Medicaid Incentives for Prevention of Chronic Diseases



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LIST OF ABBREVIATIONS

ACA—Affordable Care Act ADA—American Diabetes Association ATET—average treatment effect on the treated BMI—body mass index BP-blood pressure CBT—cognitive behavioral therapy CDC-Centers for Disease Control and Prevention CDPS—Chronic Illness and Disability Payment System CHC—Community Health Center CI-confidence interval CMMI—Center for Medicare and Medicaid Innovation CMS—Centers for Medicare & Medicaid Services CO-carbon monoxide CVD—cardiovascular disease DBP-diastolic blood pressure DHCS—Department of Health Care Services (California) DHHS—Department of Health and Human Services (Montana) DHS-Department of Human Services (Hawaii, Minnesota) DPH—Department of Public Health (Connecticut) DPP—diabetes prevention program ED—emergency department

FB—First Breath

6MWT-6-minute walk test

FOA—funding opportunity announcement

FQHC—Federally Qualified Health Center

HEDIS—Healthcare Effectiveness Data and Information Set

HI-PRAISE—Hawaii Patient Reward and Incentives to Support Empowerment

HRQOL—health-related quality of life

IRB—Institutional Review Board

IRR-incidence rate ratio

LB—lower bound

MCO-managed care organization

MIPCD—Medicaid Incentives for Prevention of Chronic Diseases

MIPCD State MDS—MIPCD State Minimum Data Set

MIQS—Medi-Cal Incentives to Quit Smoking

NASHP—National Academy for State Health Policy

NRT-nicotine replacement therapy

OLS—Ordinary Least Squares

PAM—Patient Activation Measure

PCORI—Patient-Centered Outcomes Research Institute

PMPM—per member per month

PR—prescriber referral

QALY—quality adjusted life year

RCT-randomized controlled trial

SBP—systolic blood pressure

SD—standard deviation

SSI—Supplemental Security Income

TA-technical assistance

TBD-to be determined

UB-upper bound

WIN—Wellness Incentives and Navigation

WTQL—Wisconsin Tobacco Quit Line

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EXECUTIVE SUMMARY

E.1 Introduction

Section 4108 of the Patient Protection and Affordable Care Act (Affordable Care Act) mandated the creation of the Medicaid Incentives for Prevention of Chronic Diseases (MIPCD) program for States to develop evidence-based prevention programs that provide incentives to Medicaid beneficiaries to participate in and complete the MIPCD program. In September 2011, 10 States (California, Connecticut, Hawaii, Minnesota, Montana, Nevada, New Hampshire, New York, Texas, and Wisconsin) were awarded demonstration grants to implement chronic disease prevention approaches for their Medicaid beneficiaries to test the use of incentives to encourage behavior change.

As described in more detail below, States focused on different chronic diseases and health conditions (**Figure E-1**) and included different incentive schedules and amounts. Preventive services such as diabetes prevention classes, smoking cessation quitlines and counseling, and patient navigation were integral parts of the incentive programs; these services often accounted for a large share of program resources. The States were required to demonstrate Medicaid beneficiary changes in health risks and outcomes.





Consistent with the requirements of Section 4108 of the Affordable Care Act, the Centers for Medicare & Medicaid Services (CMS) awarded a contract to RTI International to conduct an independent, national evaluation of the 10 State programs. As required by the law, this evaluation focuses on

- the effect of such programs on the use of health care services by Medicaid beneficiaries participating in the program;
- the extent to which special populations (including adults with disabilities, adults with chronic illnesses, and children with special health care needs) are able to participate in the program;
- the level of satisfaction of Medicaid beneficiaries with respect to the accessibility and quality of health care services provided through the program; and
- the administrative costs incurred by State agencies that are responsible for administration of the program.

Each participating State was awarded a 5-year grant to implement, conduct, and evaluate its MIPCD program. Participating beneficiaries could earn incentive payments through December 31, 2015.

E.1.1 Purpose of the Report

As part of the MIPCD authorization, the Affordable Care Act requires that the Secretary of the Department of Health and Human Services submit an initial and a final report to Congress on the MIPCD programs. The initial report to Congress

(<u>https://innovation.cms.gov/Files/reports/MIPCD_RTC.pdf</u>) was submitted in November 2013, using information generated by RTI's independent assessment. The report provided an interim evaluation of the effectiveness of the programs based on information provided by the States through their semiannual reports; it also contained a recommendation regarding whether funding for expanding or extending the programs should be extended beyond January 1, 2016. The report concluded, "At this time, there is insufficient evidence to recommend for or against extending funding of the programs beyond January 1, 2016."</u>

The final report to Congress included the results of the independent assessment required by the law, together with recommendations for such legislation and administrative action as the Secretary determined appropriate. The final report to Congress was submitted to Congress in June 2016 (<u>https://innovation.cms.gov/Files/reports/mipcd-secondrtc.pdf</u>), accompanied by RTI's second independent assessment report (<u>https://innovation.cms.gov/Files/reports/mipcd-secondrtc.pdf</u>), accompanied by secondrtc-indpassessmentrpt.pdf).

This final evaluation report includes information contained in RTI's previous independent assessment reports as well as new material and analyses conducted on data collected through the end of the State awards.

E.1.2 Organization of the Report

This report is divided into nine sections. In *Section 1*, we introduce the MIPCD program and provide background on chronic diseases and incentives. *Section 2* includes descriptions of the data sources we used to create the report. In *Section 3*, we assess program implementation and review lessons learned. The section includes an overview of the State programs and describes program challenges, changes, and lessons learned. *Section 4* assesses utilization of

health care services by participants in the MIPCD programs. The section analyzes Medicaid claims to compare utilization and expenditures—a summary measure of utilization—by participants who receive incentives to utilization and expenditures by persons in control groups who do not receive incentives. In the section, we also analyze data on the use of incentives from the MIPCD Minimum Data Set (MIPCD State MDS). In Section 5, we analyze Medicaid beneficiary satisfaction with the accessibility and quality of health care services provided through the MIPCD program. We conducted focus groups and a beneficiary survey to collect primary information on beneficiary satisfaction. Section 6 evaluates whether special populations—including adults with disabilities, adults with chronic illnesses, and children with special health care needs—are able to participate in the program. We synthesize data from various sources to answer this question. Section 7 examines administrative costs using data from State budgets, cost reports, and an Administrative Costs Form filled out by States. We summarize findings from Final State Evaluations on the impact each program had on beneficiary outcomes in *Section 8*. Each State was required to evaluate the impact of its program on beneficiary health outcomes; these finding provide important information for an overall evaluation of the programs. Section 9 summarizes findings and discusses whether the MIPCD programs were likely to prevent chronic diseases.

E.1.3 Data Sources and Statistical Methods

We used a mixed-methods approach to analyze and synthesize information from the following sources:

- State MIPCD applications and operational protocols;
- State quarterly reports and other State-specific documents provided to CMS;
- information from the program's Learning Collaborative;
- site visits to each State;
- focus groups with beneficiaries;
- stakeholder interviews;
- a beneficiary survey focusing on program satisfaction;
- the MIPCD State MDS, which included data on enrollment, demographics, service utilization, incentive amounts received by participants, and health and behavior outcomes for incentive and control-group program participants
- Medicaid enrollment, fee-for-service claims, and managed care encounter data.

The data included in this report cover the full duration of the MIPCD programs. We also received Medicaid data prior to the start of the MIPCD program to analyze the change in select Medicaid utilization and expenditure outcomes before and after participation in MIPCD. We received Medicaid data claims data directly from each State covering the period 2 years before

entry into the MIPCD program for incentive and control-group participants (i.e., "pre-period") and 1–3 years after enrollment into the program (i.e., "post-period"). Because each State's proposed program design, incentive structure, target conditions, and outcomes of interest were unique, we conducted a separate quantitative analysis for each State. Following an intent to treat approach, we included all participants in analyses, regardless of whether the participant completed the program or used incentivized services.

Additional details describing the methodology for analyzing the beneficiary survey of program satisfaction, the MIPCD State MDS, and the Medicaid data can be found in *Sections 4.4* and *5.2*.

E.2 Background

E.2.1 Importance

Identifying effective approaches to improving Medicaid beneficiaries' health is important given the high rates of chronic disease in this population. About 9 percent of adult Medicaid beneficiaries have diabetes, 28 percent cardiovascular disease, 23 percent respiratory disease, and 35 percent mental illness. Low-income populations report high rates of smoking and obesity that contribute to increased risk of chronic diseases.

Chronic diseases also place a significant financial burden on Medicaid programs. Estimates suggest that 11 percent of adult Medicaid expenditures (\$22 billion) are attributable to smoking, while 15 percent of total Medicaid spending in a year is due to smoking-related diseases. An estimated \$69 billion is spent in the United States treating severe obesity, and approximately 11 percent of this cost is paid for by Medicaid. Diabetes is particularly costly. Diabetes and prediabetes cost the United States an estimated \$245 billion each year, and estimated spending for persons with diabetes enrolled in Medicaid was \$13,490 per capita.

Unhealthy lifestyle behavior—including smoking, physical inactivity, and poor diet contribute to chronic diseases. Changing these behaviors is difficult for the general population, and low income individuals may face added barriers. Although a growing body of evidence demonstrates that incentives can encourage healthy behaviors and use of preventive services, there is limited information on the effectiveness of incentives within Medicaid programs. The MIPCD programs were designed to test whether incentives can help Medicare beneficiaries adopt behaviors that prevent chronic diseases.

E.2.2 Theory of Action

The theory of action for MIPCD programs is outlined in *Figure E-2*. Incentives encourage Medicaid beneficiaries to use more preventive services. The preventive services help beneficiaries achieve short-term health outcomes, such as smoking cessation, weight loss, or hypertension control. Improved short-term health outcomes may then lead to long-term reductions in the onset or severity of chronic diseases. For example, an effective incentive program focused on smoking cessation would lead to more quitline or tobacco cessation calls, which lead to more successful quit attempts in the short term. The successful quit attempts would lead to long-term reductions in heart disease, cancer, and respiratory disease among those who quit.

Figure E-2 Theory of action for MIPCD Programs



This theory of action has implications for our 5-year evaluation of the MIPCD programs. Within this time span, we can evaluate whether the incentive programs can be implemented successfully, whether incentives lead to increased use of preventive services, and if any increase in preventive services leads to improvements in short-term health outcomes. However, because chronic disease develops slowly, the evaluation period is not long enough to measure whether short-term health improvements lead to long-term reductions in chronic disease. On the other hand, if we do not observe improvements in short-term health outcomes, we would not expect to see improvements in long-term outcomes.

E.2.3 Overview of State Initiatives

State MIPCD programs varied in their focus, design, and incentive structures. *Table E-1* offers brief descriptions of the 10 MIPCD programs. *Section 3.3* and *Appendix A* in the main report describe the programs in further detail.

California	Focus area: Smoking Cessation				
Enrollment target (RCTs only): 9,000 Actual enrollment (RCTs only): 4,300	Maximum incentive:Total incentive• Eligible callers who ask for MIQS incentive: \$20 gift cardpayments: \$43• RCT 1: \$60 gift cardRCT 2: \$40 gift card• Enhanced Services Non-RCT: \$60 gift				
Description: California's Medi-Cal Incentives to Quit Smoking (MIQS), aimed to increase calls by Medicaid beneficiaries who smoke to the California Smokers' Helpline (Helpline) through modest financial and cessation-related medication (nicotine replacement therapy, NRT) incentives. Medicaid beneficiaries called the Helpline to enter the program by:					

Table E-1 **Brief overviews of MIPCD Programs by State**

1) asking for a financial incentive for enrolling and completing a 30-minute counseling call;

2) being randomized into either (a) usual care (control), (b) usual care plus free NRTs, and (c) usual care plus free NRTs plus modest financial incentives for participating in counseling (randomized control trial [RCT] 1);

3) joining the Re-engagement RCT (RCT 2) for persons who had called the Helpline 3–12 months earlier;

4) being p	provided	with	Enhanced	Service	es and of	fered NR	T ship	ped di	rectly to	their l	homes;
these part	icipants	were	eligible fo	r small	financia	l incentiv	es to e	engage	in coun	seling.	

Connecticut	Focus area: Smoking Cessation				
Enrollment target:	Maximum incentive:	Total incentive			
6,210	• Original intervention arm: \$5 per	payments: \$173,096			
Actual enrollment:	counseling session/quitline call up to 10				
4,052	times, \$15 bonus after 5 counseling				
	sessions/quitline calls, \$15 per tobacco-				
	free CO test up to 12 tests, and \$10 for 3				
	consecutive tobacco-free CO tests				
	• High process group: \$10 per counseling				
	session/quitline call up to 10 times\$30				
	bonus after 5 counseling sessions/quitline				
	calls				
	• High outcome group: \$22 per tobacco-				
	free CO test (up to 12 tests total) and \$22				
	for 3 consecutive tobacco-free CO tests				

Description: Connecticut's Rewards to Quit (R2Q) program aimed to reduce smoking among Medicaid beneficiaries and to test the impact of incentives on quitting smoking. Participants in the intervention condition received incentives via gift cards for participating in counseling, using the quitline, and testing negative for tobacco in carbon monoxide (CO) breathalyzer tests. Participants in the control condition did not receive financial incentives. In the final year, the program added a high process incentives and outcomes incentives groups, with increased incentives for quitline calls or counseling sessions and tobacco-free CO tests.

Hawaii	Focus area: Diabetes prevention and diabete	s self-management
Enrollment target:	Maximum incentive: Participants were	Total incentive
1,400	eligible to receive a maximum incentive	payments: \$393,357
Actual enrollment:	amount of \$320 annually from the program	
2,323		

Description: Hawaii's Patient Reward and Incentives to Support Empowerment (HI-PRAISE) MIPCD Program aimed to improve the early detection of diabetes among individuals at high risk for developing diabetes and to improve diabetes self-management. Participants received incentives for participation and for completion of specific behaviors or goals. For participants enrolled through federally qualified health centers (FQHCs), Hawaii used a quasi-experimental design with pre-post intervention comparisons. Participants enrolled in the Kaiser Permanente Hawaii managed care organization (MCO) were randomized into control and incentive groups.

Minnesota	Focus area: Diabetes prevention and weight management			
Enrollment target: 1,800 Actual enrollment: 1,100	 Maximum incentive: All participants received \$25 for attending one of the first three DPP sessions and for completing labs at follow-up. Incentive condition: eligible to receive up to \$520 for achieving attendance and weight loss goals, provided via reloadable debit cards. 	Total incentive payments: \$124,645		

Description: Minnesota's We Can Prevent Diabetes Minnesota program aimed to prevent diabetes and encourage weight loss among Medicaid beneficiaries with increased risk of diabetes or diagnosed pre-diabetes. Program participants participated in a standardized 12 month, group YMCA Diabetes Prevention Program (DPP). Groups of participants were randomized to one of three cohorts of DPP classes:

Cohort 1 received incentives for attaining individual attendance and weight loss goals
 Cohort 2 received incentives for individual and group goal attainment

3) Cohort 3 was the control group and was not eligible for goal-related incentives

Montana	Focus Area: Diabetes prevention, weight management, and hypertension			
Enrollment target: 724 Actual enrollment: 261	Maximum incentive: Participants at incentive sites were eligible to receive up to \$320 annually from the program, provided via debit cards.	Total incentive payments: \$14,295		

Description: Participants in Montana's MIPCD program participated in an evidence-based lifestyle intervention adapted from the National Institute of Health's DPP. Montana's program had a crossover design, in which half of the program sites distributed incentives for the first 18 months of the program and the remaining sites did not provide incentives. In January 2014, sites that did not previously distribute incentives began to do so and the remaining sites no longer provided incentives.

Nevada	Focus area: Diabetes prevention, diabetes management, weight management, and hypertension			
Enrollment target: 2,000	Maximum incentive: Program enrollees received points redeemable for rewards on a	Total incentive payments: \$231,346		
Actual enrollment:	tiered basis. The maximum monetary value			
1,840	of the incentives was \$350.			

Description: Nevada's MIPCD program, Nevada Healthy Choices, worked with Medicaid beneficiaries to try to control or reduce their weight, lower cholesterol, lower blood pressure, and avoid the onset of diabetes or improve management of diabetes. The Children's Heart Center's Healthy Hearts Program enrolled children between the ages of 7 and 18 and provided one-on-one counseling and motivational coaching and a monitored exercise program, with two treatment groups: young people in treatment group 1 were eligible to earn incentive points and in treatment group 2, incentive points earned by young people were split between the child and the child's parents. United HealthCare and Amerigroup offered weight management and diabetes disease management programs to beneficiaries with diabetes served by MCOs, with participants randomized into 1) a control group that did not receive any incentives, 2) treatment group 1 that received incentive points for each test or service completed, and 3) treatment group 2 that received incentive points for obtaining tests or services and achieving health goals. The YMCA offered the National Institute of Health's DPP to participants with prediabetes or at risk for type 2 diabetes. The Lied Clinic provided counseling to adults diagnosed with diabetes or at risk for type 2 diabetes. Participants at the YMCA and Lied Clinic were randomly assigned to a control or a treatment group wherein reward points could be earned for obtaining tests and services.

New Hampshire	Focus area: Weight management and smoking cessation			
Enrollment target: 2,600 Actual enrollment: 2,031	 Maximum incentive: 24-month weight management program: \$3,097 via debit cards 12-month weight management program: \$1,860 via debit cards Smoking cessation program: \$415 via debit card 	Total incentive payments: \$231,346		

Description: Program enrollees participated in one of four weight management program arms that entailed 1) gym membership; 2) personal training (InShape); 3) Weight Watchers; or 4) a combination of personal training (InShape) and Weight Watchers.

Program enrollees also could participate, simultaneously or not, in one of three smoking cessation program arms that entailed 1) a referral for NRT only; 2) a referral for NRT and quitline sessions; and, 3) a referral for NRT and telephonic cognitive behavioral therapy.

New York	Focus area: Diabetes prevention, diabetes management, hypertension, and smoking cessation			
Enrollment target:	Maximum incentive: For each of the four programs. New York capped the amount of	Total incentive		
Actual enrollment:	incentives disbursed at \$250 distributed via	payments. \$450,520		
4,279	mailed checks.			

Description: New York implemented four incentivized programs: diabetes prevention, blood pressure management, diabetes management, and smoking cessation. For the smoking cessation, blood pressure, and diabetes management programs, participants were randomized into one of the incentive arms or the control group. For the diabetes prevention program, classes were randomized into a particular incentive arm or the control group.

Texas	Focus area: Participant-set health goals			
Enrollment target:	Maximum incentive: Flexible wellness	Total incentive		
1,250	account with up to \$1,150 per year for up to	payments:		
Actual enrollment:	3 years.	\$1,454,995		

Description: The goal of the Wellness Incentives and Navigation (WIN) project was to improve health self-management and reduce the incidence and consequences of chronic disease among non-elderly adult Medicaid beneficiaries with behavioral health diagnoses. WIN participants set personal wellness goals with the assistance of health navigators and used flexible wellness accounts to pursue the wellness goals. Control group participants did not receive flexible wellness accounts or other incentives.

Wisconsin	Focus area: Smoking cessation			
Enrollment target: 3,250 Actual enrollment: 2,928	 Maximum incentive: WTQL intervention group: \$270 in gift card incentives over 6 months WTQL control group: \$80 in gift cards over 6 months FB intervention group: \$600 in gift cards over the course of pregnancy plus 6-12 months postpartum FB control group: \$160 in gift cards over the course of pregnancy plus 6-12 months postpartum 	Total incentive payments: \$449,320		
Description: Wisconsin's MIPCD program aimed to provide smoking cessation services to				

Description: Wisconsin's MIPCD program aimed to provide smoking cessation services to adult smokers enrolled in one of two programs, each with a randomized control group: (1) a general program for all smokers, who enrolled through the Wisconsin Tobacco Quit Line (WTQL), or (2) First Breath (FB), an evidence-based program for pregnant smokers.

E.3 Implementation of State Programs

All 10 States successfully implemented Medicaid incentive programs. This is a basic, but important, accomplishment because States had relatively little experience with Medicaid incentive programs prior to MIPCD (Blumenthal et al., 2013). While six States had implementation delays, all States implemented programs by 2013. Those States with multiple program arms had implemented all program components by March 2015. As part of their program evaluations, all 10 States voluntarily implemented randomized trials.

States found implementing an incentive program was more challenging than States initially thought it would be and required flexibility and more planning than anticipated. States found that starting up their programs took longer than anticipated. Reasons for implementation delays included the need to hire and train staff, obtain Institutional Review Board (IRB) approval, and formalize partnerships and contracts. This resulted in delays for six States that took 6 months to 2 years longer than projected to implement their programs. States addressed implementation delays and program challenges with flexibility, by implementing numerous program changes, and by continuously evolving their programs. Building on an existing chronic disease prevention program, established relationship with Medicaid providers, or interagency agreements facilitated States' MIPCD program implementation.

States worked hard to recruit participants, but only two States met their target enrollment. Most programs found that collaborating with providers, clinics, and MCOs was an important tool in identifying potentially eligible participants and providing referrals and enrollment. Several States used provider incentives, and some modified them to increase provider engagement. States adapted and modified outreach strategies and program features during and throughout implementation as they sought to address challenges. Delays in implementing programs and the associated challenges in recruiting participants had a significant impact on States' enrollment targets, with seven programs reducing their initial projections by between 42 percent and 85 percent. Even with these reductions, only **Hawaii** and **Texas** met their enrollment targets. Overall State enrollment was approximately 70 percent of the targeted goals.

Lessons learned from the initiative may aid implementation of future Medicaid incentive programs. Lessons learned included the following:

- Partnering with community-based organizations that had similar goals resulted in partner buy-in. Their relationships with targeted populations provided an inroad to the enrollment of these groups
- Collaborating with MCOs, FQHCs, and safety net providers that worked with and knew the Medicaid population aided with both enrollment and in helping participants adopt health behaviors.
- Focusing outreach efforts to address health disparities and recruit underrepresented groups, such as ethnic minorities, was important in addressing the needs of people who needed the program the most.

• Fostering healthy and strong relationships between participants and program educators provided a support system that participants valued as they worked toward program goals.

While States could not sustain their MIPCD programs as they existed in the demonstration, and some had to discontinue programs completely because of the lack of funding, **most States worked to find ways to sustain some of the program components** through several vehicles. States were especially interested in sustaining services associated with their programs (e.g., diabetes prevention classes, nicotine replacement therapy, gym or Weight Watchers memberships).

- **Texas, New Hampshire,** and **Hawaii** have worked with CMS to incorporate services associated with their programs into a Medicaid pilot or Medicaid section 1115 demonstration.
- Wisconsin, New Hampshire, Minnesota, and Hawaii were exploring potential funding of services by other programs.
- New York, California, and New Hampshire were working to embed program components in their MCOs.

With the exception of Texas, which was considering a flexible wellness account for a self-directed care pilot program, States have not continued cash incentives for participants.

E.4 Utilization and Expenditures

We performed econometric analyses using information from the MIPCD State MDS and Medicaid claims data to evaluate whether MIPCD participants who had the opportunity to receive incentives had lower utilization of health care services, better short-term health outcomes, and lower Medicaid expenditures than participants who were not offered incentives. The analysis examined claims to determine expenditure differences but did not include costs attributable to incentive payments made by the awardees. Our hypothesis was that MIPCD participants receiving incentives would obtain more services promoted by the MIPCD programs, leading to improvements in health, which would result in less use of high-cost health care, such as inpatient admissions and emergency department (ED) visits. Reductions in inpatient admissions and ED visits would then lead to reductions in inpatient expenditures, ED expenditures, and total expenditures.

E.4.1 Use of Incentivized Services and Changes in Health Outcomes

All MIPCD programs distributed financial incentives to pay for participating in particular health promotion activities or for meeting milestones in health promotion utilization, health outcomes, or both. As shown in *Figure E-3*, disbursed incentives range from \$14,295 in **Montana** to \$1,454,995 in **Texas**, based on MIPCD State MDS data. The amounts disbursed were a function of program design (how much, on average, the State reimbursed participants for activities) and the number of enrollees in a program.

Figure E-3 Amount of incentives disbursed from MIPCD program start through December 2015



Based on our analysis of MIPCD State MDS data, **many program participants used significantly more of a preventive service if they received a financial incentive.** Among the diabetes prevention, weight management, and diabetes management programs in **Minnesota**, **Montana**, and **New York**, participants receiving incentives to attend DPP classes attended significantly more classes than the control group; the participants receiving incentives attended on average 1-2 more classes. Findings for other types of services such as meetings with a health coach or doctor, gym visits, or attendance at Weight Watchers meetings were more mixed, with incentivized participants using significantly more of a service in some programs but not others. Among the smoking cessation programs, participants receiving incentives in **California**, **Connecticut**, and **Wisconsin** made significantly more calls, on average 1-2 more, to a quitline or attended more smoking cessation counseling sessions relative to a control group.

States also saw some success in improving health outcomes among participants. Compared to the control group, incentivized participants had greater reductions in weight and HbA1c and blood pressure levels; more minutes of physical activity; improvements in self-reported health status; greater likelihood of reporting a smoking cessation quit attempt or having ceased smoking; and greater likelihood of having ceased smoking, confirmed via biochemical tests, though improvements were often small in magnitude and did not always represent clinically significant or statistically significant changes. Examples include

Weight loss. Average weight loss among participants in weight management, diabetes prevention, or diabetes management programs was modest. No treatment arm lost more than 7 lbs. on average over time. In regression-adjusted analyses, Minnesota's incentive participants lost on average 3 pounds more than control group participants; this change was modest but statistically significant. In contrast, Montana's, Hawaii's, and New York's incentive participants did not lose significantly more weight than the control group.

• Smoking cessation. In California, more participants in the two incentive groups reported a quit attempt (72 percent and 78 percent, respectively) compared to participants in the control group (68 percent); a difference that was significantly different. In Wisconsin's Striving to Quit smoking cessation program, 36 percent of the incentive group versus 24 percent of the control group had a biochemical test indicating smoking cessation, and in Wisconsin's First Breath smoking cessation program, 39 percent of the incentive group versus 23 percent of the control group had a biochemical test indicating smoking cessation. The differences in both programs were statistically significant. In contrast, there were minimal differences between incentive and control groups in Connecticut and New Hampshire.

States performed more extensive analyses of health outcomes and reported results in their final evaluation reports (see *Section 8*).

E.4.2 Health Care Use and Expenditure

Overall, there were few statistically significant changes in total, inpatient, or ED Medicaid expenditures (excluding incentive payments) associated with receipt of incentives. However, regression-adjusted estimates of the change in total, inpatient, and ED expenditures and in the probability of having an inpatient or ED visit were sometimes negative, suggesting that participants who received incentives may have been trending towards reductions in utilization and expenditures. For example, Texas had decreases in total, inpatient, and ED expenditures and utilization for the incentive group compared to the control group, but results were statistically insignificant. Below we discuss findings for total expenditures; detailed findings related to the other expenditure and utilization outcomes can be found in *Section 4.6*.

As shown in *Figure E-4*, DPP and weight loss programs that focused on prevention of chronic disease (Minnesota, Montana, New York, Nevada Healthy Hearts, and New Hampshire) trended towards reductions in total Medicaid expenditures, while success was more mixed for the programs that focused on disease management (Hawaii, Nevada, and New York). Disease management programs were designed to increase uptake of medical care necessary to manage health, which could increase total expenditures in the short term. However, in the years following participation, total expenditures may fall as health benefits are realized.

Figure E-4 Difference-in-difference estimates of total per-member-per-month Medicaid expenditures for diabetes and weight programs



A *negative* value for the difference-in-difference estimate corresponds to *less growth* in expenditures over time for the participants receiving incentives relative to control group participants, and a *positive* value corresponds to *greater growth* in expenditures over time for the participants receiving incentives relative to the control group. These estimates do not include incentive payments. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

As shown in *Figure E-5*, about half of smoking cessation programs had reductions in total Medicaid expenditures, but only the estimates for Wisconsin's quitline were statically significant. New Hampshire, Connecticut, and Wisconsin all had both in-person and telephonic modes of delivering cessation counseling, while California and New York delivered the intervention telephonically through a quitline. There were no clear patterns to suggest that one mode of delivery was more successful than the other at reducing growth in total expenditures relative to a control group.

Figure E-5 Difference-in-difference estimates of total per-member-per-month Medicaid expenditures for smoking cessation programs



A *negative* value for the difference-in-difference estimate corresponds to *less growth* in expenditures over time for the participants receiving incentives relative to control group participants, and a *positive* value corresponds to *greater growth* in expenditures over time for the participants receiving incentives relative to the control group. These estimates do not include incentive payments. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

In States (**Connecticut** and **New York**) that tested multiple incentive designs within one program, we found no clear pattern to suggest that one type of incentive approach had a greater impact on changing patterns of expenditures, inpatient, and ED use compared to another approach.

Texas had a unique program wherein participants worked with a patient navigator to develop individual health goals. Activities were funded by a flexible wellness account. As shown in *Figure E-6*, the Texas incentive program led to a reduction in total Medicaid expenditures, but the reduction was not statistically significant.

Figure E-6 Difference-in-difference estimates of total per-member-per-month Medicaid expenditures in Texas program



A *negative* value for the difference-in-difference estimate corresponds to *less growth* in expenditures over time for the participants receiving incentives relative to control group participants, and a *positive* value corresponds to *greater growth* in expenditures over time for the participants receiving incentives relative to the control group. These estimates do not include incentive payments. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

The findings on expenditures and utilization of inpatient and ED use were not completely unexpected. Changing patterns of health care often takes time to achieve, so MIPCD programs may not necessarily be expected to have immediate impact on high-cost utilization and expenditure measures in the months (or even years) following participation. However, there was evidence that some of the States were trending towards reductions in expenditures and use, but it is unknown if those trends would materialize in to demonstrable savings in the long-run.

E.4.3. Cumulative Savings

Using the regression-adjusted difference-in-difference estimates, we estimated the cumulative gross savings or losses generated in each program arm. Cumulative gross savings and losses are calculated by multiplying the per member per month covariate-adjusted difference-indifference regression estimate for total Medicaid expenditures (not including incentive payments) by the number of months participants who received incentives were enrolled in Medicaid, from the start of the participants' participation in MIPCD through the end of the available Medicaid data. If the difference-in-difference regression estimate for total Medicaid expenditures was statistically significant, the cumulative spending estimate will also be statistically significant. Only 5 of the 36 program arm estimates were significantly different than zero. Three program arms had significant gross savings: New Hampshire's Weight Watchers + InShape program, Minnesota's individual incentives arm in their DPP program, and Wisconsin's smoking cessation Quitline program. Two program arms were associated with significant gross losses: Hawaii's HI-PRAISE diabetes management program in a pre-post analysis, and New York's process incentive arm for hypertension management. The gross saving and loss estimates do not take into account the incentives that were paid out. After taking the incentives into account, the savings would be less and the losses would be greater.

E.5 Beneficiary Satisfaction

Overall, survey respondents were very satisfied with the MIPCD program. Sixtyseven percent were very satisfied with the program and another 27 percent were somewhat satisfied (*Figure E-7*). Seventy-four percent of respondents said they would recommend the program to family and friends and another 22 percent said they would probably do so. The mean program rating was 8.5, out of a scale of 1 (worst possible program) to 10 (best possible program).





Most survey respondents were satisfied with program accessibility, educational materials, and communications with program staff. About 9 out of 10 respondents strongly agreed that the program started as soon as they wanted, the amount of time spent on the program was about right, the program schedule was convenient, and the program location was convenient. Some focus group participants wanted more flexibility and more options for participating in inperson programs. More than half of survey respondents (58 percent) received educational materials and information that was very helpful. Another 21 percent received materials and information that was somewhat helpful. Some focus group participants said they had not used the materials much or at all, in some cases because literacy was a barrier. Others thought the materials provided useful information and were helpful as reminders and motivators. Most survey respondents were satisfied with their communication with program staff. About three-quarters strongly agreed that the program staff explained things in a way they could understand, listened to them carefully, and encouraged them to ask questions and talk about their health concerns. About 78 percent strongly agreed that program staff seemed to care about them as a person.

About three-quarters of survey respondents strongly agreed that they were happy with the incentives overall and most strongly agreed that the incentives were fair (73 percent) and that they liked getting incentives for taking good care of their health (78 percent). A

somewhat lower percentage (67 percent) strongly agreed that they were happy with how often they got incentives. Survey respondents reported that the program and the incentives specifically had a positive impact on their health understanding and behaviors. For most respondents, the program had encouraged lifestyle changes to improve their health (76 percent strongly agreed), helped them learn ways to take better care of their health (71 percent), and helped them understand their health issues (64 percent). The incentives helped them set goals and work towards them (66 percent) and make positive changes in their life (66 percent).

The monetary value of incentives was a significant predictor of some measures of overall program satisfaction, satisfaction with incentives, and impact of incentives in multivariate analyses controlling for respondent and program characteristics. Receiving incentives of \$100 to \$400 (compared to less than \$25) was a significant predictor of higher program rating. Receiving incentives valued at \$25 to \$100 (compared to less than \$25) was associated with some measures of satisfaction with and impact of incentives. Incentive form was a significant predicator of satisfaction with incentives but not of incentive impact. Receiving points redeemable for rewards (compared to money-valued incentives) was a significant predictor of lower satisfaction with incentives.

E.6 Special Populations

Special populations (including adults with disabilities, adults with chronic illnesses, and children with special health care needs) are one of the key topics mandated to be evaluated by Section 4108. We found that **special populations were able to participate** in the incentive programs. All States served at least one special population identified in the enacting legislation for this demonstration (*Table E-2*). Most of the programs served persons who were eligible for Medicaid based on disability, and three States specifically targeted persons with mental health or substance abuse issues. All of the States served persons with or at risk of chronic disease, and one State served children at risk for obesity or heart disease. Eight States also engaged special populations that are not identified in the legislation. These included pregnant women, mothers of newborns, and beneficiaries who speak English as a second language.

Focus group discussions and stakeholder interviews revealed that in the programs for persons with behavioral health and substance use disorders, the in-person components of the programs strongly resonated with participants. Focus group discussions show **mixed results regarding language access** with a few programs offering materials in languages other than English, such as Spanish and Somali. At the same time, participants indicated that materials for low literacy individuals or individuals who spoke other languages were not available.

As noted previously, participant satisfaction with the programs overall was high. Among participants that reported receiving disability or Supplemental Security Income (SSI), **satisfaction was significantly higher** than non-disabled participants with regards to the overall program, their contact with staff, program accessibility, incentives overall, and incentive fairness.

Across nearly all programs examined, we found no differential effects of the program on total per-member-per-month (PMPM) expenditures associated with participants' Medicare-Medicaid dual enrollee or disabled status. In five programs, we observed significant impact on

total PMPM expenditures associated with a special population; expenditures declined in four of these cases and increased in one. We interpret these findings with caution given the small sample sizes and standard errors.

State	Adults with behavioral health or substance use disorders	Medicare- Medicaid enrollees	Disabled beneficiaries or SSI recipients	Pregnant women and mothers of newborns	Children	Beneficiaries who speak English as a second language
California ¹		\checkmark	\checkmark	\checkmark		\checkmark
Connecticut	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark
Hawaii ²		\checkmark	\checkmark			\checkmark
Minnesota ³		\checkmark	\checkmark			\checkmark
Montana ⁴		\checkmark	\checkmark	\checkmark		
Nevada		\checkmark	\checkmark		\checkmark	\checkmark
New Hampshire	\checkmark	\checkmark	\checkmark			
New York ⁵		_	\checkmark	\checkmark	_	\checkmark
Texas	\checkmark		\checkmark			
Wisconsin		\checkmark	\checkmark	\checkmark		\checkmark
Total	3	8	10	5	1	7

 Table E-2

 Special populations engaged in Medicaid incentives to prevent chronic diseases, by State

¹ California did not consider these populations to be a primary focus but was able to identify these populations and provide data on their participation.

 2 Hawaii did not consider those with mental illness and substance use disorders to be a primary focus but was able to identify these populations and provide data on their participation.

³ Minnesota did not consider these populations to be a primary focus but translated and adapted materials to ensure that these populations have access to the program.

⁴ In Montana, pregnant women were ineligible for the program, but mothers of newborns who meet the eligibility criteria were eligible for the program.

⁵ New York did not consider mothers of newborns to be a primary focus, but this special population was included in its programs.

E.7 Administrative Costs

We estimate that administrative costs accounted for about 42 percent of overall expenditures in MIPCD programs. This estimate comes with several caveats because the cost data were not reported uniformly across States and only 8 of the 10 States provided the information necessary for estimating administrative costs. The administrative cost estimates included evaluation costs that might not be incurred in a fully operational incentives program. Evaluation costs accounted for about 35 percent of administrative costs, so that administrative

costs net of evaluation costs accounted for about 27 percent of total program expenditures. Evaluation costs were especially high in Year 5 of the programs as the States assessed program impacts. Lower than planned enrollment probably contributed to administrative costs' share of overall expenditures. Incentive and service costs tend to rise proportionally with enrollment, whereas administrative costs may be partially fixed and rise more slowly with enrollment. The combined effect implies that a shortfall in enrollment leads to a higher share of funds spent on program administration.

Looking at costs more broadly, States spent about \$4.5 million on incentive payments to MIPCD participants, representing about 8 percent of overall expenditures. There are several reasons why incentive payments were relatively low.

- Most States planned to spend significant amounts to provide services as integral parts of their program. For example, California provided nicotine replacement therapy, New Hampshire paid for gym memberships and Weight Watchers, Texas provided patient navigators, and several States paid for diabetes prevention programs. In some cases, States considered the services as part of the incentive provided to participants, and these services were also usually provided to participants in the control group who do not receive cash incentives.
- Delays in implementation and enrollment slowed incentive payments. Most States spent less in total than they budgeted in Year 1 of their programs, and spending on incentives was correspondingly lower than budgeted. As enrollment increased in subsequent years, incentives accounted for a greater share of overall program costs.
- It appears likely that some States initially overestimated the amount that would be paid as incentives to participants. Several States revised their initial estimates of enrollment downward because of delays in implementation or challenges in recruitment. Therefore, because fewer persons participated and incentive payments per person were fixed, total incentive payments fell.

E.8 State Evaluation Reports

Each State was given the primary responsibility for assessing quality improvements and clinical outcomes of their MIPCD programs. We obtained each State's final evaluation reports and reviewed the major findings related to utilization, health outcomes, and—where available—Medicaid expenditures or cost-effectiveness analyses.

States generally found that incentives significantly increased use of incentivized preventive services. Attendance in diabetes prevention programs increased with incentives, as did the use of tobacco quitlines and cessation counseling.

Findings for the impact on health outcomes were mixed. For some States that targeted diabetes prevention, weight loss, or both, incentives impacted weight loss whereas in others the changes in average weight between incentive and control groups were insignificant. Minnesota, Montana, and New York offered diabetes prevention programs that focused on weight loss and physical activity. In Minnesota and New York, incentives led to modest but significant

increases in the percentage of participants achieving 5% weight loss, but had insignificant effects on average weight loss. Incentives had an insignificant effect on weight in the **Montana** diabetes prevention program. Incentives led to significantly lower BMI in **Nevada** and lower weight in one of two **Hawaii** weight loss programs, but incentives did not significantly affect weight in the other Hawaii program or in programs focusing on weight in **New Hampshire**. **New York** and **Hawaii** also investigated the impact of incentives on blood pressure and found that **incentives did not significantly change blood pressure**.

For **smoking cessation**, quit rates were higher for participants receiving incentives in two States, based on biochemical tests, and in a third State based on self-reports, but there were no differences between incentive and control arms in a fourth State. In **Texas**, measures of quality of life were higher for participants in the incentive arm.

Three States performed cost-effectiveness analyses; these analyses varied in focus. Wisconsin showed that incentives lowered the cost-per-quit achieved. California used a simulation model to estimate long-term health and cost outcomes over a 60-year period and estimated that both the basic smoking cessation program and the incentive program would lead to long-term cost savings. Texas made assumptions about the value of a quality-adjusted life year gained and estimated that its incentive program would have net benefits, even though it increased Medicaid costs.

E.9. Discussion

E.9.1 Summary of Key Findings

The MIPCD initiatives represent the most comprehensive test to date of incentive programs to prevent chronic diseases in Medicaid beneficiaries. Our evaluation focused on program implementation and the four Congressionally mandated issues of utilization, beneficiary satisfaction, special populations, and administrative costs. Our major findings follow.

Implementation. States can implement incentive programs for Medicaid beneficiaries. All 10 States implemented their programs successfully. The States often met challenges, and the lessons they learned may benefit other States interested in implementing a program. Future incentive programs should put special emphasis on recruiting and enrolling beneficiaries.

Utilization. Participants receiving incentives used more of the preventive services that were incentivized. Although this is not surprising, it is a prerequisite for achieving the stated goal of the MIPCD initiative: preventing chronic diseases. We found little systematic evidence that the incentives significantly changed utilization of other Medicaid services or total Medicaid expenditures. This finding was not completely surprising because the health and utilization benefits of delaying or preventing a chronic disease may not manifest themselves for years after an intervention occurs.

Beneficiary Satisfaction. Through a beneficiary survey and focus groups, we found that beneficiaries receiving incentives were very satisfied with the MIPCD programs, and the vast majority would recommend the programs to friends and family. Beneficiaries were happy with the incentive payments and believed that the programs helped them reach their health goals. Not surprisingly, satisfaction ratings increased with the amount of incentive received. However,

beneficiaries noted that the incentives were most important when they started the program, but became less important as they started to receive health benefits from participating.

Special Populations. Special populations could participate in the programs. All programs served adult Medicaid beneficiaries who were eligible for Medicaid based on disability, and each State targeted adults with or at risk of chronic disease. One program targeted children with special health needs. Special populations were at least as satisfied with the programs as other Medicaid beneficiaries.

Administrative Costs. We found that administrative costs were higher than anticipated, accounting for an estimated 42 percent of program expenditures. This estimate has caveats because administrative costs were not reported uniformly across States. In addition, administrative costs might have been higher than they would be in an operational program because States conducted randomized tests of incentives and performed formal program evaluations. Lower than anticipated enrollment likely increased the administrative costs' share of total costs. Preventive services—diabetes prevention classes, gym membership, nicotine replacement therapy, and others—were integral parts of the incentive programs and usually accounted for a significant share of overall costs; actual incentive payments to participants accounted for about 8 percent of program spending.

E.9.2 Did the MIPCD Programs Prevent Chronic Disease?

Because chronic diseases develop slowly and our evaluation only lasted 5 years, we were not able to directly measure whether the MIPCD programs prevented chronic diseases. However, we can infer whether long-term effects on chronic diseases are possible based on the short-term health outcomes (e.g., smoking cessation, weight loss) reported in State evaluation reports. As the theory of action in *Figure E-2* suggests, improved short-term health outcomes are a prerequisite for improved long-term health outcomes.

Based on the impact of incentives on short-term health outcomes reported in the State evaluation reports, the case for incentives preventing chronic diseases is probably strongest for programs focusing on smoking cessation, because these programs increased smoking cessation rates. For diabetes prevention, incentives' insignificant effects on average weight loss suggest that the incentives' long-term impact on diabetes onset will be questionable. More people met weight loss goals in two of the three MIPCD diabetes prevention programs with incentives, but the increase in percentage was relatively small, and the average weight loss was similar between the incentive and no incentive arms of the programs. The insignificant impact of incentives on blood pressure suggest that incentives will not have an impact on blood pressure-related diseases. For diabetes management, the significant effect of Hawaii's HI-PRAISE incentives on HbA1c shows promise for the long-term control of the disease, but this result is based on before and after measurements in the group receiving incentives; there was no corresponding control group. Incentives did not have an impact on HbA1c in Hawaii's Kaiser or New York's program, both of which had control groups. Finally, mapping the improvement in the health measurement in Texas to specific chronic diseases is difficult because of the general nature of the health measure and because the Texas program did not focus on a single disease.
E.9.3 Future Directions for Incentives in Medicaid Programs

The MIPCD experience demonstrates that Medicaid programs can successfully implement incentive programs. Medicaid beneficiaries had high levels of satisfaction with the programs and believed that the incentives helped them reach their health goals. Beneficiaries who were assigned to incentive arms used more preventive services than those assigned to program arms without incentives. Special populations were able to access the programs. These findings suggest that incentives are a potential tool to help Medicaid beneficiaries become more actively engaged in prevention activities.

The lack of impact on utilization of other Medicaid services and the generally insignificant effect on Medicaid expenditures was not unexpected because our follow-up time period was too short to allow for measurable changes in chronic disease outcomes and associated costs. However, the relatively small observed impacts on short-run health outcomes for some programs suggest that future work on incentives should focus on approaches that ensure that incentives produce measurable changes in short-term health outcomes.

Another area for work is increasing recruitment into incentive programs. Most of the MIPCD programs enrolled fewer beneficiaries than anticipated. "If you build it, they will come" doesn't necessarily apply to incentive programs (or to prevention programs in general). Beneficiaries must be ready to make changes, and they must know that prevention programs exist. Improving recruitment would allow more beneficiaries to enjoy benefits from the programs and might help reduce administrative costs as a share of total program costs.

The lessons from the MIPCD experience described in this evaluation report provide guidance for future Medicaid incentive initiatives.

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SECTION 1 INTRODUCTION AND BACKGROUND

1.1 Purpose of the Evaluation

Section 4108 of the 2010 Affordable Care Act (ACA) mandated the creation of the Medicaid Incentives for Prevention of Chronic Diseases (MIPCD) program. MIPCD was a grant program for States to develop evidence-based prevention programs that provide incentives to Medicaid beneficiaries for their program participation and completion. In September 2011, 10 States were awarded demonstration grants to implement chronic disease prevention approaches among their Medicaid beneficiaries to test the use of incentives to encourage behavior change. These States were required to demonstrate Medicaid beneficiaries' changes in health risks and outcomes. Each participating State was awarded a 5-year grant to implement, conduct, and evaluate its MIPCD program. Participating beneficiaries could earn incentive payments through December 31, 2015.

In line with Section 4108 of the ACA, the Centers for Medicare & Medicaid Services (CMS) awarded a contract to RTI International to conduct an independent, national evaluation of these 10 State demonstration Grantees. Although each State was required to conduct a State-level evaluation of its initiative, RTI focused its efforts on complementing these individual State evaluations by conducting an assessment across State initiatives to examine four topics specifically mandated by Section 4108:

- 1. the effect of the initiatives on the use of health care services by Medicaid beneficiaries participating in the program;
- 2. the extent to which special populations (including adults with disabilities, adults with chronic illnesses, and children with special health care needs) are able to participate in the program;
- 3. the level of satisfaction of Medicaid beneficiaries with respect to the accessibility and quality of health care services provided through the program; and
- 4. the administrative costs incurred by State agencies that are responsible for administration of the program

In addition to these mandated topics, RTI also assessed implementation progress and lessons learned by States in implementing their initiatives.

1.2 Purpose of this Report

This report summarizes key evaluation results. Some of the finding were previously included in two reports to Congress on the MIPCD programs. The initial report to Congress (<u>https://innovation.cms.gov/Files/reports/MIPCD_RTC.pdf</u>) was submitted in November 2013, using information generated by RTI's independent assessment. The report provided an interim evaluation of the effectiveness of the programs based on information provided by the States through their semiannual reports. As required by the ACA; it also contained a recommendation regarding whether funding for expanding or extending the programs should be extended beyond

January 1, 2016. The report concluded, "At this time, there is insufficient evidence to recommend for or against extending funding of the programs beyond January 1, 2016."

The final report to Congress included the results of the independent assessment required by the law, together with recommendations for such legislation and administrative action as the Secretary of the Department of Health and Human Services determined appropriate. The final report to Congress was submitted to Congress in June 2016 (<u>https://innovation.cms.gov/Files/reports/mipcd-secondrtc.pdf</u>), accompanied by RTI's second independent assessment report (<u>https://innovation.cms.gov/Files/reports/mipcd-secondrtc-indpassessmentrpt.pdf</u>).

In addition to information included in the previous independent assessment reports, this final evaluation report includes new material and analyses conducted on data collected through the end of the State awards.

1.3 Key Evaluation Questions

The following evaluation questions are addressed in this report:

- What progress and changes did State programs make in implementing their initiatives?
- What challenges did States face in implementing their strategies?
- What key lessons did States learn in implementing their initiatives?
- Did the State programs reduce Medicaid utilization and expenditures?
- Did the State programs reduce inpatient or emergency department (ED) admissions?
- Can special populations participate in the incentive programs?
- How did utilization of services by special populations compare with utilization of services overall within a State? How did Medicare expenditures for services by special populations compare with expenditures overall within a State?
- Were special populations satisfied with their programs overall, and do they experience the same reaction to program incentives as other beneficiaries in the State?
- To what extent were Medicaid beneficiaries satisfied with State programs overall?
- To what extent were Medicaid beneficiaries satisfied with State program accessibility and program incentives?
- To what extent did program incentives facilitate healthy behavior change?

- How did the States spend their administrative funds, and how did this compare with the projected spending in their proposals? What were the annual costs of the incentives that were paid by the program as a fraction of total spending? Did administrative expenditures as a fraction of total spending change across time?
- Were there additional financial costs of the program that were not covered by the program? How significant were in-kind contributions?

1.4 Organization of this Report

Section 2 describes data sources used in the evaluation. In Section 3, we describe implementation of incentives in the 10 participating States and discuss lessons learned. We provide recommendations for policymakers planning to implement Medicaid incentive programs. In Section 4, we analyze the effect of the incentives on the use of health care service by Medicaid beneficiaries. As a summary measure of utilization, we also look at Medicaid beneficiary costs. In Section 5, we examine Medicaid beneficiary satisfaction with the accessibility and quality of health care services provided through the incentive programs. We also look at beneficiary satisfaction with the incentives themselves. In Section 6, we consider the extent to which special populations were able to participate.¹ In Section 7, we assess administrative costs incurred by the programs.

Each State was required to evaluate the impact of its program on beneficiary health outcomes. Because improving health outcomes is a major objective of the MIPCD program and crucial information for an overall evaluation of the program, we summarize findings from the Final State Evaluations in Section 8.

In the final Discussion Section 9, we consider the main evaluation findings in relation to broader questions concerning the use of incentives for chronic disease prevention in Medicaid.

1.5 Background on Chronic Diseases and Incentive Programs

1.5.1 Burden of Chronic Disease in the Medicaid Population

Identifying effective approaches to improving Medicaid beneficiaries' health is important given the high rates of chronic disease in this population (Lochner et al., 2013; Kaiser Family Foundation, 2012; Wilper et al, 2009). About 9 percent of adult Medicaid beneficiaries have diabetes, 28 percent cardiovascular disease, 23 percent respiratory disease, and 35 percent mental illness (Kaiser Family Foundation, 2012). Low-income populations report higher rates of activities that contribute to increased risk of these chronic conditions. For example, while an estimated 17 percent of adults currently smoke, 29 percent of Medicaid beneficiaries are current smokers compared to 13 percent of persons who are enrolled in private health insurance (CDC, 2015). The prevalence of overweight and obesity, key contributors to increased risk of diabetes and cardiovascular disease, is high both in the general population and among low-income

¹ Although special populations is the second mandated evaluation topic in Section 4108, we present it after the section on beneficiary satisfaction so that we can discuss overall beneficiary satisfaction before we discuss satisfaction among special population groups.

Americans. An estimated 71 percent of adults aged 20 years and older are overweight or obese (National Center for Health Statistics, 2016); 33 percent of adults who earn less than \$15,000 per year are obese compared to 25 percent who earn \$50,000 per year or more (Trust for America's Health and Robert Wood Johnson Foundation, 2011).

Mortality associated with diabetes, smoking, and obesity is significant. Diabetes is the third-leading cause of death in the United States, responsible for an estimated 11 percent of deaths (Stokes and Preston, 2017), and smoking accounts for about 20 percent of deaths annually (CDC, 2017). Mortality is about three times higher for smokers compared to nonsmokers (CDC, 2017). On its own, obesity is linked to higher mortality rates relative to non-obese individuals (Flegal et al., 2013), and it is also a key factor in death rates due to diabetes and smoking. Studies have noted that mortality rates are higher among individuals who are obese and have diabetes or who smoke and are obese relative to individuals with just one of the conditions (Stokes and Preston, 2017; Freedman et al., 2006).

These chronic conditions also place a significant financial burden on Medicaid programs. Estimates suggest that 11 percent of adult Medicaid expenditures (\$22 billion) are attributable to smoking (Armour et al., 2009), while 15 percent of total Medicaid spending in a year is due to smoking-related diseases (Xu et al., 2015). An estimated \$69 billion is spent in the United States treating severe obesity, and approximately 11 percent of this cost is paid for by Medicaid, with spending varying quite significantly by State. Diabetes is particularly costly. According to the American Diabetes Association (2013), diabetes and prediabetes cost the United States \$245 billion each year, and estimated spending for persons with diabetes enrolled in Medicaid was \$13,490 per capita, which is higher than spending per capita for individuals with cardiovascular disease, respiratory disease, or mental illness (Kaiser Family Foundation, 2012).

When Medicaid beneficiaries have more than one of these chronic conditions—which is true for most Medicaid beneficiaries (Kaiser Family Foundation, 2012)—per capita spending climbs even higher. Individuals enrolled in Medicaid due to disability face particularly high rates of comorbidity, with an estimated 67 percent of these individuals having three or more chronic conditions (Kronick et al., 2009). As the number of chronic conditions increases, the average Medicaid cost per person also increases substantially (e.g., an estimated \$700/month for disabled Medicaid beneficiaries) (Kronick et al., 2007).

1.5.2 Challenges to Changing Lifestyle Behaviors for Chronic Disease Prevention

Unhealthy lifestyle choices—including smoking, physical inactivity, and poor diet contribute to chronic diseases. Multiple barriers discourage individuals from adopting healthy lifestyle behaviors, including characteristics of the built environment, limited access to facilities and resources for physical activity, cost and convenience of less healthful foods, time constraints, and knowledge and attitudes related to health behaviors and chronic disease (Kelly et al., 2016). Individuals who attempt to make healthy lifestyle changes often experience poor success rates. For example, only about 6 percent of adults who quit smoking sustain cessation for 6 months to a year (National Center for Health Statistics, 2013). Rates of successful smoking cessation are lower among populations with lower socioeconomic status, African Americans, and individuals with public health insurance or no insurance. Long-term weight-loss maintenance is also a challenge; about 20 percent of individuals can be considered successful when weight-loss maintenance is defined as intentionally losing at least 10 percent of one's weight and maintaining that loss for a minimum of 1 year (Turk et al., 2009). Although rates of physical inactivity are declining, still only about one out of five Americans achieve the recommended levels of physical activity (An et al., 2016; Johnson et al., 2014).

As discussed above, Medicaid beneficiaries and lower income populations generally have higher rates of chronic disease and are more likely to smoke, be physically inactive, and to be overweight or obese (CDC, 2015; Lantz et al., 2010; Trust for America's Health and Robert Wood Johnson Foundation, 2011). Medicaid beneficiaries also face more barriers to health care than adults with private insurance coverage, including delays in receiving care due to transportation problems and difficulty finding providers who accept Medicaid (MACPAC, 2016a). Medicaid beneficiaries are less likely to have access to specialist care—care that patients often rely on to manage and treat their chronic health conditions (MACPAC, 2016a).

Relative to the general population, low-income populations face added barriers to achieving a healthy lifestyle. Barriers to physical activity include lack of access to recreational facilities (e.g., due to location/cost), unsafe or unpleasant environments for physical activity (e.g., crime, no sidewalks), and lack of social support (Barth & Greene, 2007; Cotter & Lachman, 2010; Humpel et al., 2002; Trost et al., 2002; Wardle & Steptoe, 2003). Cost and access are barriers to healthy eating (Cassady et al., 2007; Chang et al., 2008; Fulp et al., 2009; Kirkpatrick, 2012; Ylitalo et al, 2016). Low-income populations are also more likely to live in "food deserts"—geographic areas with limited access to fruits, vegetables, and other healthy foods (Bertoni et al., 2011; Ver Ploeg et al., 2009; Walker et al., 2010). In terms of smoking cessation, beliefs about smoking and quitting can serve as barriers to smoking for stress management, lack of support from health and other service providers, and for individuals with mental illness, maintenance of mental health (Christiansen et al., 2012; Twyman et al., 2014). Collectively, these challenges contribute to a decreased ability and motivation to live healthy lifestyles.

Smoking Cessation Helplines

Smoking cessation programs can exist in various forms and may involve advice from a clinician, intensive individual counseling, or group therapy. Telephone helplines can supplement or substitute for in-person support. Telephone counseling can be proactive, when the counselor initiates one or more calls to provide support in making a quit attempt or avoiding relapse. In contrast, reactive counseling occurs when the participants call the helplines. A systematic review of telephone counseling for smoking cessation found that proactive telephone counseling aids smokers who seek help from helplines (Stead et al., 2013). Studies demonstrate dose-response; one or two brief calls are less likely to provide measurable benefit compared to a larger number of calls (Stead et al., 2013). However, there is insufficient evidence to determine the optimal number of calls.

Quit rates for vulnerable and underserved populations are generally lower than for general populations (Kerkvliet & Fahrenwald, 2015; Varghese et al., 2014). For example, in South Dakota the 7-month quit rate was 46.9 percent for a "non-priority" population and 35.7 percent for Medicaid beneficiaries (Kerkvliet & Fahrenwald, 2015). In Arkansas, the odds of longer-term abstinence (3 and 6 months) for helpline users with the highest socioeconomic

status was 1.75 times the odds for helpline users with the lowest socioeconomic status (Varghese et al., 2014).

Lifestyle Programs for Diabetes Prevention

Structured lifestyle programs such as the DPP demonstrate that half of new diabetes cases could be avoided when persons with prediabetes change their lifestyle habits to lose a modest amount of body weight (5–7 percent of initial body weight) (Knowler et al., 2002, 2009). In a clinical trial, diabetes incidence was reduced 58 percent with lifestyle intervention compared to the placebo treatment group. Approximately half of the lifestyle group reached a 7 percent weight loss goal and three-quarters met the 150-minute weekly physical activity goal by the end of 16 sessions; 37 percent and 67 percent of the cohort remained at weight and activity goals, respectively, after an average 3.2 years.

Evidence from published National Diabetes Prevention Program work has shown overall success across various settings. These settings include primary care facilities (Kramer et al., 2009; McTigue et al., 2009; Whittemore et al., 2009), cardiac rehabilitation programs (McBride et al., 2008), churches (Boltri et al., 2008), YMCAs (Ackermann et al., 2008; Alva et al., 2017, forthcoming), and community-based facilities (e.g., parks and recreation centers) (Katula et al., 2011). Program completion rates in community settings are lower (between 20 and 50 percent) than in clinical settings (74 percent in the DPP trial), but weight loss has been similar (usually between 3 and 7 percent of initial weight). However, we do not have long-term studies (longer than 1 year), apart from the trial itself, to indicate whether changes are permanent. Typically, maximum weight loss in the program occurs during the first 3 to 6 months in the program (Ali et al., 2012).

There is limited information about the effectiveness of the DPP in the Medicaid population. The Montana adaptation of the DPP program offers some insights (Carpenedo et al., 2014). Montana enrolled both Medicaid and non-Medicaid beneficiaries. The Medicaid group had a significantly higher baseline body mass index (BMI) compared to the non-Medicaid group. The average weight loss was 3.0 kg in the Medicaid group and 5.4 kg in the non-Medicaid group. Non-Medicaid participants were more likely to achieve the 7 percent weight loss goal (32 percent) compared to Medicaid participants (17 percent). The goal of 150 minutes of weekly physical activity was achieved by 59 percent of Medicaid participants compared to 47 percent of non-Medicaid participants.

1.5.3 Use of Incentives for Chronic Disease Prevention

A growing body of evidence demonstrates that incentives can encourage healthy behaviors and use of preventive services (Giles et al., 2014; Haff et al., 2015; Jochelson, 2007; Kane et al, 2004; Lussier et al., 2006; Sigmon & Patrick, 2012; Sutherland et al., 2008). This evidence supports the effectiveness of incentive programs for smoking cessation across diverse populations including substance abusers, adolescents, patients with pulmonary disease, patients with serious mental illness, and pregnant women (Sigmon & Patrick, 2012). However, the evidence regarding program effects on long-term abstinence is limited (Troxel & Volpp, 2012). Incentives programs for diabetes prevention have targeted diet, weight loss, nutritional lifestyle changes, and physical activity (Otto et al., 2008; Sutherland et al., 2008). An examination of the Centers for Disease Control and Prevention's lifestyle-change Diabetes Prevention Program (DPP) and Look AHEAD (Action for Health in Diabetes Programs) programs suggests that using incentives supports successful behavior change and weight loss (Otto et al., 2008). Another review determined that incentives can increase adoption of healthy behaviors including physical activity and dietary change, but that positive effects may diminish over time (Sutherland et al., 2008). For example, monetary incentives help individuals alter their lifestyle to lower cholesterol. However, the evidence on the effects of incentives on weight loss, either in the community or in worksites, is not conclusive (Sutherland et al., 2008).

The success of incentive programs varies depending on the targeted behaviors and health outcomes, the population, and the design of the incentive program. In terms of incentive-program design, important features include what participants must do to earn incentives, the form of the incentive (e.g., cash, vouchers, goods/services), the incentive schedule, the certainty of receiving incentives, and whether incentives are positive or negative (i.e., "carrot" or "stick") (see *Table 1-I*). Evaluations of incentive programs indicate how each of these characteristics can influence program effectiveness.

Incentive Form

Incentives can be provided in numerous forms including cash, coupons, vouchers, gifts, lotteries, and free and reduced medical services. In a review of incentive programs, rates of positive results varied by incentive form, with the highest rate for programs that offered coupons (80 percent), followed by cash (73 percent), free or reduced-cost medical services (67 percent), lottery (60 percent), and gifts (57 percent) (Kane et al, 2004). Another review compared "regret lotteries" (where participants were only able to win the lottery if they carried out the targeted behavior), deposit contracts (participants deposited and put their own money at risk), and monetary rewards linked to achieving a specific outcome. Regret lottery and deposit contract designs had the highest proportion of participants who achieved smoking cessation, weight loss, and other outcomes (Haff et al., 2015).

Target

Incentives can be tied to outcomes, such as achieving a specific weight loss, or to participation in activities (e.g., attend counseling or educational sessions) or adherence to a behavior (e.g., get immunized). In a review of studies, the rate of positive results for programs that provided incentives tied to outcomes was the highest. About 83 percent of these programs had positive results (all of these programs targeted complex behaviors). The rate for positive results for programs that provided incentives tied to participation was 67 percent for simple behaviors and 80 percent for complex behaviors; and the rate for programs that provided incentives tied to adherence was 75 percent for simple behaviors and 63 percent for complex behaviors (Kane et al., 2004).

Timing

Several reviews found that incentives are more effective when delivered soon after the target behavior occurs (Jochelson, 2007; Lussier et al., 2006; Meredith et al., 2014). A metaanalysis of incentive programs for substance use disorders found that delivering vouchers immediately after verifying abstinence resulted in larger effect sizes (Lussier et al., 2006). The frequency of incentives is also important, with more frequent incentives more effective in promoting behavior change (Meredith et al., 2014).

Magnitude

Most studies find that higher value incentives result in greater behavior change (Finkelstein et al., 2007; Jochelson, 2007; Kane et al., 2004; Lussier et al., 2006; Sigmon & Patrick, 2012; Meredith et al., 2014). Incentives can reduce barriers to a healthier lifestyle, for example allowing participants to purchase healthy foods, go to a gym, or get transportation to a health care appointment (Jochelson, 2007). However, researchers conclude that there is insufficient evidence to determine the optimal incentive size to promote and sustain behavior change (Kane et al., 2004; Sutherland et al., 2008; Troxel & Volpp, 2012). Evidence from smoking cessation programs suggests that escalating the value of incentives over time helps to sustain abstinence (Meredith et al., 2014; Sigmon & Patrick, 2012).

Certainty

Incentives are certain when participant are sure they will receive the incentive if they perform a specific behavior or achieve a specific outcome (Adams et al., 2014). Lottery-based incentives are a common uncertain incentive. Lotteries can take several forms, including certain chance (likelihood of winning is known), uncertain chance (likelihood of winning is not known), and the previously described regret lotteries, where participants are eligible to win only if they meet specific goals. In a review of studies, lotteries were less effective (60 percent had positive results) compared to certain incentives in the form of coupons (80 percent), and free or reduced cost medical care (67 percent) (Kane et al., 2004). Another review found that regret lotteries had higher odds of success compared to certain fixed monetary rewards linked to behavior change (Haff et al., 2015)

Direction

Incentives can reward a participant for performing a health behavior or achieving an outcome (carrot approach) or punish them for failing to perform a behavior or achieve an outcome (stick approach). Few studies directly compare carrot and stick incentives (Jochelson, 2007; Meredith et al., 2014; Sutherland et al., 2008). Jochelson (2007) states that the limited evidence suggests that penalizing poor performance may reinforce individual's sense of personal failure, resulting in lower rates of behavior change. Punitive (i.e., stick) incentives may also harm patients' relationships with treatment providers or cause patients to disengage with treatment (Meredith et al., 2014).

Communication

The success of incentive programs depends not only on the program design, but also on how effectively it is communicated to the target audience. Target audiences need to know that the program exists and how to enroll, and—once enrolled—understand what they need to do to earn incentives and how to access their incentives (Sutherland et al., 2008; Wisconsin Department of Health Services, 2013). Communication "is not a trivial issue," according to Sutherland and colleagues (2008, p. 40S), and requires that program administrators devote significant time and resources to communication efforts. Communication with the target audience has been a challenge for Medicaid incentive programs (see Section 1.5.4).

Characteristics	Definition			
Recipient	Who receives the incentive			
Form	Type of incentives, such as cash or cash value (e.g., debit cards, gift cards) or health- related products			
Target	What participants have to do to earn incentives:			
	 Process incentives are based on an individual's participation in program activities or engagement in behaviors that are likely to help individuals achieve health outcomes Outcome incentives are based on participants achieving specific health goals 			
Timing	When incentives are provided to the participant:			
(schedule, immediacy,	Incentives may be provided immediately following the targeted behavior or delayed Incentives may be provided on a fixed or variable schedule			
frequency)	All or some instances may be incentivized			
Magnitude	Value of the incentives			
Certainty	Whether incentives are guaranteed (e.g., if participants perform a specific behavior or achieves a specific health outcome) or not guaranteed (e.g., if they are entered into a lottery if they perform a specific behavior or achieve a specific health outcome)			
Direction	Whether the incentive is a positive gain associated with engaging in a healthy behavior or achieving an outcome (carrot approach) or a negative loss for not engaging in a behavior or achieving an outcome (stick approach)			

Table 1-1Incentive program framework

Note: Characteristics are based on the Adams et al. (2014) framework for incentive programs.

1.5.4 Use of Incentives for Chronic Disease Prevention in Medicaid Populations

Several states implemented incentive programs for Medicaid populations prior to the MIPCD (Barth & Greene, 2007; Blumenthal et al., 2013; Greene, 2007; Hand et al., 2014; Kenney et al., 2011; MACPAC, 2016b; Nyman et al., 2013; Wisconsin Department of Health Services, 2013). States have focused incentives on various wellness and preventive behaviors including increasing physical activity, eating a healthier diet, tobacco cessation, substance abuse, wellness exams, preventive care, and filling prescriptions (MACPAC, 2016b). Medicaid programs have used money-valued incentives (e.g., vouchers, gift cards), points that can be redeemed for health-related items, activities, or memberships (e.g., gym memberships) provided to beneficiaries to reward healthy behaviors. Programs also use cost-sharing requirements for certain services or coverage of additional services as incentives (MACPAC, 2016b).

Several states have reduced premiums or cost-sharing requirements for beneficiaries who complete specific behaviors through a Section 1115 demonstration waiver (Katch & Solomon, 2017; MACPAC, 2016b). These incentives can only be targeted for higher-income beneficiaries as beneficiaries with lower incomes typically do not pay premiums and cost sharing (MACPAC, 2016b). In the Healthy Indiana Plan (HIP), beneficiaries can participate in the Basic or Plus plan. All beneficiaries have a health savings account (HSA) that contains both state contributions and deposits from beneficiaries who pay premiums. After the first year of enrollment, beneficiaries in

HIP Plus can use a portion of the remaining funds in their HSA to reduce their premiums and the amount they can roll over is doubled if they get recommended preventive services. An interim evaluation found that beneficiaries in the Plus plan use more preventive, primary, and specialty care and prescription drugs—and are less likely to use the emergency room—than beneficiaries in the Basic plan (Katch & Solomon, 2017).

Prior to the MIPCD, relatively few studies examined the effectiveness of healthy behavior incentives in Medicaid (Blumenthal et al., 2013; Kenney et al., 2011; MACPAC, 2016b; Nyman et al., 2013). These studies found that Medicaid beneficiaries were more likely to participate in short-term or one-time activities rather than changing long-term behaviors. Another finding was that providing incentives immediately after completion of an activity was more effective than delayed distribution (MACPAC, 2016b).

Communication was identified as a challenge in some of the Medicaid incentives programs (Barth & Greene, 2007; Blumenthal et al, 2013; MACPAC, 2016b; Wisconsin Department of Health Services, 2013). For example, beneficiaries have difficulty understanding incentive structures due to their complexity. Low enrollment in Idaho's incentive program and redemption rates of only 52 percent of available credits in the Florida program suggest that beneficiaries were unaware of the program, did not understand program features, or did not perceive a benefit from the incentives (Blumenthal et al., 2013). In the Wisconsin pilot program, it was difficult to communicate with potential program participants due to their mobility (e.g., bad addresses, disconnected phones); in addition, participants were unclear how to earn incentives and, once earned, how to obtain incentives (Wisconsin Department of Health Services, 2013).

1.5.5 Implications for the MIPCD Evaluation

This background has several implications for our evaluation. First, chronic disease is common among Medicaid beneficiaries, resulting in high mortality, morbidity, and costs. Clearly, chronic diseases are an important issue for Medicaid. Second, many chronic disease cases could be prevented if people quit smoking, lost weight, became physically active, or managed other risk factors. The Medicaid program would benefit if beneficiaries adopted these behaviors. Third, behavior change—such as quitting smoking, adopting a healthier diet, and increasing physical activity—is difficult for the general population, and low-income Medicaid beneficiaries may face additional challenges or barriers. In evaluating Medicaid prevention programs, it is important to recognize the modest success rates of such lifestyle change programs, especially for low-income populations.

Finally, there is increasing interest in using incentives to help engage Medicaid beneficiaries and encourage them to adopt healthy behaviors. However, there is relatively little evidence about the impact of incentives within the Medicaid program or about what features of incentive programs are most important. This evaluation assesses the impact of incentives on Medicaid beneficiaries participating in the MIPCD program.

SECTION 2 DATA SOURCES

This report focuses on State programs' implementation progress, impacts on health care utilization and costs, participation by special populations, beneficiary satisfaction, and administrative costs. Using the evaluation questions as the foundation for the analyses, the data sources in *Table 2-1* were used to prepare this Final Evaluation Report.

Table 2-1Data sources

Data sources	Evaluation topics
State MIPCD applications and operational protocols	Implementation progress Participation by special populations
State Quarterly Reports and State-specific documents provided to CMS	Implementation progress Administrative costs
MIPCD Dashboard enrollment data	Implementation progress Participation by special populations
Site visits and stakeholder interviews conducted in 2014	Implementation progress Participation by special populations
State updates on monthly calls with the Implementation Contractor along with program-specific information and forms provided by the State to the Implementation Contractor	Implementation progress
Program updates and discussions from the Learning Collaborative's all-State, in-person biannual meetings	Implementation progress
Telephone interviews with the State program manager and staff, evaluators, and contractors participating in the program	Implementation progress Administrative costs
Focus group discussions with program participants in all States, and in-depth interviews with State program staff that have direct interaction with participants	Beneficiary satisfaction Participation by special populations
Cross-sectional survey of Medicaid beneficiaries aged 18 or older who had participated or were participating in the experimental arms of State programs in the 6 months preceding survey administration	Beneficiary satisfaction Participation by special populations
Quarterly Medicaid claims, encounter, and enrollment data available from 8 of 10 MIPCD States	Utilization and costs Participation by special populations
MIPCD State MDS template data, collected on a quarterly basis	Utilization and costs Participation by special populations
Administrative costs data reported by 9 of 10 MIPCD States	Administrative costs
State evaluation reports	Health outcomes

As part of the evaluation, each State had an assigned RTI staff member who served as the liaison and technical expert on that State's program. This person had a thorough understanding of the program; reviewed all program submissions; kept track of program challenges, updates,

and modifications as they occurred; led the telephone interviews with the State; and informed the rest of the team about key developments.

We conducted a systematic review of the data sources listed in *Table 2-1* to assess MIPCD program implementation, utilization and costs, special populations, beneficiary satisfaction, and administrative costs. We describe results from State-specific and cross-State analyses in the following chapters. To the extent possible, we draw conclusions based on available qualitative and quantitative data.

SECTION 3 PROGRAM IMPLEMENTATION AND LESSONS LEARNED



Assessing States' implementation progress serves as the foundation of RTI's evaluation efforts. Implementation is an important issue because, prior to MIPCD, States had relatively little experience with Medicaid incentive programs, and the few existing programs were not extensively evaluated (Blumenthal et al., 2013). RTI addresses the following evaluation questions in this section of the report:

- 1. What were the characteristics of each State initiative and were there common implementation characteristics across States initiatives?
- 2. How successful were States in implementing their initiatives?
- 3. What changes did States make to their implementation plans?
- 4. What challenges did States face in implementing their strategies?
- 5. What key lessons did State learn in implanting their initiatives?

3.1 Key Findings

All 10 States successfully implemented a diverse range of Medicaid Incentive Programs. While 6 States had implementation delays, all implemented programs by 2013. Those States with multiple program arms had implemented all program components by March 2015. As part of their program evaluations, all 10 States voluntarily implemented randomized trials.

States found implementing an incentive program was more challenging than States initially thought it would be and required flexibility and more

- States can successfully implement incentive programs in Medicaid programs. States were also able to implement randomized trials.
- Implementing an incentive program was more challenging than States initially thought it would be and required flexibility and more planning than anticipated.
- Two States met their target enrollment. Collectively, actual enrollment was about 70 percent of target enrollment.
- Lessons learned from the initiatives may aid implementation of future Medicaid incentive programs.
- States plan to sustain some components of their programs, particularly services, but only one State is considering continuing monetary incentives.

planning than anticipated. States found that starting up their programs took longer than anticipated. Reasons for implementation delays included the need to hire and train staff, obtain Institutional Review Board (IRB) approval, and formalize partnerships and contracts. This resulted in delays for six States that took 6 months to 2 years longer than projected to implement their programs. States addressed implementation delays and program challenges with flexibility, by implementing numerous program changes, and by continuously evolving their programs.

States worked hard to recruit participants, but only two met their target enrollment. With the exception of Texas, enrollment in State initiatives was slower than anticipated. **Texas** was able to meet its enrollment goal within its planned timeline for several reasons: (1) they were

able to identify their targeted population (Supplemental Security Income [SSI] beneficiaries with a behavioral health diagnosis) through claims and focus their outreach efforts on these beneficiaries; (2) the State hired an outside contractor that was able to devote resources to outreach; (3) the contractor varied their outreach approach based on strategies that proved effective, (e.g., they used a local area code when making phone calls which encouraged people to pick up their phone, they made phone calls in the evenings and on weekends when people were more likely to be home); and (4) Texas offered a incentives that included a flexible wellness account of \$1,150 per year, a significant amount that was much higher than any other MIPCD State. Delays in implementing programs and the associated challenges in recruiting participants had a significant impact on States' enrollment targets, with seven programs reducing their initial projections by between 42 percent and 85 percent. Even with these reductions, only **Hawaii** and **Texas** were able to meet their enrollment targets. Overall State enrollment was approximately 70 percent of the targeted goals.

States had numerous program challenges and successes, which may aid future Medicaid incentive programs. We look at some of these lessons learned through the framework of Kevin Volpp, PhD, who presented his team's analysis of research findings of prior Medicaid incentive programs at the CMS in-person meeting for MIPCD State Grantees and subsequently published in March 2013 in *Health Affairs* (Blumenthal et al., 2013). Both Dr. Volpp's presentation and the *Health Affairs* article suggested lessons that he and his team believed should be applied to Medicaid incentive programs in the future. In assessing and analyzing the data that we have collected on MIPCD States' implementation and progress, we considered the findings from Dr. Volpp and his colleagues as providing a framework in which to discuss our findings and recommendations for States that may subsequently consider implementing a Medicaid incentive program.

While States could not sustain their MIPCD programs as they existed in the demonstration, and some had to discontinue programs completely because of the lack of funding, most States worked to find ways to maintain some of the program components through several vehicles. States were especially interested in sustaining services associated with their programs (e.g., diabetes prevention classes, nicotine replacement therapy, gym or Weight Watchers memberships). With the exception of **Texas**, which was considering a flexible wellness account for a self-directed care pilot program, States have not continued cash incentives for participants.

3.2 Methods: State Reporting, Site Visits, and Follow-up Conference Calls to States

RTI used a standardized approach to review State program materials periodically. For this process, each of the 10 State programs was assigned to an RTI team member, who served as the State team expert and the liaison between the State and the RTI and National Academy for State Health Policy (NASHP) evaluation team. RTI State team experts were also responsible for maintaining the evaluation team's State synthesis database, where information from State applications, operational protocols, site visits, and quarterly reports was collected. RTI State team experts reviewed and included in RTI's database information obtained from State demonstration summaries posted on the Centers for Medicare & Medicaid (CMS) web site, State operational protocols, and State quarterly reports provided by CMS. **Sections 3.3** through **3.6** outline the characteristics of each State initiative, including an overview of these programs, their enrollment, the incentives distributed across State programs, and the evaluation designs. RTI's evaluation also assessed State implementation progress and collected lessons learned from these programs. This assessment combines information collected in the team's State synthesis database with qualitative data collected from site visits to State programs conducted from March to November 2014 and a follow-up conference call with each State in late 2015. **Sections 3.7** through **3.13** detail States' implementation, changes made to State programs and their evaluations, challenges States faced implementing their strategies, and key implementation lessons learned.

Typically, RTI received State quarterly reports from CMS soon after they were received from the States. In all cases, the reports provided a detailed perspective on the States' demonstration implementation. Although the reports gave the RTI and NASHP team insight into the States' implementation progress, the team found it helpful to complement these reports with updates States provided at Learning Collaborative sessions and in conversations with States' staff. In addition, site visits by RTI and NASHP to each State at the end of Year 2 provided an in-depth perspective on States' implementation progress. To further augment the information obtained during site visits, RTI and NASHP conducted a follow-up conference call with each State in late 2015. The calls were discussions about the continued progress with the implementation and evolution of States' MIPCD programs. We also reviewed States' final evaluation reports, which were submitted in December 2016 and contain valuable information on the impact of the incentives on health outcomes. This information is discussed in **Section 8** of this report.

3.3 Overview of State Programs

States received their grants on September 11, 2011, and half implemented their programs by the end of the first year. Some States decided to implement their initial programs as pilots or in phases, as a way to identify and address potential challenges and issues before full implementation. The six States that used a phased-in approach—California, Hawaii, New York, Nevada, Minnesota, and Wisconsin—implemented all program arms by July 2014. This section provides an overview of each State's program; *Appendix A* contains one-page summary sheets describing each program and the key outcomes examined in later sections of this report. States faced numerous challenges in implementing their programs, and starting up their programs took most States longer than anticipated. Reasons for implementation delays included the need to hire and train staff, obtain IRB approval, and formalize partnerships and contracts. Each component was critical and had a profound impact on the six States that took 6 months to 2 years longer than projected to implement their programs. States addressed implementation delays and program challenges by implementing numerous program changes, with programs that continuously evolved.

3.3.1 California

Overview of program—The goal of the Medi-Cal Incentives to Quit Smoking (MIQS) program, led by California's Department of Health Services, was to increase smoking cessation among Medi-Cal (California's Medicaid program) beneficiaries who smoked. Medi-Cal beneficiaries entered the program by calling the California Smokers' Helpline operated through the University of California, San Diego and completing an initial intake and counseling call. Nicotine replacement therapy (NRT) and telephone counseling sessions were available to

support participants in establishing a smoking quit date and to help participants meet their goal to stop smoking.

Incentives—California provided a \$20 gift card incentive for verified Medicaid beneficiaries who called the helpline, requested the incentive, and completed the initial intake and first counseling call. There were also two incentive groups in the randomized control trial (RCT) 1, which was held from July 2012 through May 2013. The incentives for one group included NRT shipped directly to the participant and free counseling. The second group received NRT shipped directly to the participant and \$10 for each counseling session, up to \$40. After analyzing the initial results of RCT 1, California decided to provide enhanced services to all Medi-Cal beneficiaries participating in the program. Enhanced services were provided from December 2014 through April 2015. Medi-Cal members were provided with NRT shipped directly to them and were offered \$10 incentives for completing follow-up counseling sessions, up to \$60. California also conducted RCT 2, a re-engagement trial for Medi-Cal smokers who had previously called the Helpline and had relapsed or did not stop smoking. Depending on the group to which the beneficiary was assigned, incentives ranged from \$0 to \$10, \$20, or \$40 to assess the impact of incentives on whether these beneficiaries would call and re-engage in counseling. Recruitment for RCT 2 began in May 2015, with the trial completed in December 2015.

Enrollment—California served 4,300 participants.² Target enrollment was 9,000.

3.3.2 Connecticut

Overview of program—The goal of the Rewards to Quit program, led by Connecticut's Department of Social Services, was to reduce smoking among Medicaid beneficiaries and to test the impact of incentives on quitting smoking. The program targeted Medicaid beneficaries aged 18 or older who smoked, with a special focus on individuals with serious mental illness. Participating mental health clinics, federally qualified health centers (FQHCs), Person-Centered Medicail Homes, and other primary care sites recruited participants and provided individual and group counseling and offered carbon monoxide (CO) breathalyzer tests. Participants could also call the statewide smoking quitline. In selected locations, participants had the option to receive assistance from a peer coach.

Incentives—Participants in the intervention condition received incentives for participating in counseling, using the quitline, and testing negative for tobacco in CO tests. Monetary incentives (in the form of a gift card) were \$5 for participating in a counseling session or calling the quitline (up to 10 times each), with a bonus of \$15 after five calls or counseling sessions. In addition, participants received \$15 for up to 12 tobacco-free CO tests and a \$10 bonus for three consecutive tobacco-free CO tests.

Enrollment—Connecticut served 4,052 participants. Target enrollment was 6,210.

² March 31, 2016, was the final period in which States reported enrollment numbers in the CMS MIPCD Dashboard, and this is the source of the enrollment number provided for each State.

3.3.3 Hawaii

Overview of program—The Hawaii Patient Reward and Incentives to Support Empowerment (HI-PRAISE) project was led by Hawaii's Department of Human Services through a contract with the University of Hawaii. The goal of the program was to improve the early detection of diabetes among individuals at high risk for developing diabetes and to improve diabetes self-management in individuals with the condition. The program targeted Medicaid managed care beneficiaries from age 19 through 64 at each of the nine participating FQHCs and at a private provider, Kaiser Permanente Hawaii. Specifically targeted were indigenous Native Hawaiians and immigrant Asian Americans and Pacific Islanders. All participating sites tested individuals at high risk for diabetes. For individuals with diabetes who were enrolled by the FQHCs or Kaiser, a tiered incentive program was provided that included diabetes education and health coaches who provided support and motivation along with care coordination to screen and identify risk factors and comorbidities, provided referrals, made appointments, and followed up with patients.

Incentives—Participants in HI-PRAISE received incentives for participation and for completion of specific behaviors or goals. Each FQHC established its own procedures for determining the type and distribution of incentives based on a tiered financial schedule for achieving process and outcome goals. Most FQHCs provided gift cards, either to supermarkets, pharmacies, farmers' markets, or gas stations. FQHCs were also able to adjust incentive amounts up to \$50 on the basis of cost-of-living increases. The maximum incentive amount per participant was \$320 annually.

Incentives for process measures included up to \$20 to attend the first session of diabetes management education; up to \$20-valued incentive for compliance with American Diabetes Association (ADA)-recommended preventive measures, annual retinal eye examination, and HbA1c; up to \$10 for receiving a pneumococcal or influenza vaccine; up to \$20-valued incentive for patients who attended smoking cessation group or individual classes or counseling for depression or other mental health issues. Outcome measures included up to \$50 for achieving weight loss of 7 percent in 52 weeks and attaining HbA1c of less than or equal to 7 percent. Additionally, patients earned up to \$20 for reaching specific goals, such as decreasing HbA1c by 1 percent, having blood pressure less than 140/90 mmHg, and achieving LDL cholesterol of less than 100 mg/dl.

The incentive structure was the same for participants with the Kaiser Permanente RCT study, but they used a debit card through a vendor. This allowed for electronic payment to participants upon achieving incentivized outcomes.

Enrollment—Hawaii served 2,323 participants. Target enrollment was 1,400.

3.3.4 Minnesota

Overview of program—The We Can Prevent Diabetes, Minnesota research study was conducted jointly by the Minnesota Department of Human Services' Medicaid Department and the Minnesota Department of Health's Diabetes Prevention and Control Program. The study tested the effects of financial incentives on attendance and weight loss among Medicaid beneficiaries participating in the diabetes prevention program (DPP). We Can Prevent Diabetes,

Minnesota hosted group classes at YMCAs in the Twin Cities area using the national DPP curriculum. Thirteen clinic systems comprising 21 clinics participated. Minnesota's study was unique in that it engaged diverse populations such as Hmong, Somali, Karen, African American, Latino, and Native American Medicaid beneficiaries.

Incentives—Participants in the intervention were randomized into one of three incentive arms for the 16-weekly core classes. Participants in control group classes participated in free DPP sessions and received an initial class attendance incentive of \$25; up to 90 days of free YMCA access; and support for child care, transportation, and weight loss tools. Individual incentive participants received process incentives of an initial \$25 attendance incentive, a \$10 incentive for attending each of the 15 weekly sessions, a \$30 incentive for attending 12 or more weekly classes, up to 90 days of free YMCA access, and an outcome incentive of up to \$50 if they achieved a 10 percent weight loss. Group incentive participants received similar process incentives as individual incentive participants; however, they received an attendance incentive only if their full class attended 12 or more sessions and an outcome-based incentive if the group met at least a 7 percent weight loss goal. Participants also received weight loss tools, such as food scales, cookbooks, portion plates, and measuring cups throughout the course. In addition to approximately 4 months of weekly DPP classes, participants could join monthly post-core DPP sessions for 8 months. Incentivized participants in the individual and group incentive arms received up to \$15 for participating in each monthly post-core session and up to \$100 for meeting a post-core weight loss goal of up to 10 percent.

Enrollment—Minnesota served 1,100 participants. Target enrollment was 1,800.

3.3.5 Montana

Overview of program—Montana's MIPCD program aimed to prevent type 2 diabetes, reduce lipid and blood pressure levels, and reduce weight among adult Medicaid beneficiaries at high risk for developing cardiovascular disease and diabetes. The program was led by the Department of Public Health and Human Services' Medicaid Managed Care Bureau and Chronic Disease Prevention and Health Promotion Bureau. Program enrollees participated in an evidence-based lifestyle intervention adapted from the National Institute of Health's DPP. Montana originally had 14 total program sites at health facilities, but 1 site opted out of the project and 2 sites terminated their DPP contracts with the State at the end of 2014, resulting in 11 participating sites statewide. Montana's program had a crossover design, in which half of the program sites distributed incentives for the first 18 months of the program and the remaining sites did not provide incentives. In January 2014, the crossover occurred and the sites that did not previously distribute incentives began to do so and the remaining sites no longer provided incentives.

Incentives—Participants at incentive sites were eligible to receive up to \$320 annually from the program, provided via debit cards. The financial incentives were tiered and incrementally increased for (1) participant self-monitoring and reduction of fat and caloric intake and (2) participant monitoring and achievement of more than 150 minutes of moderately vigorous physical activity per week.

Enrollment—Montana served 261 participants. Target enrollment was 724.

3.3.6 Nevada

Overview of program—The Nevada Healthy Choices program's goal was to work with participants to control or reduce their weight, lower cholesterol, lower blood pressure, and avoid the onset of diabetes or improve management of diabetes. Nevada Healthy Choices was led by the State's Department of Health and Human Services' Division of Health Care Financing and Policy and was implemented through five program partners:

- 1. Amerigroup offered weight management and diabetes disease management programs to those Medicaid beneficiaries with diabetes served by the managed care organization (MCO).
- 2. United HealthCare offered weight management and diabetes disease management programs to those Medicaid beneficiaries with diabetes served by the MCO.
- 3. The YMCA of Southern Nevada offered the National Institute of Health's DPP course to fee-for-service Medicaid beneficiaries with prediabetes or at risk for type 2 diabetes.
- 4. The Children's Heart Center's Healthy Hearts Program enrolled children between the ages of 7 and 18 and provided individualized nutrition counseling, a monitored exercise program, and one-on-one counseling and motivational coaching.
- 5. The University Medical Center Lied Clinic Outpatient Facility targeted adults diagnosed with diabetes or at risk for type 2 diabetes enrolled in fee-for-service Medicaid. The Lied Clinic closed in October 2014, terminating that arm of the study.

Incentives—Program enrollees received points redeemable for rewards on a tiered basis for participation in programs, efforts at behavior change (including completing an evidence-based program), and achievement of improved health outcomes. Participants could redeem their points for reward items available in the online catalog maintained by the incentive vendor, ChipRewards. The Children's Heart Center also had a catalog worksheet that enabled the center to order rewards on behalf of participants. The maximum monetary value of the incentives was \$350.

Enrollment—Nevada served 1,840 participants. Target enrollment was 2,000.

3.3.7 New Hampshire

Overview of program—The goal of New Hampshire's Healthy Choices, Healthy Changes program was to reduce cardiovascular risk factors, including rates of obesity and smoking among a high-risk group of Medicaid beneficiaries: people with mental illness. The program was led by the Department of Health and Human Services, Division of Community-Based Care Services, Bureau of Behavioral Health and the Office of Medicaid Business and Policy. Healthy Choices, Healthy Changes was implemented at 10 community mental health centers and offered supported weight management and smoking cessation arms. Participants in the weight management program were randomized to receive different combinations of the following: an InShape health mentor, gym membership, and a Weight Watchers membership. The smoking cessation program offered introductory tobacco education and, if participants were interested, subsequent referral to cessation treatment and telephone quitline support.

Incentives—In addition to services, half of the participants in the intervention arms received extra rewards in debit cards. Participants could also receive an incentive for completing the tobacco education and for negative CO tests. The maximum annual incentive for the weight loss program was \$1,860, and the maximum incentive for the smoking cessation program was \$415.

Enrollment—New Hampshire served 2,031 participants. Target enrollment was 2,600.

3.3.8 New York

Overview of program—The goal of New York's MIPCD program was to reduce smoking, lower high blood pressure, prevent the onset of diabetes, and enhance diabetes selfmanagement. The program was led by the State Department of Health, Office of Quality and Patient Safety, targeted adult Medicaid beneficiaries from age 18 to 64 who used tobacco or had high blood pressure, prediabetes, or diabetes. Pregnant women who smoked were also able to participate. All 16 Medicaid MCOs and 3 HIV special needs MCOs were required to implement three programs: diabetes prevention, blood pressure management, and diabetes management. Although not required to do so, all MCOs implemented the smoking cessation program. New York set target enrollment goals for each program arm for each MCO. Each managed care plan was responsible for recruiting participants into the diabetes prevention, diabetes management, and blood pressure management programs, and participants were randomized into one of four groups: (1) received financial incentives for conducting certain activities, (2) received financial incentives for achieving specific health outcomes, (3) received financial incentives for both conducting certain activities and achieving health outcomes, and (4) did not receive any financial incentives for conducting certain activities or achieving health outcomes (i.e., the control group). The smoking cessation program was modified so that recruitment occurred through the New York State smokers' quitline, and participants were randomized into either Group 1, Group 2, or Group 4. There was no Group 3 for the smoking cessation program.

Incentives—New York provided financial incentives in the form of mailed checks. Participants, including those randomized to the control group, who engaged in at least one program activity received a \$50 enrollment incentive. Those randomized to the control group did not receive anything else. For each of the four programs, New York capped the amount of incentives disbursed at \$250. In the diabetes prevention program, participants could have received up to \$15 for attending each of 16 diabetes prevention program classes or making progress toward losing weight. For the diabetes management program, participants could receive up to \$50 for every primary care appointment attended or diabetes-related prescription filled (up to five appointments or prescription fills), and they could have received up to \$250 for decreasing HbA1c levels. For the blood pressure control program, participants could receive up to \$50 for every primary care appointment attended or blood pressure-related prescription (up to five appointments or prescription fills), and they could receive up to \$250 for decreasing blood pressure. For the smoking cessation program, participants could receive up to \$50 for attending smoking cessation program, participants could receive up to \$50 for attending smoking cessation program, participants could receive up to \$50 for attending smoking cessation program, participants could receive up to \$50 for attending smoking cessation program, participants could receive up to \$50 for attending smoking cessation program sessions, making smoking quitline calls, or filling smoking cessation prescriptions, and they could receive up to \$250 for smoking cessation confirmed through a saliva cotinine test.

Enrollment—New York served 4,279 participants. Target enrollment was 6,800.

3.3.9 Texas

Overview of program—The goal of the Wellness Incentives and Navigation (WIN) project, which was led by Texas's Health and Human Services Commission and Department of State Health Services, was to improve health self-management and reduce the incidence and consequences of chronic disease among non-elderly adult Medicaid Supplemental Security Income (SSI) beneficiaries. WIN targeted SSI beneficiaries with behavioral health (mental health and substance abuse) diagnoses, a population with especially high chronic disease incidence and costs. WIN participants set personal wellness goals with the assistance of health navigators and used a flexible wellness account to pursue the wellness goals. The project was implemented in the Harris Service Delivery Area, which includes Houston and surrounding counties.

Incentives—WIN incentives included a flexible wellness account of \$1,150 per year and person-centered wellness planning and navigation facilitated by trained, professional health navigators. The navigators, who were dedicated specifically to the WIN project, used motivational interviewing techniques to help participants determine their wellness goals. Participants with more serious mental illnesses were offered additional support in the form of wellness recovery action planning to enable them to take full advantage of person-centered wellness planning. Participants received wellness accounts for up to 3 years or through December 31, 2015, whichever came first. Participants could continue to work with the navigator and receive wellness recovery action planning through the end of December 2015.

Enrollment—Texas served 1,259 participants. The target enrollment was 1,250.

3.3.10 Wisconsin

Overview of program—The goal of Wisconsin's Striving to Quit program, which was led by the Department of Human Services' Division of Health Care Access and Accountability, was to provide smoking cessation services to adult smokers enrolled in Medicaid. Participants enrolled in one of two programs: (1) a general program for all smokers, who enrolled through the Wisconsin Tobacco Quit Line, or (2) First Breath, an evidence-based program for pregnant smokers. Services in both programs continued until December 2015.

Incentives—Each of the two programs had participants who received services and cash incentives and a control group whose members received treatment services only.

Wisconsin Tobacco Quit Line participants in the treatment group could receive a maximum of \$270 in incentives over 6 months (enrollment: \$40, each call up to five: \$30, attendance to month 6 visit: \$40, and 6-month nonsmoking test: \$40), whereas those in the control group could receive \$80 for enrollment and the 6-month test.

First Breath participants in the treatment group could receive a maximum of \$600 over 12 months (\$40 enrollment, six visits at \$25 each, six calls at \$20 each, two home visits at \$25 each,

three carbon monoxide (CO) tests at \$40 each, and an additional \$40 per passed test); those in the control group could receive \$160 (\$40 enrollment, three CO tests at \$40 each). As of July 1, 2014, Wisconsin transitioned its First Breath program from offering 1 year of postpartum services to 6 months. This change was made in an effort to extend the window of recruitment for the program. The 6-month First Breath version paid for five calls, four home visits, and two CO breath tests to confirm participants' smoking status.

Enrollment—Wisconsin served 2,928 participants. The target enrollment was 3,250.

3.4 Enrollment across State Programs

Delays in implementing programs and the associated challenges in recruiting participants had a significant impact on States' enrollment targets, with seven programs reducing their initial projections by between 42 percent and 85 percent. States worked hard to recruit participants, and three States expanded program eligibility to include additional Medicaid eligibles. With the exception of **Texas**, enrollment in State initiatives was slower than anticipated. States made programs more accessible to participants by providing transportation, providing reimbursement for public transportation, meeting participants in their home, or providing services telephonically, so participants did not have to travel. Accessibility also encompassed cultural and linguistic sensitivity, with States hiring culturally competent staff who had worked with or were members of the target population and partnered with organizations familiar with these populations. States modified outreach strategies and incentives, based on their success in reaching the populations being targeted.

Table 3-1 showed the progress States made in program enrollment in comparison to their revised enrollment goals across the State programs. Only two States met and exceeded their enrollment goals—**Texas** and **Hawaii**. **Texas** reached 100 percent of its enrollment goal within the first year of program implementation. **Hawaii** exceeded its enrollment goal of 1,400 participants, reaching 2,340 participants, even though their enrollment was affected by the Supreme Court's decision that Medicaid coverage would be discontinued for migrants from the Federated States of Micronesia, the Republic of Marshall Islands, and the Republic of Palau. As a result, immigrants from these Compact of Freely Associated States were removed from the Medicaid program as of February 2015 and were no longer able to participate in HI-PRAISE.

	Actual number	Total projected number	
State	enrolled ¹	of participants ²	Percentage of goal met
California	4,300	9,000	48
Connecticut	4,052	6,210	65
Hawaii ³	2,323	1,400	165
Minnesota	1,100	1,800	61
Montana	261	724	36
Nevada	1,840	2,000	92
New Hampshire	2,031	2,600	78
New York	4,279	6,800	63
Texas	1,259	1,250	101
Wisconsin	2,928	3,250	90
All States	24,373	35,034	70

Table 3-1Enrollment across State programs, through March 31, 2016

¹Actual enrollment numbers were taken from the March 31, 2016, MIPCD Dashboard data.

² Enrollment targets were taken from each State's operational protocol.

³ Hawaii's control group from the community health centers was an external group and not a participant group. Therefore, the total projected number of participants does not include control group members from the community health centers; instead, it only includes control group members from Kaiser Permanente.

3.5 Medical Conditions and Health Behaviors Addressed Across State Programs

Targeted conditions and behaviors across State programs included smoking, diabetes, obesity, hyperlipidemia, and hypertension. The programs encouraged participants to use quitlines and NRT to stop smoking; lose weight and increase physical activity to prevent diabetes, hyperlipidemia, hypertension, and heart disease; and take an active role in preventing other chronic diseases. As shown in *Table 3-2*, all but four States targeted multiple conditions, and three States targeted four or more conditions. Even when a State did not target more than one condition, it addressed other conditions or behaviors that served as barriers. **Hawaii**, for example, targeted diabetes but also addressed smoking, weight management, high cholesterol, blood pressure control, and behavioral health issues if they impeded diabetes self-management. The greatest number of States targeted hyperlipidemia (three States). In addition to the conditions listed in the table, **Texas** also targeted managing behavioral health conditions, increasing satisfaction with health care, and making progress toward personal health goals.

State	Smoking	Diabetes	Obesity	Hyperlipidemia	Hypertension
California	\checkmark				
Connecticut	\checkmark	_		_	
Hawaii		\checkmark		—	
Minnesota	_	\checkmark	\checkmark	—	
Montana		\checkmark	\checkmark	\checkmark	\checkmark
Nevada		\checkmark	\checkmark	\checkmark	\checkmark
New Hampshire	\checkmark		\checkmark		
New York	\checkmark	\checkmark			\checkmark
Texas	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Wisconsin	\checkmark			_	
Total	6	6	5	3	4

 Table 3-2

 Comparison of medical conditions and health behaviors addressed across State programs

3.6 Evaluation Design across State Programs

States were required to evaluate the effectiveness of their incentive programs. *Table 3-3* shows that most States conducted RCTs, with participants randomly assigned to a control group that received treatments but no incentives or an incentive group that received treatments and incentives. **California** and **Hawaii** used both RCTs and quasi-experimental designs.

New Hampshire used an equipoise-stratified randomized design for its weight management and smoking cessation programs. Participants selected their treatment options within the program and within each treatment option; 50 percent of participants were randomized as to whether they received incentives. However, the State had difficulty in the distribution of participants in the weight management program, because although there were four treatment options, most enrollees selected both options that provided a personal trainer. The State had not anticipated the preference for treatment options with a personal trainer and thus did not have an adequate supply of personal trainers to meet participant demand. As a result, the State modified the duration of the intervention to increase personal trainer capacity and maintain the equipoisestratified design.

Montana used a crossover design in its intervention sites. During the first 18 months, six sites provided participants with incentives, and the seven remaining sites did not provide incentives. After the first 18 months, in January 2014, sites that did not previously provide incentives began providing them to new participants, and the remaining sites where incentives were previously provided no longer provided them to new participants. During the latter period, one incentive site and one non-incentive site discontinued the program due to internal administrative issues at their facilities.

State	Quasi- experimental designs	Randomized controlled trials ¹	Equipoise- stratified randomized designs	Crossover designs	Cost- effectiveness analyses ²
California	\checkmark	\checkmark			\checkmark
Connecticut		\checkmark	_	_	\checkmark
Hawaii	\checkmark	\checkmark		_	\checkmark
Minnesota		\checkmark		_	\checkmark
Montana				\checkmark	
Nevada		\checkmark		—	\checkmark
New Hampshire			\checkmark	—	\checkmark
New York		\checkmark		—	
Texas		\checkmark		—	\checkmark
Wisconsin		\checkmark	_	_	\checkmark
Total	2	8	1	1	8

Table 3-3Evaluation designs across State programs

¹ Wisconsin changed its initiative from a clinical trial to a quality improvement project; however, it maintained its randomized two-group design.

² New York conducted an informal cost-effectiveness study; a formal assessment of all the costs was not undertaken.

California's preliminary evaluation results of its first RCT resulted in the State providing services that were shown to be the most effective in helping people stop smoking to all qualified Medicaid beneficiaries calling the quitline. These enhanced services included nicotine patches, counseling, and small financial incentives and were provided through May 2015.

States generally did not change the design of their evaluations, although adjustments to sample sizes were made in the seven States that reduced their enrollment goals. Both **Nevada** and **Montana** lost one program site, which negatively impacted their enrollment and consequently affected their evaluations. Several States also enhanced the qualitative component in their evaluation by adding interviews, focus groups, and surveys. **Nevada** added data from interviews conducted with program partners. **Montana** added a survey to ask participants how they learned about the program. **Hawaii** conducted exit interviews at four FQHCs and had two focus groups at each health center to ask people about the program and the impact of the incentives.

3.7 Factors that Contributed to Implementation Progress

Throughout the 4 years of the demonstration, the 10 MIPCD programs evolved considerably. Three main factors emerged as contributing to States' early implementation progress: (1) building on existing programs, (2) making programs accessible, and (3) hiring and training appropriate staff.

3.7.1 Building on Existing Programs

For nearly all programs, start-up took more time than anticipated. In particular, States that started new programs appeared to face more challenges than those that built on existing initiatives, relationships, or contracts. States built on existing programs in varying ways. Some States, such as Montana, Nevada, New Hampshire, and Wisconsin, built their MIPCD initiative on chronic disease prevention programs that were already operating. In these States, existing programs were simply expanded to include Medicaid beneficiaries. Montana expanded its evidence-based weight loss program to include Medicaid beneficiaries and was able to implement its MIPCD program 3 months after the grant was awarded. Other States, such as Hawaii and Minnesota, drew on relationships they had with clinics or providers that treated Medicaid beneficiaries. These clinics and providers were able to readily identify and recruit eligible Medicaid beneficiaries to participate in the States' initiatives. Hawaii's program, HI-PRAISE, recruited and operated its initiative through FQHCs because they were health care providers to the majority of Medicaid beneficiaries in their State. Programs also built on existing interagency agreements or contracts, which helped States avoid contracting delays. Texas expanded its External Quality Review Organization contract with the University of Florida, Gainesville, to include the management, evaluation, and health navigator supervision for its project. Many States also used data collection systems and software that were already in place for other purposes. Wisconsin's Striving to Quit program built on its existing quitline infrastructure and was able to use a pre-existing data system to collect participant data and outcomes from day one.

3.7.2 Making Programs Accessible

Access to reliable and affordable transportation and certain health care services has often been a challenge for Medicaid beneficiaries. Recognizing this challenge, half of the MIPCD programs adopted measures to ensure that their programs were accessible to participants. In Minnesota and New Hampshire, MIPCD programs provided participant transportation to their classes either through a shuttle or taxi service or reimbursed participants for public transportation costs. In other States, participants were able to use Medicaid-funded taxi services to access their providers' offices for free and, in turn, engage in the program. In States or areas where transportation was limited or expensive, or program participants were dispersed throughout a large area or region, such as in California, Nevada, and Montana, programs provided services to participants telephonically through a quitline or telehealth sessions. In these programs, participants were able to access services from remote locations and did not need to travel to engage in the program. California also sent NRT to participants through the mail. Minnesota and Nevada disseminated incentives through the mail, so participants did not have to travel to program sites to receive them. Staff in Connecticut, Hawaii, New Hampshire, and Texas traveled at times to meet participants at their home or a convenient location. States also expanded their Medicaid covered services to ensure that MIPCD care was free to participants. Connecticut State officials, for example, changed the Medicaid policy to include group counseling sessions as a covered service. This change allowed MIPCD participants to engage in smoking cessation group counseling for free.

3.7.3 Hiring and Training Appropriate Staff

Having the right number of staff with the appropriate skill set was critical for MIPCD program implementation progress. Numerous States faced staffing challenges. **California**, **Nevada**, and **New York** had significant delays in implementation progress because they had limited staff available during initial project implementation. Some States that began with an adequate number of staff had their implementation progress slowed by staff turnover. **Connecticut** and **Minnesota** experienced major staff turnover, which impacted their enrollment progress. States that relied on partnerships with outside organizations to help staff their initiatives found these staffing arrangements to be difficult. In these arrangements, State teams lacked the authority to engage staff at partner organizations directly, making it difficult to ensure that partner staff were adequately trained.

Some staffing challenges reflected inadequate training. To adequately train staff, States used a wide range of training techniques, such as job shadowing, multiday educational trainings, peer-to-peer learning by pairing staff together, and weekly training meetings. State teams also indicated that internal, regular meetings were helpful for keeping staff informed about and engaged in program implementation. Programs also highlighted that having staff or partner organizations that were familiar with Medicaid populations was key. To ensure this, some States partnered with organizations such as FQHCs and other community programs that already served large numbers of Medicaid beneficiaries.

3.8 Implementing Program Changes

Throughout the demonstration, the 10 MIPCD programs implemented numerous programmatic changes that included modifications to implementation dates, enrollment targets, program target populations, participant and provider/clinic incentives, and evaluation designs. Although the goals of these changes varied, the impetus behind them was often to improve program implementation.

3.8.1 Delays in Implementation Dates

Table 3-4 shows the changes that occurred in implementation dates by State. All States received MIPCD grant funds in September 2011. They had 4 years to implement their incentive programs and 5 years to evaluate their progress. Four of the 10 States—California, Montana, Texas, and Wisconsin—implemented their programs close to their planned implementation date, which was due in large part, to the States' utilizing existing programs as the foundation for their demonstrations. **California** built on its existing Helpline program. **Montana** built on an existing diabetes program and was able to reach participants in remote, rural areas through telehealth sessions, **Texas** drew on its existing External Quality Review Organization contract with the University of Florida to implement its initiative in a timely manner. **Wisconsin** also built its two initiatives (First Breath, which targeted postpartum women, and the Tobacco Quit Line) on existing programs. The First Breath program was implemented as planned in September 2012. The Tobacco Quit Line implementation, however, was delayed by 6 months while the State established memoranda of understanding with community clinics to recruit participants.

Six State initiatives implemented 6 months to 2 years after their planned implementation date. Implementation delays were reportedly due to numerous factors, including time needed to

hire and train staff; obtain IRB approval; formalize partnerships with other organizations, such as MCOs, community health centers (CHCs), or YMCAs; and develop contracts with incentive payment vendors. States such as **New York** originally planned to implement their multiple program arms simultaneously, but implementation delays made this impossible. Instead, New York implemented each program arm separately.

State	Initial planned implementation date	Actual implementation date		
California	Pilot in January 2012	Pilot began March 2012		
Connecticut	Phased implementation beginning in March 2012	Launched program in March 2013; began enrolling in April 2013		
Hawaii	January–March 2012	February 2013		
Minnesota	Clinic recruitment beginning in February 2012 with participant recruitment beginning in March 2012	Implemented in November 2012 with five clinics with participant recruitment in mid-December 2012		
Montana	Recruitment beginning November 2011	Recruitment and enrollment began in January 2012		
Nevada	Not specified in the original operational protocol or application	Enrollment began in each of five program arms in February 2013, May 2013, October 2013, December 2013, ² and June 2014		
New Hampshire	Phased implementation beginning in September 2011	May 2012		
New York	2012	Four program arms began in June 2013, April 2014, July 2014, and March 2015		
Texas	April–June 2012	April–June 2012		
Wisconsin	Enrollment beginning in September 2012	First Breath: September 2012, Tobacco Quitline: April 2013		

Table 3-4Changes in implementation dates by State1

¹ Planned and actual implementation dates are compiled from State proposals, operational protocols, quarterly reports, and participation in MIPCD monthly State activity meetings.

²Nevada's Lied Clinic closed for business in October 2014, and this program arm was terminated.

3.8.2 Enrollment Target Reductions

Table 3-5 presents the States' modified enrollment targets compared with their initial enrollment targets. **California, Montana,** and **Texas** were the only States that did not change their enrollment targets. In fact, **Texas** met its goal within 1 year of implementation. The other seven States reduced their enrollment targets by between 42 percent and 85 percent. **Connecticut** made the largest reduction, decreasing its targets by 85 percent—over 36,000 participants. This significant decrease reflected challenges Connecticut faced getting providers engaged to recruit participants as well as slow participant recruitment. In **Wisconsin**, a State with two program arms, enrollment targets were reduced for both arms for different reasons. Wisconsin's quitline program was delayed in its implementation, and, therefore, its enrollment goals were reduced by 70 percent from 11,000 to 3,250. At the same time, Wisconsin's First Breath program reduced its enrollment goals by 58 percent (from 3,000 to 1,250) because its original goals did not coincide with the number of Medicaid-enrolled pregnant women that smoked. **Nevada** originally planned

to enroll 9,810 participants across five program arms. However, because of enrollment and recruiting challenges, Nevada reduced its enrollment goal by nearly 80 percent to 2,000 participants across all five program arms.

State	Modified projected number of participants	Original projected number of participants as of May 2012 ¹		
California	9,000	9,000		
Connecticut	6,210	42,774		
Hawaii	1,400	4,521		
Minnesota	1,800	3,240		
Montana	724	724		
Nevada	2,000	9,810		
New Hampshire ²	2,600	4,500		
New York	6,800	18,456 ³		
Texas	1,250	1,250		
Wisconsin	3,250	11,000		
Total	35,034	109,275		

Table 3-5 States' modified enrollment targets compared to initial enrollment targets as of May 2012 across State programs

¹Initial enrollment goals were taken from each State's original operational protocol or application.

² New Hampshire implemented an equipoise-stratified randomization design. Thus, the State's first set of enrollment goals did not include a control group target.

³ New York's original proposal included an enrollment goal of 18,456, and its operational protocol included a lower enrollment goal of 16,898.

3.8.3 Changes in Target Populations

California, Connecticut, and **Wisconsin** modified their program target populations after implementation. **California** initially planned to target its smoking cessation program to Medicaid beneficiaries that had diabetes and other chronic diseases. Within the first 6 months of implementation, California changed its program to include all Medicaid beneficiaries who smoked and not just those with chronic diseases. This change was driven by concerns that the program would not reach its enrollment goals and did not have staff available to recruit sufficient numbers of Medicaid beneficiaries with chronic diseases. California expanded the number of individuals eligible for the program to all Medicaid beneficiaries and permitted all Medicaid beneficiaries to receive smoking cessation services regardless of whether they participated in the RCT.

Connecticut changed its target population a few months into its grant implementation. Initially, Connecticut planned to focus its smoking cessation initiative on pregnant women because Medicaid only reimbursed smoking cessation services for this population. However, 3 months into the grant, the State changed its Medicaid coverage policy so that all Medicaid beneficiaries could receive smoking cessation services. As a result, Connecticut's initiative expanded to include all Medicaid-enrolled individuals.

Wisconsin made two changes to its target population. Initially, the State's program arm that targeted pregnant women, First Breath, planned to enroll Medicaid MCO members that were eligible for Medicaid because of their low-income. After recognizing that this eligibility criterion did not include sufficient individuals to meet its enrollment target, the State expanded the First Breath program to include individuals eligible for Medicaid as Supplementary Security Income recipients. In addition, the State decided not to pursue Affordable Care Act funds to expand its Medicaid program and subsequently reduced its Medicaid eligibility threshold for parents and childless adults. For First Breath participants, this change in eligibility criteria meant fewer women would be eligible or could remain in the program. In response, the State decided to expand program eligibility to include Medicaid-eligible pregnant women and new mothers and those already enrolled in the program before the Medicaid eligibility criteria changed. The State paid to keep pregnant women and new mothers who were already enrolled in First Breath, but no longer eligible for Medicaid, enrolled in the program.

3.8.4 Changes in Incentives for Participants, Providers and Clinics

State modifications to participant incentives were minimal once their programs were implemented. Changes included expanding the options for where gift cards could be redeemed, small increases to incentive amounts, and the addition of some codes to the list of incentivized tests for participants.

In addition to participant incentives, some States provided incentives to providers and clinics for their role in recruiting and referring Medicaid beneficiaries to the programs. Originally, only three States—Hawaii, Montana, and Nevada—provided incentives to providers and clinics that recruited participants. However, 1.5 years into their implementation, Connecticut, Minnesota, and Wisconsin began incentivizing or paying providers to recruit participants. Connecticut paid providers a \$35 stipend for each program enrollee they recruited and also paid for full- and part-time enrollment specialists to provide clinics with administrative support for recruitment and enrollment services. Minnesota offered up to \$278,000 per participating clinic to cover its study-related costs. This payment helped Minnesota increase the number of clinics and providers willing to recruit participants into its program from 5 to 25 clinics over a 1-year time frame. Wisconsin took a combined incentive and payment approach by paying each clinic \$1,000 for agreeing to recruit participants and by giving providers \$75 for each person they enrolled in the program.

3.8.5 Changes in Evaluation Design

In response to program delays, a few programs changed their evaluation designs. In **Connecticut** and **Minnesota**, the programs changed how they randomized participants. Both States planned to randomize participants based on the clinic from which they were recruited. However, after implementation, they changed to randomizing at the participant level in some clinical locations. **Hawaii** was going to do a crossover study with private providers, but changed this to a randomized control trial with Kaiser Permanente. Hawaii had also planned on having a comparison group for the pre-post intervention, composed of 1,000 non-Medicaid persons with

diabetes that was to come from diabetes registries. The State changed the external comparison group to be 2,002 Medicaid beneficiaries with diabetes patients who met the project eligibility criteria, from either FQHCs or private providers, drawn from the Hawaii Department of Human Services (DHS) Medicaid database.

3.9 Outreach and Recruitment

Programs used several strategies to identify, engage, and recruit participants. Three main types of strategies emerged: (1) using data to identify participants and target outreach efforts; (2) collaborating with providers, clinics, and community-based organizations that served Medicaid beneficiaries; and (3) working with MCOs. Over the course of MIPCD programs, outreach and recruitment strategies evolved and were modified to be more effective in reaching target populations. Program outreach strategies were not mutually exclusive, and, in many cases, States combined multiple strategies to increase the likelihood of identifying and getting participants enrolled.

3.9.1 Using Data

States used data in several ways to identify potential participants and target outreach efforts. **California, Minnesota, Montana,** and **New Hampshire** used Medicaid claims data to identify potentially eligible individuals and send them direct marketing materials for the program. **California** used a series of direct mailings and found them to be a successful strategy. **Minnesota** conducted three direct mail campaigns to Medicaid beneficiaries as a way to reach a large number of potential participants and funnel those potential participants to participating clinics. **Montana** found that that direct mailings provided a low yield and modified its strategy from sending direct mailings to providing data to a contractor who made telephone calls to recruit possible participants, which the State identified as its most successful recruitment strategy. **New Hampshire** identified Medicaid beneficiaries that fit the program demographics and sent out a one-page mailing to them, with positive results in getting inquiries and enrolling participants. Thus, with the exception of **Montana**, each of these States considered direct mailings to be among its most successful strategies.

Nevada, Texas, Wisconsin, and California relied on MCOs and Hawaii relied on FQHCs to use their Medicaid claims or medical records data, or both, to identify potentially eligible individuals and contact them via either mail or telephone. **Texas**'s MCOs identified potential participants by reviewing MCO enrollee claims for a specific set of diagnosis codes. Once identified, MCO beneficiaries were contacted either by telephone or in person for screening and enrollment. In **Wisconsin**, the MCOs identified smokers in their plans and mailed outreach materials about the initiative. **California** MCOs targeted their Medi-Cal smokers through ICD-9 codes and pharmacy encounter data. In **Nevada**, MCOs were responsible for recruiting participants. **Hawaii's** FQHCs used electronic health record data or recent test results to identify persons with diabetes so that staff could engage them in the program.

3.9.2 Collaborating with Providers and Clinics

Half of the programs collaborated with providers and clinics to identify and engage participants in their programs. Programs recognized that Medicaid-serving providers and clinics were most familiar with the Medicaid beneficiary population and in many cases, were well

equipped to recruit for their programs. For example, in **Hawaii**, FQHCs used program coordinators or health educators to review patient records, identify persons with diabetes, and engage them; either they or the provider recruited the participants in the HI-PRAISE program. Hawaii's co-project director worked at the two largest participating FQHCs, which facilitated referral and recruitment efforts. While the process for implementing this outreach and engagement model was lengthy because it required working out the details of the service agreement individually with each of the nine participating FQHCs and then training staff at each FQHC, it allowed the program to engage participants in a culturally and linguistically sensitive manner and to do so with someone that patients already knew from their interactions with the FQHC.

Nevada's Children's Heart Center program arm, a pediatric health and lifestyle improvement education program, often recruited patients from its clinic waiting room, which was found to be the most successful arm in recruiting participants. **Montana** reached out to health care providers for referrals and provided a confirmation phone card to interested participants. **Wisconsin** found clinician referral to the quitline program to be one of its most effective strategies. **Connecticut** found that adding enrollment specialists to larger clinics was key in marketing, outreach, and enrollment. One approach that worked well in Connecticut was having enrollment specialists set up tables in clinic waiting rooms to provide information, recruitment flyers, and other information about the program and recruit participants. **Minnesota** found that partnerships with health educators—having them set up a table during the clinic or participate in health fairs—were successful in recruiting participants.

Programs that relied on providers or clinics to engage and recruit participants often provided them with incentives. The types of incentives provided ranged from a per-participant fee to a large grant to be used for clinic study-related costs. States found that providers and clinics needed assistance in reaching enrollment goals, and with experience they modified those goals to more realistic numbers and provided sites with marketing and direct mailing materials in several languages. States also provided educational materials for providers to help them in serving the target population. **New Hampshire**, for example, developed a myth-busting presentation for providers on effective methods for encouraging individuals with mental illness to quit smoking.

3.9.3 Working with MCOs

Similar to providers and clinics serving Medicaid beneficiaries, MCOs were well situated to recruit participants. State programs in **California, Hawaii, New York, Texas,** and **Wisconsin** used MCOs in their participant recruitment processes.

California had initially focused on getting the word out to providers, community-based organizations, FQHCs, and local organizations but found that enrollment growth was slower than they had hoped. In early 2014, they modified their focus to partnering with Medi-Cal MCOs and found success. This was shortly after the debut of the enhanced benefits in 2013. This allowed the State to offer nicotine patches to participants, which was a concrete benefit MCOs could market to their Medi-Cal beneficiaries who were smokers. The MCOs targeted smokers through ICD-9 codes and pharmacy encounter data and sent mailings to the targeted population.

California worked with 22 MCOs, focusing primarily on those with the largest Medi-Cal enrollment.

Texas identified telephone outreach conducted by the MCOs to beneficiaries the MCOs had identified as potentially eligible as being one of their most successful strategies because it allowed interested people to learn more about the program in a safe way. **New York** provided participating MCOs with lists of potentially eligible people for their diabetes management, hypertension, and diabetes prevention arms. New York provided brochures that plans could brand with their own logo, and each MCO developed and conducted its own outreach efforts. Similarly, participating MCOs in **Wisconsin** were responsible for outreach and mailed outreach materials to members they had identified as being potentially eligible.

Hawaii's MIPCD program worked with the Kaiser Health Plan in implementing the randomized control group; the MCO was responsible for recruiting intervention and control patients. With multiple job responsibilities, staff at Kaiser were very slow in getting participants enrolled. Recognizing the problem, the MIPCD program provided Kaiser with an enrollment specialist's time and they were subsequently able to meet their enrollment target.

3.10 Role of Incentives across State Programs for Participants

States' program incentives were available to eligible participants for incentivized outcome or process goals they achieved through December 31, 2015. All States provided participants with monetary incentives in the form of cash, gift cards, or other money-value item, or flexible wellness account funds, as illustrated in *Table 3-6*.

Money was the most common type of incentive and was offered through prepaid debit cards and a flexible wellness account. Four States offered prepaid debit cards in combination with other incentives. In **New Hampshire**, for example, participants received cash rewards for healthy behaviors, obtained free access to fitness resources, and received transportation assistance.

Nevada offered incentive coupons for screening or other preventive services that represented value points that could have been redeemed from a catalog of rewards. **Minnesota** not only provided individual incentives but also offered additional incentives to participants in the "group incentives" program arm based on class participation and weight loss goals. In addition to providing monetary incentives, **Connecticut** provided peer coaching in two locations and distributed "motivation" cards that provided words of encouragement to beneficiaries following their participation in smoking cessation counseling sessions and negative breathalyzer tests.

The **Texas** program differed from most of the other State programs in its focus, format, and size of incentives. This program focused on Medicaid beneficiaries with mental illnesses and provided an annual flexible spending account of \$1,150 that could be spent on approved health care purchases. Participants worked with a patient navigator to establish individualized health goals and a spending plan to meet those goals.

State	Money	Money- valued incentives	Flexible spending accounts for wellness activities	Prevention- related incentives	Treatment- related incentives	Points redeemable for rewards
California		\checkmark			\checkmark	
Connecticut	\checkmark		—	_	\checkmark	
Hawaii	\checkmark	\checkmark	—	\checkmark	_	
Minnesota	\checkmark		—	\checkmark	_	
Montana	\checkmark		—	_	_	
Nevada						\checkmark
New Hampshire	\checkmark	—	_	\checkmark	\checkmark	—
New York	\checkmark		_	_		
Texas ²		_	\checkmark	\checkmark	\checkmark	
Wisconsin	\checkmark	\checkmark				
Total	7	3	1	4	3	1

 Table 3-6

 Incentives across State programs for participants

During site visits and in follow-up interviews with stakeholders, we asked for their impressions on the importance incentives played in recruiting and retaining program participants. Respondents often said that while financial incentives were important in recruiting participants, they were not critical factors in retaining participants. The reason for this was that once people enrolled in the programs and started realizing the benefits, they became committed to continuing the program; the incentives, while a nice bonus, were not as important. California said that once people realized that the first counseling session was helpful and the counselors were there to help them, they often continued with counseling sessions even when incentives were no longer available and went on to create a smoking cessation plan and actually quit. Minnesota had a similar observation, that while incentives were a great tool for getting people interested, the lifestyle coach seemed to be a better motivator for continuing the program. Montana agreed, noting that focus group participants mentioned that they appreciated the incentive money because it allowed them to pay for gas or part of their rent, but the lifestyle coach was a better motivator for continuing the program. On the other hand, stakeholders in other States thought that the monetary incentive had served as a method for retaining participants. Texas originally provided only monetary incentives to participants to help them reach their self-defined goals. After implementation, the program added a participation incentive of \$30 each quarter for
participants who met with or spoke to their lifestyle coach each month. This incentive helped the program retain and keep participants engaged.

When asked about the impact of incentives on adopting healthy behaviors, stakeholders in some States noted that intervention group participants that received incentives used more services than those in the control groups. **Montana** found that the incentive group attended more classes, engaged in higher levels of physical activity, and tracked their food intake more frequently than control group participants. **Connecticut's** preliminary analysis showed that participants who received incentives participated in more counseling sessions and NRT use. **Hawaii** observed that monetary incentives helped encourage participants to make specific behavior changes and helped motivate them to achieve self-defined goals.

The use of incentives is further analyzed in subsequent sections of this report, using data from the Minimum Data Set, beneficiary surveys, focus groups, and States' evaluations.

3.11 Special Populations

Special populations (including adults with disabilities, adults with chronic illnesses, and children with special health care needs) are one of the key evaluation topics mandated to be evaluated by Section 4108. All the States' programs targeted adults with or at risk of chronic disease, one of the three special populations highlighted in the legislation. Four of the programs—California, Connecticut, New Hampshire, and Texas—focused on people with behavioral health and two of these States (California and Texas) also focused on people with substance use disorders. All States served adults with disabilities, the second group highlighted in the legislation. The largest program arm in Nevada served children with special health care needs, the third special population highlighted in the legislation. States also considered participants dually enrolled in Medicare and Medicaid (dual enrollees) to be a special population because, like beneficiaries who receive disability or Supplemental Security Income (SSI), they typically have higher morbidity and consequently have greater health care expenditures. All States, except New York and Texas, enrolled participants dually enrolled in Medicare and Medicaid in their initiatives. Although New York and Texas enrolled Medicaid-only beneficiaries in their programs, they allowed participants who became dually enrolled in Medicare and Medicaid during program participation to remain in the program.

Four of five programs that specifically targeted pregnant women and mothers of newborns (**California, Montana, New York,** and **Wisconsin**) had a smoking cessation component as part of their program. In addition, four programs (**California, Hawaii, Nevada**, and **Wisconsin**) targeted racial and ethnic minorities. Although **Nevada** did not initially identify racial and ethnic minorities as a primary focus, Nevada prioritized this special population after learning that most program participants were Latino. Nevada began targeting Latino communities by reaching out to the Latino Chamber of Commerce in Las Vegas, communicating with colleagues who had existing relationships with people in Latino communities, and visiting sites that were treating potential enrollees.

States found that to effectively engage and retain special populations, ensuring that programs were culturally appropriate for the target population was key. In some cases, this meant hiring culturally competent staff, such as individuals who were either members of the target

population or had worked with the target population. In other cases, it meant adapting the programs to be more culturally competent. In **Minnesota**, for example, where 80 percent of program participants were Somali, the program adapted the YMCA's diabetes prevention program to provide recipes for diabetic-friendly Somali foods and made a picture food diary for non-English speaking Somalis to complete weekly.

Creating culturally competent programs included hiring bilingual staff and translating program materials into the languages participants commonly spoke to make programs more readily accessible. In **Hawaii**, the program ensured that at least one health educator in each clinic was able to speak with non-English speaking clinic participants and a database of participants' immigrant status was maintained so that subcategories of participants could be tracked to ensure that they had appropriate access to materials and program staff.

Outside of language access, programs adapted to address special population's needs. In **Montana**, staff revised the diabetes prevention program to include audio instead of written food diaries for blind participants. The program also provided classes at a slower pace for cognitively impaired participants.

Programs indicated that collaborating or partnering with organizations familiar with their targeted special populations was extremely helpful. In **California**, for example, the State worked closely with the Indian and Rural Health Offices to provide program outreach and engagement to Native American clinic patients.

3.12 Assessment of the MIPCD Learning Collaborative

CMS supported participating MIPCD programs with a Learning Collaborative system to engage, educate, and share lessons learned between States. CMS offered the MIPCD Learning Collaborative through a contract with Econometrica, Inc. and its subcontractors, collectively referred to as the Implementation Contractor. Learning Collaborative activities included virtual and in-person meetings, a web-based support forum (MIPCD.net) and direct technical assistance.

RTI International and the National Academy for State Health Policy (NASHP) evaluated the MIPCD Learning Collaborative as part of the independent federal evaluation. The Final Learning Collaborative Assessment Report with detailed key findings from the evaluation of the MIPCD Learning Collaborative system is available in *Appendix B*. Briefly, RTI and NASHP found that among the offered Learning Collaborative activities, States reported in-person meetings to be the most beneficial because the meetings provided an opportunity for meaningful face-to-face conversations. States also rated peer-led activities that addressed State-requested topics highly. States consistently reported finding the MIPCD Learning Collaborative activities to be generally useful. Input from and experiences with the MIPCD Learning Collaborative appeared to particularly impact State programs' participant outreach and marketing, use of incentives, data collection and evaluation, program closeout, and sustainability planning decisions. The MIPCD Learning Collaborative encouraged communication and camaraderie among the MIPCD Grantee States.

3.13 Program Challenges, Successes, and Lessons Learned

The sections below summarize States' feedback on implementing incentive programs among Medicaid populations. Some lessons are State specific, whereas others are generalizable across all States.

3.13.1 Challenges

Programs highlighted a wide variety of challenges that impeded or delayed their implementation progress, which are summarized below.

Administrative procedures required for conducting randomized trials were new to States and often delayed implementation. Challenges that arose were in part due to States' concerns in implementing randomized controlled incentive programs for the Medicaid population. This type of program was a new concept, and some State governments were initially concerned that these programs would be controversial. **California** worked closely with its Office of Public Affairs and Privacy Office to allay their fears about the risk of a privacy breach and concerns about the public perception of giving money to Medicaid beneficiaries for adopting healthier behaviors. Administrative challenges also included obtaining IRB approval, implementing partner and vendor contracts, reimbursing partners for participant services they provided, and coordinating partners' roles and responsibilities. All of these can often delay implementation progress. Because most programs were implemented as research studies, they were required to obtain IRB review and approval before they could begin. For States such as **Minnesota** and **Hawaii**, the IRB process included obtaining IRB approval not only from the State, but also in some cases from clinic partners.

The administrative vehicles States used to distribute incentives impacted implementation. States needed to make choices in the administrative vehicle their program would use for distributing incentives and there were numerous challenges associated with implementing these administrative vehicles. Several States used a third-party vendor. Whereas some States found that using a vendor facilitated the process, other States found it to be a more expensive option and had to work through challenges.

- New York issued two requests for proposals for a vendor but did not have a vendor that met their requirements submit a proposal, which necessitated New York's exploring another path and ultimately distributing their incentives in house. However, in doing this in house, there was a time lag in issuing the checks, resulting in some checks' being returned with addresses that were no longer valid and some participants' not realizing that the checks were incentive payments from the program.
- Wisconsin used a third-party vendor for its quitline, but found the experience difficult because it removed control from the State. For example, once an incentive card was ordered, the participant had to work with the third-party vendor should any issues arise, rather than working directly with staff involved in the study. The State felt that this did not reflect well on the research study because it made participants feel as though they were just getting passed along. The State found this to be very frustrating and said they would not select this option again.

- Alternatively, Kaiser Permanente in **Hawaii** used Greenfire as a vendor for their participants. Greenfire downloaded money onto participants' claim cards when laboratory results came in. Although there was an expense for the card and an expense related to the transaction, Hawaii found this to be an excellent option because the incentives were automatically ready and participants quickly received the payment. The disadvantage with this option was that there was no warm hand-off with the incentives to reinforce the participant's success, but Hawaii still considers it to be an excellent option because of the immediacy of incentive payment.
- Hawaii and other States also used providers for distributing incentives. In Hawaii, each participating FQHC provided incentives to participants. Health centers had autonomy in terms of where they wanted to purchase gift cards, which was a learning experience for each health center because participants were not always interested in the FOHC's selection. For example, one of the FOHCs had gift cards from a vegetable stand but found that patients were not using it. Trying to figure out which stores were popular and which stores participants wanted gift cards from was challenging for FQHCs. Distributing incentive gift cards was also difficult—in some health centers, if the person whose task was giving out incentives was not in the office, with a patient, or just unavailable, participants could not get their gift cards at that time. Additionally, FQHCs were uncomfortable with distributing financial incentives. Rather than giving participants the entire amount of money they were entitled to receive, some health centers meted it out in small amounts. The health centers were very concerned about audits and the security of gift cards within the health centers, so they set up gatekeepers, which erected barriers to distributing the gift cards.
- Wisconsin's First Breath program also managed the incentives in-house, which proved to be difficult because the health educators, who were responsible for keeping the incentives for their assigned participants, had a large caseload and could not keep up with the incentives. The State restructured the process so that a point person rather than the health educators took care of the incentives. Participants were paid when the educator went to a visit. While this approach remedied the tracking issue, it resulted in a time lag for participants to receive their incentives. For example, the payment for the October visit was not made to the participant until the November visit.
- **Connecticut's** major challenge was tracking and providing incentives for calls to the quitline, which was run by the Connecticut Department of Public Health (DPH). Program participants were supposed to provide their Medicaid IDs when they called the quitline so that the call could be registered for purposes of the incentives. However, there were frequent issues with quitline counselors not following the procedures and incentives not being processed. As a result, the State had to follow up and advocate for participants who had not received incentives.

The more complex a State program's structure, the greater the challenges in program implementation. Nevada, for example, in retrospect, would have implemented a simpler program design that was more structured and defined across program partners. Having

multiple hypotheses and experimental groups as well as a broad structure that differed among program partners and arms added a level of complexity to Nevada's program that was difficult to implement and administer. This was further complicated by having the State's program administration in Carson City, while the partners were in Las Vegas, and the third-party vendor was in Birmingham, Alabama. This distance inhibited collaboration and recruitment assistance among the program administrators and program partners.

The more steps required for participants to receive incentives, the greater the delay in participants' receiving them and the smaller the impact of the incentives. The path to achieving incentives was designed differently in each State program. In some programs, the participant completed the incentivized behavior and the incentive was speedily provided. In other programs, the participant completed the incentivized behavior and had to go through multiple steps to obtain the incentive, thus making earning incentives complex and delaying the time when incentives were received.

- Montana reported that the multiple steps required with their incentive process resulted in potential barriers at each step and took longer than expected. The process required participants to attend class and keep track of their behaviors in the participant record, which they returned to coaches. Clinic staff typed up records in the system and sent them to the Department of Health and Human Services (DHHS) weekly for upload to U.S. Bank. The payment then had to be approved by DHHS's fiscal staff, and then 2–3 business days later it was added to the participant's debit card. Montana found that the multiple layers involved in getting the money to participants caused time lags between participants' attending the session and receiving the payments on their cards.
- In Nevada, program partners submitted data files to the incentive vendor ChipRewards, and the data were used to provide redeemable points to eligible participants for incentive items from an online catalog. However, some program partners had difficulties in submitting data files for participants to the incentives vendor. This type of program was new to ChipRewards, so there were also issues with the vendor that needed to be worked through with program partners. Additionally, some participants had difficulty accessing the ChipRewards system and actually redeeming points for items. Other participants did not realize that they were eligible for incentives, did not understand the process, and never redeemed their incentives.
- **New York** also discussed the complexity of its incentive schedule, noting that if the design had been simpler, it might have been easier for both participants and MCOs to understand the incentive process.

Engaging the target population took more work and staff time than States anticipated. Four programs that targeted people with behavioral health and substance use disorders found that ensuring staff were appropriately trained and aware of the challenges mentally ill participants may present was important.

- New Hampshire's program found that some providers were resistant to working with Medicaid beneficiaries and were nervous about prescribing NRT or did not know how to address a mentally ill participant's behavior at a Weight Watchers meeting. In response, staff decided to involve caretakers for participants with behavioral health problems to help prevent issues from arising during group sessions and provided training to providers and Weight Watchers' educators to better equip them to work with this population.
- **Minnesota's** program was available only in English and Spanish, making access for the Hmong and Somali populations difficult. By working directly with the community health centers that served these communities, the State was able to interact with these populations.
- Wisconsin found it difficult not just to enroll but also to retain participants in its First Breath program, because this population was transient and constantly moving or changing their telephone numbers. The health educators worked hard in keeping track of participants and in trying to maintain current contact information.

Verifying Medicaid eligibility in real-time when potentially eligible individuals called smoking quitlines was difficult for some programs. For telephonic programs such as California's, Connecticut's, and Wisconsin's smoking cessation programs, hotline staff had difficulty either obtaining real-time Medicaid eligibility information on callers or could not find the time to confirm Medicaid eligibility while callers were on the telephone.

- **California** initially thought it could rely on participants to accurately self-identify as Medicaid beneficiaries. However, over time, the program realized that this process was insufficient. As a result, the quitline staff were given access to the Medicaid eligibility database. But even with access to the eligibility system, quitline staff experienced difficulty obtaining accurate and timely eligibility information. They worked hard to develop a productive relationship with Department of Health Care Services (DHCS) and they were able to identify a DHCS staff member whom they worked with one-on-one in verifying Medi-Cal numbers, which facilitated the process.
- Hawaii found that FQHC staff were not always knowledgeable about verifying Medicaid eligibility and did not always know what to look for in terms of dates of service or the end dates of eligibility, resulting in enrolling people who were not always eligible, thus illustrating the importance of continuous training throughout the program's duration.
- **Connecticut's** quitline counselors did not consistently ask about Medicaid status or request the Medicaid identification number, so Connecticut implemented a process in which providers reviewed the quitline procedures with new enrollees so that they knew to provide this information on the quitline intake call.

Relying primarily on providers for program recruitment can be problematic due to providers' competing priorities. Engaging clinical staff, clinics, and MCOs to serve as

participant recruiters was a challenge in States that built their recruitment strategies primarily around providers, because providers and their staff had multiple priorities and job responsibilities that competed for their time. In States such as **Minnesota** and **Connecticut**, programs often had to implement provider incentives and reimbursement to encourage their assistance in recruiting participants.

Navigating Medicaid reimbursement for program services was difficult for programs with limited experience in working with Medicaid. Montana built its program on an existing diabetes prevention program for non-Medicaid individuals. For some Montana program staff, the grant was their first time working with Medicaid or handling Medicaid reimbursement. Some health care facilities involved in Montana's program said that they had difficulty navigating the Medicaid reimbursement process. They also found that the reimbursement process was labor intensive. New Hampshire's Medicaid reimbursement policy for NRT was complicated and a challenge for many providers. As a result, program management recommended simplifying the process.

Ensuring comprehensive and accurate data collection by program partners took significant staff commitment and time.

- **Hawaii** spent considerable time working with partner FQHCs to ensure that they were correctly and accurately collecting comprehensive participant data. State program staff visited FQHCs to help them complete missing participant data and review their database to make sure data were collected accurately.
- **Connecticut** found that working through a State agency operating the quitline, which was not the Medicaid agency, created issues for data collection. The State also saw that providers needed support with data submission and used enrollment specialists and community practice specialists for data input, resulting in a dramatic reduction in data submission errors.
- New York relied on MCOs to implement the program and found that collecting the necessary pre- and post-program data required for each of the program arms from participating MCOs was challenging. To facilitate these efforts, the State provided plans with an Excel template outlining the data elements to be collected and submitted to the State. The State then cleaned and analyzed the data to determine incentive amounts to be paid to participants.

3.13.2 Successes and Lessons Learned

States identified numerous program successes and lessons learned while implementing their programs, which are summarized in this section.

Implementing this incentive program for a Medicaid population was far more challenging than anyone initially realized. The fact that each participating State was able to work through the challenges and implement a program of this magnitude speaks to the hard work, commitment, and flexibility of the staff in each State.

Collaborating with MCO plans, FQHCs, and clinics that worked with and knew the Medicaid population was critical to several States' successes. These providers were well positioned to recruit participants because of the relationships they have with members. These programs were also advantageous to MCOs and FQHCs because of the potential for helping participants adopt healthy behaviors that could prevent expenditures associated with the development or progression of disease.

- **Texas'** program was designed around the Texas managed care system, with navigators employed by the plans. In using this existing structure, navigators were ready to jump right in and were also able to help coordinate other services that might be needed for participants.
- **Minnesota** engaged community clinics that worked largely with Medicaid populations and was able to design a culturally competent diabetes prevention program for racially diverse populations, such as Somali and Native Americans. Several States also mentioned the need to incentivize providers monetarily and provide them with support to reduce the burden of participation.
- **Connecticut** assisted providers through enrollment specialists and community practice specialists.

Developing strong partnerships with community organizations with similar goals was a big success for many programs. Many programs worked hard to obtain partner buy-in from the initial implementation stages throughout the program. In having a small outreach staff, **California** found that developing the capacity of partner organizations was an important piece in ensuring their help in getting the message out to people. Finding partners that had complementary goals helped get the partners invested in the program. For example, **California** worked with a cancer care program whose goal was to promote the helpline, an overlap that provided a common agenda for both programs that resulted in an effective partnership.

Focusing outreach efforts to address health disparities and recruit underrepresented groups, such as ethnic minorities or lesbian, gay, bisexual, and transgender people, from the program's inception was specifically noted by **California** as being important for addressing the needs of the people who needed the program the most. **Hawaii** stressed the importance of keeping marketing materials simple and clear and incorporating cultural sensitivities that honored the participants' culture.

Fostering healthy and strong relationships between participants and program educators was important. States spoke about the important role their program educators played in successfully implementing their programs.

- **New Hampshire** said that Medicaid beneficiaries with mental illness made it clear that they valued relational support to pursue and achieve positive, healthy lifestyle changes.
- **Hawaii's** HI-PRAISE program highlighted the importance of relationships participants built with their health coaches. Many participants felt that these coaches

cared about them and were willing to help them improve their health. As a result, many health coaches saw patients meet and even exceed their goals for weight loss and diabetes management.

• **Minnesota** stressed that lifestyle coaches should be from the same population group that the program is targeting because they reflected the group's experience and community and were able to understand the challenges that these groups faced in their day-to-day life.

Establishing effective administrative processes was key for program implementation. Many stakeholders highlighted the importance of establishing administrative processes early in program implementation. All States worked with multiple partners. Across all of these programs, engaging partners in regular meetings was an important way to update staff on program rules and help oversee and ensure consistency in the processes that took place across sites. **Wisconsin** held recurring meetings with program staff and found it extremely helpful to ensure consistency across its five main partners.

3.14 Program Sustainability

While States could not sustain their MIPCD programs as they existed in the demonstration, and some had to discontinue programs completely because of the lack of funding, most States worked to find ways to maintain some of the program components through several vehicles, as illustrated in *Table 3-7*. States were especially interested in sustaining services associated with their programs (e.g., diabetes prevention classes, NRT, gym or Weight Watchers memberships). With the exception of **Texas**, which was considering a flexible wellness account for a self-directed care pilot program, the States are not continuing cash incentives for participants.

State	Section 1115 demonstration	Medicaid pilot	Other program funding	Embedding in MCO program
California				\checkmark
Hawaii	\checkmark		\checkmark	
Minnesota			\checkmark	
New Hampshire	\checkmark		\checkmark	\checkmark
New York				\checkmark
Texas		\checkmark		
Wisconsin			\checkmark	

Table 3-7						
State efforts for sustainability						

Implementing a Medicaid Pilot or CMS demonstration was one vehicle that several States were developing.

- **Texas** developed plans with the State Medicaid office for a potential self-directed care pilot in the State's integrated Medicaid managed care system for adults (STAR+PLUS) and received approval from the Patient-Centered Outcomes Research Institute (PCORI) to apply for funds to administer and evaluate the study. The pilot would incorporate self-direction and empowerment, provided through a flexible wellness account and implemented in the same Medicaid managed care delivery system being used in its MIPCD program. The navigators are embedded in the system and would be sustained, and the engagement strategies of motivational interviewing and personal planning are embedded in this approach as well.
- **New Hampshire** has a new section 1115 demonstration with CMS that will provide InShape services that are included in beneficiaries' behavioral health plans.
- **Hawaii** has been talking with its Department of Health Services, which is revising its section 1115 demonstration, and is hopeful that some elements of the program could be incorporated.

Funding by other programs was also an option States were exploring.

- Wisconsin's State Tobacco Prevention and Control Program was offering Medicaid beneficiaries a five-call counseling program with 8 weeks of NRT.
- Community Mental Health Centers in **New Hampshire** were working with community partners on fundraising and received small grants to subsidize the costs associated with gym memberships so that participants could continue to access services.
- Three clinics that participated in **Minnesota's** MIPCD program continued to offer the DPP program through funds provided by the Centers for Disease Control and Prevention and did so with no cost to participants. The participating clinics also continued to provide child care and transportation.
- **Hawaii** was working with clinics on getting their ADA and American Association of Diabetes Educators certifications so they could bill for the individual and group counseling in diabetes care that they provided for their clients.

Embedding program components in MCOs was a promising avenue in several States.

• New York discussed several program components that it viewed as being sustainable. Some MCOs that used their own resources in developing the diabetes prevention programs wanted to keep the programs going and were looking for ways to maintain them. Several plans also moved to contract with the New York State Smokers' Quitline so that they could refer plan members to the quitline for smoking cessation assistance. The diabetes management program and the hypertension management program were easy programs to continue because the State's program was framed around Medicaid benefits that were available to the Medicaid beneficiaries.

- In **California**, the MIPCD program was working with 23 MCOs to convince them of the effectiveness of contracting with the Helpline to promote and distribute NRT for Medi-Cal beneficiaries. The State was working on a cost-benefit analysis of the administrative costs compared with the health care costs for smokers so that MCOs could consider the potential financial savings, with the hope that they would adopt it. Unfortunately, there are no HEDIS (Healthcare Effectiveness Data and Information Set) measures tied to this that advanced the State's cause, but they were hopeful that MCOs would be persuaded by the health advantages.
- In **New Hampshire**, one of the two Medicaid MCOs agreed to fund limited access to Weight Watchers for Medicaid beneficiaries.

3.15 Discussion

As we analyzed data on each State's implementation and progress and assessed the effectiveness of the overall program, we considered the findings from Kevin Volpp, PhD and his colleagues as providing a framework in which to discuss our findings and recommendations for States that may subsequently consider implementing a Medicaid incentive program. In May 2012, Dr. Volpp presented his team's analysis of research findings of prior Medicaid incentive programs at the CMS in-person meeting for MIPCD State Grantees. This presentation was subsequently followed by a published report in March 2013 in *Health Affairs* on this research analysis (Blumenthal et al., 2013). Both Dr. Volpp's presentation and the *Health Affairs* article suggested lessons that he and his team believed should be applied to Medicaid incentive programs in the future. Dr. Volpp and his team's research made the following observations:

- 1. to assess effectiveness, programs need rigorous evaluations
- 2. evaluation metrics need to be meaningful
- 3. low levels of program awareness are common
- 4. base the program on partnerships that work
- 5. think carefully about the type of reward
- 6. incentive amounts need to be significant to effect behavior change
- 7. the timing and delivery of incentives matter
- 8. programs are often too complex
- 9. solve administrative hurdles to make feedback fast

At the time Dr. Volpp and his team did their research, there had only been three Medicaid incentive programs. The award of MIPCD grants to 10 States provided the opportunity to examine a significantly expanded database and observe programs that were specifically established as Medicaid incentive programs to prevent or control chronic disease rather than incentive programs that were a component of larger demonstration programs. In this section, we discuss the State MIPCD programs in the context of the observations by Dr. Volpp and his team. The observations provided by Dr. Volpp and his team are italicized at the beginning of each discussion point.

1. <u>To assess effectiveness, programs need rigorous evaluations.</u>

Prior Medicaid incentive programs were not established with a rigorous evaluation. This lack of rigorous evaluation made it impossible to answer the question of whether people changed their behavior because of the program. New programs should be designed to ensure that the relative effectiveness of different incentive programs could be assessed.

All of the MIPCD States adopted a randomized experimental design, and 8 of the 10 States implemented randomized controlled trials for at least one arm of their program.

States had flexibility to make adjustments to their evaluation designs, which allowed States to improve their design and address challenges that had not been anticipated when initially planning the evaluation. Some States modified their randomization. **Minnesota**, for example, originally planned to randomize participants into three study conditions by clinic. The State was concerned that if a clinic were to drop out or account for a large share of enrollees, the reliability of the study results would be compromised, so it changed to randomization within each clinic. **Hawaii** implemented an RCT with Kaiser Permanente, which it had not originally planned.

Some States enhanced the qualitative component in their evaluation by adding surveys, interviews, and focus groups with their participant panels. States also made modifications as a result of recruitment challenges that impacted potential sample sizes in State evaluations, with 7 of 10 States lowering their enrollment targets. Implementation delays also limited the length of time for studying the potential impact of States' program arms, because States could only provide incentives through December 2015, and, based on the law, this period could not be extended for the six States with delayed implementation of 6 months to 2 years. And, while States did face challenges and delays in implementing their programs and evaluation designs, they responded with flexibility and creativity in working through the issues and in sometimes adopting alternative options that allowed them to move forward, so all the MIPCD States were able to implement a rigorous, randomized design that would provide data on the effectiveness of their programs.

2. Evaluation metrics need to be meaningful

Rigorous evaluations need meaningful metrics because assessing the effectiveness of programs is not only tied to evaluation design, but is also tied to how the evaluation measures impact.

All the MIPCD programs used both process and outcome metrics to evaluate the program impact. Process-linked incentives provided data on an individual's participation in program services or adherence to specific behaviors. And, as discussed in detail in *Section 4*, RTI's data analyses did show that program participants across MIPCD programs did use more program services if they received a financial incentive.

Outcome measures linked participants to achieving specific health goals and provided data on assessing behavior change. While States shared challenges obtaining outcome data, which was often obtained from electronic health records, most States were able to consistently use these data to identify any associated changes in health outcomes. Our data analyses showed that States saw some success in improving health outcomes among participants who received incentives, though improvements were often small in magnitude and may not have always represented clinically significant change. These analyses are discussed in detail in **Section 4** of this report.

3. Low levels of program awareness are common

The lack of program awareness contributes to low program participation rates. Building recruitment efforts around providers is challenging because of the competing priorities for their time.

States found that getting the message out about their programs and getting Medicaid beneficiaries enrolled was more challenging and took longer than they had anticipated. Only two States, **Hawaii** and **Texas**, met their enrollment goals, while overall States met approximately 70 percent of their enrollment goals.

States used multiple evolving strategies throughout the demonstration, finding that they could not rely on just one method to recruit participants. States used data to identify and target potentially eligible individuals and contact them by mail or telephone and collaborated with community-based organizations, providers, clinics, FQHCs and MCOs that served Medicaid beneficiaries in their work to enroll program participants. They also focused their efforts on making programs accessible by providing or paying for transportation and in making programs culturally and linguistically accessible by hiring staff who had worked with or were members of the target population.

Six of the MIPCD States built recruitment strategies around providers. Similar to Dr. Volpp's observations, States found that with providers' multiple job responsibilities, recruiting participants fell low on providers' priority lists. To address this, three of these States incentivized providers to assist with recruitment. Approximately 1.5 years into implementation, three additional States adopted incentives for providers, finding that these incentives did have a positive impact on increasing referrals and recruitment. Despite these efforts, enrollment was challenging and implementation delays that occurred in some States also shortened the recruitment timeframe.

4. Base the program on partnerships that work

Programs should collaborate with partners where interests are aligned and where their organizational capabilities can be leveraged.

Consistent with the findings of Dr. Volpp and his team, effective partnerships were an important vehicle in MIPCD programs for stretching outreach and education resources and also provided entry to priority populations, helping States to recruit participants that would not otherwise have been receptive to these programs. Effective partnerships were with organizations that had similar and complementary goals. Partner organizations that worked with and understood Medicaid beneficiaries and targeted populations provided an entrée to communities that the State might not otherwise have had relationships.

- In California, for example, the State works closely with the Indian and Rural Health Offices to provide program outreach and engagement to American Indian clinic patients. Community organizations also provided important feedback on marketing materials and outreach strategies. In some States, these partners provided staff support in these communities.
- The Hispanic Council and the Greater Bridgeport Area Prevention Program provided peer coaches in Bridgeport, **Connecticut**.
- In Minnesota, the YMCA trained new DPP coaches, provided staffing support through existing YMCA DPP coaches, and hosted DPP classes at selected sites. Working with these partner organizations from the planning phase throughout the program helped in getting them invested in the MIPCD program and wanting to see the program succeed. Continuing regular communications and establishing clear roles for partners were also important components in effective partnerships.

Beyond Dr. Volpp's findings, we found that partnerships had a deeper impact than outreach and education. In several States, partner organization were also integral to sustainability planning and worked with States to provide funding or to pick up some program services.

- In Texas, Mental Health America continued some program-related services.
- In **Wisconsin**, the State Prevention and Control Program offered Medicaid beneficiaries a five-call counseling program with 8 weeks of NRT.
- Community Mental Health Centers in **New Hampshire** worked with community partners on fundraising and received small grants to subsidize the costs associated with gym memberships so that participants could continue to access services.

5. Think carefully about the type of reward

The literature on Medicaid incentive programs does not provide any clear evidence on how reward type relates to effectiveness, but does indicate that cash incentives were preferred over other types of incentives.

It logically follows that participants have to want the incentive for incentive programs to be effective. Nine of ten programs provided monetary incentives in the form of check, debit card, gift card, or flexible wellness account funds, which focus

group participants favored for incentives. A couple of States that had originally considered providing a check or debit card, found that there were administrative obstacles to implementing these as incentives, so instead found that providing gift cards was more feasible. States that provided gift cards needed to consider whether it was a gift card to a store that participants frequented and would use. One of **Hawaii's** FQHCs provided gift cards to a local farmers' market and found that participants were not using them. When multiple States queried, participants said that they favored gift cards to large chain stores, such as Walmart. Rather than just making a programmatic decision on the incentive type, States needed to get input from participants when selecting the incentive type that would help motivate participants as they work towards achieving goals.

6. Incentive amounts need to be significant to effect behavior change

Incentives need to be of significant value (i.e., greater than \$500) to have an impact on the likelihood of changing participants' behavior.

Only three MIPCD States provided incentives valued at greater than \$500— Wisconsin's First Breath program, Texas, and New Hampshire. States' decisions in setting incentive values were in large part, made in consideration of potential policy implications, concern about public opinion, and potential sustainability. For example, California provided a small incentive payment with the hope that if successful, Medicaid MCOs would adopt and continue the program after the demonstration. In evaluating whether the financial incentive amount impacted participants adopting behavior change, incentive amounts were categorized as follows: less than \$25; from \$25 up to \$100; from \$100 up to \$400, from \$400 up to \$2,500, and \$2,500 or more. The data from the beneficiary satisfaction survey supported Dr. Volpp's observation: there was a correlation between the amount of the incentive received with the likelihood that a participant reported adopting changes to improve his or her health. These data are described in further depth in Section 5 of this report.

7. The timing and delivery of incentives matter

Incentives should be given as soon as the participant meets the goal to make the relationship between meeting the goal and payment of the incentive clear.

MIPCD beneficiary satisfaction surveys and focus group results support the idea that providing incentives close to the completion of incentivized activities is strongly related to keeping participants motivated and focused on their goals. In some MIPCD States, there was a significant time lag between the participant's achievement of the incentivized behavior and receiving the incentive. States that used providers often found that participants were required to wait until the following month's visit to the provider to receive their incentives. In some health centers, if the person whose task was giving out incentives was not in the office, with a patient, or otherwise unavailable, participants could not get their gift cards at that time.

- In Montana, participants had to track their attendance and behaviors in a participant record that was returned to their coaches. Site staff then typed the records into the system with reports sent to DHHS each week. Once approved by fiscal staff, DHHS uploaded files to their vendor, U.S. Bank and incentives would be distributed to participants' debit cards several days later. Given the multiple data transfer points, this process was prone to delays, resulting in participants expressing some frustration in focus groups with the length of time in getting their incentives.
- Each of Hawaii's participating FQHCs established their own processes for distributing incentives and often required participants to return the following month after they had completed their incentivized goal to get their incentive. Focus group participants said that they found this process frustrating and burdensome in having to return to the FQHC.
- In New York, the State distributed checks to eligible participants using an inhouse agency. Administrative delays in the processing and issuing of these incentive checks resulted in some checks being returned with addresses that were no longer valid and some participants' not realizing that the checks were incentive payments from the MIPCD program.

8. Programs are often too complex

Complex programs with multiple elements and steps lead to a lack of understanding by participants of incentives and obscured program priorities.

The path to achieving and redeeming incentives was designed differently in each State's program. In some programs, the participant completed the incentivized behavior and had to go through multiple steps to obtain the incentive, thus making the process complicated and creating barriers to participants obtaining them. Participants often did not realize they were even eligible for incentives or became frustrated and did not bother with going through the required steps.

In **Nevada** for example, participants earned points that could be redeemed for health-related items from an online catalog. When participants completed the incentivized activity, the participating clinic submitted a monthly file report to the vendor that updated the earned points that were then available to the participant online. Participants and clinics were not always aware of the process or that they were even eligible for incentives. Participants were sent a packet at enrollment that included a description of the incentives and process for achieving them, but focus group respondents generally said that they had not kept the packet and did not recollect or understand the process for achieving them. Some focus group participants said that they had problems accessing the online site and others did not know how to use a computer, resulting in participants not bothering to redeem incentives for which they were eligible. Keeping the design simple makes the process and relationship easily understandable to the participant. One State said that if their design had been simpler, it might have been easier for both participants and MCOs to understand the incentive process.

9. Solve administrative hurdles to make feedback fast

Medicaid programs do not typically have an existing mechanism in place for providing incentive payments and feedback on success and incentive earnings and need to put an administrative structure in place to do this, often using vendors to fill this gap.

MIPCD States found numerous challenges associated with implementing administrative vehicles for distributing incentives. Several States used a third-party vendor and found that this facilitated the disbursement process, although it was more costly than if it had been done in-house. While States were generally satisfied with using vendors, one State mentioned that when the incentive was mailed to the participant by the vendor, the opportunity to provide a warm hand-off with feedback that health center distribution provided, did not occur.

Securing vendor services was not always a simple process for States. **New York** issued two Requests for Proposals for a vendor, but did have a vendor that met their requirements submit a proposal. This necessitated their exploring another path and ultimately using an in-house agency for distributing their incentives. This solution worked for New York, but came with challenges in the amount of time that it took to process these checks, which resulted in a time lag in distributing the incentive checks.

Other States disbursed the incentives internally through providers and health educators and found this to be challenging. States found that some providers were uncomfortable with distributing financial incentives. Rather than giving participants the entire amount of money they were entitled to receive, some health centers meted it out in small amounts. The health centers were very concerned about audits and the security of gift cards within the health centers, so they set up gatekeepers, which erected barriers to distributing the gift cards. Health center staff and health educators also found keeping up with distributing incentives was challenging because of other job responsibilities and heavy caseloads. MIPCD States were able to work through challenges in establishing administrative vehicles for incentive distribution and the issues that they faced in trying to facilitate quick, reliable disbursement of incentives can help inform States that may consider implementing incentive programs in the future.

3.16 Conclusion

The MIPCD States demonstrated that they and other States can successfully implement incentive programs in Medicaid, although implementing these programs was more challenging and required significantly more time planning and greater flexibility in implementing than States originally anticipated. Clearly, the saying, "build it and they will come" does not translate into a successful Medicaid incentive program—just providing incentives for adopting healthy behaviors was not sufficient. States struggled with delays in implementing programs and in

getting participants to enroll, resulting in only two States (**Hawaii** and **Texas**) reaching their enrollment targets. Collectively, actual enrollment was about 70 percent of target enrollment.

Programs used multiple strategies to identify, engage, and recruit participants. Three main types of strategies emerged: (1) using data to identify participants and target outreach efforts; (2) collaborating with providers, clinics, and community-based organizations that served Medicaid beneficiaries; and (3) working with MCOs. Over the course of MIPCD programs, outreach and recruitment strategies evolved and were modified to be more effective in reaching target populations. States found that working with partners that had similar goals helped in leveraging limited outreach resources. Collaborating with MCO plans, FQHCs, and clinics that worked with and knew the Medicaid population was also critical in getting participants enrolled because of the established relationships they had with members.

The experiences of the MIPCD States demonstrated that the design and delivery of incentive programs were critical factors in whether these programs were successful. All States provided participants with monetary incentives in the form of cash, gift cards, or other money-value item, or flexible wellness account funds. While participants indicated in the beneficiary survey and focus groups that they preferred monetary over other types of incentives, factors in the design and structure of the incentive program were equally important in the effectiveness of these programs. The process for obtaining incentives needed to simple; incentives need to be delivered immediately once the incentivized behavior is achieved; and there must be clear communications with the participant about the program swith multiple steps participants needed to take to get their incentive or had a delay from when the incentivized behavior occurred to when the participant received the incentive resulted in participants who often did not understand the connection between the behavior and the incentive.

The MIPCD program provided the opportunity to study Medicaid incentive demonstration programs in 10 States that addressed varying chronic diseases and implemented differing approaches to program implementation and program design. With each of these States successfully implementing rigorous, randomized evaluations with meaningful metrics, it is possible to assess the impact and effectiveness of these demonstrations on behavior change. States considering implementing similar programs will be able to utilize these data to inform their design decisions moving forward.

While States could not sustain their MIPCD programs as they existed in the demonstration, most States worked to find ways to maintain some of the program services (i.e., diabetes prevention classes, nicotine replacement therapy, gym or Weight Watchers memberships). Vehicles States exploring included Section 1115 demonstrations, a Medicaid pilot, funding through other programs, and by embedding services in MCOs.

SECTION 4 UTILIZATION AND EXPENDITURES OF HEALTH CARE SERVICES



MIPCD programs used incentives to promote uptake of services that could improve the health of Medicaid beneficiaries with chronic conditions. Improved health, in turn, might further affect service use and health care expenditures. Our hypothesis was that MIPCD participants receiving incentives would obtain more services promoted by the MIPCD programs, leading to improvements in health, which would result in less use of highcost health care, such as inpatient admissions and ED visits. Reductions in

inpatient admissions and ED visits would then lead to reductions in inpatient expenditures, ED expenditures, and total expenditures.

While reductions in Medicaid expenditures are an important outcome in assessing the success of these programs, they are not the only measure of success. Changing patterns of health care often takes time to achieve, so MIPCD programs may not have any impact on high cost utilization and expenditure measures in the months (or even years) following participation. For example, MIPCD programs focusing on smoking cessation may have little to no effect on health care costs and utilization in the one or two years after MIPCD, but if the programs successfully motivate enrollees to quit, they may prevent smoking-related complications later in life, thereby lowering utilization and costs in the long run. Therefore, a clearer test of MIPCD programs and better health as measured by changes in health metrics that were expected to change through participation.

4.1 Key Findings

Across MIPCD programs, many program participants used significantly more of a service if they received a financial incentive. Among the diabetes prevention, weight management, and diabetes management programs in Minnesota, Montana, and New York, participants receiving incentives to attend a diabetes prevention program (DPP) class attended significantly more DPP classes than the control group. Findings for other types of services such as meetings with a health coach or doctor, gym visits, or attendance at Weight Watchers meetings were more mixed, with incentivized participants using significantly more of a service in some programs but not others.

Key Findings

- Many program participants used significantly more of a preventive service if they received a financial incentive.
- Findings suggest that program participants receiving incentives had greater improvements in select health outcomes. For example, incentive recipients in **Minnesota** and **Texas** lost more weight than control group members, and incentive recipients in **California** and **Wisconsin** reported a greater likelihood of smoking cessation relative to control group members. However, the improvements were often small in magnitude and were not always statistically significantly different between incentive and control groups.
- Incentives generally did not have a significant effect on other Medicaid utilization or expenditures; though for some States there were statistically significant reductions in select utilization and expenditure outcomes.
- When States tested different approaches to providing incentives, there were no clear patterns to suggest that one type of incentive design was more successful than another in improving health or reducing claims-based expenditures and utilization.

Among the smoking cessation programs, participants receiving incentives in **California**, **Connecticut**, and **Wisconsin** made significantly more calls to a quitline or attended more smoking cessation counseling sessions relative to a control group.

States also saw some success in improving health outcomes among participants. Participants who received incentives often showed improvements in health, though improvements were often small in magnitude and did not always represent clinically significant change. Compared to the control group, incentivized participants had greater reductions in weight loss and HbA1c and blood pressure levels; more minutes of physical activity; improvements in self-reported health status; greater likelihood of reporting a smoking cessation quit attempt or having ceased smoking; and greater likelihood of having ceased smoking, confirmed via biochemical tests. However, these improvements in health were not always statistically significant.

With the demonstrated associations between receipt of incentives and greater uptake of prevention activities and subsequent improvements in health, we examined whether incentives led to reductions in other health care utilization and expenditures. Overall, there were no consistent patterns across programs suggesting that MIPCD participants who received incentives had statistically significantly less utilization or fewer Medicaid expenditures after participation relative to participants that did not receive incentives. Overall claims-based expenditures and utilization findings were not completely unexpected. Changing patterns of health care often takes time to achieve, so MIPCD programs may not necessarily be expected to have immediate impact on high-cost utilization and expenditure measures in the months (or even years) following participation.

When States tested different approaches to providing incentives, that is, incentivizing activities (process), meeting health outcome targets (outcome), or both activities and health outcomes (process plus outcome), evidence that one approach was more effective than another approach was mixed. There were no clear patterns to suggest that one type of incentive design was more successful than another in improving health or reducing claims-based expenditures and utilization.

4.2 Evaluation Questions

To examine the effects of the MIPCD programs on utilization, expenditures, and health outcomes, we assessed the impact of States' programs to answer the following evaluation questions:

- Have the MIPCD programs improved utilization of services incentivized by the MIPCD program?
- Is receipt of incentives associated with improved health outcomes of participants?
- Is receipt of incentives associated with reduced inpatient admissions and ED visits?
- Is receipt of incentives associated with reduced total Medicaid expenditures, inpatient expenditures, and ED expenditures?

4.3 Data Sources

The utilization and cost analyses discussed here rely on data from two sources: (1) the MIPCD State MDS, and (2) State Medicaid enrollment, fee-for-service claims, and managed care encounter data. These data sources are briefly described below.

4.3.1 MIPCD State MDS

The MIPCD State MDS includes data on enrollment, demographics, service utilization, incentive amounts received by participants, and health and behavior outcomes (e.g., weight, blood pressure, reports of smoking cessation) for incentive and control-group program participants at the time of enrollment in the program, during the program, and for a period after enrollment in the program.

4.3.2 Medicaid Enrollment, Fee-for-Service Claims, and Managed Care Encounter Data

Medicaid enrollment data files included information that was used to describe the incentive and control-group participants, such as why an individual enrolled in Medicaid (i.e., low income or categorical restrictions such as disability and age), date of birth, sex, and race/ethnicity. Medicaid fee-for-service claims and managed care encounters detailed the services rendered to a beneficiary, including the type of service rendered, the dates on which services were rendered, the service provider, and the amount paid to the provider. The one significant difference between claims and encounter data is that some States do not record the amount paid to the provider on encounter claims, which was the case in **Minnesota's** encounter data.

4.4 Analytic Approach

4.4.1 Study Population and Data Availability

To assess the impact of the MIPCD program on utilization and expenditures, we analyzed MIPCD State MDS, Medicaid enrollment, fee-for-service claims, and managed care encounter data for the 10 States. MIPCD State MDS and Medicaid claims were submitted for incentive and control-group participants. Control-group members were randomized into the control group by the States. Most States enrolled adult beneficiaries older than 18 years. **Nevada's** Healthy Hearts Program was an exception, as it was limited to children younger than 18 years.

States provided Medicaid claims data for 2 years before entry into the MIPCD program for incentive and control-group participants (i.e., "pre-period") and data for 1–3 years after enrollment into the program (i.e., "post-period"). To conduct a difference-in-difference analysis (see *Section 4.4.3* for additional details), participants with no pre-period data were removed from the analysis. Unlike the claims data, the MIPCD State MDS does not provide information on MIPCD participants before their enrollment in the MIPCD program. *Table 4-1* describes the years of data available, by each data source, as well as the number of study participants in each State.

State	Time period of MIPCD State MDS	Number of enrollees in the MIPCD State MDS	Time period of Medicaid claims data	Number of enrollees in the Medicaid claims data	Maximum number of post- period quarters of claims data
California	January 2013– December 2015	RCT 1: 3,847	March 2010- December 2015	RCT 1: 3,276 ¹	14
Connecticut	January 2013– December 2015	4,052	January 2012– December 2015	3,998	11
Hawaii	January 2013– December 2015	HI-PRAISE: 2,003 Kaiser: 320	January 2010– December 2015 ²	HI-PRAISE: 2,003 Kaiser: 320	11 2
Minnesota	January 2013– December 2015	1,101	January 2011– December 2015	1,101	12
Montana	January 2013– December 2015	261	January 2010– December 2015	244	16
Nevada ³	January 2013– December 2015	Healthy Hearts Program: 1,674 AmeriHealth/Health Plan of Nevada: 98	January 2011– December 2015	Healthy Hearts Program: 1,068 AmeriHealth/Health Plan of Nevada: 90	19
New Hampshire	January 2013– December 2015	Prescriber Referral: 146 CBT: 214 Quitline: 305 Gym: 169 InShape: 596 Weight Watchers: 87	January 2013– December 2015	Prescriber Referral: 145 CBT: 214 Quitline: 304 Gym: 169 InShape: 594 Weight Watchers: 87	15

 Table 4-1

 Time periods and number of unique enrollees in the Medicaid claims data and MIPCD State MDS, by State

(continued)

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State	Time period of MIPCD State MDS	Number of enrollees in the MIPCD State MDS	Time period of Medicaid claims data	Number of enrollees in the Medicaid claims data	Maximum number of post- period quarters of claims data
New York	January 2013– December 2015	Diabetes Prevention: 560 Diabetes Management: 959 Hypertension Management: 920 Smoking Cessation: 1,840	July 2011– December 2015	Diabetes Prevention: 559 Diabetes Management: 959 Hypertension Management: 920 Smoking Cessation: 1,840	7
Texas	January 2013– December 2015	1,262	April 2010– December 2015	1,262	15
Wisconsin ⁴	January 2013– December 2015	Striving to Quit: 1,960 First Breath: 1,032	April 2011– December 2015	Striving to Quit: 1,900 First Breath: 1,031	14 10

Table 4-1 (continued) Time periods and number of unique enrollees in the Medicaid claims data and MIPCD State MDS, by State

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¹ In addition to the randomized control trial (RCT 1), California tested re-engaging individuals in smoking cessation activities who had previously called the quitline. For the Medicaid claims analysis, the focus was on RCT 1 to test the impact of financial incentives on outcomes. Furthermore, due to inconsistencies in matching multiple data sources, the sample size for the Medicaid claims analysis was less than the sample size in the MIPCD State MDS.

² Amounts paid on Medicaid claims for Hawaii's Kaiser group were not available for January 2015–December 2015. Therefore, the claims-based outcomes were only calculated for January 2010–December 2014.

³ Nevada received approval to use Medicaid children who had already completed the Healthy Hearts Program as their control group. There were children who finished the program prior to 2011, which was the start of the Medicaid claims data for this analysis. These children were not included in the Medicaid claims analysis, and this accounts for the larger discrepancy in sample size between the MIPCD State MDS and the Medicaid claims analysis.

⁴ Wisconsin allowed participants in Striving to Quit and First Breath to re-enroll in the program. With each new enrollment, they were allowed to earn incentives for engaging in the program. Sixty-two participants re-enrolled in Striving to Quit, and eight participants re-enrolled in First Breath. Therefore, seventy individuals were analyzed twice in the MIPCD State MDS analysis.

It is important to note that the number of MIPCD participants varied by data source, with fewer participants in the claims data than in the MIPCD State MDS for two primary reasons. First, participants with no pre-period claims data were removed from the claims analysis. Second, States did not always provide a comprehensive list of participants in the claims data. Overall, discrepancies in sample size were minor.

4.4.2 Measures of Interest

Key independent variable—The primary predictor of interest is whether a MIPCD participant **received incentives** for participating in the program.

Claims-based utilization and expenditure measures—Rates of utilization and expenditures were examined in the period surrounding the patient's enrollment date, with the baseline period comprising up to 8 quarters (2 years) before enrollment and the intervention period comprising quarters after enrollment. Not every enrollee had a claims history spanning the full 2 years before enrollment in the MIPCD program, and not every enrollee had the same number of quarters of post-enrollment in MIPCD. Those who enrolled in the program soon after the State implemented the program had more quarters of post-enrollment data than those who enrolled near the time when the State submitted its claims data for analysis. In each State, incentive and control group participants had similar distributions of pre-enrollment and post-enrollment quarters of Medicaid data.

The following measures were examined for each quarter for which we had data for a participant:

- total per-member-per-month (PMPM) expenditures,
- binary indicator of whether an enrollee had an inpatient stay in the quarter,
- inpatient PMPM expenditures,
- binary indicator of whether an enrollee had an ED visit in the quarter,
- ED PMPM expenditures, and
- binary indicator of whether an enrollee had an outpatient visit for evaluation and management services (for selected States).

We calculated the outpatient visit measure for **Minnesota**, **Nevada**, and **New York**. **Minnesota** did not provide amounts paid to providers in the claims data for their managed care enrollees. As a result, expenditure data were only available on fee-for-service claims, which underestimated the total expenditures, so we analyzed outpatient visits to expand our understanding of patterns of utilization among MIPCD participants. **Nevada's** program primarily consisted of children younger than 18 years; because children have fewer hospitalizations and ED visits than adults, we also examined this outcome to better understand patterns of utilization among the child participants. **New York** specifically incentivized visits to the doctor in its diabetes management and hypertension management programs, so we also examined outpatient visits in these programs.

Some program enrollees may not be enrolled in Medicaid for all 3 months of each quarter. Because of the differential time enrolled within a quarter, all enrollees' outcomes (except inpatient hospitalization and inpatient expenditures) were adjusted to mimic full exposure to Medicaid in the quarter. Cost and utilization measures were "quarterized" by multiplying each enrollee's non-inpatient utilization and costs by the inverse of the fraction of time that the patient was enrolled in Medicaid during the quarter. Inpatient hospitalizations and expenditures were not adjusted for partial-quarter enrollment in Medicaid because they are rare, costly events, and adjustment could result in large overestimates of these measures.

Claims-based covariates of interest—In multivariate analyses, we adjusted for several sociodemographic characteristics, including age, sex, race, ethnicity, reason for Medicaid eligibility in the year before enrolling in the MIPCD program, total months enrolled in Medicaid (defined as number of months the enrollee was in the Medicaid claims data file), whether the beneficiary was continuously enrolled in Medicaid (defined as whether a beneficiary is enrolled in Medicaid for every month starting when the beneficiary first enters the study period through his or her exit from the data set), and whether the beneficiary was also enrolled in Medicare (dually eligible).

Claims-based special populations—As described in *Section 6*, all States targeted adults with or at risk of developing chronic conditions. Additionally, States targeted diverse populations, such as those with mental illness or substance use disorders or racial/ethnic minorities. Most States also considered participants dually enrolled in Medicare and Medicaid to be a special population because these enrollees typically have higher morbidity and consequently have greater health care expenditures. Similarly, participants enrolled in Medicaid because they are low income and disabled can be considered a special population, given their higher morbidity and expenditures compared with those enrolled in Medicaid only because they are low-income. Therefore, we examined the impact of the MIPCD programs on utilization and expenditures for the following special populations:

- Medicare-Medicaid enrollees: identified as ever being reported as dually eligible for Medicare in the Medicaid enrollment data, and
- Beneficiaries with disabilities: identified by Medicaid codes detailing reason for enrollment.

Not all States had enough participants designated as a special population to warrant additional analyses. For example, in **Texas** all participants were enrolled in Medicaid because of disability. Therefore, we limited the special populations analysis to Medicare-Medicaid enrollees only. Most of **Nevada's** MIPCD participants were children, and relatively few were disabled (2 percent of the sample). None were dually eligible for Medicare.

MIPCD State MDS-related utilization variables and covariates—To examine the impact of providing incentives on engagement in MIPCD program activities, we examined the outcomes of interest described in *Table 4-2*. In analyses of these outcomes, we also controlled

for the possible influence of the sociodemographic characteristics listed in *Table 4-2*. The MIPCD State MDS captured information on sex, age, race, ethnicity, and education. States varied in the extent to which they reported complete data for these characteristics. If one of these characteristics is not listed below for a State, there were significant missing data for that characteristic (e.g., education was not well captured by many States). Most States reported that all participants completed the program, but in States where this was not the case, we also controlled for program completion. Time enrolled in the MIPCD program also influenced engagement in program activities; therefore, we controlled for the number of days a participant was enrolled, from date of entry into the program through program completion date or the end of the last quarter through which States reported data (December 30, 2015).

State	MIPCD program service	I	Health outcomes	Characteristic of interest
California •	Number of helpline calls	•	Self-report of a quit attempt Self-report of 30- day smoking abstinence period	Age, sex, race, ethnicity, education, program time
Connecticut •	Number of individual smoking cessation counseling sessions Number of quitline calls	•	Self-report of a smoking cessation service within first 30 days of program participation Self-report of smoking cessation	Age, sex, race, ethnicity, education, program time
Hawaii •	Number of visits with a health coach Number of individual-only diabetes education sessions Number of behavioral health counseling sessions Number of individual-only smoking cessation sessions	•	Reduced HbA1c level to <7%	Age, sex, race, ethnicity, program time
Minnesota •	Number of core diabetes prevention program sessions Number of post-core diabetes prevention program sessions	•	Lost 5% body weight Average weight loss	Age, sex, race, program time, program completion
Montana •	Number of core diabetes prevention program sessions Number of post-core diabetes prevention program sessions	•	Lost 5% body weight Average weight loss Minutes of physical activity	Age, sex, race, program time, program completion

Table 4-2
Utilization of MIPCD program services and select health outcomes, by State

(continued)

State	MIPCD program service	Health outcomes	Characteristic of interest
Nevada ¹	 Healthy Hearts Program: Number of patients attaining goal at week 12 of the program, child-only incentive Healthy Hearts Program: Number of patients attaining goal at week 12 of the program, child and parent incentive Amerigroup/Health Plan Nevada: receipt of evidence- based diabetes care (HbA1c test, LDL cholesterol test, and eye exam) 		Age, sex, program time, program completion
New Hampshire	 Number of gym sessions (weight program) Number of Weight Watchers meetings (weight program) Number of health mentor sessions (weight program) Number of quitline calls (smoking cessation program) Number of cognitive behavioral therapy calls (smoking cessation program) 	 Change in BMI Minutes physical activity Self-report of smoking cessation Biochemical tests for smoking cessation 	Age, sex, race, ethnicity, education, program time, program completion
New York	 Number of diabetes prevention program sessions (diabetes prevention program) Number of diabetes management primary care visits (diabetes management program) Number of diabetes-related prescriptions filled (diabetes management program) Number of hypertension management primary care visits (hypertension program) Number of hypertension-related prescriptions filled (hypertension program) Number of smoking cessation counseling sessions attended (smoking cessation program) Number of smoking-related prescriptions filled (smoking cessation program) 	 Lost 5% body weight Average weight loss Reduced HbA1c level to <7% Change in blood pressure 	Age, sex, race, ethnicity, program time

Table 4-2 (continued)Utilization of MIPCD program services and select health outcomes, by State

(continued)

State	MIPCD program service	Health outcomes	Characteristic of interest
Texas	• Number of patients receiving an incentive for purchasing wellness devices, gym membership or wellness program, nutritional item or health food, or behavioral health interventions	 Lost 5% body weight Average weight loss Self-report of health status Self-report of smoking cessation 	Age, sex, race, ethnicity, education, program time
Wisconsin	 Number of quitline calls (Striving to Quit program) Number of prenatal smoking cessation counseling visits (First Breath program) Number of postpartum smoking cessation counseling visits (First Breath program) Number of postpartum smoking cessation quitline calls (First Breath program) 	 Biochemical tests for smoking cessation Self-report of smoking cessation 	Age, sex, race, ethnicity, education, program time, program completion

Table 4-2 (continued)Utilization of MIPCD program services and select health outcomes, by State

¹ Covariate-adjusted regression analyses of MIPCD program services were not conducted in Nevada's Healthy Hearts Program because the State did not report on program goal attainment for the control group.

4.4.3 Statistical Analyses

Because each State's proposed program design, incentive structure, target conditions, and outcomes of interest were unique, we conducted a separate quantitative analysis for each State. Following an intent to treat approach, we included all participants in analyses, regardless of whether the participant completed the program or used incentivized services.

Descriptive analysis—All States randomized participants into the incentive or control group (**Hawaii** had two programs, but only one had an incentive and control group that was randomized). We assessed the success of each State's randomization process by calculating standardized differences in means (or proportions) in sociodemographic, enrollment, and preperiod total Medicaid expenditures between incentive and control groups. We also used *t*-tests and chi-square tests to test for significant differences between the two groups on these characteristics. Across States, incentive and control group participants were fairly comparable on almost all characteristics we examined. See *Section 4.6.1* for a summary of characteristics of MIPCD participants in the Medicaid claims data.

Regression analysis—For the claims-based analysis, we employed a difference-indifference regression framework to test for the effect of receiving incentives on our outcomes of interest. For the utilization measures, we fit a logit difference-in-difference model for binary outcomes. For the expenditures outcomes, we fit a linear difference-in-difference model.³ The difference-in-difference model was estimated as

Any Health Care Visit/Cost = $\beta_0 + \beta_1$ PostYear + β_2 Incentive + β_3 PostYear * Incentive + β_4 Covariates + ϵ ,

where separate models were estimated for each measure of utilization (e.g., did the MIPCD participant have an inpatient admission in the quarter, or did the participant have an ED visit in the quarter). "PostYear" is an indicator of whether the observation is from the pre- or post-intervention period, "Incentive" is an indicator of whether the participant was in the incentive group, and PostYear * Incentive is an interaction term. Covariates represent vectors of participant characteristics described above in *Claims-Based Covariates of Interest*. Under this specification, β_3 is the average intervention effect during the post-demonstration period. This term is the difference-in-difference estimate and the primary variable of interest. This term reflects how the outcome changed between the pre-intervention period and the post-intervention period for the incentive group relative to the change between the pre-intervention period and the post-intervention period for the control group.

In these linear specifications, a *negative* value for the difference-in-difference estimate corresponds to *less growth* in expenditures over time for the participants receiving incentives relative to control group participants, and a *positive* value corresponds to *greater growth* in expenditures over time for the participants receiving incentives relative to the control group. For this analysis, a negative value is preferable in that it suggests that receipt of incentives led to greater reductions in cost growth.

Interpretation of the difference-in-difference estimate is similar for the binary outcomes, but instead of looking at changes in average expenditures, we examined changes between the incentive and control groups in the predicted probability of having an inpatient admission, ED visit, or outpatient visit. For binary outcomes, rather than calculate odd ratios we used the Puhani method to calculate differences in the predicted probability of using services between the control and treatment groups (Puhani, 2012).⁴ Statistical significance is measured at p < .10 or 90 percent.

Hawaii's federally qualified health center (FQHC)-based HI-PRAISE program did not have a comparison group. Therefore, the sample included only patients receiving incentives, and we estimated a modified version of the regression above without the variables "Incentive" and "PostYear * Incentive." Additionally, a linear time trend is added to the regression to account for changes in utilization and spending due to secular trends that are not otherwise captured through a comparison group. In the HI-PRAISE regressions without a comparison group, we estimated the change in utilization (or expenditures) between the baseline and intervention period for participants. These results should not be interpreted as the causal impact of MIPCD program

³ With the relatively small study sample sizes, the number of observations with 0 or 1 inpatient admissions and 0 or 1 ED visits in a quarter was quite large. Therefore, we chose to create binary measures of any utilization instead of modeling these outcomes as a count distribution.

⁴ This approach results in predicted probabilities that reflect the average treatment effect on the treated (ATET).

participation because there was no comparison group. Rather, results should be interpreted as merely suggestive because it is possible that the results are due to external factors besides MIPCD participation that cannot be accounted for without a comparison group.

Hawaii also provided Medicaid claims data for a non-randomized comparison group of Medicaid beneficiaries not participating in MIPCD but who had diabetes. We conducted a secondary analysis in which we matched these comparison group beneficiaries to the HI-PRAISE enrollment group. HI-PRAISE participants enrolled in the program from February 2013 through December 2014. In a given month, we matched individuals enrolled in HI-PRAISE to a comparison group member who looked similar to the HI-PRAISE enrollee. Covariates used to match HI-PRAISE beneficiaries to comparison group Medicaid beneficiaries were gender, race, Medicare-Medicaid eligibility, age, reason for Medicaid eligibility, total months of Medicaid enrollment, and a binary indicator for continuous Medicaid enrollment.⁵ Once HI-PRAISE enrollees were matched to a comparison group individual, we conducted the difference-in-difference analysis.

<u>Clustering</u>. Because the evaluation design is characterized by repeated outcomes on the same enrollee over time, we made cluster adjustments to the standard errors in estimating demonstration effects in all regression models. In some MIPCD programs, there are levels of clustering in addition to the repeated outcomes over time. For example, when programs enroll participants into a diabetes prevention class, participants are clustered under a particular teacher. Participants with the same teacher may do better (or worse) than participants with another teacher, based on the relative effectiveness of the teacher. However, by clustering for the repeated outcomes on the same enrollee, we sufficiently adjust the standard errors to also address this second level of clustering. An important point to note is that, compared with an independent sample, samples that adjust for clustering take a larger intervention effect or data from additional demonstration quarters to reject the null hypothesis of no effect of the incentive on outcomes.

<u>Special populations for the claims analysis</u>. To examine outcomes among special populations, we tested whether effects differed for members of a special population and those who were not members of a special population. To do this, we ran two additional sets of regression models, the first included an additional interaction term for whether the participant was a member of the special population; this term was a three-way interaction.⁶ We also then stratified the study sample to examine the impact of the MIPCD program specifically on members of the study sample who were members of the special population (e.g., beneficiaries

⁵ We used a probit model to obtain the predicted probability of HI-PRAISE enrollment based on the listed covariates and then matched HI-PRAISE enrollees to a comparison group member who had a similar predicted probability of enrollment.

⁶ The interaction term for special population is a three-way interaction. For example, the three-way interaction term to test if there are differences in outcomes for the disabled versus the non-disabled is specified as: Any Health Care Visit/Cost_i = $\beta_0 + \beta_1$ PostYear + β_2 Incentive + β_3 PostYear * Incentive + β_4 Disabled + β_5 Disabled * Incentive + β_6 Disabled * PostYear + β_7 PostYear * Incentive * Disabled + β_8 Covariates + ϵ . β_7 is the three-way interaction term.

with disabilities) and then separately the impact on members who were not part of the special population (e.g., non-disabled enrollees).

Special considerations for the MIPCD State MDS analysis—Similar to the approach taken for the Medicaid claims analyses, we assessed the distribution of sociodemographic characteristics between the incentive and control groups within each State. To assess the impact of receiving incentives on the outcomes of interest, we conducted regression analyses for all States except **Texas** and one component of **Hawaii's** program. **Texas's** control group, by design, does not receive the same set of services as the incentive group; the control group consists of Medicaid beneficiaries who otherwise meet the criteria for enrollment into MIPCD (i.e., same diagnoses, reside in the same geographic area as the MIPCD enrollees) but who were not randomized into the incentive group. Therefore, we were unable to compare MIPCD utilization between the incentive and control groups. **Hawaii** did not report on a control group for the HI-PRAISE component of its program. For **Texas** and **Hawaii** HI-PRAISE, we present descriptive information on utilization for the incentive group.

The MIPCD State MDS data did not provide information on utilization of health services or health outcomes before enrollment in the MIPCD program. Therefore, we did not consider a difference-in-difference regression approach, but we did include sociodemographic characteristics in all regression models to control for the possible influence of these characteristics on outcomes.

We fit negative binomial or Poisson models for all outcomes that reflect counts of visits, sessions, or calls. We fit a logit model for all outcomes that reflect whether the participant ever received an outcome, including certain health outcomes. For selected health outcomes (e.g., weight and minutes of physical activity), we fit a linear model to examine the change in the measure over time. As explained above, we followed an intent-to-treat approach for the MIPCD program service utilization analyses. However, we controlled for whether a beneficiary completed the program.

States were charged with examining how health outcomes changed over time as part of their State-specific evaluations, and some States have provided detailed analyses in their final evaluation reports to CMS. Others will provide additional findings in manuscripts submitted to peer-reviewed journals. To complement the States' work in this area, we analyzed health outcome data as well, though our results are not always as extensive as the analyses done by States. *Section 8* includes a discussion of the States' findings from their own evaluations.

For our analyses of health outcomes, we subset the analysis to those who had sufficient outcomes data available for analysis (e.g., had at least two outcome measures to examine change in the outcome over time). Therefore, the sample size for these regressions was often smaller than the total number of reported participants in the MIPCD State MDS. *Section 4.5.3* (specifically *Table 4-5*) summarizes the sample size for each outcome regression model. This approach considered only individuals who chose to engage in the program long enough to have multiple health outcome measurements taken, and one could assume these participants may have been more likely to improve their health over time compared to those who did not provide the health outcome data. Therefore, this analysis may be viewed as a "best-case scenario" in examining how successful the use of incentives was in improving health. We also discuss in

Section 4.5.3 how findings changed if we included individuals in the analysis without multiple health measurements and instead assumed that they had no change from baseline measurements or no improvements in health. The true effects of using incentives on health outcomes are most likely in between the "best-case scenario" and the latter approach.

In many States, outcome measures were taken repeatedly, but success in capturing this information over time varied widely across measures and States. For simplicity and consistency across States, we collapsed repeated measures into the difference in the outcome from the baseline measure and the last measure for a participant to create a single measure of change over time. In these regression models, we included a covariate for time in the program to account for program exposure time and its influence on the number of outcome measures a participant had.

4.5 MIPCD State MDS Analysis: MIPCD Program Effects on Utilization of MIPCD Program Services and Health Outcomes

4.5.1 Incentive Amounts Disbursed

All MIPCD programs distributed financial incentives to pay for participating in particular health promotion activities or for meeting milestones in health promotion utilization, health outcomes, or both. These payment amounts are reported in the MIPCD State MDS through December 2015 (*Figure 4-1*).

Figure 4-1 Amount of incentives disbursed from MIPCD program start through December 2015, by State



Disbursed incentives range from a low of \$14,295 in **Montana** to a high of \$1,454,995 in **Texas**. The amounts disbursed were a function of program design (average value of incentives provided to participants) and the number of enrollees in a program. It is important to note that payments reported may underestimate the value of incentives provided to participants to support them in meeting their health goals. For example, payments made for transportation to a class or a gym or child care were not always recorded by States in the MIPCD State MDS.

4.5.2 Utilization of MIPCD Program Services

In *Table 4-3*, we present the mean rates of utilization of MIPCD services and the results from the covariate-adjusted regression analyses that examined the association between receipt of incentives and use of the MIPCD service. If incentivized to utilize a particular service, program participants often used significantly more of the service compared to the control group. Incentivized participants attended more diabetes prevention program classes and made more calls to a quitline or attended more smoking cessation counseling sessions. Findings for other types of services such as meetings with a health coach or doctor, gym visits, or attendance at Weight Watchers meetings were more mixed, with incentivized participants using more of a service in some programs but not in other programs.

Diabetes prevention—Minnesota, **Montana**, and **New York** each tested the impact of financial incentives on attendance in the 16-session diabetes prevention program, and all three saw significantly more class attendance in the incentivized group than in the control group.

Incentivized participants in all three States were also more likely to have attended nine or more of the diabetes prevention program (DPP) classes. The first eight sessions teach the fundamentals of healthy eating and weight loss while the last eight focus on the challenges maintaining motivation and how to overcome those challenges (Diabetes Prevention Program Research Group, 2002). Therefore, we examined attendance beyond the fundamental sessions. Of **Minnesota's** individual incentives only

Key Findings on the Use of Incentivized MIPCD Services

Across MIPCD programs, many program participants used significantly more of a service if they received a financial incentive.

Diabetes Prevention, Weight Management, and Diabetes Management Programs: In Minnesota, Montana, and New York, participants receiving incentives to participate in a DPP class attended significantly more DPP classes than the control group. Findings for other types of services such as meetings with a health coach or doctor, gym visits, or attendance at Weight Watchers meetings were more mixed, with incentivized participants using significantly more of a service (e.g., gym visits or attending a Weight Watchers meeting) in some programs but not in others.

Smoking Cessation Programs: Participants receiving incentives in California, Connecticut, and Wisconsin made significantly more calls to a quitline or attended more smoking cessation counseling sessions than the control group.

group, 54 percent attended nine or more classes, and 52 percent of the individual plus group incentives group attended nine or more classes, compared to 38 percent of the control group, a statistically significant difference in regression analyses. **Montana** reported that 77 percent of the incentive group attended nine or more classes compared to 63 percent of the control group, a statistically significant difference in regression analyses. Finally, 53 percent of **New York's** process incentive only group, 44 percent of the outcome incentive only group, 40 percent of the process and outcome incentive group, and 31 percent of the control group reported

	DPP classes Mean (SD)	IRR (90% CI)	Provider visits Mean (SD)	IRR (90% CI)	Rx fills Mean (SD)	IRR (90% CI)
Hawaii	_					
HI-PRAISE	_	_	Health coach: 6 (6) Diabetes class: 1 (2)	_	—	
Kaiser incentive	_	_	Health coach: 10 (12)	0.95 (0.77-1.17)		
Kaiser control		_	Health coach: 11 (17)		_	_
Minnesota	_		_		_	
Individual incentives	Core: 9 (7)	Core: 1.26* (1.09–1.45)	—	—	_	_
	Post-core: 2 (3)	Post-core: 1.93* (1.49-2.51)				
Individual + Group incentives	Core: 8 (7)	Core: 1.21* (1.04–1.41)	—	_	_	—
	Post-core: 2 (3)	Post-core: 2.11* (1.60–2.79)				
Control	Core: 7 (6) Post-core: 1 (2)	_	_	_	—	
Montana						
Incentive	Core: 12 (5)	Core: 1.14* (1.03–1.26)	—	_	—	_
	Post-core: 3 (3)	Post-core: 1.48* (1.09–2.03)				
Control	Core: 11 (5) Post-core: 2 (2)	_	_	_	—	_

 Table 4-3

 Utilization of MIPCD services in diabetes prevention, diabetes management, and weight management programs

(continued)

	DPP classes Mean (SD)	IRR (90% CI)	Provider visits Mean (SD)	IRR (90% CI)	Rx fills Mean (SD)	IRR (90% CI)
New Hampshire-Gym Membership	—	—	_	_		_
Incentive	—		Gym visits: 34 (56)	1.26 (0.81–1.96)		_
Control			Gym visits: 23 (39)	_		_
New Hampshire-Weight Watchers	_	—	_	—	_	_
Incentive	—	_	Meeting: 19 (20)	4.19* (2.05-8.56)		_
Control	—	—	Meetings: 5 (10)	_		_
New Hampshire-InShape	—	—	_	_		_
Incentive	_	—	Gym visits: 44 (58) Mentor sessions: 15 (16)	1.50* (1.27–1.77) 1.04 (0.89-1.22)	_	_
Control	_	—	Gym visits: 32 (49) Mentor sessions: 16 (15)	_	_	—
New Hampshire-InShape and Weight Watchers		—	—	_	_	
Incentive	_	_	Gym visits: 54 (69) Mentor sessions: 16 (15) Meetings: 16 (15)	1.77* (1.48-2.11) 1.21* (1.03-1.42) 14.82* (10.52-20.88)	_	_
Control	_	_	Gym visits: 33 (41) Mentor sessions: 14 (15) Meetings: 2 (5)	_	_	_

Table 4-3 (continued) Utilization of MIPCD services in diabetes prevention, diabetes management, and weight management programs

(continued)

	DPP classes Mean (SD)	IRR (90% CI)	Provider visits Mean (SD)	IRR (90% CI)	Rx fills Mean (SD)	IRR (90% CI)
New York-Diabetes Prevention	—	—	—	_	_	—
Incentive (process)	9 (6)	1.67* (1.42–1.96)	—	_	_	
Incentive (outcome)	7 (5)	1.37* (1.16–1.62)	_		_	
Incentive (process+ outcomes)	7 (5)	1.31* (1.09–1.56)	_	_	_	_
Control	6 (5)	_	—	_	_	
New York-Diabetes Management	_	—	_	_	_	—
Incentive (process)	_	_	1 (1)	1.04 (0.88–1.23)	3 (2)	1.00 (0.92–1.09)
Incentive (outcome)	_	_	1 (1)	0.97 (0.82–1.16)	3 (2)	0.98 (0.90-1.06)
Incentive (process+ outcomes)	—	—	1 (1)	0.94 (0.79–1.12)	4 (2)	1.09 (1.00–1.18)
Control	_	_	1 (1)	_	3 (2)	
New York-Hypertension			_	_	_	
Incentive (process)	_	_	0.62 (0.74)	1.00 (0.82–1.22)	4(1)	1.04 (0.96–1.12)
Incentive (outcome)			0.59 (0.78)	0.98 (0.80–1.21)	4 (2)	1.04 (0.95–1.12)
Incentive (process+ outcomes)	_	—	0.68 (0.79)	1.09 (0.90–1.33)	4 (1)	1.02 (0.94–1.11)
Control	_	_	0.60 (0.78)	_	4 (2)	_

 Table 4-3 (continued)

 Utilization of MIPCD services in diabetes prevention, diabetes management, and weight management programs

Notes: CI = confidence interval; DPP = diabetes prevention program; HI-PRAISE = Hawaii Patient Reward and Incentives to Support Empowerment project; IRR = incidence rate ratio; MIPCD = Medicaid Incentives for Prevention of Chronic Diseases; SD = standard deviation; <math>p < 0.10.
attending nine or more classes. The differences between the control group and the process only incentive group and the outcome only incentive group were statistically significant in regression analyses. **Montana** and **Minnesota** also tracked additional diabetes prevention class attendance after the initial 16-week program was completed (these additional classes are known as post-core classes), and on average the incentivized group attended more post-core classes than the control group.

In the two States that used multiple incentive arms to test alternate approaches to providing incentives, evidence that one approach was more effective than another approach was mixed. In **Minnesota**, there was no statistically significant difference in the mean number of diabetes prevention classes between the individual incentive only and the individual and group incentive group. In contrast, **New York's** process only incentive arm had on average nine diabetes prevention classes, while the outcome only and the process plus outcome incentive arms each had on average seven classes. Differences in the attendance of prevention classes across incentive arms in New York were statistically significant.

Diabetes and hypertension management—New York also tested a provider-based program for diabetes management and hypertension, incentivizing doctor visits and medication fills/refills. Notably, there were no statistically significant relationships between incentives and use of those services, and no incentive arm performed better than the others. On the basis of the average number of visits (one) and prescription fills (three or four), filling a prescription may have been an easier activity for participants to engage in than attending a doctor's appointment). Nevada also had a diabetes management group; 98 individuals from Amerigroup and Health Plan of Nevada, two Medicaid managed care organizations, were enrolled in the program. There were two incentive groups—treatment arm 1 received process only incentives and treatment arm 2 received process and outcome incentives—as well as a control group. For these participants, the health plans called or mailed participants reminders of the importance of receiving evidencebased diabetes care. Therefore, the State reported how many times these participants received an HbA1c test, an LDL cholesterol test, and an eye exam. Each of the two treatment arms as well as the control group received on average two HbA1c tests, two LDL cholesterol tests, and two eve exams. Therefore, the difference between treatment arm 1 and the control group was not statistically significant in regression analyses, and the difference between treatment arm 2 and the control group was also not statistically significant.

Hawaii implemented two diabetes management programs: the HI-PRAISE FQHC study and the Kaiser Permanente (a Medicaid managed care organization) study. In both groups, participants with diabetes met with a health coach, and they did so relatively frequently, although the difference was not significantly different in the Kaiser Permanente incentive and control arms, as shown in *Table 4-3*. In addition to receiving cash incentives for evidence-based care for diabetes and for meeting with a health coach, participants also received incentives for attending smoking cessation sessions, attending counseling for any behavioral health concerns, attending diabetes education classes, or a combination of these. In the HI-PRAISE FQHC group, an estimated 45 percent had at least one diabetes education class, 15 percent of those reporting smoking at baseline had at least one smoking cessation class, and 8 percent had at least one session related to behavioral health. The Kaiser group had no diabetes education classes, but 66 percent of the incentive arm who reported smoking at baseline had a smoking cessation session compared to 50 percent of the control group who reported smoking at baseline. However, the difference between the incentive and control groups was not statistically significant in regression analyses. About 7 percent of the incentive group had a counseling session related to behavioral health, compared with 5 percent of the control group, and this difference was also not statistically significant.

Weight management—New Hampshire had a weight management program with four separate programs: (1) gym membership, (2) Weight Watchers, (3) gym membership with a trainer/health mentor, and (4) gym membership with a trainer/health mentor in addition to Weight Watchers. The trainer/health mentor program had the greatest number of enrollees with 596 Medicaid beneficiaries, and the Weight Watchers program had the fewest number of enrollees with 87 Medicaid beneficiaries. Participants who received incentives in the gym membership with trainer/health mentor program and the gym membership with trainer/health mentor program had statistically significantly more gym visits compared to the control group. Participants receiving incentives in Weight Watchers programs attended significantly more Weight Watchers meetings compared to the control group. Notably, in the two groups using trainers, the group receiving incentives did not have significantly more trainer sessions compared to a control group.

Nevada also had a weight management program for children, known as the Healthy Hearts Program. Because the Healthy Hearts Program did not incentivize services in a manner similar to the other MIPCD weight management programs, we do not report these results in *Table 4-3*. Two treatment arms focused on weight management in children; in treatment arm 1, only the child received incentives for meeting key goals, but in treatment arm 2, both the child and the parent/family received incentives for meeting goals. In treatment arm 1, 32 percent of children completed the weight management program; in treatment arm 2, 26 percent of children and their parents completed the program. All those who completed the program received an incentive for goal attainment at week 12.

Smoking cessation programs—In *Table 4-4*, we present the mean rates of utilization of smoking cessation services and the results from the covariate-adjusted regression analyses that examined the association between receipt of incentives and use of the MIPCD smoking cessation services.

Among smoking cessation programs, the findings on service utilization suggest that individuals who are provided financial or other incentives to engage in smoking cessation-related services are more likely to use the services than are those not offered incentives. Participants in **California**, **Connecticut**, and **Wisconsin** used more quitline or in-person counseling for smoking cessation than the control group. There are no reported differences in service use between incentive and control group participants in **New York** and **New Hampshire**.

	Quitlin	e/other calls	Cessation	n sessions with provider
	Mean (SD)	IRR (90% CI)	Mean (SD)	IRR (90% CI)
California				
Counseling + NRT	4 (5)	1.00 (0.94–1.08)	—	
Counseling + NRT + incentives	5 (4)	1.35* (1.26–1.45)	_	_
Control	4 (5)	—	—	
Connecticut	_	_	—	
Original incentive	5 (5)		Individual: 5 (5)	Individual: 2.14* (1.97–2.32)
		1.82* (1.44–2.29)	Group: 6 (5)	Group: 1.85* (1.59–2.15)
High process incentive	5 (5)		Individual: 3 (3)	Individual:
		1 54* (1 16-2 06)		1.14 (0.95-1.37)
		1.51 (1.10 2.00)	Group: 6 (5)	Group: 1.16 (0.83–1.60)
High outcome incentive	6 (7)		Individual: 3 (4)	Individual:
		1 64* (1 12-2 40)		1.16 (0.84-1.59)
		1.01 (1.12 2.10)	Group: 8 (6)	Group: 1.69* (1.23–2.32)
Control	3 (3)	_	Individual: 2 (2)	_
			Group: 4 (3)	
New Hampshire—Quitline	—	—	_	—
Incentive	0.87 (1.26)	1.22 (0.84-1.77)	0	(-)
Control	0.74 (1.19)	—	0	

Table 4-4Utilization of smoking cessation services in smoking cessation programs

	Quitline	e/other calls	Cessation sessions with provider			
	Mean (SD)	IRR (90% CI)	Mean (SD)	IRR (90% CI)		
New Hampshire—Telephonic Smoking Cessation Therapy	_	_	_	_		
Incentive	9 (4)	0.95 (0.81-1.13)	—	—		
Control	9 (5)	—	—	—		
New York	—	—	—	—		
Incentive (process)	2(1)	1.02 (0.95–1.10)	_	_		
Incentive (outcome)	2(1)	1.00 (0.94–1.07)	—	_		
Control	2(1)	—	—	—		
Wisconsin—Striving to Quit		_	_	_		
Incentive	4 (2)	1.37* (1.32–1.43)	_	_		
Control	3 (2)	_	_	_		
Wisconsin—First Breath		_	_	_		
Incentive	Postpartum: 4 (2)	1.42* (1.33–1.53)	Prenatal: 1 (2) Postpartum: 3 (2)	Prenatal: 1.27* (1.10–1.48) Postpartum: 1.26* (1.18–1.34)		
Control	Postpartum: 3 (2)	_	Prenatal: 1 (1) Postpartum: 3 (2)	_		

Table 4-4 (continued) Utilization of smoking cessation services in smoking cessation programs

Notes: CI = confidence interval; IRR = incidence rate ratio; NRT = nicotine replacement therapy; SD = standard deviation. p < 0.10

• California's analysis is restricted to the randomized control trial arm of the program.

• Connecticut's quitline analysis is restricted to participants who used the quitline. The analysis of individual counseling sessions with a provider was restricted to participants who had at least one individual counseling session, and the analysis of group counseling sessions with a provider was restricted to participants who had at least one group counseling session.

In the States that used multiple incentive arms to test alternative approaches to providing incentives, evidence that one approach was more effective than another approach was mixed. California's incentive arm that received telephonic smoking cessation counseling and nicotine replacement therapy (NRT) shipped to the home and financial incentives did make significantly more calls to the quitline (on average five calls) than the group that only received the telephonic counseling plus the NRT (on average four calls). Among participants in Connecticut's program who used the quitline, there was no difference in mean number of calls between the group that received the original incentive and groups receiving higher incentives for meeting certain process activities and those receiving higher incentives for meeting certain outcomes. Among participants who used group counseling in **Connecticut**, the original incentive group did have significantly more sessions than the high process incentive group. Among participants who used the individual counseling, the normal incentive group did have significantly more sessions than the high process and the high outcome incentive groups. However, the sample size for the high process (N = 150) and high outcome (N = 66) incentives were small, which may lead to spurious associations. In New York, there was no difference in quitline calls between the process only incentive group and the outcome only incentive group.

California also examined service use among several more groups. California had an enhanced services group of 42,507 Medicaid beneficiaries who received nicotine replacement therapy shipped directly to the beneficiary's home as well as \$10 for completing a follow-up counseling sessions with the helpline. Almost all of these individuals (96 percent) received at least one nicotine replacement therapy shipment to their home, but far fewer (41 percent) made a call to the helpline to assist with smoking cessation. California also re-engaged 5,200 individuals who had participated in California's MIPCD randomized control trial in addition to individuals who did not participate in the randomized control trial but who called the helpline as part of a pilot program to test incentives to improve outreach. Half of these individuals were re-engaged through mail outreach; the other half through phone outreach. Only 9 percent completed one helpline counseling sessions after enrolling in the re-engagement program.

Utilization of MIPCD services in other programs—**Texas's** MIPCD program promotes weight loss, increased physical activity, healthy eating, and other wellness-related goals among Medicaid beneficiaries with serious mental illness, behavioral health concerns, or both. Because it does not fall easily into categories discussed above, we present the results for Texas separately. The incentive group had on average 22 monthly visits and 6 quarterly visits to their navigator. Less than 10 percent of incentive participants had no engagement with their navigator. Most incentive participants (92 percent) used the wellness account to purchase wellness devices, and 87 percent purchased a nutritional item or health food. Fewer participants (35 percent) used the incentives to purchase a gym membership, and very few (2 percent) used the funds to promote behavioral health (e.g., yoga or meditation). Because the control group does not receive access to the same types of MIPCD services, there were no comparable utilization statistics for the control group.

4.5.3 Health Outcomes Associated with Program Participation

In the following section, we examine select health outcomes. There was incomplete reporting of all health outcome data in the MIPCD State MDS. States either chose not to report on outcomes that they initially indicated they would assess, or follow-up to collect the outcome data was not as successful as States had hoped. Therefore, we selected outcomes that had sufficient data to examine change over time.

Results were promising. Compared to control group participants, incentivized participants had greater reductions in weight loss and HbA1c and blood pressure levels. They also had more minutes of physical activity and improvements in self-reported health status and were more likely to have reported making a

Key Findings

Across MIPCD programs, many program participants showed improvements in health.

Compared to control group participants, incentivized participants had:

- greater reductions in weight loss and HbA1c and blood pressure levels;
- more minutes of physical activity;
- improvements in self-reported health status;
- greater likelihood of reporting a smoking cessation quit attempt or having ceased smoking; and
- greater likelihood of having ceased smoking, confirmed via biochemical tests. These differences in health outcomes between incentive and control groups were not always statistically significantly different from each other.

smoking cessation quit attempt or having ceased smoking. In States that tested for smoking cessation via biochemical testing, more incentivized participants tested positive for smoking cessation compared to the control group. Detailed findings can be found in *Table 4-5*.

Select outcome	State	Sample size for	Conclusion	Prevalence or change in the	Regression-adjusted coefficient		
Select outcome	State	regression	Conclusion	oucone	(5070 CI)		
Weight loss of 5% from	MN	820	Individual Incentive Group > Control Group*	26% > 19%	Odds Ratio: 1.51* (1.08-2.13)		
baseline			Individual + Group Incentive Group > Control Group	21% > 19%	Odds Ratio: 1.06 (0.73-1.53)		
	MT	250	Incentive Group > Control Group	27% > 20%	Odds Ratio: 1.61 (0.96 – 2.72)		
	ΤХ	1,210	Incentive Group > Control Group*	36% > 32%	Odds Ratio: 1.55* (1.20-2.01)		
	HI	303	Kaiser: Intervention Group > Control Group	16.0% > 14%	Odds Ratio: 1.10 (0.64-1.87)		
		1,817	HI-PRAISE	21.19% of the HI-PRAISE group lost 5% or more of weight	_		
	NY	431	Diabetes Prevention Program				
			Process Only: Incentive Group > Control Group*	27.7% > 14.1%	Odds Ratio: 2.59* (1.43-4.72)		
			Outcome Only: Incentive Group > Control Group	20.5% > 14.1%	Odds Ratio: 1.34 (0.70-2.57)		
			Process + Outcome: Incentive Group < Control Group	10.8% < 14.1%	Odds Ratio: 0.80 (0.37-1.75)		
Average weight MN 820 loss from		820	Individual Incentive Group > Control Group*	5 lb > 2 lb	Coefficient: -2.86* (-4.950.79)		
baseline			Individual + Group Incentive Group > Control Group*	5 lb > 2 lb	Coefficient: -2.62* (-4.810.44)		
	MT	253	Incentive Group > Control Group	5.80 lb > 5.27 lb	Coefficient: -0.86 (-3.82 – 2.10)		
	ТХ	1,210	Incentive Group > Control Group*	7.14 lb > 2.21 lb	Coefficient: -6.95 (-10.323.58)		

Table 4-5Impact of incentives on health outcomes, by State

Select outcome	State	Sample size for regression	Conclusion	Prevalence or change in the outcome	Regression-adjusted coefficient (90% CI)
	HI	303	Kaiser: Intervention Group < Control Group	09 lb < 1.92 lb	Coefficient: 1.84 (-0.65 – 4.33)
		1,817	HI-PRAISE	The HI-PRAISE group lost on average 2.21 lb.	
	NY	431	Diabetes Prevention Program		
			Process Only: Incentive Group > Control Group	-4.73 lb > -3.87 lb	Coefficient: -1.31 (-2.89 – 0.26)
			Outcome Only: Incentive Group > Control Group	-4.17 lb > -3.87 lb	Coefficient: -0.33 (-2.03 – 1.36)
			Process + Outcome: Incentive Group < Control Group	-2.59 lb < -3.87 lb	Coefficient: 0.81 (-0.99 – 2.60)
Increases in minutes of physical activity per week	МТ	168	Incentive Group < Control Group	4.8 change in minutes < 12.6 change in minutes	Coefficient: -6.86 (-51.01 – 37.29)
	NH	144	Gym: Incentive Group > Control Group	21.8 change in minutes > -5.4 change in minutes	Coefficient: 25.99 (-39.07 – 91.06)
		497	InShape: Incentive Group > Control Group	58.35 change in minutes > 45.71 change in minutes	Coefficient:14.92 (-13.46 - 43.30)
		70	Weight Watchers: Incentive Group > Control Group*	80.51 change in minutes > 30.32 change in minutes	Coefficient: 73.58* (3.98 – 143.17)
		446	InShape + Weight Watchers: Incentive Group < Control Group	5.05 change in minutes < 81.55 change in minutes	Coefficient: -5.33 (-39.80 – 29.15)

Select outcome	State	Sample size for regression	Conclusion	Prevalence or change in the outcome	Regression-adjusted coefficient (90% CI)		
HbA1c < 7% after baseline if	HI	1,749	HI-PRAISE	38% of participants were in control of their HbA1c	_		
at or above 7% at baseline		309	Kaiser: Incentive Group = Control Group	32.03% < 32.69%	Odds Ratio: 0.93 (0.62-1.41)		
	NY	572	Diabetes Management				
			Process Only: Incentive Group > Control Group*	18.4% > 11.3 %	Odds Ratio: 1.80* (1.02-3.19)		
			Outcome Only: Incentive Group < Control Group	10.9% < 11.3 %	Odds Ratio: 0.93 (0.50-1.76)		
			Process + Outcome: Incentive Group > Control Group	12.3% > 11.3 %	Odds Ratio: 1.13 (0.61-2.08)		
Systolic blood	NY	258	Hypertension Management				
pressure dropped below 140 if			Process Only: Incentive Group > Control Group*	65.1% > 43.1%	Odds Ratio: 2.10* (1.14-3.87)		
baseline					Outcome Only: Incentive Group = Control Group	59.4% > 43.1%	Odds Ratio: 1.75 (0.96-3.17)
			Process + Outcome: Incentive Group > Control Group	58.3% > 43.1%	Odds Ratio: 1.64 (0.89-3.02)		
Self-reported health status	ТХ	1,114	SF 12 Physical Health: Incentive Group > Control Group*	3.42 change in score > 0.21 change in score	Coefficient: 3.31* (1.97-4.66)		
			SF 12 Mental Health: Incentive Group > Control Group*	6.67 change in score > 0.31 change in score	Coefficient: 6.72* (5.11-8.33)		

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Select outcome	State	Sample size for regression	Conclusion	Prevalence or change in the outcome	Regression-adjusted coefficient (90% CI)
Self-report of making a quit	CA RCT	3,221	NRT only: Incentive Group > Control Group*	72% made a quit attempt > 68% made a quit attempt	Odds Ratio: 1.54* (1.25-1.89)
attempt			NRT plus cash: Incentive Group > Control Group*	78% made a quit attempt > 68% made a quit attempt	Odds Ratio: 2.47* (1.97-3.09)
	CT ¹	1,867	Incentive Group = Control Group	56% made a quit attempt = 56% made a quit attempt	Odds Ratio: 0.95 (0.80-1.12)
	ТХ	350	Incentive group	Among the intervention group who reported smoking at baseline, 48% reported a quit attempt.	_
Self-report of NH smoking		146	Prescriber Referral: Incentive Group > Control Group	18% ever reported no smoking > 14% ever reported no smoking	Odds Ratio: 1.33 (0.61-2.91)
cessation		214	CBT: Incentive Group > Control Group	24% ever reported no smoking > 20.0% ever reported no smoking	Odds Ratio: 1.24 (0.70-2.21)
	mokingControl Groupessation214CBT: Incentive Group > Con305Quitline: Incentive Group > 0Group		Quitline: Incentive Group > Control Group	20% ever reported no smoking > 15% ever reported no smoking	Odds Ratio: 1.66 (0.98-2.81)
	WI	901	Quitline: Incentive Group > Control Group	30% ever reported no smoking > 25% ever reported no smoking	Odds Ratio: 1.29 (1.00-1.66)
		915	First Breath: Incentive Group > Control Group*	38% ever reported no smoking > 27% ever reported no smoking	Odds Ratio: 1.69* (1.33-2.14)
Biochemical test NH indicating		82	Prescriber Referral: Incentive Group > Control Group	-0.91 change in cotinine level > -0.32 change in cotinine level	Coefficient: -0.61 (-1.30-0.079)
reductions in smoking		135	CBT: Incentive Group > Control Group	-1.32 change in cotinine level > -1.11 change in cotinine level	Coefficient: -0.037 (-1.42-1.35)
		196	Quitline: Incentive Group > Control Group	-1.04 change in cotinine level > -0.69 change in cotinine level	Coefficient: -0.52 (-1.28-0.24)

Select outcome	State	Sample size for regression	Conclusion	Prevalence or change in the outcome	Regression-adjusted coefficient (90% CI)
	WI	1133	Quitline: Incentive Group > Control Group*	36% had all positive tests after baseline test > 24% had all positive tests after baseline test	Odds Ratio: 1.78* (1.43-2.22)
		649	First Breath: Incentive Group > Control Group*	39% had all positive tests after baseline test > 23% had all positive tests after baseline test	Odds Ratio: 2.29* (1.70-3.09)

*=statistically significant difference at p-value<0.10 > = intervention group had more improvement than control group

< = intervention group had less improvement than control group

¹In Connecticut, over half the study sample is missing health outcome data. Further the sample sizes in the high process, high outcome, and peer-coaching arms are small (< 100 individuals). Because of the missing data and small sample sizes, we combined all incentive arms into one incentive group to assess the 105 outcome.

Weight loss—We examined weight loss in Minnesota, Montana, and New York's diabetes prevention programs; Hawaii's diabetes management program; and **Texas's** program. Among participants who had a measure of weight at baseline and at least one additional weight measurement taken after participation in the program began, we calculated the average change between measurements, and we also calculated whether the participant lost 5 percent or more of his/her baseline weight.

Average weight loss was fairly modest; no treatment arm had more than a 7 lb weight loss on average over time

(*Figure 4-2*). Minnesota had a regression-adjusted change in



I=incentive group; I-1=Incentive group 1; I-2=Incentive group 2; I-3=Incentive group 3; C=control group; MN=Minnesota; MT=Montana; TX=Texas; HI-HiPr=Hawaii HiPrase; HI-KSR=Hawaii Kaiser; NY-DPP=New York Diabetes Prevention Program

*=average weight loss for the incentive group is significantly different from the control group at p<0.10.

weight between the first and last measurement of 3 lbs for both the individual incentive only participants and individual plus group incentives participants compared to the control group; this difference was statistically significant. **Texas's** incentive group also had a significant reduction in average weight of 7 lbs compared to the control group. There were no significant findings for **Montana**, **Hawaii**, and **New York's** diabetes prevention program. **New Hampshire** reported BMI measurements, and among participants with at least two BMI measurements, reductions in BMI were greater for the incentive groups as compared to the control group in the gym, Weight Watchers, and InShape plus Weight Watchers programs. The regression-adjusted change in BMI between the first and the last measurement was -0.58 for the gym program, -1.13 for the Weight Watchers program. None of these changes were statistically significantly different from zero.

In almost all programs, more individuals in the incentive group lost 5% of body weight compared to the control group, and the difference was statistically significant in **Minnesota's** individual incentive group and **New York's** process only incentive group (*Figure 4-3*).

Physical activity—We examined changes in reported minutes of physical activity per week in **Montana** and **New Hampshire** between first and last measurement. In **Montana**, the control group reported a 12-minute increase in physical activity compared to a 5-minute increase in the incentive group (regression adjusted change of -6 minutes and 90% CI: -51–37). In **New Hampshire**, the incentive groups in almost all weight-related programs reported more minutes of physical activity compared to the control groups, and the difference was statistically significant in the Weight Watchers program (regression adjusted change of 26 more minutes for

the incentive group compared to the control group in the gym program; 15 more minutes for the incentive group compared to the control group in the InShape program; 74 more minutes for the incentive group compared to the control group in the Weight Watchers program; 5 fewer minutes for the incentive group compared to the control group in the InShape plus Weight Watchers program).

HbA1c—In two diabetes management programs, Hawaii and New York, we examined how many participants were able to bring their HbA1c below 7 percent if HbA1c at baseline was greater

Figure 4-3 Percent of the sample with weight loss of 5% or more



I=incentive group; I-1=Incentive group 1; I-2=Incentive group 2; I-3=Incentive group 3; C=control group; MN=Minnesota; MT=Montana; TX=Texas; HI HiPr=Hawaii HiPrase; HI-KSR=Hawaii Kaiser; NY-DPP=New York Diabetes Prevention Program

*=percentage for the incentive group is significantly different from the control group at p<0.10.

than or equal to 7 percent. In **Hawaii**, 38 percent of HI-PRAISE participants with a baseline HbA1c greater than or equal to 7 percent were able to bring it below 7 percent. In the Kaiser program, 32 percent of incentive groups and 33 percent of the control group were able to bring their HbA1c readings down below 7 percent—a non-statistically significant difference. In **New York's** program, 18 percent of process only incentive participants, 11 percent of outcome only incentive participants, 12 percent of process and outcome incentive participants, and 11 percent of the control group participants were able to bring their HbA1c levels below 7 percent. The difference between the process only incentive group and the control group was statistically significant (odds ratio= 1.80; 90% CI: 1.02-3.19).

Blood pressure—In **New York's** hypertension management program, we assessed how many participants were able to bring their systolic blood pressure below 140 mm Hg if their baseline blood pressure was 140 mm Hg or greater. Sixty-five percent of process only incentive participants, 59 percent of outcome only incentive participants, 58 percent of process and outcome incentive participants, and 43 percent of the control group participants were able to lower their blood pressure to less than 140 mm Hg. The difference between the process only incentive group and the control group was statistically significant (odds ratio= 2.10; 90% CI: 1.14-3.87).

Self-report of health status—Texas administered the SF 12 physical health and SF 12 mental health short form health survey to gauge physical and mental functioning of the incentive and control group participants at baseline and after participation. While both the incentive and control group reported improved functioning after baseline (higher SF 12 score), the incentive group experienced a statistically significant greater improvement in the scores relative to the control group. The regression adjusted change was 3.31 (90% CI: 1.97–4.66) points higher for

the SF 12 physical health, relative to the control group, and 6.72 (90% CI: 5.11–8.33) points higher on the SF 12 mental health, relative to the control group.

Self-report of a quit attempt or smoking cessation—

California, Connecticut, New Hampshire, and Texas had participants self-report on quit attempts or current smoking status (*Figure 4-4*). In California, more participants in the NRT-only and NRT-plus-cash incentives groups reported a quit attempt (72 percent and 78 percent, respectively) compared to participants in the control group (68 percent). Regression analyses showed that the differences were significant. Not all program participants reported information on whether they had abstained from smoking for 30 days; 71 percent of the total sample reported on their abstinence behaviors. However, among those who did report information, more participants in the NRT-plus-cash incentives group reported an abstinent period (48 percent) than did participants in the NRT-only

Figure 4-4 Percent of the sample that self-reported a quit attempt or smoking cessation



I=incentive group; I-1=Incentive group 1; I-2=Incentive group 2; C=control group; CA=California; CT=Connecticut; TX=Texas; NH=New Hampshire; WI=Wisconsin; CBT=cognitive behavioral therapy; RCT=randomized control trial; PR=prescriber referral; Quit=quitline; FB=First Breath

*=percentage for the incentive group is significantly different from the control group at p<0.10.

group (35 percent) and the control group (36 percent). The difference between the NRT-pluscash incentive group and the control group was statistically significant in regression analyses. In **Connecticut**, the same proportion (56 percent) of incentive and control group participants reported a quit attempt. Among incentive group participants in **Texas** reporting smoking at baseline, 48 percent reported a quit attempt. The percent of the study sample reporting smoking cessation was lower than the percent of the study sample reporting a quit attempt. A somewhat larger proportion of incentive group participants in **New Hampshire's** three smoking cessation programs and in **Wisconsin's** two smoking cessation programs reported they had ceased smoking relative to their respective control groups, but the differences were not statistically significant in most programs, except for Wisconsin's First Breath program.

Biochemical test indicating reductions in smoking—New Hampshire, New York, and Wisconsin requested biochemical tests of participants to confirm smoking cessation. Only 2 percent of participants in **New York's** smoking cessation program took a test, so results are not reported here. To operationalize smoking cessation in **Wisconsin**, we looked at the proportion of participants who had test results on all biochemical tests after the baseline test that would

indicate smoking cessation. In Wisconsin's Striving to Quit program, 36 percent of the incentive group had a positive test after the initial baseline test, which indicated smoking cessation; in contrast, 24 percent of the control group had a positive test after baseline. This was a statistically significant difference (Odds Ratio: 1.78; 90% CI: 1.43-2.22). In Wisconsin's First Breath program, 63 percent of the sample had a baseline test and at least one test after the baseline test⁷, and among these who had tests after the baseline test, 39 percent of incentive group participants had all positive tests after the baseline test, and the 23 percent of the control group had all positive tests after baseline. This difference was also a statistically significant (Odds Ratio: 2.29; 90% CI: 1.70–3.09). New Hampshire reported cotinine levels from biochemical tests, so we examined reductions in cotinine levels over time. In all three programs, the average cotinine level was 6 at the baseline test, which was indicative of being a current smoker.⁸ Incentive participants in all three of New Hampshire's smoking cessation programs had greater reductions in cotinine levels between their first and last cotinine tests relative to the reductions experienced by their control groups, but the reductions were not large. Further, the differences between incentive and control groups were not statistically significant (regression adjusted change in cotinine levels: prescriber referral program: -0.61 [-1.30–0.079]; telephonic cognitive behavioral therapy program: -0.037 [-1.42–1.35]; quitline program: -0.52 [-1.28–0.24]).

Change in health outcomes when all participants were included in the analyses— The findings reported above considered only individuals who chose to engage in the program long enough to have multiple health outcome measurements taken, and one could assume these participants may have been more likely to improve their health over time compared to those who did not provide the health outcome data. To test the sensitivity of our findings to the population included in the analysis, we included individuals in the analysis without multiple health measurements and assumed that they had no change from baseline measurements or no improvements in health. In most States, we saw lower estimates of average change in the outcome or the percent of the incentive or control group that met an outcome compared to the results reported in Table 4-5. However, overall conclusions remained unchanged for most outcomes. There were only a few changes to conclusions based on the regression adjusted coefficients. The difference in minutes of physical activity between the incentive and control group in New Hampshire's Weight Watchers program went from statistically significant at p < 0.10 to not statistically significant, even though the incentive group continued to have on average a larger increase in minutes of physical activity. In Connecticut, a smaller percentage of individuals in the incentive group reported a quit attempt compared to the control group, and this difference was statistically significant at p < 0.10. In Wisconsin's quitline program, as described in *Table 4-5*, a larger percentage of the incentive group reported smoking cessation compared to the control group, but now this difference was statistically significant at p < 0.10, where previously it was not significant.

⁷ Among the 63 percent (or 649 women), 48 percent of women had one test after baseline, and 52 percent had two tests after baseline.

⁸ New Hampshire reported cotinine levels from 0-6, which correspond to cotinine levels of 1 ng/mL to 2000 ng/mL, respectively. New Hampshire provided incentives to indivduals who could bring their cotinine levels down to 0, 1, or 2.

4.6 MIPCD State Claims Analysis: MIPCD Program Effects on Claims-Based Expenditures and Utilization

In this section, we explore the impact of receiving incentives on claims outcomes, including PMPM total Medicaid expenditures, PMPM inpatient expenditures, PMPM ED expenditures, inpatient admissions, ED visits, and office visits. Results are grouped by focus of the MIPCD program: diabetes prevention, control, and weight management programs and smoking cessation programs. **Texas's** program did not clearly fit into either of the previous two categorizations; therefore, results for Texas are presented separately.

4.6.1 Characteristics of the Study Sample

Table 4-6 summarizes characteristics of MIPCD participants in the incentive and control groups. The distribution of participants' characteristics was used to assess the success of randomization within MIPCD programs. With randomization, differences between the treatment and control groups can be considered causal. Additionally, successful randomization in MIPCD programs suggests that other demonstrations may be able to implement randomization effectively. We assessed the success of randomization using the Medicaid claims data because they give us more sociodemographic variables to assess than the MIPCD State MDS, which had fewer variables. *Table 4-6* contains means and standard deviations for incentive and control groups side by side for comparison purposes. Additionally, we conducted statistical tests (t-tests) for differences in means for each variable between the treatment and comparison groups. Differences that were statistically significant are denoted with an asterisk next to the intervention group's mean.

As reported in previous annual reports, randomization was fairly successful in MIPCD programs. Over half of the programs had good balance on the characteristics we could examine. These programs included **Hawaii** Kaiser; **Montana**; **New York's** diabetes management, hypertension, and smoking cessation; **New Hampshire's** quitline and telephonic counseling; **Texas**; and **Wisconsin's** quitline and First Breath. Means and standard deviations of the variables were often quite close, even when they were statistically different. The remaining programs that randomized were not as successful at balancing the incentive and control group program arms. The success of randomization depends, in part, on how patients become enrolled in the MIPCD program and how many are enrolled. For example, randomization in **Wisconsin** was successful, which may result from the ease of randomizing patients who called the quitline and the relatively large sample size. On the other hand, **Connecticut** enrolled beneficiaries through clinics, and some of their incentive program arms were quite small (< 100 enrollees). Achieving near-perfect balance in a more complex enrollment environment with wide variation in sample size across program arms is more challenging.

	California								
	Nicotine Replacem (NRT) O N=1,18	nent Therapy nly 5	NRT+ Financial N=1,21	Incentives 2	Control group N=879				
Characteristic	mean	sd	mean	sd	mean	sd			
Age in years, mean	47	12	48	12	47	12			
Female, %	70.1%	45.8%	69.1%	46.2%	70.1%	45.8%			
White, %	62.3%*	48.5%	65.7%	47.5%	67.0%	47.1%			
Hispanic, %	9.5%	29.3%	19.6%	39.7%	8.7%	28.1%			
Black, %	20.9%*	40.7%	9.6%	29.5%	16.9%	37.5%			
Dual, %	39.2%*	48.8%	37.5%*	48.4%	33.0%	47.1%			
Continuously Enrolled, %	34.2%	47.5%	34.2%	47.4%	34.5%	47.6%			
No. Months Enrolled in Medicaid, mean	46	19	47	20	46	19			
Reason for Medicaid Eligibility, %									
Low income	27.8%	44.8%	28.5%	45.1%	29.8%	45.8%			
Disabled/Blind	69.2%	46.2%	68.8%	46.4%	68.2%	46.6%			
Aged	2.9%	16.9%	2.8%	16.4%	2.0%	13.9%			
Baseline Period Total PMPM Expenditures, mean	\$785	\$1,699	\$758	\$1,645	\$724	\$1,423			

 Table 4-6

 Sociodemographic characteristics of incentive and control group MIPCD participants, by State

					Connec	eticut				
	Original incentives N=2,242		High pr incent N=14	High process incentives N=148		High outcome incentives N=64		iching 53	Control group N=1,540	
Characteristic	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Age in years, mean	44*	11	45	11	43	11	49*	9	43	12
Female, %	53%*	50%	52%	50%	47%	50%	62%	49%	59%	49%
White, %	73%*	45%	60%*	49%	78%	42%	43%*	50%	76%	43%
Hispanic, %	—	—	—	_	—	_	—	—	—	_
Black, %	26%*	44%	39%*	49%	22%	42%	54%*	50%	23%	42%
Dual, %	21%*	41%	11%	31%	17%	38%	22%	42%	16%	37%
Continuously Enrolled, %	68%*	47%	68%	47%	80%	41%	60%	49%	71%	45%
No. Months Enrolled in Medicaid, mean	40	10	39	11	37*	11	41	10	40	10
Reason for Medicaid Eligibility, %	—	—	—	_	—	_	—	—	—	_
Low income	67%*	47%	78%	41%	84%	37%	64%	49%	74%	44%
Disabled/Blind	33%*	47%	22%	41%	16%	37%	37%	49%	27%	44%
Aged	—	—	—	_	—	_	—	—	—	—
Baseline Period Total PMPM Expenditures, mean	\$1,440	\$2,540	\$915	\$1,972	\$1,422	\$2,025	\$1,302	\$1,998	\$1,186	\$2,171

		Hawaii H	HI-praise		Hawaii-Kaiser			
	Incentive g N=1,98	group 32	Matched compa N=1,6	Matched comparison group N=1,685		group 0	Control group N=150	
Characteristic	mean sd		mean	sd	mean	sd	mean	sd
Age in years, mean	54	12	54	15	47	11	48	10
Female, %	60%	49%	60%	49%	56%	50%	54%	50%
White, %	8%	28%	10%	30%	22%	42%	20%	40%
Hispanic, %		_	—	_	—	_		_
Black, %	1%	8%	0%	5%	1%	21%	1%	12%
Dual, %	19%	39%	21%	41%	6%	23%	4%	19%
Continuously Enrolled, %	55%	50%	54%	50%	75%	43%	76%	43%
No. Months Enrolled in Medicaid, mean	49*	20	46	22	41	19	43	19
Reason for Medicaid Eligibility, %		_	—	_	—	_		_
Low income	66%	47%	67%	47%	99%	8%	99%	12%
Disabled/Blind	18%	39%	18%	38%	1%	8%	1%	12%
Aged	16%	37%	16%				_	_
Baseline Period Total PMPM Expenditures, mean	\$571	\$1,402	\$531	\$1,542	\$397	\$1,091	\$335	\$622

			Minnes	sota			Montana				
	Individual incentive N=386		Individual + group incentive N=342		Control group N=373		Incentive group N=142		Control group N=102		
Characteristic	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	
Age in years, mean	49	12	48	12	48	12	45	13	46	13	
Female, %	72%	45%	73%	45%	70%	45%	77%	43%	75%	43%	
White, %	17%	38%	26%*	44%	12%	38%	95%	22%	95%	22%	
Hispanic, %	_	_		_	_	_	_	_		_	
Black, %	69%*	47%	53%*	50%	61%	47%	1%	8%	0%	0%	
Dual, %	16%	36%	16%	37%	14%	36%	56%	50%	56%	50%	
Continuously Enrolled, %	10%	30%	9%	28%	11%	30%	74%	44%	73%	45%	
No. Months Enrolled in Medicaid, mean	52	13	53	13	51	13	65	16	65	15	
Reason for Medicaid Eligibility, %	_	_	_	_	_	_	_	_	_	_	
Low income	60%	49%	56%	50%	60%	49%	9%	29%	3%	17%	
Disabled/Blind	34%	47%	39%	49%	34%	47%	87%	34%	92%	27%	
Aged	6%	24%	5%	22%	7%	24%	4%	19%	5%	22%	
Baseline Period Total PMPM Expenditures, mean	\$385	\$1,085	\$471	\$1,106	\$444	\$1,125	\$1,050	\$1,914	\$1,049	\$1,958	

		Ne	vada Healthy H	learts Progra	am		Nevada Adult Diabetes Management				
	Child incentives N=359		Child+p incenti N=33	Child+parent incentives N=335		Control group N=374		group 1	Control group N=29		
Characteristic	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	
Age in years, mean	11	3	11	3	11	3	47	11	48	12	
Female, %	47%	50%	49%	50%	48%	50%	54%	50%	66%	48%	
White, %	5%	21%	9%	29%	6%	21%	41%	50%	41%	50%	
Hispanic, %	76%*	43%	73%*	44%	56%	43%	20%	40%	28%	46%	
Black, %	6%	24%	5%	23%	9%	24%	30%	46%	24%	44%	
Dual, %	0%	0%	0%	0%	0%	0%	3%	18%	3%	19%	
Continuously Enrolled, %	71%	45%	76%	43%	74%	45%	89%	32%	83%	38%	
No. Months Enrolled in Medicaid, mean	44	15	46	15	45	15	33	16	35	16	
Reason for Medicaid Eligibility, %											
Low income	98%	13%	99%	11%	97%	13%	100%	0%	100%	0%	
Disabled/Blind	2%	13%	1%	11%	3%	13%	0%	0%	0%	0%	
Aged	_	_	_	_	_	_	_	—	_	_	
Baseline Period Total PMPM Expenditures, mean	\$63	\$345	\$67	\$359	\$108	\$727	\$46	\$204	\$129	\$637	

	New Hampshire-Weight																	
		rogram			InShape	Program		Weight Watchers Program				InShape+Weight Watchers Program						
	Incentiv N=	e group 84	Control group N=85		Incentive group N=297		Control N=2	Control group N=297		Incentive group N=45 N=42		Incentive group N=45		l group 42	Incentive group N=261		Control group N=253	
Characteristic	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd		
Age in years, mean	43	12	45	13	43	13	43	12	44	11	46	13	43	12	44	12		
Female, %	48%	50%	57%	50%	71%	45%	70%	46%	78%	42%	71%	46%	74%	44%	75%	44%		
White, %	96%	19%	98%	15%	96%	21%	95%	21%	98%	15%	98%	15%	97%*	17%	93%	26%		
Hispanic, %			_	—	—	—		_			—		—	—	—	—		
Black, %	2%	15%	2%	15%	2%	15%	3%	16%	2%	15%	0%	0%	2%	14%	3%	18%		
Dual, %	67%	47%	54%	50%	51%	50%	53%	50%	67%	48%	60%	50%	58%	49%	60%	49%		
Continuously Enrolled, %	69%	47%	66%	48%	61%	49%	64%	48%	69%	47%	71%	46%	66%	47%	64%	48%		
No. Months Enrolled in Medicaid, mean	58	17	59	17	59	15	57	17	65	10	63	12	59	15	59	15		
Reason for Medicaid Eligibility, %		—		—	—	—		—	—	—	—	—	—	—	—	—		
Low income	7%	26%	12%	32%	13%	34%	13%	33%	13%	34%	19%	40%	13%	33%	13%	34%		
Disabled/Blind	64%	48%	59%	50%	63%	49%	61%	49%	62%	49%	50%	51%	59%	49%	57%	50%		
Aged	_	_	_	_		_		_	_	_	_		—		—	_		
Baseline Period Total PMPM Expenditures, mean	\$868	\$1,291	\$902	\$943	\$1,004	\$1,364	\$1,067	\$1,890	\$1,006	\$1,161	\$1,074	\$1,655	\$1,028	\$1,432	\$973	\$1,527		

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	New Hampshire-Smoking											
		Referral		Quit	line		Telephonic Cessation Therapy					
	Incentive N=7	Incentive group N=76		Control group N=69		Incentive group N=153		group 51	Incentive group N=109		Control group N=105	
Characteristic	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Age in years, mean	43	11	44	10	46	11	46	11	45	11	48	11
Female, %	61%	49%	52%	50%	63%	48%	68%	47%	72%	45%	65%	48%
White, %	95%	23%	91%	28%	96%	20%	95%	21%	95%	23%	96%	19%
Hispanic, %	_	_	_	_	_	_	_	_	_	_	_	_
Black, %	4%	20%	3%	17%	3%	16%	3%	18%	5%	21%	3%	17%
Dual, %	55%	50%	54%	50%	60%	49%	60%	49%	62%	49%	65%	48%
Continuously Enrolled, %	59%	50%	70%	46%	63%	49%	70%	46%	70%	46%	64%	48%
No. Months Enrolled in Medicaid, mean	57	15	53	21	59	15	58	18	58	18	59	16
Reason for Medicaid Eligibility, %	_	_	_	_	_	_	_	_	_	_	_	_
Low income	8%	27%	9%	28%	11%	32%	11%	32%	11%	31%	9%	28%
Disabled/Blind	66%	48%	62%	49%	58%	50%	58%	50%	62%	49%	60%	49%
Aged	_	_	_	_	_	_	_	_	_	_	_	_
Baseline Period Total PMPM Expenditures, mean	\$1,149	\$1,872	\$1,601	\$2,539	\$1,038	\$1,422	\$1,105	\$1,666	\$1,093	\$1,702	\$1,127	\$2,966

		New York - Diabetes Prevention Program								New York - Diabetes Management Program							
	Proo incer N=	cess ntive 160	Outc incer N=	ome ntive 148	Process+ incer N=	outcome ntive 111	Control N=1	l group 140	Pro ince N=	cess ntive 254	Outc incer N=2	ome ntive 243	Process- ince N=	+outcome entive =230	Control N=2	l group 232	
Characteristic	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	
Age in years, mean	46	11	49	11	46	11	48	11	52	9	52	9	53	9	53	9	
Female, %	71%	46%	75%	43%	68%	47%	67%	47%	59%	49%	62%	49%	61%	49%	62%	49%	
White, %	4%	21%	12%*	33%	11%*	31%	4%	19%	13%	34%	25%	43%	16%	36%	18%	39%	
Hispanic, %	20%	40%	32%*	47%	24%	43%	20%	40%	37%	48%	34%	48%	40%*	49%	29%	45%	
Black, %	44%	50%	32%*	47%	40%	49%	45%	50%	26%	44%	23%	42%	21%*	41%	30%	46%	
Dual, %	3%*	18%	7%	26%	5%	23%	9%	28%	8%	28%	7%	26%	7%	26%	9%	28%	
Continuously Enrolled, %	89%	31%	87%	34%	85%	36%	85%	36%	93%	25%	94%	24%	91%	28%	91%	29%	
No. Months Enrolled in Medicaid, mean	35	7	35	6	35	6	34	6	39	4	39	5	39	5	39	4	
Reason for Medicaid Eligibility, %	—	—	_	_	—	—	—	_	_	_	_	_	—	—	—	—	
Low income	81%	39%	76%	43%	86%	35%	79%	41%	73%	44%	75%	44%	76%	43%	77%	42%	
Disabled/Blind	19%	39%	24%	43%	14%	35%	21%	41%	27%	44%	26%	44%	24%	43%	23%	42%	
Aged		—	—	—	—	—	—		—			—			—	—	
Baseline Period Total PMPM Expenditures, mean	\$1,260	\$3,123	\$758	\$1,237	\$1,047	\$4,138	\$1,110	\$2,876	\$1,444	\$2,471	\$1,418	\$2,668	\$1,261	\$2,429	\$1,366	\$2,510	

 Table 4-6 (continued)

 Sociodemographic characteristics of incentive and control group MIPCD participants, by State

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		New York - Hypertension Program								New York - Smoking Cessation Program					
	Proc incer N=2	cess ntive 244	Outc incer N=2	ome ntive 223	Process+ incer N=	outcome ntive 232	Control N=2	l group 220	Proc incer N=0	cess ntive 509	Outc incer N=0	ome ntive 604	Control N=0	l group 503	
Characteristic	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	
Age in years, mean	54	9	53	8	54	9	54	8	44	12	45*	13	44	12	
Female, %	60%*	49%	64%*	48%	60%	49%	51%	50%	60%	49%	56%*	50%	63%	48%	
White, %	25%	44%	21%	41%	23%	42%	25%	43%	44%	50%	42%*	49%	48%	50%	
Hispanic, %	28%	45%	35%	48%	29%	45%	31%	47%	14%	35%	13%	34%	13%	34%	
Black, %	31%*	46%	28%	45%	30%	46%	23%	42%	27%	45%	28%	45%	23%	42%	
Dual, %	9%	29%	10%	30%	11%	32%	9%	29%	17%	38%	17%	37%	15%	36%	
Continuously Enrolled, %	94%	24%	95%	23%	91%	29%	95%	22%	83%	38%	85%	36%	83%	38%	
No. Months Enrolled in Medicaid, mean	38	5	38	5	37	5	38	5	31	7	30	7	30	7	
Reason for Medicaid Eligibility, %	_		—		_	_	—						_		
Low income	73%	44%	64%	48%	69%	47%	69%	46%	64%	48%	61%	49%	67%	47%	
Disabled/Blind	27%	44%	36%	48%	32%	47%	31%	46%	36%	48%	39%	49%	33%	47%	
Aged	_		—		_	_	—						_		
Baseline Period Total PMPM Expenditures, mean	\$1,337	\$2,710	\$1,594	\$3,085	\$1,466	\$4,745	\$1,474	\$2,857	\$1,741	\$4,699	\$1,507	\$2,877	\$1,383	\$3,071	

		Tex	kas		W	isconsin St	riving to Quit		Wisconsin First Breath				
	Incentive N=6	e group 32	Compariso N=6	on group 30	Incentive N=9	e group 58	Control group N=942		Incentive group N=520		Control group N=511		
Characteristic	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	
Age in years, mean	45	9	44	9	45	11	45	11	27	5	26	5	
Female, %	62%	49%	61%	49%	60%	49%	60%	49%	100%	0%	100%	0%	
White, %	34%*	48%	40%	49%	39%	49%	35%	48%	44%	50%	46%	50%	
Hispanic, %		—	—							—			
Black, %	43%*	50%	37%	48%	45%	50%	46%	50%	40%	49%	39%	49%	
Dual, %	8%	26%	8%	27%	14%	35%	13%	34%	2%	15%	2%	15%	
Continuously Enrolled, %	93%	26%	93%	26%	81%	39%	79%	41%	55%*	50%	46%	50%	
No. Months Enrolled in Medicaid, mean	67	9	67	9	56	18	56	18	57	15	56	15	
Reason for Medicaid Eligibility, %	—	—	—	—	—	—	—	—	—	—	—	—	
Low income	_	_	_		35%	48%	34%	48%	62%*	49%	69%	47%	
Disabled/Blind	100%	0%	100%	0%	65%	48%	66%	48%	38%*	49%	32%	47%	
Aged	_	_		—	—	—	_	—	—	—			
Baseline Period Total PMPM Expenditures, mean	\$1,552	\$4,457	\$1,254	\$2,857	\$758	\$2,167	\$725	\$2,396	\$359	\$729	\$333	\$717	

*p<0.05 for the difference between the incentive and control group.

sd = standard deviation

4.6.2 Diabetes Prevention, Diabetes Control, and Weight Management Program Effects on Expenditures and Utilization

Figures 4-5 through 4-10 contain regression-adjusted difference-in-differences regression estimates of program impact for claims-based outcomes in States with diabetes prevention or weight management programs. Difference-indifferences estimates compare the change in spending and utilization among MIPCD program participants with the same change among a control group not enrolled in the program. Under basic assumptions, difference-in-differences estimates isolate the causal effect of program participation on spending and utilization. For each State, Figures 4-5 through 4-10 present the difference-indifferences estimate and the 90 percent confidence interval of the estimate-that is, the range within which the true estimate will fall 90 percent of the time.

Appendix Tables C-1 through

C-6 include unadjusted means in claims

Key Findings

- In most programs, there was no statistically significant impact of incentives on total, inpatient, or ED Medicaid expenditures. However, regression-adjusted estimates of the change in inpatient and ED expenditures and in the probability of having an inpatient or ED visit were often negative, suggesting that participants who received incentives may have been trending towards reductions in utilization and expenditures.
- New York designed its programs to test if process incentives, outcome incentives, or a combination of process and outcome incentives had greater impact on outcomes. There was no evidence to suggest that one type of incentive had a greater impact on outcomes compared to the others.
- Programs that focused on prevention of chronic disease (Minnesota, Montana, New York, Nevada Healthy Hearts, and New Hampshire) trended towards reductions in total Medicaid expenditures, while success was more mixed for the programs that focused on disease management (Hawaii, Nevada, and New York). However, these management programs were designed to increase uptake of medical care necessary to manage health, which could increase total expenditures.

outcomes before and after the intervention, unadjusted pre/post differences in claims outcomes, and the regression-adjusted differences presented in *Figures 4-5* through *4-10*. We refer readers interested in unadjusted means of the claims outcomes to these tables.

Figure 4-5 presents difference-in-differences estimates of changes in total PMPM Medicaid expenditures associated with receipt of incentives.

Figure 4-5 Difference-in-difference estimates of total per-member-per-month expenditures, by State, for participation in a diabetes or weight program



Notes: The first estimate in the figure labeled "Hawaii HiPraise Pre/Post" is not a difference-in-differences estimate; rather, it is a pre/post estimate of the difference in spending before and after the intervention among the incentive group. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

For most State MIPCD programs, the change in Medicaid expenditures was not statistically different from zero. **Minnesota's** individual incentives only group had a significant decrease in Medicaid expenditure growth of \$127 PMPM (90% CI: \$17–\$236), and in contrast we did not observe a similar trend in lower expenditures for **Minnesota's** individual plus group incentives group. Incentive participants in **New Hampshire's** InShape plus Weight Watchers program also had a significant decrease in Medicaid expenditure growth of \$175 (90% CI: \$16–\$333). About half of incentive programs also had negative estimates of changes in expenditure growth, indicating that intervention group patients' expenditures fell relative to control group patients' expenditures. The other half had a positive estimate, indicating that the growth in expenditures among the incentive group was higher than the growth in expenditures among the control group after adjustment for baseline differences in expenditures and other contemporaneous factors that could affect expenditures.

Based on the direction of the regression-adjusted coefficients, programs that focused on prevention of chronic disease (Minnesota, Montana, New York, Nevada Healthy Hearts, and New Hampshire) seemed to have success reducing the growth in total Medicaid expenditures,

while success was more mixed for the programs that focused on disease management (i.e., **Hawaii's** HI-PRAISE, **New York's** diabetes management program, **New York's** hypertension management plan, and **Nevada's** adult diabetes management program). These programs were designed to promote uptake of evidence-based services necessary to maintain health, which may explain the increase in expenditure growth that we observed. However, it is important to note that firm conclusions cannot be drawn from estimates with confidence intervals that overlapped zero.

Figure 4-6 presents linear difference-in-differences estimates of changes in inpatient PMPM Medicaid expenditures associated with receipt of incentives.

Figure 4-6 Difference-in-difference estimates of inpatient per-member-per-month expenditures, by State, for participation in a diabetes or weight program



Notes: There are not enough inpatient visits in Nevada's programs to conduct an analysis on inpatient spending. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

Difference-in-differences estimates demonstrate minimal impact of incentives on inpatient Medicaid expenditures, except in **New Hampshire's** InShape plus Weight Watchers program, which had a significant decrease in the growth of inpatient expenditure of \$38 PMPM (90% CI: \$8–\$69). However, there were other programs that showed small, negative effects on inpatient spending—Hawaii's HI-PRAISE sample matched to a comparison group, Hawaii's Kaiser program, New York's diabetes management program, Minnesota, and New Hampshire's gym program. Even though these effects had confidence intervals that included

zero, the fact that half of programs saw spending moving in the anticipated direction was promising. We do note that it is difficult to detect changes in inpatient spending because inpatient hospitalizations are rare and the sample size for some States was relatively small. Moreover, diabetes and weight loss interventions may not have noticeable impacts on inpatient hospitalization rates or spending several months and possibly even several years after program participation.

Figure 4-7 presents linear difference-in-differences estimates of changes in ED PMPM Medicaid expenditures associated with receipt of incentives.

Figure 4-7 Difference-in-difference estimates of emergency department per-member-per-month expenditures, by State, for participation in a diabetes or weight program



Notes: There are not enough ED visits in Nevada's programs to conduct an analysis on ED spending. Revenue codes were not well reported in New York's claims data, and because these codes are used to help identify ED visits and spending, these measures were not calculated. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

For all States, estimated changes in ED expenditure growth were near zero. **Hawaii's** Kaiser program, **Minnesota**, and **New Hampshire's** gym, InShape, and InShape plus Weight Watchers program each had small, negative estimates of the impact of the MIPCD program on ED spending, but no estimates were statistically significant at the 10 percent level.

Figure 4-8 presents logit difference-in-differences estimates of probability of having an inpatient admission associated with receipt of incentives.

Figure 4-8 Difference-in-difference regression estimates: inpatient admission, by State, for participation in a diabetes or weight program

Program		D-in-D Estimate
HI HiPraise - Pre/Post		► 5.28 (4.75, 5.81)
HI HiPraise - Matched	·	-0.24 (-1.13, 0.65)
HI - Kaiser	•]	-0.77 (-4.16, 2.62)
NY DM - Process		0.18 (-1.91, 2.27)
NY DM - Outcome	_ _	0.83 (-1.19, 2.85)
NY DM - Process+Outcome	•	0.21 (-1.37, 1.79)
MN - Individual	_ _ _	-1.81 (-3.32, -0.30)
MN - Indvidual+Group		-1.30 (-2.86, 0.26)
MT	•	-2.60 (-6.12, 0.92)
NY DPP - Process		-1.03 (-3.10, 1.04)
NY DPP - Outcome		-1.15 (-2.43, 0.13)
NY DPP - Process+Outcome		0.30 (-2.04, 2.64)
NH - Gvm	•	-0.88 (-3.00, 1.24)
NH - InShape		0.47 (-0.76, 1.70)
NH - WW		0.32 (-2.34, 2.98)
NH - InShape + WW		-0.30 (-1.68, 1.08)
NY HTN - Process	·	1.58 (-0.54, 3.70)
NY HTN - Outcome		0.12 (-2.10, 2.34)
NY HTN - Process+Outcome		-0.01 (-1.98, 1.96)
	Ī	2.31 (1.66) 1.66)
-10	-5 0 5	10
Predicted Pro	bability: Inpatient	Admission

Notes: There are not enough inpatient visits in Nevada's programs to conduct an analysis on inpatient spending. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

There was little evidence that receipt of incentives had a statistically significant impact on the likelihood of having an inpatient admission. However, about half of programs—Hawaii's HI-PRAISE sample matched to a comparison group, Hawaii's Kaiser program, Minnesota, Montana and New York's diabetes prevention programs, and New Hampshire's gym and InShape plus Weight Watchers programs—showed small reductions in the likelihood of having an inpatient admission. However, none of these effects were statistically significant. *Figure 4-9* presents logit difference-in-differences estimates of the probability of having an ED visit associated with receipt of incentives.





Notes: There are not enough ED visits in Nevada's programs to conduct an analysis on ED spending. Revenue codes were not well reported in New York's claims data, and because these codes are used to help identify ED visits and spending, these measures were not calculated. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

There was little evidence that receipt of incentives had a statistically significant impact on the likelihood of having an ED visit, except in **Montana's** diabetes prevention program. In that program, incentivized participants were significantly less likely to have an ED visit relative to the control group. All but two of the remaining programs—**Hawaii's** HI-PRAISE sample matched to a comparison group, **Hawaii's** Kaiser program, **Minnesota's**, and **New Hampshire's** InShape and InShape plus Weight Watchers programs—showed small reductions in the likelihood of having an ED visit among the incentive group relative to the control group. However, none of these effects were statistically significant. *Figure 4-10* presents logit difference-in-differences estimates of the probability of having an outpatient visit associated with receipt of incentives.

Figure 4-10 Difference-in-difference regression estimates: outpatient visit, by State, for participation in a diabetes or weight program



Notes: All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

We analyzed the impact of MIPCD diabetes prevention and weight loss program participation on the likelihood of having an outpatient visit in **Minnesota**, **Nevada**, and **New York**. In these programs, changes in the likelihood of having an outpatient visit were relatively small (effects close to zero), and in **Minnesota's** diabetes prevention program and **Nevada's** Healthy Hearts Program there was a reduction in the likelihood of having an outpatient visit among incentive group relative to the control group. In **Nevada's** adult diabetes management program and most incentive arms in **New York's** programs, there was a small increase in the likelihood of having an outpatient visit among the incentive group, relative to the control group. Even though none of the effects were statistically significant in **Nevada** and **New York**, the small increases aligned with their program designs to incentivize outpatient care.

4.6.3 Smoking Cessation Program Effects on Expenditures and Utilization

Figures 4-11 through *4-16* contain regression-adjusted difference-indifferences regression estimates of program impact for claims-based outcomes in the four States with smoking cessation programs. For each State, *Figures 4-11* through *4-16* present the difference-in-differences estimate and the 90 percent confidence interval of the estimate.

Appendix Tables C-7 through *C-11* include unadjusted means in claims outcomes before and after the intervention, unadjusted pre/post differences in claims outcomes, and the regression-adjusted differences presented in *Figures 4-11* through *4-16*. We refer readers interested in unadjusted means of the claims outcomes to these tables.

Key Findings

- In most programs, there was no statistically significant impact of incentives on total, inpatient, or ED Medicaid expenditures. However, regression-adjusted estimates of the change in inpatient and ED expenditures and in the probability of having an inpatient or ED visit were often negative, suggesting that participants who received incentives may have been trending towards reductions in utilization and expenditures.
- There were no clear patterns that mode of delivery (e.g., telephonic versus in-person) had more or less success changing patterns of care for participants.
- Two States (Connecticut and New York) designed their programs to test if process incentives or outcome incentives had greater impact on outcomes. Greater reductions in costs for the process incentive only participants compared to the outcome incentive only group were observed in both States, but reductions were not statistically significant.

Figure 4-11 presents linear difference-in-differences estimates of changes in total PMPM Medicaid expenditures associated with receipt of incentives.

Figure 4-11 Difference-in-difference estimates of total PMPM expenditures, by State, for participation in a smoking cessation program



Note: Connecticut's high process, high outcome, and peer-coaching arms had small sample sizes, which accounts in part for the large estimates and confidence intervals. All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

In most smoking cessation programs, there was no statistically significant impact of incentives on the total growth in Medicaid expenditures, with the exception of **Wisconsin's** quitline program, which generated savings of \$108 PMPM (90% CI: -\$3--\$214). However, half of the other smoking cessation programs—**California's** NRT and NRT plus incentive arms, **Connecticut's** original incentive and high process incentive arms, **New Hampshire's** telephonic cessation counseling program, **New York's** process only incentive program, and **Wisconsin's** First Breath program—all showed small, negative effects on total Medicaid spending, although the results were not statistically significant. Participation in a smoking cessation program is not expected to affect total spending in the short run. Rather, the effect of reductions in smoking on patient health and eventually spending may be generated years after the patient quits or reduces cigarette use. A lack of findings in *Figure 4-11* does not imply that MIPCD programs do not affect spending. Instead, changes in spending generated from improved health may not be realized yet.

In the two States (**Connecticut** and **New York**) that designed their programs to directly test if process or outcome incentives had greater impact on outcomes, we did observe greater reductions in expenditure growth for the process incentive only participants compared to the outcome incentive only group. However, reductions were not statistically significant.

New Hampshire, Connecticut, and Wisconsin all had both in-person and telephonic modes of delivering cessation counseling, while California and New York delivered the intervention telephonically through a quitline. There were no clear patterns to suggest that one mode of delivery was more successful than the other at reducing growth in total expenditures relative to a control group.

Figure 4-12 presents linear difference-in-differences estimates of changes in inpatient PMPM Medicaid expenditures associated with receipt of incentives.

Figure 4-12 Difference-in-difference estimates of inpatient PMPM expenditures, by State, for participation in a smoking cessation program



Notes: All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

All programs, except for **California's** counseling plus NRT arm, **New Hampshire's** Prescriber Referral program, **Connecticut's** high outcome and peer-coaching incentive arms and **New York's** outcome incentive arm, had point estimates indicating reduced growth in inpatient spending. Reductions in expenditure growth were statistically significant in **Connecticut's** original incentive program, which had savings of \$68 PMPM (90% CI: \$24–\$119). As is the case with total spending, inpatient expenditures may not be immediately affected by a reduction in smoking.
Figure 4-13 presents linear difference-in-differences estimates of changes in ED PMPM Medicaid expenditures associated with receipt of incentives.





Notes: All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

For all programs, except New Hampshire's telephonic smoking cessation counseling program, the estimated changes in ED expenditure growth were small with negative estimates, indicating reductions in ED expenditure growth associated with receipt of incentives. Estimates reached statistical significance for **Wisconsin's** quitline, which reduced ED spending by \$12 PMPM (90% CI: \$4–\$20) among the incentive group relative to the control group and for **Connecticut's** high outcome incentive arm, which reduced ED expenditure by \$18 (90% CI: \$4–\$32) among the incentive group relative to the control group. The sample size for the high outcome incentive arm is quite small (< 100 individuals), so the finding should be interpreted with caution.

Figure 4-14 presents logit difference-in-differences estimates of the probability of having an inpatient admission associated with receipt of incentives.





Notes: All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

There was no evidence that receipt of incentives had a statistically significant impact on the likelihood of having an inpatient admission. However, about half of programs—California's counseling plus NRT arm, Connecticut's original incentive and high process incentive arms, New Hampshire's quitline program, New York's process incentives program arm, and Wisconsin's quitline and First Breath programs—showed small reductions in the likelihood of having an inpatient admission, yet none of these effects were statistically significant. *Figure 4-15* presents logit difference-in-differences estimates of the probability of having an ED visit associated with receipt of incentives.



Program		D-in-D Estimate
CA - NRT	+	-0.30 (-1.81, 1.21)
CA - NRT + Incentive		-1.45 (-3.00, 0.10)
CT - Original		-1.20 (-2.71, 0.31)
CT - High Process	+	-2.90 (-7.00, 1.20)
CT - High Outcome	•	-3.81 (-11.16, 3.54)
CT - Peer Coaching	— • —	6.35 (1.30, 11.40)
NH - Prescriber Referral	•	-3.01 (-9.84, 3.82)
NH - Quitline	+	1.31 (-3.79, 6.41)
NH - Counseling	•	-3.65 (-9.87, 2.57)
WI - Quitline	_ + _	-0.72 (-2.35, 0.91)
WI - First Breath	_ • -	-2.19 (-4.61, 0.23)

Notes: All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

In **Connecticut**, likelihood of having an ED visit among participants in the peer coaching program arm increased significantly relative to the control group (6.35% 90% CI: 1.30%—11.40%). However, most of the remaining programs showed small reductions in the likelihood of having an ED visit among the incentive group relative to the control group, yet none of these effects were statistically significant.

4.6.4 Effects on Expenditures and Utilization in Texas

Texas's MIPCD program was not targeted specifically at weight management, diabetes prevention, diabetes control, or smoking cessation; therefore, we present results for Texas separately. As discussed in *Section 3.3.9*, Texas provides participants with a \$1,150 wellness account that supports specific health goals of the participant. Patient navigators visit and call patients to help them determine their wellness goals and provide ongoing support in reaching those goals. Wellness account funds can be used for wellness-promoting purchases, including devices (e.g., scale, blood pressure monitor), transportation to wellness activities, fitness memberships, individual wellness education, and nutritional food. Intervention effects should be interpreted as the impact of the wellness account and navigators on spending and utilization, keeping in mind that patients pursue individual wellness goals within the program.

Appendix Table C-12 summarizes unadjusted means in claims outcomes before and after Texas' intervention, unadjusted pre/post differences in claims outcomes, and the regression-adjusted differences presented in *Figures 4-16* and *4-17. Figure 4-16* presents difference-in-differences estimates of changes in total expenditures, inpatient expenditures, and ED expenditures due to participating in the Texas MIPCD incentive program.





Notes: All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

Texas's MIPCD program did not have any statistically significant changes in total inpatient, or ED expenditures, although the point estimates for all three expenditure categories were negative.

Figure 4-17 presents difference-in-differences estimates of the probability of having inpatient admissions and ED visits due to participating in the Texas MIPCD incentive program.

Figure 4-17 Difference-in-difference regression estimates: inpatient admission and emergency department visit, Texas



Notes: All confidence intervals presented with the D-in-D estimate are 90% confidence intervals.

Similar to the expenditure findings, the likelihood of an inpatient visit or ED visit among participants in Texas's incentive group declined relative to the control group; and it was statistically significant for ED visits (2.28%, 90% CI: 0.13%–4.43%).

4.6.5 Cumulative Changes in Total Medicaid Spending, Excluding Incentive Payments

Table 4-7 summarizes the cumulative impact of receiving incentives on total Medicaid spending. The cumulative change in spending (excluding incentive payments) is calculated by multiplying the PMPM covariate-adjusted difference-in-difference regression estimate for total Medicaid expenditures by the number of months participants who received incentives were enrolled in Medicaid, from the start of the participants' participation in MIPCD through the end of the available Medicaid data. Cumulative total spending is a function of the estimated difference-in-difference PMPM, as well the number of incentive participants in each program and how long participants were enrolled in Medicaid. A positive covariate adjusted difference-in-difference regression estimate means that the growth in total Medicaid expenditures was greater after MIPCD for the incentive group compared to the control group, so total spending increased for the incentive group compared to the control group, so total spending increased for the incentive group compared to the control group, so total spending increased for the incentive group compared to the control group, so total spending increased for the incentive group compared to the control group, so total spending increased for the incentive group compared to the control group, so total spending the multiple of the incentive group compared to the control group, so total spending decreased for the incentive group compared to the control group, so total spending decreased for the incentive group compared to the control group, so total spending decreased for the incentive group compared to the control group, so total spending decreased for the incentive group compared to the control group, so total spending decreased for the incentive group compared to the control group.

The cumulative change in spending follows our overall conclusions based on the covariate adjusted difference-in-difference total Medicaid PMPM; receipt of incentives was associated with a decrease in total spending in about half of the MIPCD programs, although the

changes were often not statistically significant. Only 5 of the 36 program arm estimates were significantly different than zero. Three program arms had significant negative estimates, indicating gross savings: **New Hampshire's** Weight Watchers + InShape program, **Minnesota's** individual incentives arm in their DPP program, and **Wisconsin's** smoking cessation quitline program. Two program arms were associated with significant gross losses: **Hawaii's** HI-PRAISE diabetes management program in a pre-post analysis, and **New York's** process incentive arm for hypertension management. The cumulative estimates do not take into account the incentives that were paid out. After taking the incentives into account, the savings would be less and the losses would be greater.

	Number of incentive participants	Covariate adjusted difference-in-difference PMPM coefficient (90% CI)	Incentive participant member months	Cumulative change in spending, \$ coefficient (90% CI)
Diabetes & Hypertension Control				
Hawaii – HI-PRAISE Pre/Post Only	1,982	169 (109, 229)	35,665	6,027,385* (3,887,485, 8,167,285)
Hawaii – HI-PRAISE matched to a comparison group not selected for evaluation	1,982	66 (-46, 178)	35,665	2,353,890 (-1,640,590, 6,348,370)
Hawaii Kaiser	150	-42 (-195, 111)	604	-25,368 (-117,780, 67,044)
Nevada-Adult Diabetes Management	61	88 (-10, 186)	1,127	99,176 (-11,270, 209,622)
New York - Diabetes Management Process Incentive	254	-40 (-288, 208)	3,957	-158,280 (-1,139,616, 823,056)
New York - Diabetes Management Outcome Incentive	243	196 (-218, 610)	3,808	746,368 (-830,144, 2,322,880)
New York - Diabetes Management Process + Outcome Incentive	230	27 (-233, 287)	3,567	96,309 (-831,111, 1,023,729)
New York - Hypertension Management Process Incentive	244	312 (63, 561)	3,479	1,085,448* (219,177, 1,951,719)
New York - Hypertension Management Outcome Incentive	223	17 (-240, 274)	3,186	54,162 (-764,640, 872,964)
New York - Hypertension Management Process + Outcome Incentive	232	-95 (-476, 286)	3,320	-315,400 (-1,580,320, 949,520)
Diabetes Prevention & Weight Ma	nagement			
Minnesota - Individual Incentive	386	-127 (-236, -18)	8,270	-1,050,290* (-1,951,720, -148,860)
Minnesota - Individual + Group Incentive	342	7 (-104, 118)	7,558	52,906 (-786,032, 891,844)
Montana	142	-99 (-370, 172)	4,552	-450,648 (-1,684,240, 782,944)
New York - Process Incentive	160	58 (-213, 329)	1,904	110,432 (-405,552, 626,416)
New York - Outcome Incentive	148	-148 (-343, 47)	1,847	-273,356 (-633,521, 86,809)
New York - Process + Outcome Incentive	111	-311 (-841, 219)	1,351	-420,161 (-1,136,191, 295,869)
				(continued)

Table 4-7 Cumulative change in Medicaid spending, by program

	Number of incentive participants	Covariate adjusted difference-in-difference PMPM coefficient (90% CI)	Incentive participant member months	Cumulative change in spending, \$ coefficient (90% CI)
Obesitv/Weight Management			•	
Nevada-Children's Healthy Hearts Study Child Only Incentive	359	-38 (-101, 25)	7,381	-280,478 (-745,481, 184,525)
Nevada-Children's Healthy Hearts Study Child + Parent Incentive	335	-49 (-112, 14)	6,853	-335,797 (-767,536, 95,942)
New Hampshire-Gym Membership	84	101 (-90, 292)	2,311	233,411 (-207,990, 674,812)
New Hampshire-In Shape	297	-69 (-193, 55)	7,435	-513,015 (-1,434,955, 408,925)
New Hampshire-Weight Watchers	45	-1 (-293, 291)	1,306	-1,306 (-382,658, 380,046)
New Hampshire-In Shape + Weight Watchers	261	-175 (-333, -16)	6,795	-1,189,125* (-2,262,735, -108,720)
Texas	631	`-154 (-325, 18)	24,601	-3,788,554 (-7,995,325, 442,818)
Smoking Cessation				
California Counseling +NRT	1,185	-30 (-107, 47)	24,595	-746,950 (-2,631,665, 1,155,965)
California Counseling+NRT+Incentive	1,12	-28 (-103, 47)	13,465	13,465 (-374,866, 1,386,895)
Connecticut Original Incentive	2,242	-4 (-114, 106)	33,065	-132,260 (-3,769,410, 3,504,890)
Connecticut High Process Incentive	148	-39 (-291, 213)	2,069	-80,691 (-602,079, 440,697)
Connecticut High Outcome Incentive	64	424 (-63, 911)	890	377,360 (-56,070, 810,790)
Connecticut Peer Coaching Group	63	344 (-20, 708)	673	231,512 (-13,460, 476,484)
New Hampshire-Prescriber Referral	76	15 (-304, 334)	1,635	24,525 (-497,040, 546,090)
New Hampshire-Quitline	153	173 (-5, 351)	3,450	596,850 (-17,250, 1,210,950)
New Hampshire-Telephonic cessation counseling	109	-16 (-226, 194)	2,593	-41,488 (-586,018, 503,042)
New York - Process Incentive Group	609	-154 (-387, 79)	5,851	-901,054 (-2,264,337, 462,229)
New York - Outcome Incentive Group	604	178 (-68, 424)	5,823	1,036,494 (-395,964, 2,468,952)
Wisconsin-Quit Line	958	-108 (-214, -3)	9,557	-1,032,156* (-2,045,198, -28,671)
Wisconsin-First Breath	520	-10 (-52, 32)	11,862	-118,620 (-616,824, 379,584)

Table 4-7 (continued)Cumulative change in Medicaid spending, by program

* p < 0.10

4.7 Summary of MIPCD State MDS and Medicaid Claims Analysis

Across MIPCD programs, many program participants used significantly more of a service if they received a financial incentive. Among the diabetes prevention, weight management, and diabetes management programs in Minnesota, Montana, and New York, participants receiving incentives to attend a diabetes prevention program (DPP) class attended on average 1-2 more DPP classes than the control group. Findings for other types of services such as meetings with a health coach or doctor, gym visits, or attendance at Weight Watchers meetings were more mixed, with incentivized participants using significantly more of a service in some programs but not others. Among the smoking cessation programs, participants receiving incentives in California, Connecticut, and Wisconsin made significantly more calls to a quitline or attended more smoking cessation counseling sessions, on average 1-2 more calls or sessions, relative to a control group.

States also saw some success in improving health outcomes among participants who engaged in the program for enough time to have outcome measures taken, though improvements were often small in magnitude. Compared to control group participants, incentivized participants had greater reductions in weight loss and HbA1c and blood pressure levels; more minutes of physical activity; improvements in self-reported health status; greater likelihood of reporting a smoking cessation quit attempt or having ceased smoking; and greater likelihood of having ceased smoking, confirmed via biochemical tests. Even when differences in health outcomes between incentive and control groups were not statistically significant, the differences were such that they may indicate clinical relevance in some cases (e.g., difference in the proportion of the population improving a health metric of 5 percent or more). In other cases, differences over time may have had little clinical relevance (e.g., the small decreases in cotinine levels in **New Hampshire's** smoking cessation programs). Overall conclusions remained primarily unchanged even after including all participants in analyses and assuming that those without sufficient health outcome data had no changes in the measure of health.

When States tested different approaches to providing incentives, that is, incentivizing activities (process), meeting health outcome targets (outcome), or both activities and health outcomes (process plus outcome), evidence that one approach was more effective than another was mixed. There was some evidence in New York's DPP that participants in the process only incentive arm attended significantly more DPP classes than the outcome only and the process plus outcome incentive participants. However, clear patterns in other States and programs (e.g., New York's diabetes management and hypertension programs, Minnesota's diabetes prevention program, Connecticut's smoking cessation program) favoring one approach over another did not emerge. Further, success in improving health outcomes did not depend on choice of incentive. Texas, California, and New Hampshire incentivized activities (process incentives), not outcomes, and each of these States' incentivized participants improved health outcomes, and States that incentivized both activities and outcomes also saw improvements. Even in New York, which directly tested the impact of different incentive designs, participants in the outcome incentives only arm did not consistently do better than participants in the process only or the process plus outcomes incentive arms. In fact, participants in the outcomes only arms were often less likely than participants in the process incentive arm to achieve certain health outcomes.

With the demonstrated associations between receipt of incentives and greater uptake of prevention activities and subsequent improvements in health, we examined whether incentives led to reductions in other health care utilization and expenditures. In some States, our findings signaled that all outcomes were moving in a hypothesized direction. For example, Texas, Montana, and the Wisconsin quitline program had improvements in select health outcomes as well as reductions in total Medicaid, inpatient, and ED expenditure growth and in the likelihood of having an inpatient admission or an ED visit that could suggest reductions in use and expenditures, even though the changes in claims-based measures were not statistically significant.

Overall, though, there were no consistent patterns across programs suggesting that MIPCD participants who received incentives had statistically significantly less utilization or fewer Medicaid expenditures after participation relative to participants that did not receive incentives. Across all programs, regression-adjusted estimates of the change in total, inpatient, and ED expenditures and in the probability of having an inpatient or ED visit were at times (though not consistently) negative, suggesting that participants who received incentives may have been trending towards reductions in utilization and expenditures. Incentivized participants in programs that focused on prevention of chronic disease (Minnesota, Montana, New York, Nevada Healthy Hearts, and New Hampshire) frequently trended towards reductions in total Medicaid expenditure growth relative to the control group, while trends were more mixed for the programs that focused on disease management (Hawaii, Nevada, and New York). However, these management programs were designed to increase uptake of medical care necessary to manage health. Increased interaction with the medical care system to obtain these services could account for observed trends of greater expenditure growth over time. These short-term trends in expenditure growth do not preclude the idea that over time better management of a condition may avoid the costs associated with severe health crises in later years. Similar to the disease management programs, trends in reduction of total Medicaid expenditures were somewhat mixed for the smoking cessation programs; in contrast, more States saw non-significant reductions in inpatient and ED expenditures.

Similar to the mixed evidence from the MIPCD State MDS analysis that one approach to incentive design (process, outcome or both) was more effective than another, we saw no clear patterns in the results to suggest that one type of incentive design was more successful than another in reducing claims-based expenditures and utilization. Texas, California, and New Hampshire, the States that incentivized activities, did not have different trends in utilization than the remaining States that incentivized activities as well as outcomes. In Connecticut's and New York's smoking cessation programs which directly tested different incentive types, there were larger reductions in costs for the process incentive only participants compared to the outcome incentive only group, but reductions were not statistically significant. However, in New York's diabetes prevention, diabetes management, and hypertension programs, there was no consistent evidence to suggest that one type of incentive had a greater impact on claims-based expenditure and utilization outcomes compared to the others.

Overall claims-based expenditures and utilization findings were not completely unexpected. Changing patterns of health care often takes time to achieve, so MIPCD programs may not necessarily be expected to have immediate impact on high cost utilization and expenditure measures in the months (or even years) following participation. This analysis had 2 to 4 years of claims data after the start of a State's MIPCD program. This may not necessarily have been enough time considering that the observed improvements in health that we noted (e.g., weight loss, more physical activity, better blood pressure or HgA1c control) are not highly correlated with immediate changes in high cost utilization like inpatient or ED visits. These changes in health may signal more holistic changes in the adoption of healthy behaviors that, if maintained over a longer period, may trigger reductions in high-cost utilization (e.g., reductions in inpatient admissions for asthma, chronic obstructive pulmonary disease, or diabetes-related complications).

There are limitations to these analyses of MIPCD State MDS and Medicaid claims data. First, we have conducted an intent-to-treat analysis, as described in *Section 4.4*. The intent-to-treat approach averages the effect of program participation across participants with more and less exposure to the intervention. While most States reported that their participants completed the designated programs, some States (e.g., **New Hampshire**) had participants who dropped out or were lost to follow-up. As a result, findings may be biased toward the null because patients with less program exposure may not have had time to realize program effects. Further, in some programs, sample sizes are quite small (e.g., < 100 people) within a program or within a particular incentive arm within a program. Detecting small differences in outcomes between groups in programs with relatively few participants is often not feasible.

Specific to the MIPCD State MDS, outcome data were not always reported for all participants. Missing data due to loss to follow-up or lack of engagement by program participants to take post-participation tests (e.g., biochemical tests for smoking cessation, lab tests for hemoglobin levels) limited our ability to examine outcomes on all participants. Therefore, sample sizes to assess health outcomes are lower than sample sizes assessing use of incentivized services. Further, some health outcomes were self-reported (e.g., reported minutes of physical activity or self-report of smoking cessation); the reliability of the self-reported measures is not entirely clear.

Specific to the Medicaid claims data, this analysis does not incorporate Medicare claims data for dually eligible individuals participating in an MIPCD program. The degree to which this omission affects the results depends on the percentage of dually eligible beneficiaries in the program. The percentage of Medicare-Medicaid eligible beneficiaries ranges from 0 percent in **Nevada's** Healthy Hearts Program to 58 percent in **Montana**. Second, **Minnesota** does not release amounts paid to providers for managed care enrollees, so the expenditures reflect fee-forservice payments only. More than 90 percent of Minnesota's MIPCD claims sample were enrolled in managed care at some point. The impact of this data shortcoming is that expenditures are underestimated in Minnesota. To increase our understanding of patterns of utilization among MIPCD participants in Minnesota, we examined office visits as an additional outcome.

SECTION 5 BENEFICIARY SATISFACTION



We conducted several activities with beneficiaries of State programs to evaluate their satisfaction with the quality, accessibility, and incentives provided by the State programs. Activities included focus group discussions, interviews with program stakeholders (i.e., staff that have direct interaction with participants), and a beneficiary satisfaction survey.

We presented methods and comprehensive findings from the focus groups and stakeholder interviews in RTI's independent assessment report (<u>https://innovation.cms.gov/Files/ reports/mipcd-secondrtc-indpassessmentrpt.pdf</u>) accompanying the Final Report to Congress. In this report, we present findings from the beneficiary survey, described below. We also include selected focus group findings to link key discussion themes with survey findings.

We also presented descriptive findings for all survey questions in the previous report. In this report, we focus on selected topics and examine differences in beneficiary experience and satisfaction by beneficiary characteristics, program characteristics (e.g., whether delivered telephonically or in person), and incentive characteristics (e.g., form of incentive, monetary value of incentive, process vs. outcome incentives).

The beneficiary survey and beneficiary focus groups address the evaluation question about the level of satisfaction of Medicaid beneficiaries with respect to the accessibility and quality of health services provided through the MIPCD. In this section, we address the following specific questions related to beneficiary satisfaction and experience:

- To what extent are Medicaid beneficiaries satisfied with the program overall?
- To what extent are Medicaid beneficiaries satisfied with specific aspects of the program, including accessibility, educational materials and information, communication with program staff, and incentives?
- What factors contribute to beneficiaries' satisfaction with the program overall and with specific aspects of the program?
- What is the impact of the program on behavior change?
- What factors contribute to the impact of the program on behavior change?

5.1 Key Findings

- **Overall**, survey respondents were very satisfied with the MIPCD program. Sixtyseven percent were very satisfied with the program and another twenty-seven percent were somewhat satisfied. Seventy-four percent of respondents said they would recommend the program to family and friends and another twenty-two percent said they would probably do so. The mean program rating was 8.5, out of a scale of 1 (worst possible program) to 10 (best possible program).
- Most survey respondents were satisfied with program accessibility. About 9 out of 10 respondents strongly agreed that the program

Key Findings

- Overall, survey respondents were very satisfied with the MIPCD program.
- Most survey respondents were satisfied with program accessibility.
- More than half of survey respondents (58 percent) received educational materials and information that was very helpful.
- Most survey respondents were satisfied with their communication with program staff.
- About three-quarters of survey respondents strongly agreed that they were happy with the incentives overall.
- Survey respondents reported that the program and the incentives specifically had a positive impact on their health understanding and behaviors.
- Satisfaction with program accessibility, communication with program staff, and educational materials were significant predictors of overall program satisfaction.
- The monetary value of incentives was a significant predictor of some measures of overall program satisfaction, satisfaction with incentives, and impact of incentives.
- Incentive form was a significant predicator of satisfaction with incentives but not of incentive impact.

started as soon as they wanted, the amount of time spent on the program was about right, the program schedule was convenient, and the program location was convenient. Respondents said they were always (62 percent) or usually (23 percent) able to get the help they wanted from program staff. Some focus group participants wanted more flexibility and more options for participating in in-person programs.

- More than half of survey respondents (58 percent) received educational materials and information that was very helpful. Another 21 percent received materials and information that was somewhat helpful. Some focus group participants said they had not used the materials much or at all, in some cases because literacy was a barrier. Others thought the materials provided useful information and were helpful as reminders and motivators.
- Most survey respondents were satisfied with their communication with program staff. About three-quarters strongly agreed that the program staff explained things in a way they could understand, listened to them carefully, and encouraged them to ask questions and talk about their health concerns. About 78 percent strongly agreed that program staff seemed to care about them as a person. Respondents who participated in programs delivered in-person and by phone were most satisfied with communication with staff, followed by those in in-person only programs, and those in telephone only programs. Focus group participants described program staff who were

caring, nonjudgmental, and supportive. However, those who participated in quitline programs had mixed experiences with communication with quitline counselors.

- About three-quarters of survey respondents strongly agreed that they were happy with the incentives overall and most strongly agreed that the incentives were fair (73 percent) and that they liked getting incentives for taking good care of their health (78 percent). A somewhat lower percentage (67 percent) strongly agreed that they were happy with how often they got incentives.
- Survey respondents reported that the program and the incentives specifically had a positive impact on their health understanding and behaviors. The program had encouraged lifestyle changes to improve their health (76 percent strongly agreed), helped them learn ways to take better care of their health (71 percent), and understand their health issues (64 percent). The incentives helped them set goals and work towards them (66 percent) and make positive changes in their life (66 percent).
- Satisfaction with program accessibility, communication with program staff, and educational materials were significant predictors of overall program satisfaction in multivariate analyses controlling for respondent and program characteristics.
- The monetary value of incentives was a significant predictor of some measures of overall program satisfaction, satisfaction with incentives, and impact of incentives in multivariate analyses controlling for respondent and program characteristics. Receiving incentives of \$100 to \$400 (compared to less than \$25) was a significant predictor of higher program rating. Receiving incentives valued at \$25 to \$100 (compared to less than \$25) was associated with some measures of satisfaction with and impact of incentives.
- Incentive form was a significant predicator of satisfaction with incentives but not of incentive impact. Receiving points redeemable for rewards (compared to money-valued incentives) was a significant predictor of lower satisfaction with incentives.

5.2 Overview of the Beneficiary Survey

RTI conducted this survey of program participants across the States to assess participants' overall satisfaction with the program and satisfaction with program accessibility, program materials, program staff, and incentives. In addition, the survey assessed whether the program had helped participants understand their health issues and make positive changes. The cross-sectional survey, conducted in two waves in 2014 and 2015, involved participants in the experimental arms of the State program (see *Appendix D* for detailed information about the survey schedule). *Table 5-1* provides a summary of the survey topics and specific survey questions.

Topic	Survey question
Overall program satisfaction	• How would you rate this program? Choose a number between 1 and 10, where 1 is the worst program possible and 10 is the best program possible.
	• Would you recommend this program to your family or friends? (yes, definitely; yes, probably; no)
	• Overall, how satisfied were you with this program? (very satisfied – very dissatisfied)
Satisfaction with program access	• How often were you able to contact program staff when you wanted to? (always – never)
	• I was able to start the program as soon as I wanted. (yes/no)
	• The amount of time I spent on the program was about right. (yes/no)
	• The program schedule was convenient for me. (yes/no)
	• The program location was convenient for me. (yes/no)
	• The program staff spoke my language. (yes/no)
	• I was able to get child care when I needed to attend the program. (yes/no)
	• I was able to get transportation when I needed to attend the program. (yes/no)
	• How often were you able to get the help you wanted from the program staff? (always – never)
Satisfaction with educational materials and information	• Did the program give you any educational materials or information about your health issue(s) (for example, written materials or a web site)? (yes/no)
Communication with program staff	• The program staff explained things in a way I can understand. (strongly agree – strongly disagree)
	• The program staff listened carefully to what I have to say. (strongly agree – strongly disagree)
	• The program staff encouraged me to ask questions. (strongly agree – strongly disagree)
	• The program staff encouraged me to talk about my health concerns. (strongly agree – strongly disagree)
	• The program staff seemed to care about me as a person. (strongly agree – strongly disagree)
Satisfaction with incentives	• Rewards or incentives helped me (or will help me) set goals and work toward them. (strongly agree – strongly disagree)
	• Rewards or incentives helped me (or will help me) make positive changes in my life.
	(strongly agree – strongly disagree)
	agree – strongly disagree)
	• I am happy with the rewards or incentives. (strongly agree – strongly disagree)
	• I am happy with how often I got (or will get) the reward or incentives. (strongly agree – strongly disagree)
	• The rewards or incentives are fair. (strongly agree – strongly disagree)
	(continued)

Table 5-1Survey topics and questions

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Topic	Survey question
Program impact	 The program helped me understand my health issues. (strongly agree – strongly disagree) The program helped me learn ways to take better care of my health. (strongly agree – strongly disagree) The program encouraged me to make lifestyle changes to improve my health. (strongly agree – strongly disagree)

Table 5-1 (continued)Survey topics and questions

Note: Table presents the survey topics and questions we present in this report. For a copy of the full questionnaire, see **Appendix E.**

5.2.1 Survey Methodology

The survey was administered by mail with telephone follow-up of nonrespondents. Participants had the option to complete the survey in English or Spanish. Because a high proportion of program participants in **Hawaii** do not speak either English or Spanish, the beneficiary survey was not administered in the State.⁹ However, Hawaii administered its own survey using selected items (with adaptations) from the cross-State beneficiary survey. We present selected findings from the Hawaii survey in Section 1.3.

Each State MIPCD program provided a list of eligible participants for the survey. The sample consisted of Medicaid beneficiaries aged 18 or older who had participated or were participating in the experimental arm of their State's MIPCD program during the prior 6 months (*Table 5-2*).

5.2.1.1 Data Collection—The first step in the data collection process was mailing a prenotification letter, letting participants know that they would receive a questionnaire soon and encouraging them to complete it. The next step was mailing the questionnaire; if a response was not received in approximately 4 weeks, the survey was mailed a second time. Finally, participants who did not complete the mail survey were contacted by telephone. (See detailed data collection schedule in *Appendix D*.)

5.2.1.2 Response Rate—Of the 4,586 program participants sampled, 2,274 responded to the survey, for an overall response rate across both waves of 52.7 percent. The response rate was calculated as follows:

<u>Total Number of Completed Interviews plus Partial Interviews</u> Total Number Sampled – Ineligible Cases

⁹ Program participants in Hawaii spoke 10 or more languages other than English, including Filipino languages (Ilocano and Tagalog), Samoan, Tongan, Micronesian languages (Chuukese and Marshallese), Vietnamese, Laotian, Chinese, and Korean.

State	Wave 1 sample	Wave 2 sample	Total
California	0	759	759
Connecticut	366	534	900
Minnesota	306	50	356
Montana ¹	31	0	31
Nevada	0	75	75
New Hampshire	497	209	706
New York	0	664	664
Texas	522	0	522
Wisconsin	336	237	573
Total	2,058	2,528	4,586

 Table 5-2

 Number of Medicaid beneficiaries sampled by wave of survey administration for States

¹We originally planned to include Montana in the Wave 2 sample, but no participants met the eligibility requirements.

Reasons for ineligibility were if the participant was deceased, had language barriers (did not speak English or Spanish and no one to assist), was institutionalized, was physically or mentally incapable of responding and no proxy was available, or reported that he or she did not participate in the program.

5.2.1.3 Data Analysis—We conducted bivariate analyses to assess the associations of respondent characteristics and program-level factors such as focus of the programs and incentive targets with outcomes, including overall program satisfaction, satisfaction with incentives, and program impact using Pearson chi-square statistics or—as needed for continuous explanatory variables—regression models. We also ran multilevel multivariable ordinal logistic regression models with the program as a random effect to examine program-level factors that might predict outcomes, while controlling for respondent-level factors. These regression models included all the factors that were significantly (p < 0.10) associated with outcomes in bivariate analyses. Regardless of statistical significance, the models controlled for demographic characteristics of respondents, such as the respondents' age, sex, marital status, education, employment status, race, and ethnicity. All the covariates included in regression analyses were examined for multicollinearity (variance inflation factor > 5) prior to inclusion in the final models. Missing data generally comprised less than 12 percent of responses for each dependent and explanatory variable; individuals with missing data were excluded from analyses.

5.3 Survey Findings

In the following sections, we present an overview of the survey respondents and findings related to overall program satisfaction (*Section 5.3.2*), satisfaction with program accessibility (*Section 5.3.3*), satisfaction with educational materials (*Section 5.3.4*), satisfaction with communication with program staff (*Section 5.3.5*), satisfaction with and impact of program

incentives (*Section 5.3.6*), and impact of the program on behavior change (*Section 5.3.8*). We also present findings examining how satisfaction with elements of the program—accessibility, educational materials, communication with program staff, and incentives—influences overall program satisfaction (*Section 5.3.7*).

We present selected focus group findings in tables at the end of each section (see *Tables 5-8, 5-10, 5-13, 5-16,* and *5-19*). For each key survey finding (e.g., satisfaction with incentives), these tables present related themes that emerged from the focus group discussions and illustrative participant quotes. Note that the discussions sometimes focused on challenges or concerns that, according to the survey findings, pertained to a minority of participants. For example, while about 92 percent of survey respondents said the program schedule was convenient, some focus group participants discussed scheduling challenges and wanted more options and flexibility (see *Table 5-8*).

5.3.1 Overview of Survey Respondents

Table 5-3 presents the sociodemographic characteristics of survey respondents overall and by State. Most respondents were female (63.7 percent), unmarried (78.4 percent), had a high school degree/GED or less (60.4 percent), and were unemployed (79.8 percent). In response to the employment question, 33.9 percent of respondents indicated that they were receiving disability or Supplemental Security Income. About half of the respondents were White (51.4 percent), 33.6 percent Black, and 15 percent "other." About 16 percent of respondents were Hispanic.

Table 5-4 presents the characteristics of the health programs in which survey respondents participated. The largest proportion of respondents participated in smoking cessation programs (47.7 percent), 13.1 percent participated in diabetes prevention programs, 10 percent in weight loss programs, 9 percent in diabetes control programs, and 5.1 percent in hypertension programs. Fifteen percent of survey respondents participated in the **Texas** MIPCD program, which is classified as "other" because the program does not target a specific chronic health condition. Instead, program participants could identify with their coach which health condition(s) to work on.

The largest portion of survey respondents participated in programs delivered both inperson and telephonically (45.4 percent), followed by in-person only (37.2 percent), and telephone only (17.5 percent). Most respondents were in programs that provided process incentives only (48.7 percent) or process and outcomes incentives (46 percent). Most respondents participated in programs that offered money-valued incentives (83.3 percent). All respondents in **Texas** received flexible wellness accounts and all respondents in **Nevada** received points redeemable for rewards. In addition to these three types of incentives, some programs also offered nicotine patches, Weight Watchers and gym memberships, and healthrelated items (e.g., cooking and fitness supplies). Note that the analyses are based on the three major incentives types (i.e., money-valued, flexible wellness accounts, points redeemable for rewards). However, the focus group findings also provide insights on participants' satisfaction with these other types of incentives.

	Overa	11					State				
-			CA	СТ	MN	MT	NH	NV	NY	TX	WI
			(N=357)	(N=393)	(N=175)	(N=21)	(N=301)	(N=42)	(N=385)	(N=338)	(N=262)
Characteristic	No.	%	Col. %	Col. %	Col. %	Col. %	Col. %	Col. %	Col. %	Col. %	Col. %
Age											
44 years or younger	530	23.3	17.6	26.5	22.3	9.5	31.9	14.6	16.1	23.4	30.2
45 to 52 years	550	24.2	20.7	26.7	22.3	23.8	25.6	31.7	20.8	29.3	22.1
53 to 58 years	517	22.8	23.5	23.4	16.0	9.5	20.6	17.1	22.7	29.6	21.0
59 years or older	675	29.7	38.1	23.4	39.4	57.1	21.9	36.6	40.4	17.8	26.7
Sex											
Male	825	36.3	41.5	41.2	26.9	28.6	33.6	45.2	34.3	36.4	33.2
Female	1449	63.7	58.5	58.8	73.1	71.4	66.4	54.8	65.7	63.6	66.8
Married											
Yes	476	21.6	26.4	17.2	28.9	5.0	11.2	40.5	29.5	17.8	19.9
No	1,732	78.4	73.6	82.8	71.1	95.0	88.8	59.5	70.5	82.2	80.1
Education											
Less than high school graduate or GED	602	26.7	25.2	27.6	20.6	14.3	14.3	11.9	31.6	36.4	29.4
High school graduate or GED	760	33.7	33.3	36.7	32.1	28.6	37.2	23.8	30.9	35.2	30.9
Some college or 2-year college degree	712	31.6	34.7	28.6	37.0	42.9	37.9	47.6	25.3	25.7	34.4
4-year college degree or more	180	8.0	6.7	7.1	10.3	14.3	10.6	16.7	12.2	2.7	5.3
Employed Full- or Part-Time											
Yes	454	20.2	19.9	21.4	24.9	9.5	25.7	33.3	25.8	4.1	20.7
No	1795	79.8	80.1	78.6	75.1	90.5	74.3	66.7	74.2	95.9	79.3
Receiving Disability or Supplemental											
Security Income											
Yes	772	33.9	31.7	29.5	22.3	42.9	41.5	31.0	22.1	57.4	29.8
No	1,502	66.1	68.3	70.5	77.7	57.1	58.5	69.0	77.9	42.6	70.2
Race											
White alone	1,136	51.4	62.9	57.3	26.0	90.5	90.6	43.6	28.6	40.7	41.8
Black or African American alone	742	33.6	18.7	27.7	55.5	0.0	1.3	33.3	50.6	47.3	46.7
Other	332	15.0	18.4	15.0	18.5	9.5	8.0	23.1	20.9	12.0	11.5
Ethnicity											
Hispanic or Latino	368	16.3	17.4	23.2	4.3	5.0	3.0	26.2	29.5	18.3	4.6
Not Hispanic or Latino	1,891	83.7	82.6	76.8	95.7	95.0	97.0	73.8	70.5	81.7	95.4

Table 5-3Demographic characteristics of respondents overall (N = 2,274) and by State

	Overa	ıll					State				
			CA (N=357)	CT (N=393)	MN (N=175)	MT (N=21)	NH (N=301)	NV (N=42)	NY (N=385)	TX (N=338)	WI (N=262)
Characteristic	No.	%	Col. %	Col. %	Col. %	Col. %	Col. %	Col. %	Col. %	Col. %	Col. %
Health Focus of Program											
Diabetes Prevention	293	13.1	0.0	0.0	100.0	100.0	0.0	0.0	26.0	0.0	0.0
Diabetes Control	202	9.0	0.0	0.0	0.0	0.0	0.0	100.0	43.8	0.0	0.0
Weight Loss	224	10.0	0.0	0.0	0.0	0.0	75.2	0.0	0.0	0.0	0.0
Smoking Cessation	1,070	47.7	100.0	100.0	0.0	0.0	24.8	0.0	0.0	0.0	100.0
Hypertension	115	5.1	0.0	0.0	0.0	0.0	0.0	0.0	30.2	0.0	0.0
Other*	338	15.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
Program Delivery Method											
In-Person	833	37.2	0.0	0.0	100.0	100.0	86.6	0.0	100.0	0.0	0.0
Telephonic	392	17.5	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
Both In-Person and Telephonic	1,017	45.4	0.0	100.0	0.0	0.0	13.4	0.0	0.0	100.0	100.0
Incentive Form											
Money-Valued Incentives	1,894	83.3	100.0	100.0	100.0	100.0	100.0	0.0	100.0	0.0	100.0
Flexible Wellness Account	338	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
Points Redeemable for Rewards	42	1.8	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
Incentive Target											
Process incentives alone	1,091	48.7	100.0	0.0	0.0	0.0	79.9	42.9	37.5	100.0	0.0
Outcome incentives alone	119	5.3	0.0	0.0	0.0	0.0	0.0	0.0	31.2	0.0	0.0
Process and outcome incentives	1,032	46.0	0.0	100.0	100.0	100.0	20.1	57.1	31.2	0.0	100.0

Table 5-4Incentive and program characteristics overall (N = 2,274) and by State

* The Texas program did not target a specific health condition.

5.3.2 Overall Satisfaction with Program

In this section, we present the findings about participants' overall satisfaction with the MIPCD program, based on three survey questions. We examine overall satisfaction by respondent and program characteristics. In *Section 5.3.7.1*, we present bivariate findings on overall satisfaction by satisfaction with specific components of the program – program accessibility, educational materials and information, communication with program staff, and incentives. In *Section 5.3.7.2*, we present findings from multivariate analyses.

SURVEY QUESTIONS: OVERALL PROGRAM SATISFACTION

- How would you rate this program? Choose a number between 1 and 10, where 1 is the worst program possible and 10 is the best program possible.
- Would you recommend this program to your family or friends? (yes, definitely; yes, probably; no)
- Overall, how satisfied were you with this program? (very satisfied, somewhat satisfied, somewhat dissatisfied, very dissatisfied)

5.2.2.1 Overall Program Satisfaction—Across all respondents, the mean program rating was 8.5 out of 10 (*Table 5-4*). Sixty-seven percent of respondents said they were very satisfied with the program and another 26.6 percent said they were somewhat satisfied (*Figure 5-1*). About three-quarters of respondents said they would definitely recommend the programs to family and friends and another 22.1 percent said they would probably do so (*Figure 5-2*).



Figure 5-1 Overall program satisfaction

Figure 5-2 Would recommend program to family/friends



5.2.2.2 Overall Program Satisfaction by Respondent Characteristics—*Table 5-5* presents overall satisfaction with the program by respondents' sociodemographic characteristics. Female and older respondents rated the program more highly. Across all three measures of overall program satisfaction, Black respondents were more satisfied compared to White and other respondents. Hispanic respondents (71.9 percent) were more likely to say they were very satisfied with the program compared to non-Hispanics (66 percent; p = .093)

Respondents with a 4-year college degree or higher rated the program lower than respondents with a high school degree or GED (p = .031). We see the same pattern for the other satisfaction questions (i.e., would recommend program, overall program satisfaction), but those differences are not statistically significant.

5.2.2.3 Overall Program Satisfaction by Program Characteristics—There were marked differences in satisfaction depending on the health focus of the program and how the program was delivered (i.e. in-person and/or by telephone, see *Figure 5-3* and *Table 5-6*). Across all three measures of satisfaction, respondents in the "other" health focus program (i.e., **Texas** program that allowed participants to focus on a health area of their choice) were most satisfied. Also across all three satisfaction measures, respondents in programs delivered both in-person and by telephone were most satisfied.

There were also marked differences in satisfaction depending on the form of the incentives and whether incentives were process or outcome incentives (*Figure 5-4* and *Table 5-6*). Across all three satisfaction measures, respondents in programs that provided flexible wellness accounts were most satisfied with the program (e.g., 85.1 percent very satisfied vs. 64.3 percent of respondents in programs providing money-valued incentives and 45.2 percent of respondents in programs providing points redeemable for rewards; p < .001). Also across all three satisfaction measures, respondents in programs that offered process incentives only were most satisfied with the program that offered process incentives only were most satisfied with the program.

	Overall pr	ogram rating	Responde	ent would recor family and f	nmend pro riends	ogram to	(Overall program satisfaction			
			Yes, definitely	Yes, probably	No		Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied		
Characteristic	Mean	P-value		Row %		P-value		Row %		P-value	
Overall	8.5		74.4	22.1	3.6	_	67.0	26.6	6.4		
Age						0.770				0.453	
44 years or younger	8.3	reference	72.9	23.3	3.8	_	64.1	29.6	6.3		
45 to 52 years	8.5	0.171	76.6	20.3	3.1	_	68.7	24.1	7.1		
53 to 58 years	8.5	0.058	75.2	21.6	3.1	_	66.8	27.7	5.5		
59 years or older	8.6	0.013	72.9	23.0	4.1	_	68.2	25.4	6.5		
Sex	_					0.103	_	_		0.867	
Male	8.3	_	73.1	22.2	4.6	_	67.2	26.8	6.0		
Female	8.5	_	75.1	22.0	2.9	_	67.0	26.5	6.6		
Married	_	_	_			0.728		_	_	0.750	
Yes	8.4	_	74.3	22.7	3.0	_	65.7	28.0	6.4		
No	8.5	_	74.4	21.9	3.7	_	67.4	26.3	6.3		
Education	_					0.160	_	_		0.233	
Less than high school graduate or GED	8.5	0.906	76.3	20.6	3.1	_	68.8	25.5	5.8	_	
High school graduate or GED	8.5	reference	73.8	22.7	3.5	_	68.5	25.7	5.9		
Some college or 2-year college degree	8.4	0.177	74.6	22.1	3.2	_	65.7	27.5	6.8		
4-year college degree or more	8.2	0.031	69.3	23.5	7.3	_	59.2	31.3	9.5	_	
Employed Full- or Part-Time	_					0.990	_	_		0.789	
Yes	8.5		74.2	22.2	3.6	_	68.1	26.2	5.8		
No	8.5	_	74.5	22.0	3.5		66.8	26.7	6.5		
Receiving Disability or Supplemental Security Income		—		—		0.122		—	—	0.090	
Yes	8.5	_	76.7	20.5	2.7	_	68.5	24.1	7.3		
No	8.4		73.2	22.9	4.0		66.3	27.9	5.9		

 Table 5-5

 Descriptive and bivariate analyses for overall program satisfaction by demographic characteristics

(continued)

	Overall pro	ogram rating	Responde	ent would record family and t	mmend pro friends	ogram to	Overall program satisfaction			
			Yes, definitely	Yes, probably	No		Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied	
Characteristic	Mean	P-value		Row %	Row %		Row %			P-value
Race						0.029	_			0.073
White alone	8.3	reference	72.7	23.1	4.2	_	65.1	27.3	7.5	
Black alone	8.7	< 0.001	78.5	19.2	2.3	—	70.3	25.0	4.7	
Other	8.5	0.224	71.8	23.9	4.2	—	65.6	28.1	6.3	
Ethnicity		0.323				0.496	—			0.093
Hispanic or Latino	8.6		75.1	22.4	2.5	_	71.9	22.9	5.2	
Not Hispanic or Latino	8.4		74.2	22.1	3.7	_	66.0	27.4	6.6	

Table 5-5 (continued)Descriptive and bivariate analyses for overall program satisfaction by demographic characteristics



Figure 5-3 Program satisfaction: Overall and by program characteristics

*Significantly different than reference category for overall program rating:

Health Focus of Program = Diabetes Prevention

Program Delivery Method = In-Person

†Statistically significant, p < 0.10.



Figure 5-4 Program satisfaction by incentive characteristics

*Significantly different than reference category for overall program rating:

Incentive Form = Money-Valued Incentives

Incentive Target = Process Incentives Alone

†Statistically significant, p < 0.10.

			Responde	ent would recon	mend prog	ram to				
				family and fi	riends		(Overall progra	m satisfaction	
	Overall prog	- gram rating	Yes, definitely	Yes, probably	No		Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied	
Characteristic	Mean	P-value		Row %		P-value		Row %		P-value
Health Focus of Program						< 0.001				< 0.001
Diabetes prevention	8.6	reference	73.0	24.9	2.1		69.1	26.7	4.2	
Diabetes control	8.4	0.339	62.6	33.3	4.0		62.8	31.1	6.1	
Weight loss	8.4	0.157	70.1	23.1	6.8		63.7	26.9	9.4	
Smoking cessation	8.2	0.001	74.7	21.2	4.1		62.6	29.6	7.7	
Hypertension	8.6	0.894	70.8	25.7	3.5		68.1	25.7	6.2	
Other	9.3	< 0.001	86.2	12.6	1.2		85.1	12.2	2.7	
Program Delivery Method						< 0.001				0.001
In-person	8.5	reference	70.6	25.5	3.9		66.9	27.2	5.9	
Telephonic	8.1	0.001	71.3	23.8	4.9		59.6	33.2	7.2	
Both in-Person and telephonic	8.6	0.677	78.9	18.2	2.9		70.5	22.8	6.6	
Incentive Form						< 0.001				< 0.001
Money-valued incentives	8.3	reference	72.9	23.1	4.0		64.3	28.8	7.0	
Flexible wellness account	9.3	< 0.001	86.2	12.6	1.2		85.1	12.2	2.7	
Points redeemable for rewards	7.5	0.011	45.2	50.0	4.8		45.2	45.2	9.5	
Incentive Target						0.021				0.013
Process incentives alone	8.6	reference	76.0	20.3	3.7		70.6	23.8	5.5	
Outcome incentives alone	8.3	0.119	62.6	33.9	3.5		62.3	32.5	5.3	
Process and outcome incentives	8.3	< 0.001	74.2	22.3	3.5		64.3	28.2	7.6	

 Table 5-6

 Descriptive and bivariate analyses for overall program satisfaction by program characteristics

5.3.3 Satisfaction with Program Accessibility

In this section, we present findings about satisfaction with program access. These findings are based on survey questions about access to program staff, convenience of the program schedule and location, and other access issues (see *Table 5-8*), and also on focus group findings. Below we present descriptive and bivariate analyses and integration of survey and focus group findings (see *Section 5.2.3.3*)

SURVEY QUESTIONS – PROGRAM ACCESS

- How often were you able to contact program staff when you wanted to? (always never)
- How often were you able to get the help you wanted from the program staff? (always never)
- I was able to start the program as soon as I wanted. (yes/no)
- The amount of time I spent on the program was about right. (yes/no)
- The program schedule was convenient for me (yes/no)
- The program location was convenient for me. (yes/no)
- The program staff spoke my language. (yes/no)
- I was able to get child care when I needed to attend the program. (yes/no)
- I was able to get transportation when I needed to attend the program. (yes/no)

5.2.3.1 Satisfaction with Program Access—About 9 out of 10 survey respondents said they were able to start the program as soon as they wanted (90.9 percent), the amount of time spent on the program was about right (88.5 percent), the program schedule was convenient (91.7 percent), and the program location was convenient (92.2 percent) (*Figure 5-5* and *Table 5-7*). Almost all survey respondents said that the program staff spoke their language (96.6 percent) (*Figure 5-5* and *Table 5-7*). Few survey respondents said they were not able to get child care (5.4 percent) or transportation (8.9 percent) when needed to attend the program (*Figure 5-5* and *Table 5-7*).

About half (50.7 percent) of respondents said they were always able to contact program staff when they wanted and another 20.2 percent were usually able to do so (*Figure 5-6* and *Table 5-7*). About 62 percent of respondents were always able to get the help they wanted from program staff and another 23.4 percent were usually able to do so.

5.2.3.2 Satisfaction with Program Access by Program Characteristics—Satisfaction with program access differed by the health focus of the program. Respondents in the "other" health focus program (**Texas** program) were most satisfied with program access according to most measures of program access. The differences were especially marked for access to program staff. About 68 percent of respondents in the "other" health focus program said they could always contact program staff compared to 35.5 percent (diabetes control) to 51.8 percent (weight loss) for participants in programs with focus on other health issues (p < 0.001). Similarly, 74.6 percent of survey respondents in the "other" health focus program were always able to get the help they wanted from program staff (p < 0.001) (*Table 5-7*).



Figure 5-5 Satisfaction with program accessibility

	Started program as soon as wanted			Amoun program	Amount of time spent on program was about right			Program schedule was convenient			Program location was convenient		
Characteristic	Yes	No	P-value	Yes	No	P-value	Yes	No	P-value	Yes	No	P-value	
No.	2,041	204		1,955	255		2,048	185		2,029	171		
%	90.9	9.1		88.5	11.5		91.7	8.3		92.2	7.8		
Health Focus of Program			< 0.001			< 0.001			< 0.001			< 0.001	
Diabetes prevention	88.7	11.3		89.5	10.5		86.8	13.2		86.9	13.1		
Diabetes control	87.6	12.4		89.5	10.5		90.1	9.9		87.3	12.7		
Weight loss	81.7	18.3		83.4	16.6		90.5	9.5		93.8	6.3		
Smoking cessation	92.4	7.6		86.7	13.3		92.1	7.9		92.6	7.4		
Hypertension	89.0	11.0		90.8	9.2		91.7	8.3		93.3	6.7		
Other	96.4	3.6		94.9	5.1		97.0	3.0		97.5	2.5		
Program Delivery Method			< 0.001			0.007			0.007			0.002	
In-person	86.4	13.6		88.5	11.5		89.5	10.5		89.9	10.1		
Telephonic	93.3	6.7		84.0	16.0		94.3	5.7		91.7	8.3		
Both in-person and telephonic	93.4	6.6		90.1	9.9		92.7	7.3		94.4	5.6		

 Table 5-7

 Descriptive and bivariate analyses for satisfaction with program access: Overall and by program characteristics

(continued)

	Program sta	ff spoke re language	spondent's	Got child care when needed to attend the program			Got transportation when needed to attend the program				
Characteristic	Yes	No	P-value	Yes	No	I did not need child care	P-value	Yes	No	I did not need transportation	P-value
No.	2,164	77		133	120	1,958		716	198	1,311	_
%	96.6	3.4		6.0	5.4	88.6	_	32.2	8.9	58.9	_
Health Focus of Program	_		< 0.001				0.001			_	< 0.001
Diabetes prevention	91.7	8.3	—	12.1	8.2	79.7	—	63.3	10.5	26.2	—
Diabetes control	91.2	8.8		5.3	5.3	89.5	—	27.2	7.2	65.6	—
Weight loss	96.4	3.6	_	4.1	5.0	90.9	_	48.2	8.1	43.7	_
Smoking cessation	98.9	1.1	_	5.3	4.7	90.0	_	25.1	9.8	65.1	_
Hypertension	96.3	3.7		8.0	6.3	85.7	_	37.6	4.6	57.8	
Other	96.7	3.3		4.0	5.8	90.2	_	19.1	7.0	73.9	
Program Delivery Method	_		< 0.001				0.011	_		_	< 0.001
In-person	93.6	6.4	_	7.8	6.6	85.6	_	48.2	8.7	43.1	_
Telephonic	98.4	1.6		4.7	3.6	91.7	_	9.1	4.9	86.0	—
Both in-person and telephonic	98.2	1.8	—	5.1	5.3	89.7	_	28.4	10.4	61.2	_

Table 5-7 (continued)Descriptive and bivariate analyses for satisfaction with program access: Overall and by program characteristics

continued

DRAFT

	Freq	uency of cor	tact with pr	ogram staff	Frequency that respondent got help wanted from program staff						
Characteristic	Always	Usually	Some- times	Never	I did not try to contact program staff	P-value	Always	Usually	Some- times	Never	P-value
No.	1,141	454	294	58	305	_	1,380	522	251	82	_
⁰∕₀	50.7	20.2	13.1	2.6	13.5	-	61.7	23.4	11.2	3.7	_
Health Focus of Program	_	_	_	-	_	< 0.001	-	-	_	_	< 0.001
Diabetes prevention	46.0	23.0	14.8	2.7	13.4	-	65.2	22.0	10.8	2.1	_
Diabetes control	35.5	21.5	15.5	4.0	23.5	-	45.2	30.5	11.2	13.2	_
Weight loss	51.8	27.7	10.3	3.1	7.1	-	56.6	26.7	14.5	2.3	_
Smoking cessation	50.4	18.9	13.4	2.5	14.7	-	62.0	23.1	11.4	3.5	-
Hypertension	39.6	18.0	13.5	3.6	25.2	-	50.5	27.5	14.7	7.3	-
Other	67.5	16.7	11.0	1.2	3.6	-	74.6	17.6	7.8	0.0	-
Program Delivery Method	_	_	-	-	_	< 0.001	-	_	_	_	< 0.001
In-person	45.0	23.5	13.7	3.0	14.8	-	55.7	27.0	12.4	4.9	-
Telephonic	47.2	17.2	9.5	3.6	22.6	-	63.8	20.8	8.9	6.5	-
Both in-person and telephonic	56.7	18.6	14.0	1.9	8.8	_	65.8	21.4	11.1	1.7	_

Table 5-7 (continued) Descriptive and bivariate analyses for satisfaction with program access: Overall and by program characteristics

Figure 5-6 Satisfaction with program accessibility: contact with and help from program staff



Survey respondents who participated in programs delivered both in-person and by telephone (94.4 percent) were more satisfied with program location compared to respondents who participated in programs delivered in-person only (89.9 percent) or by telephone only (91.7 percent; p = .002) (*Table 5-7* and *Figure 5-7*). These respondents were also more likely to say they were always able to contact program staff when they wanted to (56.7 percent) compared to respondents who participated in programs delivered in-person only (45 percent) or by telephone only (47.2 percent; p < 0.001) (*Table 5-7* and *Figure 5-7*). They were also more likely to say they could always get the help they wanted from program staff (65.8 percent) compared to respondents who participated in programs delivered in-person only (55.7 percent) or by telephone only (63.8 percent; p < 0.001) (*Table 5-7* and *Figure 5-7*).

Integration of survey and focus group findings regarding satisfaction with program access—The focus group discussions provided additional insight into program participants' experiences with program access. *Table 5-8* presents key themes that emerged from the focus group discussions related to each of the survey questions about program access. We included participant quotes to illustrate each of the themes.

Figure 5-7 Satisfaction with program access by program delivery method



Table 5-8Integration of survey and focus group findings: satisfaction with program accessibility

Survey findings*	Focus group findings
90.9% of survey respondents said they were able to start the program as soon as they wanted	• Most participants said they were able to start participation as soon as they want <i>It was easy for me to get in the program because my doctor signed me up and then got all the paperwork and then they called me.</i>
88.5% of survey respondents said the amount of time spent on the program was about right	• Some participant thought the program should be extended. I think it should be longer, just extend it a little longer because, you know, you fall, get up, you know. You know there's going to be some hits and some misses, sostick with me, stay with me. I just need you tohold my hand and walk me through this because this is something I want to do.
	• Some participants suggested that program staff follow up with them after the program ends to see how they are doing. <i>I would like to see [program staff] follow-up after we're out of the program, just to see how you are doing.</i>

(continued)

Survey findings*	Focus group findings						
91.7% of survey respondent said the program schedule was convenient for them	 Some participants found the schedule convenient. Specifically, some liked participating in program activities on a regular schedule (e.g., a weekly group smoking cessation session). <i>I like the discipline of coming every Wednesday and putting my best foot forward.</i> <i>I know every Monday at 3–4:00, this is my group, and this is when I</i> 						
	 However, some participants said the schedule was not convenient and they wanted more options for where and how to participate. My schedule is always so busy. So like class is this day at this time, I don't know if I'm going to have four kids with me. It's hard to find a babysitter 						
	• Some participants liked the flexibility of the quitline because they could call at any time, for example when they were experiencing a craving. <i>One time I called about like 7:00 at night. I was trying to slow down smoking and got stressed out and called themwe talked a good bit.</i>						
	• Participants appreciated that the quitline coaches scheduled follow-up calls at times that were convenient or when they were most likely to need support. <i>I set up a time schedule for them to call me becausewhen I wake up in the morning I needed that first cigaretteso I had them call me around that time, around mealtimes, around stressful situation times.</i>						
92.2% of survey respondents said the program location was convenient	• Some participants had difficulty getting to the program location, for example, they had to take multiple forms of public transportation or pay for gas or a cab. <i>I got to take a bus so sometimes…like after the group I have to wait like an hour and a half for the next bus and it pisses me off.</i>						
	• Some participants using the quitline appreciated that they could call from the comfort and privacy of home. <i>I like the Help LineI can be in my own home. I can be personal. I can tell this person anything and they're not going to judge me.</i>						
50.7% were always able to contact program staff when they wanted; 61.7% were always able to get the help they wanted from program staff	 Many participants said that the program staff were accessible. In some cases, program staff went "above and beyond," for example, sharing their personal cell phone number or offering to meet them at convenient locations. <i>They actually met me at Safeway and went and did the shopping for me.</i> My trainer came to the Zumba class with me because I was afraid of the state of the state of the state of the state. 						
	 <i>going by myself, which made things a lot easier for me.</i> A few participants had difficulty contacting program staff or wanted more time with them. My [navigator] don't even call me, I can't even get in touch with the one for an appointment. 						
	I need at least to be able to have like an hour, hour and a half with a trainer to discuss things, to work on things,						
	• Some participants were frustrated that they were not able to call program staff directly, for example, not able to return missed calls. <i>I got some switchboard and she didn't know what I was talking about.</i>						

Table 5-8 (continued)Integration of survey and focus group findings: satisfaction with program accessibility

*See detailed survey findings in *Table 5-7*.

5.3.4 Satisfaction with Educational Materials and Information

Survey respondents were asked if they received any educational materials or information about their health issues and, if so, how helpful the materials/information were. Below we present descriptive and bivariate analyses and integration of survey and focus group findings (see *Section 5.2.4.3*)

SURVEY QUESTIONS – EDUCATIONAL MATERIALS/ INFORMATION

- Did the program give you any educational materials or information about your health issue(s) (for example, written materials or a web site)? (yes/no)
- How helpful were these materials or information? (very helpful not helpful)

5.3.4.1 Satisfaction with Educational Materials and Information—More than half of survey respondents (58 percent) said they had received educational materials/ information that was very helpful and another 21.2 percent had received materials/information that were somewhat helpful. About 21 percent of respondents had not received any materials/information or received materials/information that were not helpful (*Figure 5-8* and *Table 5-9*).

Figure 5-8 Helpfulness of educational materials or information about health issues



5.3.4.2 Satisfaction With Educational Materials And Information By Program Characteristics—Respondents who participated in programs delivered both in-person and by telephone were most likely to say they had received materials and information that was very helpful (60.5 percent vs. 56.8 percent for those in in-person and telephone programs and 54.5 percent for those in telephonic only programs; p < 0.001) (*Table 5-9*).

	Helpfulness of education materials or information about health issues							
Characteristic	Received not helpful or no materials	Received materials that were somewhat helpful	Received materials that were very helpful	P-value				
No.	460	467	1,278	—				
%	20.9	21.2	58	_				
Health Focus of Program	_	-	_	< 0.001				
Diabetes prevention	8.6	13.9	77.5	—				
Diabetes control	28.7	21	50.3	_				
Weight loss	38.5	20.6	40.8	_				
Smoking cessation	17.9	25.2	56.9	_				
Hypertension	36.6	15.2	48.2	_				
Other	18.8	16.4	64.8	_				
Program Delivery Method	—	_	_	< 0.001				
In-person	25.6	17.5	56.8	—				
Telephonic	18.8	26.7	54.5	_				
Both in-person and telephonic	17.7	21.8	60.5	_				

Table 5-9Descriptive and bivariate analyses for satisfaction with educational materialsand information

We also found differences in satisfaction with materials/information by the health focus of the program (p < 0.001) (*Table 5-9*). Participants in the diabetes prevention program (77.5 percent) were most likely to say they had received materials/information that was very helpful. Participants in the weight loss (40.8 percent) and hypertension (48.2 percent) were least likely to say they had received materials/information that was very helpful.

5.3.4.3 Integration of Survey and Focus Group Findings Regarding Satisfaction with Educational Materials and Information—The focus group discussions provided additional insight into program participants' satisfaction with educational materials and information provided as part of the program. *Table 5-10* presents key themes that emerged from the focus group discussions related to the survey questions about educational materials and information. We included participant quotes to illustrate each of the themes.
Table 5-10 Integration of survey and focus group findings: satisfaction with educational materials and information

Survey findings*	Focus group findings
58% of respondents said they had received educational materials or information about their health issue that was very helpful	• Materials were helpful in understanding their health issues and steps they could take to improve their health. <i>If my numbers are a certain way, I want to know like what my body is kind of doing. [The informational material] kind of tells you what your body's doing.</i>
	What the pamphlets did for me, they enlightened me on the pros and cons of health. You know, the cancer, emphysema, and all that other stuff.
	• The materials were helpful as reminders and motivators. I found it helpful just to put some of that stuff [materials] on your fridgehow much progress you've made or like your goal for the week.
	• Participants had mixed reactions to the food tracker tool used in the diabetes program. Some participants found it helpful while others found it complicated to use Our tracker was very inspirational [it] let me to see that I needed to change my mind on what I was eating.
	If I don't have the book right next to me to write every time I eat it's a bit difficult so I have to take time from the kids in the evening to sit and write and try to remember exactly what I eat at the time I eat.
	Especially when you're eating something like a Spanish dish. How do you measure that? How do you know how many meats they put there?
20.9% of survey respondents said they had not received any materials/information or they had materials/information that were not	• Literacy was a barrier for some participants. Program staff relied on visuals to help with participants with low literacy. <i>Part of my issue is my readingif you can't read it's like reading another language.</i>
helpful	• Some participants felt overwhelmed by the amount of information they received It's good to have a lot of information but I can't seem to figure out what information to take in and not. And I can't remember it all either.

*See detailed survey findings in *Table 5-9*.

5.3.5 Satisfaction with Communication with Program Staff

Survey respondents were asked about different aspects of their communication with program staff and whether staff seemed to "care about them as a person." Below we present descriptive and bivariate analyses and integration of survey and focus group findings (see *Section 5.3.5.3*).

SURVEY QUESTIONS- COMMUNICATION WITH PROGRAM STAFF

- The program staff explained things in a way I can understand. (strongly agree strongly disagree)
- The program staff listened carefully to what I have to say. (strongly agree strongly disagree)
- The program staff encouraged me to ask questions. (strongly agree strongly disagree)
- The program staff encouraged me to talk about my health concerns. (strongly agree strongly disagree)
- The program staff seemed to care about me as a person. (strongly agree strongly disagree)

5.3.5.1 Satisfaction with Communication with Program Staff—Overall, survey respondents were favorable about their communication with program staff. About 79 percent strongly agreed that staff explained things in a way they can understand; 78.8 percent strongly agreed that program staff listened carefully to what they have to say; 74.6 percent strongly agreed that program staff encouraged them to ask questions; 73.5 percent strongly agreed that program staff encouraged them to talk about their health concerns; and 77.9 percent strongly agreed that program staff seemed to care about them as a person (*Table 5-11 and Figure 5-9*).

5.3.5.2 Satisfaction with Communication with Program Staff by Program

Characteristics—Across all of these questions, respondents who participated in programs delivered both in-person and telephonically rated the communication most favorably and respondents in telephonic only programs rated the communication least favorably (*Tables 5-11 and 5-12*). For example, 83.2 percent of respondents in programs delivered both in-person and telephonically strongly agreed that program staff listened carefully to them, compared to 75.6 percent for in-person programs and 74.7 percent for telephonic programs (p < 0.001; *Table 5-11*); 82.8 percent of these respondents strongly agree that program staff seemed to care about them as a person compared to 74.9 percent for in-person programs and 71.4 percent for telephonic programs (p < 0.001; *Table 5-12*).

 Table 5-11

 Descriptive and bivariate analyses for satisfaction with communication with staff by program characteristics

Program staff explained things in a way respondent could understand			a way 1	Program staff listened carefully to what respondent had to say			Program staff encouraged respondent to ask questions					
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
No.	87	393	1,750	_	106	367	1,758		149	417	1,665	_
%	3.9	17.6	78.5	_	4.8	16.5	78.8		6.7	18.7	74.6	_
Health Focus of Program	_			< 0.001		_	_	< 0.001	_	_		< 0.001
Diabetes prevention	3.1	12.2	84.7	—	3.1	15.3	81.5	—	3.8	14.3	81.9	—
Diabetes control	8.2	25.0	66.8	_	8.8	21.2	69.9	_	10.8	24.6	64.6	_
Weight loss	3.2	17.4	79.4	_	6.8	21.7	71.5		7.3	25.9	66.8	_
Smoking cessation	4.1	19.3	76.6		5.5	16.9	77.6		8.3	19.1	72.6	_
Hypertension	3.6	23.4	73.0		2.8	17.4	79.8		4.5	30.0	65.5	_
Other	1.8	9.8	88.4	_	1.2	8.3	90.5		2.1	8.4	89.6	
Program Delivery Method	_			0.004		—	_	< 0.001				< 0.001
In-person	4.2	18.3	77.5		5.3	19.1	75.6		6.2	22.4	71.5	_
Telephonic	5.9	21.3	72.9	_	6.9	18.5	74.7	_	9.5	19.8	70.6	_
Both in-person and telephonic	2.9	15.4	81.8		3.7	13.2	83.2		6.1	15.0	79.0	



Figure 5-9 Communication with program staff

We also found significant differences in satisfaction with communication by the health focus of the program. Across all the communication questions, survey respondents who participated in the "other" health focus program (i.e., **Texas** program) were most satisfied with communication with program staff. For example, 92.9 percent of respondents in the "other" health focus program strongly agreed that program staff encouraged them to talk about their health concerns, compared to 79.5 percent for diabetes prevention programs, 69.7 percent for smoking cessation programs, 67.9 percent for diabetes control programs, 64.4 percent for weight loss programs, and 59.6 percent for hypertension program strongly agreed that program strongly agreed that program strongly agreed that program strongly agreed that programs (p < 0.001) (*Table 5-12*). About 94 percent of respondents in the "other" health focus programs, 73.3 percent in diabetes prevention programs, 73 percent in hypertension programs, and 66.8 percent in diabetes control programs (p < 0.001; *Table 5-12*).

Table 5-12
Descriptive and bivariate analyses for satisfaction with communication with staff (additional measures) by program
characteristics

	Program staft	f encouraged res conc	spondent to talk erns	about health	Program staff	seemed to care	about responde	nt as a person
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
No.	174	416	1,637		142	352	1,743	
%	7.8	18.7	73.5		6.3	15.7	77.9	
Health Focus of Program				< 0.001				< 0.001
Diabetes prevention	3.8	16.7	79.5		4.2	15.0	80.8	
Diabetes control	10.2	21.9	67.9		8.7	24.5	66.8	
Weight loss	7.8	27.9	64.4		8.1	18.6	73.3	
Smoking cessation	10.9	19.4	69.7		7.8	16.6	75.6	
Hypertension	8.3	32.1	59.6		3.6	23.4	73.0	
Other	0.9	6.3	92.9		2.1	4.2	93.8	
Program Delivery Method				< 0.001				< 0.001
In-person	6.6	23.2	70.1		5.8	19.4	74.9	
Telephonic	11.5	22.1	66.4		9.5	19.0	71.4	
Both in-person and telephonic	7.6	13.8	78.6		5.6	11.6	82.8	

Integration of survey and focus group findings regarding satisfaction with communication—The focus group discussions provided additional insight into program participants' communication with program staff. *Table 5-13* presents key themes that emerged from the focus group discussions related to each of the survey questions about communication. We included participant quotes to illustrate each of the themes.

 Table 5-13

 Integration of survey and focus group findings: satisfaction with communication with program staff

Survey findings*	Focus group findings
77.9% of survey respondents strongly agreed that program staff seemed to care about them as a person	• Many program participants felt that program staff genuinely cared about them and their success in making healthy behavior changes. <i>They genuinely sound like they care, it wasn't just their job.</i>
	I could talk to him about anything and he's there for me. It makes me feel like he really cares and he don't look at me different than family or friends.
 Percent who strongly agree that program staff Explained things in a way I can understand (78.5%) Listened carefully to what I have to say (78.8 %) Encouraged me to ask questions (74.6%) Encouraged me to talk about my health concerns (73.5%) 	 Participants who interacted with program staff in person generally said the staff communicated well, listened to their questions and concerns and explained things clearly. <i>They show you in a different way than the doctor would show you what is going on with your healthlike your doctor can tell you one way and you may not understand. But the health coordinatorthey take the time to explain everything out.</i> Participants who interacted with quitline counselors had mixed experiences, with some describing counselors who seemed scripted, rushed, and judgmental. <i>It pissed me off because I felt like I was being judged by a non-smoker Each time I called it was a bad experience. She was being negative and judgmental. A lot of times I needed to talk to them more and I got rushed through it</i>

*See detailed survey findings in Tables 5-11 and 5-12.

5.3.6 Satisfaction with and Impact of Program Incentives

Survey respondents were asked questions about their satisfaction with incentives and about whether incentives had helped them with their health goals. Below we present descriptive and bivariate analyses, followed by multivariate analyses (see Section 5.3.6.4) and integration of survey and focus group findings (see Section 5.3.6.6).

SURVEY QUESTIONS – SATISFACTION WITH AND IMPACT OF PROGRAM INCENTIVES

- Rewards or incentives helped me (or will help me) set goals and work toward them. (strongly agree – strongly disagree)
- Rewards or incentives helped me (or will help me) make positive changes in my life. (strongly agree – strongly disagree)
- I like getting rewards and incentives for taking good care of my health. (strongly agree strongly disagree)
- I am happy with the rewards or incentives. (strongly agree strongly disagree)
- I am happy with how often I got (or will get) the reward or incentives. (strongly agree strongly disagree)
- The rewards or incentives are fair. (strongly agree strongly disagree)

5.2.6.1 Satisfaction with and Impact of Incentives—Overall, survey respondents were happy with the incentive—78.1 percent strongly agreed that they liked getting incentives for taking good care of their health, 74.6 percent strongly agreed that they were happy with the incentives overall, and 72.7 percent strongly agreed that the incentives were fair (*Figure 5-10*). Satisfaction was lower with frequency of receiving incentives; 67.4 percent of respondents strongly agreed that they were happy with how often they got incentives.



Figure 5-10 Satisfaction with and impact of incentives

In terms of the impact of the incentives, 65.8 percent of respondents strongly agreed that incentives helped them set goals and work towards them and 65.5 percent said the incentives helped them make positive changes in their life (*Figure 5-10*).

5.3.6.2 Bivariate Analyses: Satisfaction with Incentives—We found differences in satisfaction with incentives by demographic characteristics, including respondents' sex, education level, and disability status (see *Appendix Table F-1*). Female respondents were more likely to strongly agree with the statements about satisfaction with incentives. For example, 77.2 percent of females strongly agreed that they were happy with the incentives overall compared to 70 percent of males (difference was not statistically significant for "incentives are fair"). Less educated respondents were more likely to strongly agree that they were happy with how often they got the incentives (71.4 percent for less than high school, 68.3 percent for high school graduation, 64.6 percent for some college, and 61.4 percent for college degree; p = .002). Respondents receiving disability or SSI were more likely to strongly agree that they are happy with the incentives overall (76.3 percent vs. 73.6 percent for those not receiving SSI or disability; p = .038) and that the incentives are fair (74.9 percent vs. 71.5 percent; p = .057).

We also found differences in satisfaction with incentives by all of the program characteristics examined (see *Appendix Table F-2*). Participants in the "other" health focus program (i.e., **Texas** program) were most likely to strongly agree that they liked getting incentives for taking good care of their health, were happy with the incentives overall, were happy with how often they got the incentive, and the incentives were fair. Respondents in programs delivered both in-person and telephonically were also more likely to strongly agree with these satisfaction questions.

Satisfaction with incentives also differed by incentive form, with the highest satisfaction for flexible wellness accounts, followed by money-valued incentives, and points redeemable for rewards. For example, 91.5 percent of respondent who received a flexible spending account strongly agreed that they liked getting incentives for taking good care of their health, compared to 75.7 percent of respondents receiving money-valued incentives and 64 percent of those receiving points redeemable for award (p < .001). Respondents who received process incentives only were most satisfied with incentives. For example, 80.9 percent of respondents who only received process incentives strongly agreed that they liked getting incentives for taking good care of their health, compared to 76.7 percent of respondents who received process and outcome incentives and 66.3 percent of those who received outcome incentives only (p < .001).

The monetary value of incentives was also associated with satisfaction (see *Appendix Table F-2*). For example, among respondents who strongly agreed that they were happy with incentives overall, the mean value of incentives received was \$707, compared to a mean value of \$456 among those who somewhat agreed and \$234 among those who somewhat or strongly disagreed (p < .001).

5.3.6.3 Bivariate Analyses: Impact of Incentives—We found differences in the impact of incentives by demographic characteristics, including respondents' race, education level, and sex (see *Appendix Table F-3*). Black respondents were more likely to say the incentives helped them set goals and work towards them (71.1 percent vs. 62.2 percent for White and 67.6 percent for other races; p = .004) and helped them make positive changes in their life (70.1 percent. vs.

62.6 percent for White and 67.5 percent for other races; p = .009) (*Table 5-14*). Respondents with less than high school education were more likely to strongly agree that the incentives helped them make positive changes (p = .068). There were also differences by respondents' sex in agreement that incentives helped them make positive changes in life. Although males and females were equally likely to strongly agree (65.5 percent for both), males were more likely to somewhat or strongly disagree (11.1 percent vs. 7.6 percent for females) (p = .012).

We also found differences in impact of incentives by all of the program characteristics examined (see *Appendix Table F-4*). Respondents in the "other" health focus program (i.e., **Texas** program) were most likely to strongly agree that the incentives helped them set goals and work towards them and helped them make positive changes in their life. Respondents in programs delivered both in-person and by telephone were also more likely to strongly agree that the program had a positive impact.

The impact of incentives also differed by incentive form, with the highest satisfaction for flexible spending wellness accounts. About 87 percent of respondents who received flexible spending wellness accounts said they strongly agreed that incentives helped them set goals and work towards them, compared to 64 percent for points redeemable for rewards and 61.8 percent for money-valued incentives (p < .001) (see *Appendix Table F-4*). Respondents in programs that provided process incentives only were mostly likely to strongly agree incentives helped them positive changes in their life (69 percent vs. 64.4 percent for process and outcome incentives and 49.5 percent for outcome incentives only; p < .001).

The monetary value of incentives was also associated with self-reported impact of incentives (see *Appendix Table F-4*). Among respondents who strongly agreed that the incentives helped them set goals and work towards them, the mean value of incentives received was \$774, compared to a mean value of \$381 for those who somewhat agreed and \$238 for those who somewhat or strongly disagreed. Among respondents who strongly agreed that the incentives make positive changes in their life, the mean value of incentives received was \$779, compared to a mean value of \$372 for those who somewhat agreed and \$212 for those who somewhat or strongly disagreed.

5.3.6.4 Multivariate Analyses—Our multivariate modeling results showed that a number of respondent and program characteristics were significant predictors of the four measures of satisfaction with program incentives: (1) respondent liked getting incentive for taking good care of health, (2) respondent was happy with rewards or incentives overall, (3) respondent was happy with how often they got rewards or incentives, and (4) respondent thought rewards or incentives are fair (for each measure: strongly agree or somewhat agree compared to somewhat or strongly disagree) (see *Table 5-14* and *Appendix Tables F-5* through *F-8*). Our results also showed that several respondent and program characteristics were significant predictors of the two measures of impact of program incentives: (1) rewards or incentives helped set goals and work towards them, and (2) rewards or incentives helped make positive changes in life (for each measure: strongly agree or somewhat or strongly disagree) (see *Tables F-9 and F-10*). Specifically:

				Respondent Liked Getting Rewards or Incentives for Taking Good Care of Health	Respondent Happy with Rewards or Incentives Overall	Respondent Happy with How Often Got Rewards or Incentives	Rewards or Incentives Are Fair
	Characteristic	Group	Reference	OR	OR	OR	OR
1	Program delivery method	Telephonic	In person	1.57	1.95*	1.75*	1.77*
		Both in person and telephonic	In person	1.56*	1.29	1.18	1.36*
2	Incentive target	Outcome incentives alone	Process incentives alone	0.74	0.77	0.79	0.68
		Process and outcome incentives	Process incentives alone	0.94	0.88	0.95	0.8
3	Age	45 to 52 years	44 years or younger	0.89	0.89	1.08	0.99
	C	53 to 58 years	44 years or younger	0.96	0.93	1.11	0.95
		59 years or older	44 years or younger	0.88	0.86	1.23	1.04
4	Sex	Female	Male	1.32*	1.59*	1.42*	1.29*
5	Married	Yes	No	0.93	1.09	1.05	1.18
6	Education	Less than high school graduate or GED	High school graduate or GED	1.07	1.03	1.11	0.99
		Some college or 2-year college degree	High school graduate or GED	1.16	0.93	0.86	0.96
		4-year college degree or more	High school graduate or GED	1.04	0.93	0.71*	0.75
7	Employed full- or	Yes	No	0.95	1.34*	1.25*	1.31*
	part-time						
8	Race	Black alone	White alone	1.04	1.02	1.09	0.87
		Other	White alone	1.07	1.23	1.03	1.1
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	0.72*	1.09	1.09	1
10	Incentive form	Flexible wellness account	Money-valued incentives	1.01	1.41	1.28	0.89
		Points redeemable for rewards	Money-valued incentives	0.55	0.35*	0.21*	0.3*
11	Dollar amount of	\$25 - <\$100	\$0 - <\$25	1 01	1 45*	1 74*	1 31
••	incentive received	420 4100	\$\$ \$ 4	1.01	1.10		1.01
		\$100 - <\$400	\$0 - <\$25	1.13	2.2*	2.26*	1.89*
		\$400 - <\$2 500	\$0 - <\$25	1 9*	2.42*	3 16*	2.06*
		\$2,500 or more	\$0 - <\$25	3.44*	3.36*	4.27*	4.82*

 Table 5-14

 Summary of ordinal proportional odds models of satisfaction with incentives

*Statistically significant at p<0.10.

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				Rewards or Incentives Helped Set Goals and Work Toward Them	Rewards or Incentives Helped Make Positive Changes in Life
	Characteristic	Group	Reference	OR	OR
1	Program delivery method	Telephonic	In person	1.13	1.33
		Both in person and telephonic	In person	1.45*	1.54*
2	Incentive target	Outcome incentives alone	Process incentives alone	0.95	0.8
		Process and outcome incentives	Process incentives alone	1.02	0.99
3	Age	45 to 52 years	44 years or younger	1.11	1.01
		53 to 58 years	44 years or younger	0.94	0.94
		59 years or older	44 years or younger	0.97	1.05
4	Sex	Female	Male	1.08	1.1
5	Married	Yes	No	1.21	1.12
6	Education	Less than high school graduate or GED	High school graduate or GED	1.03	1.13
		Some college or 2- year college degree	High school graduate or GED	0.89	1.04
		4-year college degree or more	High school graduate or GED	0.9	0.8
7	Employed full- or part-time	Yes	No	1.07	1
8	Race	Black alone	White alone	1.32*	1.26*
		Other	White alone	1.30*	1.27
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.08	1.08
10	Incentive form	Flexible wellness account	Money-valued incentives	1.09	0.97
		Points redeemable for rewards	Money-valued incentives	1.24	0.87
11	Dollar amount of incentive received	\$25 - <\$100	\$0 - <\$25	1.07	1.26
		\$100 - <\$400	\$0 - <\$25	1.56*	1.67*
		\$400 - <\$2,500	\$0 - <\$25	3.19*	3.22*
		\$2,500 or more	\$0 - <\$25	4.37*	6.02*

Table 5-15 Summary of ordinal proportional odds models of impacts of incentives

*Statistically significant at p<0.10.

- Respondents' sex, ethnicity, education level, employment status were significant
 predictors of satisfaction with program incentives, but not impact of program
 incentives. Female respondents were more likely to report <u>higher</u> satisfaction with
 incentives (all measures) compared to male respondents. Hispanic respondents were
 more likely to report <u>lower</u> agreement that they liked getting incentives for taking
 good care of their health compared to non-Hispanics. Respondents with at least a
 4-year college degree were more likely to report <u>lower</u> agreement that they were
 happy with how often they got incentives compared to respondents with a high school
 diploma or the equivalent. Employed respondents were more likely to report <u>higher</u>
 agreement that they were happy with incentives overall, happy with how often they
 got incentives, and that incentives were fair compared to unemployed respondents.
- Race was a significant predictor of impact of program incentives, but not satisfaction
 with program incentives. Black as well as respondents who were other races were
 more likely to report <u>higher</u> impact of program incentives compared to White
 respondents.
- Age and marital status were not significant predictors of either satisfaction with or impact of program incentives.
- Respondents who participated in programs delivered via telephone only were more likely to have <u>higher</u> agreement with three measures of satisfaction with program incentives (happy with the incentives overall, happy with how often they got the incentives, think the incentives are fair) compared to respondents who participated in programs delivered in-person only. Respondents who participated in programs delivered both in-person and via telephone were more likely to have <u>higher</u> agreement with two measures of satisfaction with program incentives (liked getting incentives for taking good care of their health, think the incentives are fair), and both measures of impact of program incentives (incentives helped set goals and work toward them, incentives helped make positive changes in their life) compared to respondents who participated in programs delivered in-person only.
- Incentive target (i.e., process or outcome) was not a significant predictor of satisfaction with or impact of program incentives, when controlling for other factors in the models.
- Incentive form was a significant predictor of satisfaction with program incentives, but not impact of program incentives. Respondents who participated in programs that provided points redeemable for incentives were more likely to have <u>lower</u> agreement with three measures of satisfaction with program incentives (happy with incentives overall, happy with how often they got incentives, think the incentives are fair) compared to respondents who participated in programs that provided money-valued incentives.

• Although the dollar amount of incentive received predicted all measures of satisfaction with and impact of program incentives, the dollar amount needed to make a significant difference varied by outcome. Respondents who received incentives valued <u>at least \$25</u> were more likely to have <u>higher</u> agreement that they were happy with the incentives overall and were happy with how often they got incentives compared to respondents who received incentives valued \$0 to \$25. Respondents who received incentives are fair and that the incentives made an impact (both measures) compared to respondents who received incentives valued \$0 to \$25. Respondents who received incentives are fair and that the incentives walued \$0 to \$25. Respondents who received incentives valued \$0 to \$25.

5.3.6.5 Marginal Effects—Marginal effects tell us how the monetary value of the incentives affects the probabilities of agreeing with the outcomes for satisfaction with and impact of program incentives. For each outcome, if all the participants were given an incentive in a category higher than \$0<\$25 and their other characteristics used as model covariates were kept unchanged, the probability of (somewhat or strongly) disagreeing and somewhat agreeing would decrease but the probability of strongly agreeing would increase. For example, for the outcome "happy with incentives overall" (top panel of *Figure 5-11*), we can see that the decreases in disagreeing and somewhat agreeing and the increases in strongly agreeing were significant for the categories of \$25-<\$100 or higher amounts, as indicated by their 90 percent confidence intervals below or above zero. The outcome "happy with how often got incentives" had similar trends (see *Appendix Figure F-1*). Regarding the outcome "incentives are fair" (middle panel of *Figure 5-11*), significant changes were observed for the category of incentive amounts as low as \$100–\$400. Similar trends were apparent for both measures of the impact of program incentives (see *Appendix Figures F-2* and *F-3*). Regarding the outcome "respondent liked getting incentives for taking good care of health" (bottom panel of *Figure 5-11*), significant changes were only observed for the categories \$400-\$2,500 and \$2,500 and above.

5.2.6.6 Integration of Survey and Focus Group Findings—The focus group discussions provided additional insight into program participants' experiences with program incentives. *Table 5-16* presents key themes that emerged from the focus group discussions related to each of the survey questions about satisfaction with and impact of incentives. We included participant quotes to illustrate each of the themes.

Access to program staff was also associated with overall program satisfaction. Respondents who were always able to contact program staff when they wanted to were most likely to be very satisfied with the program overall (81.4 percent) compared to those who were usually (60.7 percent), sometimes (39.8 percent), or never (26.8 percent) able to contact program staff. Similarly, respondents who were always able to get the help they wanted from program staff were most likely to be very satisfied with the program overall (82.8 percent) compared to those who were usually (50.9 percent), sometimes (27.0 percent), or never (33.8 percent) able to contact program staff.

Figure 5-11

Ordinal proportional odds model of satisfaction with and impact of incentives: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0–<\$25



Figure 5-11 (continued) Ordinal proportional odds model of satisfaction with and impact of incentives: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0–<\$25



 Table 5-16

 Integration of survey and focus group findings: satisfaction with and impact of incentives

Survey findings*	Focus group findings
About 75% of respondents strongly agreed that they were happy with incentives overall	• Overall participants were happy to receive incentives as part of the MIPCD program I like [the program] because we get something for us, for ourselvesAnd good thing is we get something to make us happy, you know, the gift cards, [the incentive is] not for my husband, not for my kids, no, it's only for me.
About 78% of respondents strongly agreed that they liked getting incentives for taking care of their health	• Participants were surprised and pleased to receive incentives for taking care of their health <i>I look at it this wayyou can give me whatever you want to give. What I mean, it's just, 'Wow, you're going to pay me to quit smoking'''</i>
About 73% of respondents strongly agreed that the incentives are fair	• Many participants thought incentives were "more than fair." <i>They [are] paying us to stop smoking, so whatever they give you should be fair.</i>
	• Incentives are fair because the more you do the more you earn. I think they seem fair because they're staggered in how you earn them. The greater effort you put into cessation the greater are the rewards.

Table 5-16 (continued)Integration of survey and focus group findings: satisfaction with and impact of incentives

Survey findings*	Focus group findings
About 67% of respondents strongly agreed that they were happy with how often they got incentives	 Some participants felt that incentives arrived quickly. They [gift cards] just came quick. <i>It [gift card] came right on time, and I needed it.</i>
	• Some participants were frustrated with delays in receiving incentives. The program is hard because we don't get the gift card right away. We typically have to wait.
	I think maybe that is the frustration that everyone has, because I know all of us here kind of struggle like may the middle or towards the ending of the month. And wait you have to wait until the next month and the next month to get it [incentive], it's a little frustrating.
	• Some participants encountered barriers to obtaining their incentives, such as difficulty checking on incentives earned, no or limited Internet access to redeem points online, and limited hours to pick up their incentives in-person. I called the line to see if there was any money on my card. There's no way that they let you know they put money on it so you got to call every time. And it's a pain in the ass to call and go through that whole thing.
	There's only like a three hour window [to pick up incentives]you can only come on Thursdays that's difficult.
About 66% of respondents strongly agreed that incentives helped them set goals for their health and work towards them	 The incentives motivated participants to focus on their goals to improve their health It [incentives] helps you stay focused. The money do help, but I would like to stay in it because I'm bettering myself.
	There was definitely times when you wanted to give up but you kept going because of the incentive.
	 Incentives motivated smokers to use the quitline and refrain from smoking I wanted to quite anyway, but the incentive did helpit made me answer the phone [for a quitline call] because I knew \$30 was coming.
	• The incentives encouraged participants to follow through on steps to achieve their goals <i>I just procrastinate you know, but knowing there's an incentive, you knowthe faster I get it done.</i>
	Well, [the incentive] makes me want toget my stuff, what I got to get doneLike I'm diabetic so I have to do all those stuff, check my feet, the A1C.

Table 5-16 (continued) Integration of survey and focus group findings: satisfaction with and impact of incentives

Survey findings*	Focus group findings
About 66% of respondents strongly agree that the incentives helped them make positive changes in their lives	Participants were often initially motivated to join the program at least in part by incentives. However, over time the importance of incentives declined as they came to appreciate the value of the program. I could have stopped after the first session, taken the \$50 and ranBut when I saw the first session, how much information now the money didn't outweigh the visit, it was the information outweighing the money.
	The program sounded good because I wanted to learn how to eat right and the money sounded good because I was broke. But once I started losing the weight it was more motivating than the money was for me personally.
•	Incentives allowed participants to purchase items (e.g., healthy foods, cooking equipment) and participate in activities (e.g., physical activity, Weight Watchers) to help them meet their health goals. <i>If you want to set a goalyou use your incentives to buy stuff that you probably wouldn't buy with your regular money.</i>
	The money has helped me get some things that I very well needed to facilitate me losing the weight.
•	Receiving nicotine patches as an incentive was helpful to smokers who could not otherwise afford them. <i>The patches are definitely important because they are</i> <i>expensive.</i>

*See detailed survey findings in *Appendix F*.

5.3.7 Overall Program Satisfaction by Satisfaction with Program Elements

We examined how respondents' overall satisfaction with the MIPCD program was influenced by their satisfaction with specific elements of the program. Below we present findings for overall program satisfaction by satisfaction with program accessibility, educational materials and information, communication with program staff, and incentives.

5.3.7.1 Overall Satisfaction by Satisfaction with Program Accessibility—The beneficiary survey included several questions to assess program accessibility (e.g., how frequently able to contact program staff, whether they could start the program as soon as they wanted). *Appendix Table F-17* presents overall satisfaction with the program by these measures of program accessibility. Across all nine measures of program accessibility, respondents who rated the program as more accessible were more satisfied with the program overall. For example, 71.4 percent of respondents who said the program schedule was convenient were very satisfied with the program compared to 21.9 percent who said the schedule was not convenient (p < 0.001). About 70 percent of respondents who said the location was very convenient were very satisfied with the program overall compared to 31.5 percent of respondents who said the program was not convenient (p < 0.001).

5.3.7.2 Overall Program Satisfaction by Satisfaction with Educational Materials and Information—Overall, 80.5 percent of survey respondents said they received educational materials or information about their health issues as part of the program. Respondents who received materials rated the materials as very helpful, somewhat helpful, or not helpful. Across all three measures of overall program satisfaction, respondents who received materials that were helpful were more satisfied compared to respondents who received materials that were somewhat helpful, did not receive materials, or received materials that were not helpful (see *Appendix Table F-18*). For example, 82 percent of respondents who received materials that were very helpful were very satisfied with the program, compared to 47.6 percent of respondents who received materials that were very materials that were somewhat helpful, and 46.7 percent of respondents who did not receive any materials or received materials that were not helpful (p < 0.001).

5.3.7.3 Overall Program Satisfaction by Satisfaction with Communication with Program Staff—Survey respondents rated their agreement with five statements about communication with program staff. The statements were, program staff (1) explain things in a way they can understand; (2) listen carefully to what they have to say; (3) encourages questions; (4) encourage them to talk about health concerns; and (5) seemed to care about them as a person. *Appendix Table F-18* presents respondents' overall program satisfaction by measures of communication with program staff. Across all three measures of program satisfaction, respondents who rated their communication with program staff more positively were more satisfied with the program. For example, 83.0 percent of respondents who strongly agreed that staff listened carefully to what they have to say would definitely recommend the program to family and friends compared to 47.9 percent of those who somewhat agreed and 27.2 percent of those who somewhat or strongly disagreed that staff listened carefully.

5.3.7.4 Overall Program Satisfaction by Satisfaction with Incentives—Survey respondents rated their agreement with four statements about incentives: (1) I like getting incentives for taking care of my health; (2) I am happy with the incentives; (3) I am happy with how often I got the incentives; and (4) the incentives are fair. *Appendix Tables F-19 and F-20* present respondents' overall program satisfaction by their satisfaction with and perceived impact of incentives. Across all three measures of program satisfaction, respondents who were more satisfied with the incentives and strongly agreed that the incentives had an impact were more satisfied with the program overall. For example, 84.7 percent of respondents who strongly agreed that they were happy with how often they got the incentives said they would definitely recommend the program to family and friends compared to 61.6 percent of those who somewhat agreed and 48.3 percent of those who somewhat or strongly disagreed that they were happy with how often they got incentives.

5.3.7.5 Findings from Multivariate Analyses—Our multivariate modeling results showed that several respondent and program characteristics were significant predictors of the three measures of program satisfaction: overall program rating (scores of 8, 9, or 10, compared to 1–7), program satisfaction (very satisfied, somewhat satisfied compared to very or somewhat dissatisfied), and whether respondent would recommend program to family and friends (yes definitely, yes probably vs. no) (see *Table 5-17* and *Appendix Tables F-21* through *F-23*). Specifically:

- Older respondents (59 years and older) were more likely to have <u>higher</u> overall program ratings and say they were satisfied with the program compared to younger respondents (44 years or less). Female and employed respondents were more likely to have higher overall program ratings compared to male and unemployed respondents, respectively. Hispanic respondents were more likely to say they were satisfied with the program compared to non-Hispanics.
- Findings regarding mode of delivery were mixed. Respondents who participated in programs delivered both in-person and via telephone were more likely to have <u>lower</u> overall program ratings compared to respondents who participated in programs delivered in-person only. Respondents who participated in programs delivered via telephone only were more likely to say they would recommend the program to others compared to respondents who participated in-person only.
- Program access was a significant predictor of all three measures of program satisfaction. Respondents who reported that the amount of time spent on the program was about right (compared to those who did not think it was about right), the program schedule was convenient (compared to those who did not think it was convenient), and that they always got the help that they wanted from program staff (compared to those who sometimes or never got the help that they wanted) were more likely to have <u>higher</u> overall program ratings, say they were satisfied with the program, and say they would recommend the programs to others.
- Communication with program staff was also a significant predictor of all three measures of program satisfaction. Respondents with a higher score on the composite communication measures were more likely to have <u>higher</u> overall program ratings, say they were satisfied with the program, and say they would recommend the programs to others.
- Respondents who received educational materials and information that were very helpful were more likely to have <u>higher</u> overall program ratings, report they were satisfied with the program, and say they would recommend the program to others compared to those who received materials that were not helpful or no materials.
- Satisfaction with incentives was a predictor of all three measures of program satisfaction. Respondents who strongly agreed that they were happy with the incentives overall and that the incentives helped them make positive changes were more likely to have <u>higher</u> overall program ratings, report they are satisfied with the program, and say they would recommend the program to others compared to respondents who somewhat or strongly disagreed with these statements. However, respondents who strongly or somewhat agreed that they liked getting incentives for taking care of their health were more likely to have <u>lower</u> overall program ratings.
- Respondents who received incentives valued at least \$100 were more likely to have <u>higher</u> overall program ratings than respondents who received incentives valued \$0 to \$25.

				Overall program rating	Respondent would recommend program to family and friends	Overall program satisfaction
	Characteristic	Group	Reference	OR	OR	OR
1	Program delivery method	Telephonic	In person	0.99	1.73*	1.11
		Both in person and telephonic	In person	0.59*	1.19	0.8
2	Incentive target	Outcome incentives alone	Process incentives alone	1.07	1.06	1.15
		Process and outcome incentives	Process incentives alone	1.06	1.2	0.96
3	Incentive form	Flexible wellness account	Money-valued incentives	1.87*	0.71	1.79
		Points redeemable for rewards	Money-valued incentives	0.47	0.32*	0.74
4	Age	45 to 52 years	44 years or younger	1.02	1.14	1.22
		53 to 58 years	44 years or younger	1.2	0.95	1.13
		59 years or older	44 years or younger	1.58*	1.12	1.62*
5	Sex	Female	Male	1.41*	1.01	0.86
6	Married	Yes	No	0.8*	0.89	0.82
7	Education	Less than high school graduate or GED	High school graduate or GED	0.85	0.91	0.74*
		Some college or 2-year college degree	High school graduate or GED	0.79*	1.2	0.96
		4-year college degree or more	High school graduate or GED	0.91	1.25	0.95
8	Employed full- or part-time	Yes	No	1.44*	0.93	1.28

Table 5-17Summary of ordinal proportional odds models of overall program satisfaction

				Overall program rating	Respondent would recommend program to family and friends	Overall program satisfaction
	Characteristic	Group	Reference	OR	OR	OR
9	Race	Black alone	White alone	1.11	1.26	1.04
		Other	White alone	1.1	0.87	0.87
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.28	1.27	1.44*
11	Started program as soon as wanted	Yes	No	1.18	0.82	0.99
12	Amount of time spent on program was about right	Yes	No	1.39*	1.71*	2.92*
13	Program schedule was convenient	Yes	No	2.5*	2.42*	2.43*
14	Program location was convenient	Yes	No	1.36	1.43	1.31
15	Program staff spoke respondent's language	Yes	No	1.14	0.63	0.93
16	Got help wanted from program staff	Always	Sometimes or never	1.89*	3.64*	3.05*
		Usually	Sometimes or never	0.82	1.92*	1.46*
17	Helpfulness of education materials or information about health issues	Received materials that were somewhat helpful	Received not helpful or no materials	0.64*	0.75	0.93
		Received materials that were very helpful	Received not helpful or no materials	1.52*	1.51*	1.86*
18	Incentives helped make positive changes	Somewhat agree	Somewhat or strongly disagree	0.91	1.11	1.39
		Strongly agree	Somewhat or strongly disagree	1.54*	1.91*	2.18*
19	Liked getting incentives for taking care of health	Somewhat agree	Somewhat or strongly disagree	0.42*	0.44*	0.47*
		Strongly agree	Somewhat or strongly disagree	0.5*	0.77	0.66
						(continued)

Table 5-17 (continued)Summary of ordinal proportional odds models of overall program satisfaction

				Overall program rating	Respondent would recommend program to family and friends	Overall program satisfaction
	Characteristic	Group	Reference	OR	OR	OR
20	Happy with rewards or incentives overall	Somewhat agree	Somewhat or strongly disagree	1.52*	1.22	1.56*
		Strongly agree	Somewhat or strongly disagree	2.12*	1.84*	2.77*
21	Dollar amount of incentive received	\$25 - <\$100	\$0 - <\$25	1.16	1.10	1.01
		\$100 - <\$400	\$0 - <\$25	1.71*	1.20	1.47*
		\$400 - <\$2,500	\$0 - <\$25	2.00*	1.19	1.67
		\$2,500 or more	\$0 - < \$25	5.03*	3.95*	2.44*
22	Communication with program staff (score 0-10)	9.6105	8.6105	1.19*	1.21*	1.20*

Table 5-17 (continued) Summary of ordinal proportional odds models of overall program satisfaction

*Statistically significant at p < .10.

5.3.7.6 Marginal Effects—Marginal effects tell us how the monetary value of the incentives affects the probabilities of agreeing with the program satisfaction outcomes. In terms of overall program rating, if all participants were given an incentive in a category higher than \$0–\$25 and their other characteristics used as model covariates were unchanged, the probability of rating the program as 10 would increase and the probability of rating the program less than 10 would decrease, as indicated by their 90 percent confidence intervals above or below zero (*Figure 5-12*). The trends for other satisfaction measures, including likelihood of recommending the program to family and friends and overall program satisfaction, are provided in *Appendix Figures F-4* and *F-5*.

Figure 5-12

Ordinal proportional odds model of overall program rating: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0-<\$25



5.3.8 Program Impact on Behavior Change

Respondents were asked about the impact of the program on their understanding of their health issues, learning how to take care of their health, and encouraging lifestyle changes. Below we present descriptive and bivariate analyses, followed by multivariate analyses (see *Section 5.3.8.2*) and integration of survey and focus group findings (see *Section 5.3.8.4*).

SURVEY QUESTIONS—IMPACT OF PROGRAM INCENTIVES

- The program helped me understand my health issues (strongly agree strongly disagree)
- Rewards or incentives helped me (or will help me) make positive changes in my life. (strongly agree – strongly disagree)
- The program helped me learn ways to take better care of my health (strongly agree strongly disagree)
- The program encouraged me to make lifestyle changes to improve my health (strongly agree strongly disagree)

Most respondents overall said that the program had a positive impact; 64.2 percent strongly agreed that the program helped them understand their health issues, 70.5 percent strongly agree that the program helped them learn better ways to take care of their health, and 76 percent strongly agreed that the program encouraged them to make lifestyle (*Figure 5-13*).



Figure 5-13 Program impact on behavior change

5.2.8.1 Bivariate Analyses—Hispanic, Black, married, less educated respondents, and those receiving SSI were more likely to say that the program helped them understand their health issues (see *Appendix Table F-27*). Black respondents also were more likely to say that the program helped them learn ways to take better care of their health (76 percent vs. 67 percent for White respondents and 70 percent for other; p = .001) and to encourage lifestyle changes (79.8 percent vs. 73.6 percent for White respondents and 76.1 percent for other; p = .043). Respondents receiving SSI were also more likely to say that the program encouraged lifestyle changes (78.1 percent vs. 74.9 percent for those not receiving SSI; p = .086).

Respondents in programs delivered both in-person and by telephone were more likely to strongly agree that the program helped them understand their health issues (67.6 percent vs. 63.3 percent in-person only and 58.3 percent telephone only; p = .02) (see *Appendix Table F-28*). These respondents were also more likely to say that the program encouraged them to make lifestyle changes (79.5 percent vs. 74 percent in-person only and 70.9 percent telephone only; p = .001).

We examined program impact by satisfaction with program access (see *Appendix Table F-29*). For all three of the program impact questions, we found significant differences by satisfaction with program access. For example, respondents who said they could always contact program staff when they wanted to were most likely to strongly agree that the program helped them understand their health issues (77.5 percent vs. 55.5 percent for usually, 41.7 percent sometimes, and 29.8 percent never; p < .001), helped them learn ways to take better care of their health (84.1 percent vs. 63.4 percent for usually, 47.9 percent sometimes, and 33.9 percent never; p < .001), and encouraged lifestyle changes (87.9 percent vs. 71.7 percent for usually, 55.9 percent sometimes, and 37.5 percent never; p < .001). Respondents who said the program schedule and location were convenient were also most likely to strongly agree with these questions.

Program impact was also consistently associated with satisfaction with program materials (see *Appendix Table F-30*). Respondents who received materials that were very helpful were more likely to strongly agree that the program had a positive impact. For example, 90.1 percent of respondents who received materials that were very helpful strongly agreed that the program encouraged lifestyle changes vs. 62.1 percent of those who received materials that were somewhat helpful and 50.7 percent of those who received no materials that were not helpful (p < .001).

Program impact was also consistently associated with satisfaction with communication with program staff (see *Appendix Table F-30*). Respondents who strongly agreed that program staff communicated well were more likely to strongly agree that the program had a positive impact. For example, 88.9 percent of respondents who strongly agreed that program staff encouraged them to talk about their health concerns strongly agreed that the program encouraged lifestyle changes compared to 47.9 percent of those who somewhat agreed and 25.4 percent of those who somewhat or strongly disagreed that program staff encouraged them to talk about their health concerns staff encouraged them to talk about their health concerns staff encouraged them to talk about their health concerns staff encouraged them to talk about their health concerns staff encouraged them to talk about their health concerns (p < .001).

Respondents who strongly agreed that program staff seemed to care about them as a person were also more likely to strongly agree that the program helped them understand their

health issues (75.3 percent vs. 28.9 for respondents who somewhat agree and 16.3 percent of those who somewhat or strongly disagreed; p < .001), helped them learn ways to care for their health (82.4 percent vs. 35.7 percent for respondents who somewhat agreed and 11.3 percent of those who somewhat or strongly disagreed; p < .001), and encouraged lifestyle changes(87.2 percent vs. 44.2 for respondents who somewhat agreed and 19.7 percent of those who somewhat or strongly disagreed; p < .001)

Finally, program impact was also consistently associated with satisfaction with incentives (see *Appendix Table F-31*). For example, respondents who strongly agreed that they were happy with the incentives overall were more likely to strongly agree that the program helped them understand their health issues (72.5 percent vs. 45.1 percent for respondents who somewhat agree and 32.3 percent of those who somewhat or strongly disagreed; p < .001), helped them learn ways to care for their health (80.6 percent vs. 48.1 percent for respondents who somewhat agreed and 40.5 percent of those who somewhat or strongly disagreed; p < .001), and encouraged lifestyle changes(84.7 percent vs. 59.4 percent for respondents who somewhat agree and 49.4 percent of those who somewhat or strongly disagreed; p < .001).

5.3.8.2 Multivariate Analyses—Our multivariate modeling results showed that several respondent and program characteristics were significant predictors of the three measures of perceived program impact on behavior change: program helped me understand health issues (strongly agree or somewhat agree compared to strongly or somewhat disagree), program helped learn ways to take better care of health (strongly agree or somewhat agree compared to strongly or somewhat agree compared to strongly or somewhat disagree), and program encouraged lifestyle changes to improve health (strongly agree or somewhat agree compared to strongly or somewhat disagree) (see *Table 5-18* and *Appendix Tables F-32 through F-34*). Specifically:

- Respondents 42 to 52 years of age were more likely to report <u>higher</u> agreement that the program helped understand health issues and helped learn ways to take better care of health compared to younger respondents (44 years or less). Married and Hispanic respondents were more likely to report higher agreement that the program helped understand health issues compared to unmarried and non-Hispanic respondents, respectively. Employed respondents were more likely to report higher agreement that the program helped them learn ways to take better care of health compared to unemployed respondents. Black respondents were more likely to report higher agreement that the program helped understand health issues, helped learn ways to take better care of health, and encouraged lifestyle changes to improve health.
- Respondents with a 4-year college degree or more were likely to report <u>lower</u> agreement that the program helped them understand health issues and learn ways to take better care of their health compared to respondents with a high school diploma or the equivalent. Respondents with some college or a 2-year college degree were more likely to report <u>lower</u> agreement that the program helped them understand their health issues compared to respondents with a high school diploma or the equivalent, but <u>higher</u> agreement that the program encouraged lifestyle changes to improve their health.

- In terms of incentive form, respondents in programs that offered points redeemable for rewards were more likely to report <u>lower</u> agreement that program encouraged lifestyle changes to improve their health.
- Although the dollar amount of incentive received predicted all measures of perceived program impact on behavior change, the dollar amount needed to make a significant difference varied by outcome. Respondents who received incentives valued at \$100 or more were more likely to report <u>higher</u> agreement that the program helped them understand their health issues compared to respondents who received incentives valued at \$25 or more were more likely to report <u>higher</u> agreement that the program helped them understand their health issues compared to respondents who received incentives valued at \$25 or more were more likely to report <u>higher</u> agreement that the program helped them learn ways to take better care of health and encouraged lifestyle changes to improve their health compared to respondents who received incentives valued \$0 to \$25.

Table 5-18Summary of ordinal proportional odds models of perceived program impact on
behavior change

				Program helped understand health issues	Program helped learn ways to take better care of health	Program encouraged lifestyle changes to improve health
	Characteristic	Group	Reference	OR	OR	OR
1	Program delivery method	Telephonic	In person	0.96	1	1.25
		Both in person and telephonic	In person	0.86	0.74	0.91
2	Incentive target	Outcome incentives alone	Process incentives alone	0.89	1.34	1.2
		Process and outcome incentives	Process incentives alone	0.82	1.05	1.04
3	Incentive form	Flexible wellness account	Money-valued incentives	0.65	1.34	1.24
		Points redeemable for rewards	Money-valued incentives	0.58	0.62	0.3*
4	Age	45 to 52 years	44 years or younger	1.34*	1.35*	1.18
		53 to 58 years	44 years or younger	1.17	1.21	0.94
		59 years or older	44 years or younger	1.2	1.19	0.94
5	Sex	Female	Male	0.96	1.03	1.16
6	Married	Yes	No	1.33*	1.17	1.25

Table 5-18 (continued)Summary of ordinal proportional odds models of perceived program impact on
behavior change

				Program helped understand health issues	Program helped learn ways to take better care of health	Program encouraged lifestyle changes to improve health
	Characteristic	Group	Reference	OR	OR	OR
7	Education	Less than high school graduate or GED	High school graduate or GED	0.85	0.89	1.02
		Some college or 2-year college degree	High school graduate or GED	0.74*	0.95	1.26*
		4-year college degree or more	High school graduate or GED	0.59*	0.68*	0.9
8	Employed full- or part-time	Yes	No	1.16	1.26*	0.9
9	Race	Black alone	White alone	1.31*	1.28*	1.28*
		Other	White alone	0.99	0.99	1.05
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.42*	1.26	1.21
11	Dollar amount of incentive received	\$25 - <\$100	\$0 - <\$25	1.16	1.72*	1.46*
		\$100 - <\$400	\$0 - <\$25	1.62*	1.96*	1.87*
		\$400 - <\$2,500	\$0 - <\$25	2.84*	2.65*	2.36*
		\$2,500 or more	\$0 - <\$25	4.56*	3.83*	5.39*

*Statistically significant at p < 0.10.

5.3.8.3 Marginal Effects—Marginal effects tell us how the monetary value of the incentives affects the probabilities of agreeing with the program impact outcomes. For each outcome, if all the participants were given an incentive in a category higher than \$0-\$25 and their other characteristics used as model covariates were kept unchanged, the probability of (somewhat or strongly) disagreeing and somewhat agreeing would decrease but the probability of strongly agreeing would increase. In the margin plot for the outcome "program helped understand health issues" (see the top panel of *Figure 5-14*), we can see that both the decreases and the increases were significant for the categories of \$100-<\$400 or higher amounts, as indicated by their 90 percent confidence intervals below or above zero. Regarding the outcome "program helped learn ways to take better care of health" (see bottom panel of *Figure 5-14*), significant changes were observed for the category of incentive amounts as low as \$25-\$100. Similar trends were apparent for the measure "program encouraged lifestyle changes to improve health" (see *Appendix Figure F-6*).

Figure 5-14

Ordinal proportional odds model of perceived program impact on behavior change: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0–<\$25





5.3.8.4 Integration of Survey and Focus Group Findings—The focus group discussions provided additional insight into program participants' perceptions about the impact of the program. *Table 5-19* presents key themes that emerged from the focus group discussions related each of the survey questions about program impact. We included participant quotes to illustrate each of the themes.

Survey findings	Focus group findings
64.2% of survey respondents strongly agreed that the program helped them understand their health issues	Participants gained understanding about their health conditions and the consequences of different behaviors. They often commented that they learned more from program staff than they did from their doctors and other sources. You get to talk to a nurse and she kind of helps youkind of talks to you about things and it kind of clarifies some things in your mind So it did help.
• 70.5% of survey respondents strongly agreed that the program helped them learn ways to take better care of their	The programs helped participants set goals for their health [<i>The program</i>] gave me a better outlook. It gave me the ability to set some kind of goal for myself.
health	The diabetes and weight management programs helped participants learn about healthy eating <i>I used to fry a lot of foods but now I bake and broil.</i>
	I would have to say it taught me how to look at what I'm eating in Wendy's or McDonald's or whatever and realize, 'That's got a lot of fat in it, better not have it,' pass up the pop and get water instead.
•	The smoking cessation programs gave participants strategies to deal with cravings including eliminating triggers She helped me identify what [my triggers] were and how to modify my behavior, so maybe I do something a little bit different and bypass that trigger.
	What was different for me was when they gave me a suggestion of going to ride the bike for 35 minutes. That was something I hadn't thought about doing.
	I had one that helped me a lotwhen I have a cup of coffee I have to have a cigarette. He's like, 'You can still have your coffee, but instead of having a cigarette in your hand, put a pencil or pen between your fingers.'
 76% of survey respondents strongly agreed that the program encouraged them to make lifestyle changes to improve their health 	Participants described healthy lifestyle changes they made as a result of program participation. The program saved my life. I was at the ER at least once a week because everything hurt. I stopped eating sugar and started Weight Watchers, and it just changed me entirely. Before I couldn't even tie my shoes and I was just at home watching TV and just jumping in the car to get fast food at a drive-through.
	I lost 50 pounds and feel great. This is the best thing that happened to me and I don't want it to end.

 Table 5-19

 Integration of survey and focus group findings: program impact

*See detailed survey findings in *Appendix F*.

5.4 Selected Findings from Hawaii State Survey

As noted above, RTI did not administer the cross-State beneficiary survey in Hawaii because at least one-third of the program participants do not speak either English or Spanish. Hawaii administered its own survey, which included a number of questions that are the same or similar to questions in the cross-State beneficiary survey. The State conducted surveys of participants in the FQHC intervention arm in 2014 and 2015 and a survey of participants in the Kaiser intervention arm in 2015 only. The methods and selected findings for both surveys are presented below.¹⁰

5.4.1 Survey Methods

Staff at the participating FQHCs distributed the survey to program participants within a specified 2-week period. Staff were available to provide translations and reading and writing assistance with the survey. The survey was mailed to Kaiser participants at the completion of the program.

5.4.2 FQHC Survey

A total of 147 out of 185 program participants from five FQHCs completed the survey in 2014 and 160 out of 235 program participants from seven FQHCs completed the 2015 survey. More than half (55 percent) of respondents in 2014 and 47 percent in 2015 needed assistance to complete the survey (*Table 5-20*). Most respondents were Native Hawaiian or other Pacific Islander (about 63 percent). The highest proportion of respondents (44 percent) had a high school degree or equivalent, and about 28 percent had less than a high school degree. About 13 percent were employed full- or part-time, and another 27 percent were unemployed and looking for work, and 25 percent were unable to work.

Variable name	2014 (N=147) count (%)	2015 (N=160) count (%)
Overall Health		
Excellent	4 (2.7)	2 (1.3)
Very good	31 (21.1)	28 (17.5)
Good	63 (42.9)	66 (41.3)
Fair	32 (21.8)	49 (30.6)
Poor	10 (6.8)	12 (7.5)
Missing	7 (4.8)	3 (1.9)
		(continued)

Table 5-20
Overview of Hawaii FQHC survey respondents

¹⁰ Information about the Hawaii survey is from state program final report, December 12, 2016.

Variable name	2014 (N=147) count (%)	2015 (N=160) count (%)
Overall Mental Health		
Excellent	4 (2.7)	1 (0.6)
Very good	19 (12.9)	20 (12.5)
Good	60 (40.8)	66 (41.3)
Fair	33 (22.4)	49 (30.6)
Poor	22 (15.0)	20 (12.5)
Missing	9 (6.1)	4 (2.5)
Sex		
Female	79 (53.7)	96 (60.0)
Male	61 (41.5)	61 (38.1)
Missing	7 (4.8)	3 (1.9)
Race		
White	12 (8.2)	15 (9.4)
Black	4 (2.7)	1 (0.6)
American Indian or Alaska Native	0 (0)	2 (1.3)
Asian	21 (14.3)	37 (23.1)
Native Hawaiian or Other Pacific Islanders	90 (62.2)	85 (53.1)
Multiple races	17 (11.6)	19 (11.9)
Missing/Unknown	3 (2.0)	1 (0.6)
Ethnicity		
Hispanic or Latino	14 (9.5)	15 (9.4)
Not Hispanic or Latino	128 (87.1)	142 (88.8)
Missing/unknown	5 (3.4)	3 (1.9)
Marital Status		
Married or living with a partner	43 (29.3)	57 (35.6)
Widowed	20 (13.6)	19 (11.9)
Divorced	17 (11.6)	34 (21.3)
Separated	14 (9.5)	9 (5.6)
Never married	44 (29.9)	37 (23.1)
Missing	9 (6.1)	4 (2.5)
Education		
8 th grade or less	18 (12.2)	22 (13.8)
Some high school, but did not graduate	20 (13.6)	24 (15.0)
High school graduate or GED	60 (40.8)	74 (46.3)
Some college or 2-year college degree	26 (17.7)	26 (16.3)
4-year college degree	2 (1.4)	6 (3.8)
More than 4-year college degree	10 (6.8)	5 (3.1)
Missing/unknown	11 (7.5)	3 (1.9)
Mean Age (SD) in Years	55.0 (12.0)	57.0 (13.3)

Table 5-20 (continued)Overview of Hawaii FQHC survey respondents

Variable name	2014 (N=147) count (%)	2015 (N=160) count (%)
Age		
20–39	15 (10.2)	17 (10.6)
40–59	70 (47.6)	68 (42.5)
60–79	52 (35.4)	54 (33.8)
80+	2 (1.4)	8 (5.0)
Missing	8 (5.4)	13 (8.1)
Employment Status		
Employed full-time	11 (7.5)	17 (10.6)
Employed part-time	8 (5.4)	19 (11.9)
Unemployed and looking for work	39 (26.5)	25 (15.6)
Student	2 (1.4)	3 (1.9)
Homemaker	9 (6.1)	12 (7.5)
Retired	26 (17.7)	34 (21.3)
Unable to work	37 (25.2)	46 (28.8)
Other	13 (8.8)	14 (8.8)
Missing	3 (2.0)	0 (0)
Did Someone Help Complete Survey		
Yes	81 (55.1)	76 (47.5)
No	62 (42.2)	84 (52.5)
Missing	4 (2.7)	0 (0)
Type of Help		
Answered some or all of the questions for me	20 (24.7)	20 (26.3)
Read the questions to me	61 (75.3)	63 (82.9)
Explained the questions to me	52 (64.2)	57 (75.0)
Wrote down the answers I gave	51 (63.0)	51 (67.1)
Translated the questions into my language	21 (25.9)	19 (25.0)
Helped in some other way, please specify	5 (6.2)	4 (5.3)
Missing	0 (0)	3 (3.9)

Table 5-20 (continued)Overview of Hawaii FQHC survey respondents

5.4.2.1 Satisfaction with Program—Respondents rated the Hawaii program on a scale of 1 (worst program possible) to 10 (best possible program). The mean program rating in both 2014 and 2015 was 9.6. About 96 percent of respondents in both 2014 and 2015 reported that they were very satisfied with the program overall. About 97 percent and 98 percent of those surveyed in 2014 and 2015 respectively indicated that they would definitely recommend the program to their families and friends.

5.4.2.2 Program Access—About 84 percent of survey respondents in 2014 and 91 percent in 2015 said they were always or usually able to contact the health center staff when they wanted to. About 92 percent of respondents in 2014 and 97 percent in 2015 were always or usually able to get the help they wanted from the staff. *Table 5-21* presents responses to additional questions about program access. About 93 percent of respondents said that program staff spoke their language, which was critical in the Hawaii program given the many languages spoken by participants.

	% for 2014		% for 2015	
Question	Yes	Not Needed	Yes	Not Needed
a. I was able to start the program as soon as I wanted	98.6	N/A		N/A
b. The amount of time I spent on the program was about right.	98.6	N/A	98.1	N/A
c. The program schedule was convenient for me.	97.9	N/A	98.7	N/A
d. The program location was convenient for me.	97.8	N/A	98.1	N/A
e. The program staff spoke my language.	92.9	N/A	92.9	N/A
f. I was able to get child-care when I needed it to attend the program.	13.8	78.3	17.9	76
g. I was able to get transportation when I needed it to attend the program.	47.1	50.0	47.3	48

Table 5-21Program access: Hawaii FQHC survey 2014 and 2015

5.4.2.3 Satisfaction with and Impact of Incentives—Almost all respondents reported they received incentives (99 percent in both 2014 and 2015). About 80 percent of 2014 respondents and 86 percent of 2015 respondents strongly agreed that they were happy with the incentives (*Table 5-22*). Most respondents strongly agreed they liked to be rewarded for taking good care of their diabetes (71 percent in 2014 and 81 percent in 2015), and that the rewards helped them set goals (66 percent in 2014 and 76 percent in 2015) and make positive changes in their lives (68 percent in 2014 and 72 percent in 2015). Satisfaction with incentives was generally higher in 2015 compared to 2014.

Table 5-22Satisfaction with and impact of incentives: Hawaii FQHC survey 2014 and 2015

			Strongly agree	Agree	Disagree	Strong disagree
		n	(%)	(%)	(%)	(%)
2014						
1.	I am happy with the rewards	132	80.3	16.7	0.0	3.0
2.	Rewards were given to me on-time	131	62.6	26.0	8.4	3.1
3.	Rewards have helped me set goals and work towards them	130	66.2	29.2	2.3	2.3
4.	Rewards have helped me make positive changes in my life	130	67.7	27.7	3.1	1.5
5.	I like getting rewards for taking good care of my diabetes	130	70.8	25.4	1.5	2.3
6.	Rewards DO NOT help me take care of my diabetes	123	4.9	4.9	29.3	61.0

		n	Strongly agree (%)	Agree (%)	Disagree (%)	Strong disagree (%)
7.	I am happy with the dollar amount of each reward.	130	60.8	34.6	3.1	1.5
8.	I am happy with how often I got the rewards	128	64.8	28.1	4.7	2.3
9.	It was easy for me to get the rewards.	126	49.2	39.7	8.7	2.4
10.	It was easy for me to use the rewards	128	68.8	29.7	0.0	1.6
11.	The rewards were fair	129	65.9	31.8	0.8	1.6
2015						
1.	I am happy with the rewards	152	86.2	13.8	0.0	0.0
2.	Rewards were given to me on-time	150	77.3	22.0	0.0	0.7
3.	Rewards have helped me set goals and work towards them	152	75.7	23.0	1.3	0.0
4.	Rewards have helped me make positive changes in my life	152	71.7	27.0	1.3	0.0
5.	I like getting rewards for taking good care of my diabetes	152	80.9	19.1	0.0	0.0
6.	Rewards DO NOT help me take care of my diabetes	144	5.6	2.8	27.8	63.9
7.	I am happy with the dollar amount of each reward.	145	75.2	23.4	0.7	0.7
8.	I am happy with how often I got the rewards	145	75.2	24.8	0.0	0.0
9.	It was easy for me to get the rewards.	144	54.9	35.4	8.3	1.4
10.	It was easy for me to use the rewards	147	74.8	24.5	0.7	0.0
11.	The rewards were fair	147	75.5	23.8	0.7	0.0

Table 5-22 (continued)Satisfaction with and impact of incentives: Hawaii FQHC survey 2014 and 2015

5.4.3 Kaiser Survey

All survey respondents reported that they had received rewards. About 46 percent of respondents used the reward for themselves, 39 percent for their family, and 12 percent for both themselves and their family.

About 50 to 60 percent of Kaiser respondents strongly agreed with statements about satisfaction with incentives (*Table 5-23*). In general, Kaiser respondents were less satisfied with and less likely to report a positive impact of the incentives compared to FQHC survey respondents. For example, 54 percent of Kaiser survey respondents said the incentives helped them set goals and work towards them compared to 76 percent of FQHC participants. About 54 percent of Kaiser respondents were happy with how often they got the rewards compared to 75 percent of FQHC respondents.

		Strongly Agree	Agree	Disagree	Strongly Disagree	Mean
	n	(%)	(%)	(%)	(%)	(SD)
1. Rewards were given to me on time.	75	65.3	33.3	1.3	0	3.6 (0.5)
2. Rewards have helped me set goals and work towards them.	77	54.5	41.6	3.9	0	3.5 (0.6)
3. Rewards have helped me make positive changes in my life.	76	48.7	47.4	3.9	0	3.4 (0.6)
4. I like to be rewarded for taking good care of my diabetes.	76	60.5	34.2	5.3	0	3.6 (0.6)
5. Rewards have NOT helped me keep up with my diabetes care.	76	10.5	14.5	40.8	34.2	2.0 (1.0)
6. I am happy with the amount of each reward.	76	53.9	43.4	2.6	0	3.5 (0.6)
7. I am happy with how often I received the rewards.	76	53.9	39.5	6.6	0	3.5 (0.6)
8. It was easy for me to get the rewards.	77	51.9	39.0	9.1	0	3.4 (0.7)
9. I was UNABLE to get some of the rewards.	73	8.2	23.3	46.6	21.9	2.2 (0.9)
10. It was easy for me to use the rewards.	75	62.7	36.0	1.3	0	3.6 (0.5)
11. The rewards were fair.	77	57.1	42.9	0	0	3.6 (0.5)
Overall	_	_	_	_	_	3.4 (0.4)

 Table 5-23

 Satisfaction with and impact of incentives: Hawaii Kaiser survey (2015)

5.4.3.1 Satisfaction with Program and Program Access—The Kaiser respondents rated the program highly, 9.1 on average, on a scale of 1 (worst possible program) to 10 (best possible program). About 78 percent of survey respondents were very satisfied with the program.

About 95 percent of respondents were always or usually able to get the help they wanted from Kaiser and about 77 percent were always or usually were able to contact Kaiser staff when they wanted. *Table 5-24* summarizes responses to questions about program access. The findings indicate that transportation was the biggest barrier, with about 17 percent strongly or somewhat agreeing that transportation was a problem.
			Percentage (%)			
		n	Strongly Agree (%)	Somewhat Agree (%)	Somewhat Disagree (%)	Strongly Disagree (%)
1.	I had to wait too long to start the program.	75	1.3	5.3	22.7	70.7
2.	The program took too much of my time.	75	1.3	2.7	20.0	76.0
3.	The schedule was not convenient for me.	74	2.7	4.1	17.6	75.7
4.	The location was not convenient for me.	74	1.4	9.5	14.9	74.3
5.	Child care was a problem for me.	63	1.6	7.9	11.1	79.4
6.	Transportation was a problem for me.	71	5.6	11.3	9.9	73.2
7.	The program staff did not speak my language.	71	0	2.8	11.3	85.9
8.	I did not understand what HI- PRAISE study was about.	72	0	8.3	11.1	80.6

Table 5-24Program access: Hawaii Kaiser survey 2015

5.5 Discussion

The mixed method assessment of participants' satisfaction with the MIPCD program found a **high level of satisfaction overall**. Survey participants rated the program highly—an average of 8.5 on a scale of 1 to 10—and almost all participants said that they were either very (67 percent) or somewhat satisfied (27 percent) with the program. Satisfaction appears to be driven to a large extent by satisfaction with program access (e.g., schedule convenient, easy to get help from program staff, amount of time spent on program about right), good communication with program staff (e.g., program staff explained things clearly, listened to them, and encouraged questions), the quality of educational materials and information, and satisfaction with incentives. We did not find clear patterns in overall program satisfaction by either mode of program delivery (i.e., phone and/or telephone) or by incentive type. Several participant characteristics were significant predictors of greater overall program satisfaction including being age 59 years or older (compared to 44 years or younger), female, Hispanic, and Black.

Most participants said that the program had a positive impact in terms of gaining better understanding of their health issues, helping them learn ways to take better care of their health, and encouraging and supporting healthy lifestyle changes. Focus group participants shared stories about how the program had helped them quit or reduce smoking, spurred them to be more physically active, helped them improve their diet, and make other changes. Survey findings reveal some differences in program impact by race; being Black (vs. White) was a significant predicator of greater program impact across the three measures used whereas being Hispanic was a significant predictor of greater program impact based on one measure, whether the program helped them understand their health issues. In general, having a higher education level was associated with lower program impact. In addition to exploring overall program satisfaction and impact of the program, we also examined satisfaction with and the impact of the incentives specifically. **Overall, participants were satisfied with the program incentives**, with most survey respondents strongly agreeing that they liked getting incentives for taking care of their health (78 percent), they were happy with the incentives (75 percent), and the incentives were fair (73 percent). Satisfaction was somewhat lower for how often they received incentives (67 percent). We heard in the focus groups that some participants experienced delays and challenges in accessing their incentives.

Program delivery method was a significant predictor of three measures of satisfaction with incentives, with <u>higher</u> satisfaction among participants in telephone only programs compared to participants than in-person programs. However, participants in programs delivered both in-person and by telephone were more likely to report a positive impact of incentives. The finding that satisfaction with incentives was higher for participants in telephone-only programs may be because these participants found it easy to earn incentives (e.g., less time consuming, could participate in the program from home). The greater impact of incentives for participants in programs delivered both in person and by telephone may be because these participants in the program from home). The greater impact of incentives for participants in programs delivered both in person and by telephone may be because these participants had more opportunities for engagement with program staff who supported them to use incentives in a way that benefits their health.

Incentive form was a significant predictor of satisfaction with incentives but not of incentive impact. Participants receiving points redeemable for rewards were less satisfied compared to those receiving money-valued incentives. Focus group participants in the Nevada program, which used points redeemable for rewards, reported challenges in tracking and accessing their rewards. The focus group discussions highlighted that participants appreciated incentives that were provided in a timely manner (i.e., soon after earning the incentive), were easy to access, and that were flexible in how they could be used. Prior research confirms the importance of the immediacy of rewards and the benefits of monetary-valued incentives (Kane et al., 2004; Lussier et al., 2006; Adams et al., 2014). Incentives that increase the person's ability to purchase preventative services—such as the Texas spending wellness accounts—have been found to work better than more "diffuse incentives" (Kane et al., 2004).

We examined how the dollar value of incentives influenced overall program satisfaction, program impact, and satisfaction with and impact of incentives. **Receiving incentives valued at \$25–<\$100 (compared to <\$25) was associated with some measures of satisfaction with incentives and program impact**. Receiving incentives valued at \$100–<\$400 (compared to <\$25) was a significant predictor of all measures of program impact, impact of incentives, and three out of four measures of satisfaction with incentives.

Modest incentives may be more valued by lower-income individuals (Jochelson, 2007; Adams et al., 2014). In the focus groups, we heard that participants valued small amounts that allowed them to supplement their food budget and pay for everyday needs (e.g., transportation, household items) and also buy something special for themselves or their family. Many focus group participants said that the incentive had played an important role in their decision to join the program and also to continue participants were more motivated by the positive aspects of the program, including supportive relationships with program staff, group support, and beginning to see positive changes in their health. Other studies have found that incentives in the form of rewards for participating in and adhering to goals, whether for simple or complex intervention, were generally effective inducements for behavior change. Incentives for achieving outcomes showed positive effects in the short run but outcomes were not sustained (Kane et al., 2004) We found that whether incentives were linked to processes, outcomes, or both was <u>not</u> a significant predictor of overall program satisfaction, program impact, or satisfaction with and impact of incentives specifically.

It is challenging to identify appropriate programs for benchmarking participant satisfaction in the MIPCD program. Two studies of chronic disease management programs for Medicaid beneficiaries provide some point of comparison (Patric et al., 2006; Lind, Kaplan & Berg, 2006). Evaluation of a diabetes program for Medicaid beneficiaries in Tennessee found that 93 percent of participants who responded to a survey said they would recommend the program to friends and family. A similar question in the MIPCD survey found that about 98 percent of participants in diabetes prevention programs and about 96 percent of participants in diabetes prevention programs and about 96 percent of others. Evaluation of an asthma program for Medicaid beneficiaries in Washington State found that 92 percent of participants who responded to a survey were satisfied or very satisfied with the program overall (Lindl, Kaplan & Berg, 2006). In response to a similar question in the MIPCD survey, about 96 percent of participants in diabetes prevention programs and about 94 percent of participants in diabetes control programs were very or somewhat satisfied with the program overall.

We can also compare satisfaction among MIPCD program participants with Medicaid beneficiaries' satisfaction with their health plan, although this comparison is less directly relevant. Satisfaction with Medicaid as a health plan is generally high; for example, the mean rating among Arkansas Medicaid beneficiaries in 2015 was 7.6 on a scale of 0 to 10 (Arkansas Foundation for Medical Care, 2015). Surveys in Florida and New Hampshire find that 50–60 percent of Medicaid beneficiaries rated their health plan as 9–10 (Duncan et al., 2010; Health Services Advisory Group, 2015). As noted above, among the MIPCD survey respondents the average program rating was 8.5 on a scale of 1–10.

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SECTION 6 PARTICIPATION BY SPECIAL POPULATIONS



Special populations (including adults with disabilities, adults with chronic illnesses, and children with special health care needs) are one of the key topics mandated to be evaluated by Section 4108. The legislative mandate required the independent evaluation to assess the extent to which special populations were able to participate in the MIPCD programs. The legislative mandate defined special populations as adults with disabilities, adults with chronic illnesses, and children with special needs. All programs

engaged at least one group characterized as a special population. All MIPCD programs except one, Nevada's Healthy Heart program, engaged adults with chronic illnesses. Some programs also engaged adults with disabilities and one program engaged children with special needs, **Nevada's** Healthy Heart program.

To assess special populations' participation in MIPCD programs, our evaluation focused on participant satisfaction and health care costs. Research presents a strong link between patient satisfaction, and access to care and services (Aday & Andersen, 1974; Ricketts & Goldsmith, 2005). As a result, our examination of special populations' participation in the MIPCD programs focused on their ability to access care and services provided by the MIPCD programs and their related satisfaction. Additionally, we examined whether the impact of these programs on participant health care costs was different for participants that were considered special populations compared to those that were not. Because satisfaction and access are variables often associated with health care costs, we used multivariate ordinary least squares analyses in an attempt to understand the impact of these programs on special populations' health care costs with all other factors being equal.

Key Findings

- Special populations—including adults with disabilities, adults with chronic illnesses, and children with special needs—were able to participate in incentive programs.
- Respondents receiving disability or Supplemental Security Income had significantly higher satisfaction than other participants in three accessibility areas.
- In general, incentive effects for persons from special populations were not significantly different from incentive effects for persons who were not from special populations. There were scattered exceptions:
 - Persons living with disabilities in Minnesota's diabetes prevention program and New Hampshire's InShape and Weight Watchers programs had significantly lower total costs than persons without disabilities.
 - Dual Medicare-Medicaid enrolled participants in New York's and participants living with disabilities in Wisconsin's quitline program had significantly lower total costs than those not enrolled in Medicare and Medicaid.
 - Among participants living with disabilities in New Hampshire's smoking cessation program, incentives were associated with higher costs.

6.1 Key Findings

All States served at least one, if not two, special populations outlined in the enacting legislation for this demonstration. Most of the programs served persons who were eligible for Medicaid based on disability, and three States specifically targeted persons with mental health or substance abuse issues. All of the States served persons with or at risk of chronic disease, and

one State served children at risk for obesity or heart disease. Eight States also engaged special populations that are not identified in the legislation. These include pregnant women, mothers of newborns, and beneficiaries who speak English as a second language.

Focus group discussions and stakeholder interviews revealed that in the programs for persons with behavioral health and substance use disorders, the in-person components of the programs strongly resonated with participants. Focus group discussions show mixed results regarding language access with a few programs offering materials in other languages such as Spanish and Somali. At the same time, participants indicated that materials for low literacy individuals or individuals who spoke other languages were not available.

Participant satisfaction with the programs overall was high. Among participants that reported receiving disability or Supplemental Security Income (SSI), satisfaction was significantly higher than non-disabled participants with regards to the overall program, their contact with staff, program accessibility, incentives overall, and incentive fairness.

Across nearly all programs examined, we found no differential effects of the program on total per-member-per-month (PMPM) expenditures associated with participants' Medicare-Medicaid dual enrollee or disabled status. In five programs, we observed significant impact on total costs associated with a special population:

- People living with disabilities in **Minnesota's** diabetes prevention program and **New Hampshire's** InShape and Weight Watchers program had significant reductions in total PMPM expenditures.
- Medicare-Medicaid dual enrollees in **New York's** and participants living with disabilities in **Wisconsin's** quitline programs had significant reductions in total PMPM expenditures.
- People living with disabilities in **New Hampshire's** smoking cessation program had significant increases in total PMPM expenditures.

Although we interpret these findings with caution given the small sample sizes and standard errors, we view them as opportunities for future qualitative examination to better understand their significance.

6.2 Evaluation Questions

This section addresses the following evaluation questions:

• Were special populations able to participate in the program? Among special populations, how did beneficiary satisfaction with the programs and incentives compare with that of other program participants? Compared with participants who are not categorized as special populations, were participants in special populations more or less satisfied with the programs overall and their accessibility?

• How did utilization of and expenditures for health services by special populations within the intervention group of a State program compare with those of similar populations in the control group? Specifically, did utilization and expenditures increase or decrease among special populations participating in the intervention group compared to similar participants in the control group?

6.3 Data Sources

The data sources for the results presented in this section include focus groups; stakeholder interviews; the beneficiary satisfaction survey; and Medicaid enrollment, fee-for-service claims, and managed care encounter data. Because **Hawaii** conducted its own beneficiary survey, the survey results presented in this section include all States except Hawaii. More information on these data sources, as well as the analytic methods used to obtain the results, are presented in *Sections 3* and *4*.

6.4 Analytic Approach

6.4.1 Special Populations for Beneficiary Satisfaction Analyses

Using focus groups and stakeholder interviews, we examined the extent to which special populations were able to participate in the programs, and found materials and staff accessible. We addressed these aspects of satisfaction by focusing on two special populations—adult participants with behavioral health or substance use disorders, and participants that spoke English as a second language. To assess satisfaction with and accessibility of these programs by mainly adults with behavioral health or substance use disorders, we analyzed qualitative feedback from the intervention arms of three State MIPCD programs that targeted this population (behavioral health and substance use disorders): **Connecticut, New Hampshire,** and **Texas**. To understand satisfaction and accessibility for individuals that spoke English as a second language, we analyzed qualitative feedback from **California, Connecticut, Hawaii, Minnesota, New York, Nevada,** and **Wisconsin**.

We also present survey results from a special population—beneficiaries who reported receiving disability or SSI. While Medicaid enrollment because of a disability can, in some States, include a larger population than those receiving disability or SSI, this was the most appropriate survey variable to identify respondents who fell into the special population category. This survey was administered to participants in all States except **Hawaii** and examined beneficiaries' opinions on the program, including access to program activities and staff, quality of service they received in the program, incentives, how the program helped them, and overall satisfaction with and willingness to recommend the program.

6.4.2 Special Populations for Utilization and Expenditures Analyses

Similar to the survey results, we limited our analysis of the MIPCD programs' impact on expenditures to Medicare-Medicaid dual enrollees and those enrolled in Medicaid because of a disability or blindness in all States. We also did not conduct stratified analyses by Medicare-Medicaid dual enrollee or disabled status for **Hawaii's** Kaiser program arm, **Montana's** program, **Nevada's** programs, and **New York's** diabetes management and hypertension program arms because these programs either lacked significant samples of Medicare-Medicaid dual

enrollees or disabled or the programs included mainly special populations, making a stratified analysis reflective of the general population and therefore irrelevant. We examined Medicaid total costs of care for these special populations using claims.

6.5 Results

6.5.1 Special Populations Targeted by the Programs

All States served adults with disabilities, the first group highlighted in the legislation as a special population. In fact, all States had beneficiaries who receive disability or SSI as participants in their programs (*Table 6-1*). These beneficiaries often have higher morbidity and health care needs. Three of the programs—Connecticut, New Hampshire, and Texas—focused on people with behavioral health or substance use disorders, a group who frequently qualify for Medicaid on the basis of disability. All of the States' programs targeted adults with or at risk of chronic disease, the second special population highlighted in the legislation. The largest program arm in Nevada served children with special health care needs, the third special population highlighted in the legislation. Most States also considered participants enrolled dually in Medicare and Medicaid to be a special population because, like beneficiaries who receive disability or SSI, they typically have higher morbidity and consequently have greater health care expenditures.

Eight States (California, Connecticut, Hawaii, Minnesota, Montana, Nevada, New York, and Wisconsin) also engaged special populations that are not identified in the legislation. These include pregnant women, mothers of newborns, and beneficiaries who speak English as a second language. These populations often present unique challenges in ensuring access to and participation in the MIPCD programs. For example, focus group discussion data from Hawaii and Minnesota showed that participants who spoke English as a second language experienced cultural barriers related to program materials (i.e., not written in their native or preferred language) and, to a lesser extent, to use of incentives (i.e., not culturally appropriate to use co-ed gyms). In fact, consistent across diabetes prevention programs was a recommendation to include more culturally appropriate recipes in cookbooks for target populations such as Somali, Native Americans, and Native Hawaiians.

 Table 6-1

 Special populations engaged in Medicaid incentives to prevent chronic diseases, by State

State	Adults with behavioral health or substance use disorders	Medicare- Medicaid enrollees	Disabled beneficiaries or SSI recipients	Pregnant women and mothers of newborns	Children	Beneficiaries who speak English as a second language
California ¹		\checkmark	\checkmark	\checkmark		\checkmark
Connecticut	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark
Hawaii ²		\checkmark	\checkmark	_	—	\checkmark
Minnesota ³		\checkmark	\checkmark	_		\checkmark
Montana ⁴		\checkmark	\checkmark	\checkmark		_
Nevada		\checkmark	\checkmark		\checkmark	\checkmark
New Hampshire	\checkmark	\checkmark	\checkmark			_
New York ⁵			\checkmark	\checkmark		\checkmark
Texas	\checkmark		\checkmark	_	_	_
Wisconsin		\checkmark	\checkmark	\checkmark	_	\checkmark
Total	3	8	10	5	1	7

¹ California did not consider these populations to be a primary focus but was able to identify these populations and provide data on their participation.

 2 Hawaii did not consider those with mental illness and substance use disorders to be a primary focus but was able to identify these populations and provide data on their participation.

³ Minnesota did not consider these populations to be a primary focus but translated and adapted materials to ensure that these populations have access to the program.

⁴ In Montana, pregnant women were ineligible for the program, but mothers of newborns who met the eligibility criteria were eligible for the program.

⁵ New York did not consider mothers of newborns to be a primary focus, but this special population was included in its programs.

6.5.2 Ability of Special Populations to Participate in the Program

Results from the focus groups and stakeholder interviews revealed that in the behavioral health and substance use disorder programs, the in-person components of the programs strongly resonated with participants. Several participants commented on how the program benefited them by encouraging them to leave the house. They appreciated the one-on-one interaction not only with the program staff, but also with others who were diagnosed with similar conditions.

Also, **Connecticut** and **Texas** incorporated peer coaches into components of their programs. Program participants said that these components, particularly the interaction with individuals who shared their same struggles, were helpful. One participant shared that the peer coaches "personalized [the program] very quickly for the whole group by sharing their problems and... what they do to... remedy the problems." However, stakeholders reported that implementing these peer-led sessions could be a challenge. In **Connecticut**, in particular, the

program found it difficult to recruit peers to coach program participants. As a result, the implementation of Connecticut's peer coaching program component was significantly delayed.

Language access—We examined language access initially using the beneficiary satisfaction survey, followed by the focus group discussions. The survey was conducted in English and Spanish. Less than 5 percent of survey responses were provided in Spanish and most English survey respondents indicated that program staff spoke their language. Because the survey was limited to English and Spanish, we relied on focus group discussion feedback and stakeholder interviews for insights on language access. While only 4 of 39 focus group discussions were conducted in a language other than English—2 groups were conducted in Somali and 2 groups were conducted in Spanish—participants in nearly all the focus groups provided feedback and lessons learned about the language accessibility of the MIPCD programs.

A few programs offered materials in other languages such as Spanish and Somali. Parents of participants in a point redeemable for rewards program shared their appreciation that materials were provided in English and Spanish. For example, youth in this program received recipes in both English and Spanish, which made the recipes easier for their families to use and eliminated any potential language barriers. Somali participants shared that some program materials were translated into Somali and in some cases pictures were used. One Somali participant shared: *"The lifestyle coach give [participants]a picture for like the seven days that they're gone, so today's lunch, breakfast, dinner...so the people who cannot read, they do like checking, like there's pictures, like fruit, veggies, bread, spaghetti, meat, milk, sugar, oil..."*

At the same time, participants highlighted that not all program materials were translated and that overall materials were mainly offered in English. They emphasized that materials offered in other languages would have been beneficial. As one participant highlighted: *"There are a bunch of different languages here [in the program]*." Even for Somali participants, some program materials were provided in English only leaving these participants dependent on program staff and family members to translate them. Participants also suggested that materials include descriptive images if they could not be translated into other languages. Also, these images would help low-literacy individuals better understand the materials.

6.5.3 Beneficiary Experiences and Satisfaction with the Program

Overall, 34 percent of survey respondents reported receiving disability or SSI.¹¹ Across States, the percentage of beneficiaries who reported receiving disability or SSI ranged from 22 percent in **New York** to 57 percent in **Texas** (*Table 6-2*).

¹¹ In this section, we refer to respondents who reported receiving disability or SSI as beneficiaries receiving disability or SSI.

Table 6-2
Percentage of beneficiaries who reported receiving disability or SSI

State	Percent
Overall	34.0
California	31.7
Connecticut	29.5
Minnesota	22.3
Montana	42.9
New Hampshire	41.5
Nevada	31.0
New York	22.1
Texas	57.4
Wisconsin	29.8

Source: Beneficiary survey.

Table 6-3 shows the results of the beneficiary satisfaction survey for beneficiaries who reported receiving disability or SSI compared with those who did not. In general, satisfaction with the program was high among beneficiaries receiving disability or SSI. Satisfaction with the programs was comparable among beneficiaries receiving disability or SSI and those who were not, with several exceptions favoring beneficiaries receiving disability or SSI:

- The percentage of respondents reporting that they were very satisfied with the program was significantly higher among beneficiaries receiving disability or SSI than among those who were not (69% and 66%, respectively, p = 0.090).
- The percentage of respondents reporting that they could always contact program staff when they wanted to was significantly higher among beneficiaries receiving disability or SSI than among those who were not (63% and 56%, respectively, p = 0.027).
- The percentage of respondents reporting that the program schedule was convenient was significantly higher among beneficiaries receiving disability or SSI than among those who were not (93% and 91%, respectively, p = 0.033).
- The percentage of respondents reporting that program staff spoke their language was significantly higher among beneficiaries receiving disability or SSI than among those who were not (98% and 96%, respectively, p = 0.003).
- The percentage of respondents reporting that they were happy with the incentives overall was significantly higher among beneficiaries receiving disability or SSI than among those who were not (76% and 74%, respectively, p = 0.038).

• The percentage of respondents reporting that they felt the incentives were fair was significantly higher among beneficiaries receiving disability or SSI than among those who were not (76% and 72%, respectively, p = 0.057).

Table 6-3

Measures of satisfaction with program overall, program accessibility, and program incentives among beneficiaries who reported receiving disability or SSI compared with those who did not

	Disabled or SSI	Nondisabled or	D1
Satisfaction measure	beneficiaries	551 beneficiaries	P-value
Overall satisfaction			
Very satisfied (%)	68.6	66.3	0.090*
Overall program rating (mean, out of 10)	8.5	8.4	0.208
Would definitely recommend program to family and friends (% responding "yes, definitely")	76.7	73.2	0.122
Satisfaction with program accessibility			
Could always contact program staff when wanted to (% responding "always")	62.8	56.3	0.027**
Started program as soon as wanted (% responding "yes")	90.6	91.1	0.732
Amount of time spent on program was about right (% responding "yes")	87.5	88.9	0.326
Program schedule was convenient (% responding "yes")	93.4	90.8	0.033**
Program location was convenient (% responding "yes")	93.4	91.6	0.156
Program staff spoke respondents' language (% responding "yes")	98.2	95.7	0.003**
Was always able to get help from program staff (% responding "always")	63.8	60.7	0.218
Satisfaction with program incentives (% "strongly agree")			
Happy with incentives overall (% responding "yes")	76.3	73.6	0.038**
Liked getting incentives for taking good care of health (% responding "yes")	80.3	76.9	0.159
Happy with how often got incentives (% responding "yes")	68.5	66.8	0.435
Incentives are fair (% responding "yes")	74.9	71.6	0.057*
Incentives helped set goals and work toward them (% responding "yes")	66.5	65.5	0.792
Incentives helped make positive changes in life (% responding "yes")	68.3	64.1	0.107

Notes: SSI, Supplemental Security Income. * p < 0.10, ** p < 0.05. Source: Beneficiary survey.

6.5.4 Expenditure Results

Table 6-4 shows the results for the analyses used to examine patterns of expenditures for special populations (including beneficiaries enrolled in dual Medicare and Medicaid services and beneficiaries living with disabilities). For each State for which special populations analyses were performed using Medicaid claims data, we show the State, the MIPCD program or program arm, the sample of special populations in the State, and the total per-member-per-month (PMPM) expenditure result, noted for the special populations within the State.

Table 6-4 Claims-based expenditure results for special populations: Medicare-Medicaid enrollees compared with Medicaid only enrollees, and disabled compared with nondisabled participants

State	Sample	Results
California	 Counseling+NRT: The two incentive arms had significantly higher percentages of dual Medicare-Medicaid enrolled than the control group. The counseling plus NRT group was comprised of 39.2% dual participants the counseling plus NRT and incentive group was comprised of 37.5% dual participants, while the control group was 33.0% dual. Counseling+NRT+Incentives: The counseling plus NRT plus incentive group had a significantly higher percentage of dual Medicare-Medicaid enrollees than the control group. The incentive group was comprised of 37.5% dual participants while the control group was 33.0% dual. 	Counseling+NRT: For Medicare- Medicaid enrollees, we observed a statistically significant decrease in total expenditure (approximately \$111 PMPM) between the pre- and post- timeframes in comparison to the control group. There were no differential effects of the MIPCD program by disability status. Counseling+NRT+Incentives: There were no differential effects of the MIPCD program on total expenditure for <i>Medicare-Medicaid enrollees</i> or participants living with disabilities.
Connecticut	All four incentive groups had significantly higher percentages of Medicare-Medicaid enrolled and/or participants living with disabilities compared to the control groups. Remaining arms did not have a significant difference in percentage of participants living with disabilities and/or Medicare-Medicaid enrolled participants in the intervention group compared to the control group. Significantly higher percentages of <i>participants</i> <i>living with disabilities</i> were in the original incentive group (Intervention 1) (32.6%), high outcome incentive group (Intervention 3) (15.6%), and peer coaching group (Intervention 4) (36.5%), compared to the control group (26.5%). Significantly higher percentages of <i>Medicare- Medicaid enrolled participants</i> were in the original incentive group (Intervention 1) (21.0%) and high process incentive group (Intervention 2) (10.8%), compared to the control group (16.3%).	There were no differential effects of the MIPCD program on total expenditures depending on dual-enrollee or disabled status.

State	Sample	Results
Hawaii	HI-PRAISE: No significant difference in the percentage of Medicare-Medicaid enrolled (18.7%) and disabled (18.1%) participants in the intervention group compared to the control group (20.9% and 17.6%, respectively).	HI-PRAISE: There were no differential effects of the MIPCD program on total expenditures depending on Medicare- Medicaid enrollment- or disabled status. Kaiser: There were not enough
	Kaiser: No significant difference in the percentage of Medicare-Medicaid enrolled participants (5.6%) and participants living with disabilities (0.7%) in the intervention group compared to the control group (3.6% and 1.4%, respectively).	Medicare-Medicaid enrolled participants or participants living with disabilities to obtain a reliable comparison of differences.
Minnesota	No significant difference in the percentage of Medicare-Medicaid enrolled participants or participants living with disabilities in each	There were no differential effects of the MIPCD program on total expenditure for <i>Medicare-Medicaid enrollees</i> .
	intervention group—individual incentive group (Intervention 1) participants, 15.6% and 33.8%, respectively and group incentive (Intervention 2) participants, 15.9% and 38.9%, respectively— compared to the control group (14.3% and 33.5%, respectively).	For participants living with disabilities in the individual incentive arm (Intervention 1), we observed a statistically significant decrease in total expenditure (approximately \$320 PMPM) between the pre and post timeframes in comparison to the control group. For participants living with disabilities in the group incentive arm (Intervention 2), we observed no differential effects of the MIPCD on total expenditures
Montana	No significant difference in the percentage of Medicare-Medicaid enrolled participants (56.0%) and participants living with disabilities (87.2%) in the intervention group compared to the control	There were no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid enrollee status.
	group (56.4% and 92.1%, respectively).	The percentage of participants living with disabilities was too high to conduct a stratified OLS analysis to identify differential effects of the intervention among this special population compared to the control group.
		(continued)

State	Sample	Results
Nevada	 Healthy Hearts: No significant difference in the percentage of participants living with disabilities in each intervention group—child incentive group (Intervention 1) participants (1.7%) and child and parent incentive group (Intervention 2) participants (1.2%)—compared to the control group (2.9%). Adult Diabetes Management: No significant difference in the percentage of Medicare-Medicaid enrolled populations in the intervention group compared to the control group. Medicare-Medicaid 	There were not enough Medicare- Medicaid enrolled participants or participants living with disabilities to obtain a reliable comparison of differences.
	enrolled comprised 3.3% of intervention group and 3.4% of the control group participants.	
New Hampshire- Weight Management	Gym program arm: <i>Significantly</i> higher percentage of <i>dual-enrolled</i> participants in the intervention group (66.7%) compared to control group (54.1%). No significant difference in the percentage of participants living with disabilities in the intervention group (58.8%) compared to the control group (64.3%).	There were no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid enrollment or disabled status.
	InShape program arm : No significant difference in the percentage of Medicare-Medicaid participants enrolled in the intervention group (50.8%) or participants living with disabilities (62.6%) compared to the control group (53.2% and 61.3%, respectively).	There were no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid enrollment or disabled status.
	Weight Watchers program arm: No significant difference in the percentage of Medicare-Medicaid enrollees in the intervention group (66.7%) or participants living with disabilities (62.2%) compared to the control group (59.5% and 50.0%, respectively).	There were no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid enrollment or disabled status.
	InShape & Weight Watchers program arm: No significant different in the percentage of Medicare-Medicaid enrollees in the intervention group (58.2%) or participants living with disabilities (58.6%) compared to the control group (60.1% and 56.5%, respectively).	For participants living with disabilities in this program arm, we observed a statistically significant decrease in total expenditure (approximately \$283 PMPM) between the pre and post timeframes in comparison to the control group. There were no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid

State	Sample	Results
New Hampshire- Smoking Cessation	Referral program arm : No significant difference in the percentage of Medicare-Medicaid enrollees in the intervention group (55.3%) or participants living with disabilities (65.8%) compared to the control group (53.6% and 62.3%, respectively).	There were no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid enrollment or disabled status
	Quitline program arm: No significant difference in the percentage of Medicare-Medicaid enrollees in the intervention group (59.5%) or participants living with disabilities (58.2%) compared to the control group (60.3% and 57.6%, respectively).	For participants living with <i>disabilities</i> in this program arm, we observed a statistically significant increase in total expenditure (approximately \$284 PMPM) between the pre and post timeframes in comparison to the control group. There were no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid enrollment status.
	Telephonic Cessation Therapy program arm: No significance different in the percentage of Medicare-Medicaid enrollees in the intervention group (61.5%) or participants living with disabilities (61.5%) compared to the control group (64.8% and 60.0%, respectively).	There were no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid enrollment or disabled status.
New York	 Diabetes Prevention: Significantly fewer Medicare-Medicaid-enrolled participants were in the process incentive group (Intervention 1) (3.1%) compared to the control group (8.6%). No significant difference in percentage of participants living with disabilities in the process incentive group (Intervention 1) (18.8%) compared to the control group (20.7%). No significant difference in the percentage of Medicare-Medicaid enrolled or participants living with disabilities in the remaining intervention groups—outcome incentive group (Intervention 2), 7.4% and 23.6%, respectively; and process plus outcome incentive group (Intervention 3), 5.4% and 14.4%, respectively—compared to the control group, 8.6% and 20.7%, respectively. 	There were not enough Medicare- Medicaid enrollees or participants living with disabilities to obtain a reliable comparison of differences.

State	Sample	Results
New York (continued)	Diabetes Management: No significant difference in the percentage of Medicare- Medicaid enrolled participants or participants living with disabilities in each intervention group—process incentive group (Intervention 1) 8.3% and 26.8%, respectively; outcome incentive group (Intervention 2) 7.4% and 25.5%, respectively; and process plus outcome incentive group (Intervention 3) 7.4% and 24.3%, respectively—compared to the control group, 8.6% and 23.3%, respectively.	There were not enough Medicare-Medicaid enrolled or participants living with disabilities to obtain a reliable comparison of differences.
	Hypertension: No significant difference in the percentage of Medicare-Medicaid enrolled participants or participants living with disabilities in each intervention group— process incentive group (Intervention 1), 9.4% and 26.6%, respectively; outcome incentive group (Intervention 2), 9.9% and 35.9%, respectively; and process plus outcome incentive group (Intervention 3), 11.2% and 31.5%, respectively—compared to the control group, 9.1% and 30.9%, respectively.	There were not enough Medicare-Medicaid enrolled or participants living with disabilities to obtain a reliable comparison of differences.
	 Smoking Cessation: Significantly more disabled participants were in the outcome incentive group (Intervention 2) (38.6%) compared to the control group (33.2%). No significant difference in percentage of participants living with disabilities in the outcome incentive group (Intervention 2) (16.6%) compared to the control group (14.8%). No significant difference in the percentage of Medicare-Medicaid enrolled participants or participants living with disabilities in in the process incentive group (Intervention 1), 17.1% and 36.0%, respectively—compared to the control group (14.8%). 	For <i>Medicare-Medicaid enrolled</i> participants in the process incentive group, we observed a statistically significant decrease in total expenditure (approximately \$414 PMPM) between the pre and post timeframes in comparison to the control group. There were no differential effects of the process incentive group of this program arm on total expenditures depending on disabled status. There were no differential effects of the outcome incentive group on total expenditures depending on disabled or Medicare-Medicaid enrollment status.
	respectively).	
Texas	No significant difference in the percentage of Medicare-Medicaid enrolled in the intervention group (7.5%) compared to the control group (8.1%). All enrollees were eligible for Medicaid because they had low income and were disabled.	There are no differential effects of the MIPCD program on total expenditures depending on Medicare-Medicaid enrollment status.

State	Sample	Results
Wisconsin	 Striving to Quit: No significant difference in the percentage of Medicare-Medicaid enrolled or participants living with disabilities in the intervention group (14.1% and 65.4%, respectively) compared to the control group (13.3% and 65.6%, respectively). First Breath (pregnant women): Significantly more participants living with disabilities in the intervention group (38.1%) compared to the control group (31.5%). No significant difference in the percentage of dual enrolled participants in the intervention group (2.3%) and the control group (2.2%). 	 Striving to Quit: For participants living with disabilities in the intervention group, we observed a statistically significant decrease in total expenditure (approximately \$184 PMPM) in comparison to the control group. There were no differential effects of the intervention group of this program arm on total expenditures depending on dual-enrolled status. First Breath (pregnant women): There are no differential effects of the MIPCD program on total expenditures depending on dual-enrolled status.

For most programs examined, the distribution of special populations was similar between the intervention and control groups. Five programs—**Connecticut's** program, **New Hampshire's** weight management gym program arm, **New York's** diabetes prevention and smoking cessation program arms, and **Wisconsin's** First Breath program arm—had statistically significant differences in the percentage of Medicare-Medicaid enrolled or participants living with disabilities in the intervention group compared to the control group. Specifically, these programs' intervention groups had, in most cases, a significantly higher percentage of special populations than the control groups. **New York's** diabetes prevention program was an exception with significantly fewer Medicare-Medicaid enrolled participants engaged in the process incentive group (3.1 percent) compared to the control group (8.6 percent). Despite these demographic differences, when controlled for in the ordinary least squares (OLS) analyses, we observed no differential effects of the interventions on total expenditures among Medicare-Medicaid enrolled or participants living with disabilities in these program arms.

We conducted stratified OLS analyses for all programs except eight—Hawaii's Kaiser program arm; Montana's program; Nevada's Healthy Hearts and Adult Diabetes Management programs; New York's diabetes prevention, diabetes management, and hypertension programs; and Texas' program. In Texas and Montana where all or nearly all program participants were living with disabilities, we did not have a sufficient sample of non-disabled participants to conduct a reliable comparison of differences. For these remaining six programs, we lacked a reliable comparison between special population participants and those that were not to conduct a stratified OLS analysis based on disabled or dual Medicare and Medicaid enrollment status.

Across nearly all programs examined, we found no differential effects of the program on total PMPM expenditures associated with participants' Medicare-Medicaid enrollment or disabled status. In six programs—California's counseling plus NRT program, Minnesota's diabetes prevention program, New Hampshire's InShape and Weight Watchers program, and

New Hampshire's, New York's and Wisconsin's smoking cessation programs—we observed a significant impact on total costs associated with a special population. Among Minnesota's diabetes prevention program and New Hampshire's weight management program, InShape and Weight Watchers, participants living with disabilities in the intervention group had significantly lower total PMPM expenditures than those in the control group. Total PMPM expenditures among participants living with disabilities in each program were, on average, \$183 and \$320, respectively, lower than those in the control groups. Smoking cessation programs in New York, California (Counseling+NRT arm), and Wisconsin (Striving to Quit) showed a significant impact on total PMPM expenditures, a reduction of, on average, \$414 among Medicare-Medicaid enrollees in New York, \$111 among Medicare-Medicaid enrollees in California's Counseling and NRT arm, and \$184 among participants living with disabilities in Wisconsin. Participants with disabilities in the intervention group of New Hampshire's quitline program had, on average, a statistically significant increase of \$284 in total expenditures than those in the control group. However, given the small sample sizes and the standard errors, we interpret all significant findings related to the impact of the interventions on total expenditures among special populations with caution.

6.6 Discussion

Based on all three data sources—survey data, focus group discussions and claims data, special populations were able to participate in the MIPCD programs, were satisfied with the programs, and showed minimal differential effects on total expenditures.

On average, a third of survey respondents reported receiving disability or SSI and, therefore, were considered special populations. **Among those who reported receiving disability or SSI, we observed a significantly higher overall satisfaction compared to those who did not.** Respondents receiving disability or SSI also had significantly higher satisfaction with three aspects of program accessibility (contact with program staff, convenience of program schedule, and staff language accessibility). Though satisfaction with program incentives overall and the fairness of the incentives were significantly higher among respondents receiving disability or SSI than those that did not report receiving disability or SSI often do not work full-time, which may impact their perception of program convenience and incentive fairness. Future surveys may include employment status to understand whether it impacts special populations' perceptions of and satisfaction with the program overall including accessibility and the incentives provided.

Our qualitative findings from focus groups with MIPCD participants supported survey findings; **focus group participants' overall impressions of the incentive programs, particularly those of program staff, were positive**. The in-person components of the programs strongly resonated with the participants, especially among participants in behavioral health and substance use disorder programs. Also, we received mixed feedback regarding language access. Some participants shared that programs had appropriate language access; whereas, others highlighted that materials could be more accessible for low-literacy individuals or participants that spoke English as a second language.

In general, incentive effects on utilization and costs for persons from special populations were not significantly different from incentive effects for persons who were not

among the special populations. Of the 21 program arms analyzed, 5 program arms showed significant incentive effects for persons from special populations. In four program arms, we observed a significant reduction in total PMPM expenditures among special populations and in one program arm we observed a significant increase in total PMPM expenditures. In two quitline programs, the reduction in total expenditures between the intervention and control groups were, on average, over \$100 PMPM. In the remaining quitline program, we observed a significant increase in total PMPM expenditures of \$284. On the one hand, the incentive effect findings suggest that participants may have been encouraged by the quitline to prioritize their health by either reducing or stopping smoking, or visiting their physician more often. On the other hand, these findings suggest that further quantitative analyses to explore dose effect and qualitative studies to understand special populations' participation in quitlines would be helpful.

The remaining two programs that showed significant reductions in total PMPM expenditures among special populations were focused on weight management and diabetes prevention. These programs had limited similarities except that they both presented information in a classroom format—one class focused on diabetes prevention and the other on healthy eating. Future qualitative studies may be beneficial to better understand what components of the programs impacted special populations' health behaviors and contributed to reduced total costs. Again, we interpret these findings with caution because of small sizes and the standard errors.

SECTION 7 ADMINISTRATIVE COSTS



States' involvement in the administrative costs assessment component included completing a one-page form on costs for each year they received funding.

Seven States first completed the Administrative Costs Form for Years 1–3 (Year 1, September 13, 2011–September 12, 2012; Year 2, September 13, 2012–September 12, 2013; Year 3, September 13, 2013–

September 12, 2014). New York, Minnesota, and Wisconsin did not respond to the voluntary request for information. In a second wave, we received information about Year 4, corresponding to the period of September 13, 2014–September 12, 2015. **Minnesota** completed all previous questionnaires and **Wisconsin** provided copies of its SF-425 forms for all years, allowing us to report its annual cumulative expenditures but not the subcomponents (administrative, incentives, services, and in-kind costs). **New York** did not respond to the questionnaire. Finally, States were asked to complete the one-page form on costs for Year 5, corresponding to the period of September 13, 2015–September 12, 2016. **New York** and **Wisconsin** were asked to complete the cost form for previous years but were unable to participate due to staff shortages. **Wisconsin** again provided annual copies of its SF-425 forms and in the case of **New York**, RTI independently obtained the State's final cumulative SF-425 form.

As in previous reports, we used the results of the Administrative Costs Form to assess the following questions:

- How do administrative costs vary by major structural differences, such as the type of program, target group/health condition, and type and amount of incentive?
- How has the State been spending its administrative funds, and how does this compare with the projected spending in its proposal?
- How have administrative expenditures changed in the different phases of the initiatives?
- What fraction of incentives and services are paid by the program?
- What additional financial costs have States incurred in the form of in-kind contributions?

As the State innovations have come to an end it is now important to also analyze:

- What fraction of administrative expenditures represents either start-up costs or costs associated with the evaluation that are unlikely to be recurrent to the innovation, like data collection systems, and satisfaction surveys evaluation as opposed to the "normal" costs of actually running the program?
- What is the return on investment of these program in terms of benefits like smoking cessation and weight loss?

The funding opportunity announcement (FOA) for MIPCD called for a 15 percent cap on administrative costs. Based on feedback from potential awardees, CMS relaxed the 15 percent requirement. The FOA did not define whether evaluation costs were to be included in the calculation of administrative costs. We include evaluation costs as part of our administrative cost estimates, but we also provide separate estimate of evaluation costs.

7.1 Key Findings

We estimate that administrative costs accounted for about 42 percent of overall expenditures in MIPCD programs. This estimate comes with several caveats because the cost data were not reported uniformly across States and only 8 of the 10 States provided the information necessary for estimating administrative costs. The administrative cost estimates included evaluation costs that might not be incurred in a fully operational incentives program. Evaluation costs accounted for about 35 percent of administrative costs, so that administrative costs net of evaluation

Key Findings

- Estimated administrative costs (personnel, training, outreach & marketing, data systems and evaluation expenses) accounted for 42 percent of overall expenditures.
- Evaluation costs accounted for about 35 percent of administrative costs.
- Incentive payments totaled \$4.5 million, 8 percent of overall expenditures.
- Services were an integral part of the MIPCD program and accounted for a sizable share of overall expenditures.
- Lower than planned enrollment may have reduced incentive payments and service costs and increased administrative costs' share of expenditures.

costs accounted for about 27 percent of total program expenditures. Evaluation costs were especially high in Year 5 of the programs as the States assessed program impacts. Lower than planned enrollment probably contributed to administrative costs' share of overall expenditures. Incentive and service costs tend to rise proportionally with enrollment, whereas administrative costs may be partially fixed and rise more slowly with enrollment. The combined effect implies that a shortfall in enrollment leads to a higher share of costs spent on administrative costs.

Looking at costs more broadly. States spent about \$4.5 million on incentive payments to MIPCD participants, representing about 8 percent of overall expenditures. There are several reasons why incentive payments were relatively low. First, most States planned to spend significant amounts to provide services as integral parts of their program. For example, **California** provided nicotine replacement therapy, **New Hampshire** paid for gym memberships and Weight Watchers, Texas provided patient navigators, and several States paid for diabetes prevention programs. In some cases, States considered the services as part of the incentive provided to participants, and these services are also usually provided to participants in the control group who do not receive cash incentives. Second, delays in implementation and enrollment slowed incentive payments. Most States spent less in total than they budgeted in Year 1 of their programs, and spending on incentives was correspondingly lower than budgeted. As enrollment increased in subsequent years, incentives accounted for a greater share of overall program costs. Finally, it appears likely that some States initially overestimated the amount that would be paid as incentives to participants. Several of the States revised their initial estimates of enrollment downward because of delays in implementation or challenges in recruitment. Therefore, because fewer persons participated and incentive payments per person were fixed, total incentive payments fell.

7.2 Detailed Results

Table 7-1 outlines some of the main differences across States in terms of target conditions; type and form of rewards; and size of the program as defined by the population enrolled, the total expenditures, and the amount of incentives distributed. The table includes two measures of incentives distributed:

- total cumulative incentive payments paid directly to participants (based on data from the MIPCD State MDS)
- total cumulative incentive costs (based on data from the Administrative Costs Form)

The amount of incentives reported in the MIPCD State MDS are systematically lower than those reported in the cost form, ranging from 96 percent of the reported incentive costs on the State forms, in the case of **Texas**, to 34 percent for **Nevada** and **Minnesota**. The biggest discrepancy is in the case of **New Hampshire** (where the difference amounted to more than \$475,000). Despite the Administrative Costs Form's instructions, some respondents might have had difficulty distinguishing between incentives and services (in particular, nonmonetary benefits like transportation, gym membership, child care), or between incentives and other administrative costs like the mailing of incentives and personnel's time devoted to distributing incentives.

The programs served more than 70,000 people, most of whom (50,000) were enrolled in **California**.¹² Five States (**California, Connecticut, New Hampshire, New York,** and **Wisconsin**) provided smoking cessation programs; seven States (**Hawaii, Minnesota, Montana, New Hampshire, Nevada, New York,** and **Texas**) provided diabetes prevention, diabetes management, or weight loss programs; and **New Hampshire** and **New York** provided both types of programs. Besides the focus on smoking cessation or diabetes/weight loss, most programs also addressed other chronic conditions or targeted vulnerable populations requiring different testing, counseling, and retention approaches. In part because of these differences in targeted conditions or populations, the State programs have different structures of services and incentives.

In terms of costs per person randomized, **Texas** was the most expensive program and **Nevada** the cheapest, excluding **California** where only a small fraction of participants was randomized.

¹² Note that California enrollment was measured differently in the MIPCD State MDS (shown here) than in the MIPCD Dashboard presented in Section 2.

State	Target conditions	Type of program/aim	Payment: process or outcome	Cumulative participants (from MIPCD State MDS)	Cumulative costs (from Administrative Costs Forms)	Cumulative payments to participants (from MIPCD State MDS)	Cumulative incentive costs (from Administrative Costs Forms)	Cumulative service costs (from Administrative Costs Forms)
CA	T, D	Smoking cessation	Process	50,373	\$9,985,822	\$448,100	\$568,489	\$6,570,008
СТ	Т	Smoking cessation for pregnant women and people with serious mental illness	Process and outcomes	4,052	\$5,894,430	\$173,096	\$425,354	\$986,126
HI	T, D	Improve early detection, self-management of diabetes	Process	2,323	\$ 5,278,479	\$393,357	\$ 494,804	\$ 1,385,257
MN	D, W	Diabetes prevention through weight loss	Process and outcomes	1,101	\$4,995,211	\$124,645	\$368,024	\$3,130,414
MT	D, O, CH, BP	Diabetes prevention through 7% weight loss in 10 months and maintaining it over time	Process	261	\$547,989	\$14,295	\$26,225	\$66,000
NH	CVD, T	Smoking cessation and weight loss for people with mental illness	Process and outcomes	1,735	\$7,718,724	\$758,869	\$1,233,981	\$5,265,113

Table 7-1	
State program co	sts

State	Target conditions	Type of program/aim	Payment: process or outcome	Cumulative participants (from MIPCD State MDS)	Cumulative costs (from Administrative Costs Forms)	Cumulative payments to participants (from MIPCD State MDS)	Cumulative incentive costs (from Administrative Costs Forms)	Cumulative service costs (from Administrative Costs Forms)
NV	D, O, CH, BP	Three components: weight management, dyslipidemia, hypertension, and hyperinsulinemia among children 7–18; diabetes and weight management among adults; diabetes prevention among adults who are overweight or obese	Process and outcomes	1,774	\$1,023,504	\$231,346	\$675,630	\$0
NY	T, D	Smoking cessation and diabetes prevention	Process and outcomes	4,253	\$3,891,587	\$430,520	NA	NA
TX	T, D, O, CH, BP	Improved health self- management, use of preventive services, and more appropriate use of health care services for SSI beneficiaries with behavioral health diagnoses	Process	1,262	\$9,669,929	\$1,454,995	\$1,516,274	\$3,965,849
WI	Т	Smoking cessation	Process and outcomes	2,998 *	\$5,993,053	\$449,320	NA	NA
Totals (all States)				70,132	\$55,628,036	\$4,478543	-	-
Totals (8 States responding to Administrative Costs Form)				62,881	\$45,743,396	\$3,598,703	\$5,308781	\$21,368,767

Table 7-1 (continued) Structural differences by type of program, target group, health condition, incentive type, and incentive amount

Note: BP = hypertension, CH = hyperlipidemia, CVD = cardiovascular disease, D = diabetes management or prevention, MIPCD State MDS = MIPCD State Minimum Data Set, NA = data not available, O = obesity, SSI = Supplemental Security Income, T = smoking cessation/tobacco use, W = weight reduction. * The cumulative number of participants for WI includes people (=70) who re-enrolled in the programs because people who were allowed to re-enroll are considered as new participants as they receive services and incentives.

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The amounts disbursed are a function of program design (i.e., how much, on average, the State provides to participants in incentives) and the number of enrollees in a program. There is a positive correlation between enrollment numbers and amount spent. However, smoking cessation programs received the most funding but lagged behind the rest of the programs on the amounts spent.

Programs that distribute incentives on the basis of process alone have recruited twice as many people as programs based on both process and health outcomes. Weight loss programs tend to pay on the basis of process (i.e., number of sessions attended) rather than outcomes (i.e., changes in BMI or achievement of 5 percent weight loss). States like **Connecticut** and **Nevada** paid participants not only for services or tests taken (process) but also for outcomes, such as having a negative carbon monoxide (CO) breathalyzer test or achieving a target weight. The share of incentives and services as a function of total costs, for the eight States in which the breakdown is possible, ranged from 84 percent in **New Hampshire** to 17 percent in **Montana**. For all States, the share of administrative costs to total costs has been higher than the 15 percent suggested in the initial FOA solicitation and has amounted on average to 42 percent of total spending. Administrative costs include the salaries and fringe benefits of MIPCD grantee staff, partner organizations' staff, and contractors; training costs; outreach and marketing costs, such as the cost of recruitment and advertisement; costs of managing data and data systems associated with the evaluation; costs of survey administration; and several other types of costs such as travel and indirect costs.

Figure 7-1 shows the difference between the amounts spent (as reported in the State's financial reports) on the vertical axis and the amount received (as reported in the State's financial reports or quarterly reports) on the horizontal axis. With the exception of **Montana, California**, and **Texas**, actual billed expenditures have been lower than the CMS grants States received. On average, during the past 5 years States spent approximately \$5.5 million whereas the original awards were on average approximately \$8 million. In terms of cumulative costs incurred during the 5 years of the programs, **California** and **Texas** had the largest program costs, \$9.9 and \$9.7 million, respectively whereas **Montana** and **Nevada** had the smallest program costs, \$0.5 and \$1 million, respectively. **California, Texas**, and **Montana** spent more than 98 percent of their grant, whereas other States spent between 77 percent (**New Hampshire**) and 29 percent (**Nevada**) of their grants. Two key factors accounted for States spending less than their budgeted amounts: program implementation was delayed in many States and recruitment of participants was more difficult than expected. As a result, not all States reached their enrollment targets, even though some of these targets were revised downwards from their original projections.

Figure 7-1 Amount awarded and amount spent, 2011–2016



7.3 Administrative Costs by State

The following sections summarize by State the information presented in *Table 7-1* for Years 1–5. The bar charts (*Figures 7-2 through 7-10*) compare spending by year in millions. In the graphs, we grouped service and incentive costs in a single category because they are conceptually similar and some States did not clearly distinguish between the two types of costs. Because administrative costs also include evaluation costs that might not have been incurred in the absence of randomization, we discuss the contribution of these costs for each State relative to total program costs. We also compare how net program costs (i.e., incentive costs per person) compare to the estimated health benefits reported in the MIPCD State MDS (*Tables 4-3 and 4-4*) for weight loss and smoking cessation.

California

• *Figure 7-2* depicts reported total annual expenditures by components for California. The costs reported represent incentive and service costs as well as administrative costs (personnel, training, outreach and marketing, travel, supplies, and operating costs). Total spending peaked at Year 4 and decreased thereafter.

- California reported service costs of \$6.6 million, including payments for nicotine transdermal patches. Dollars spent directly on participants in the form of both services and incentives (e.g., quitline calls, nicotine patches, incentive payments to participants) represent approximately 74 percent of all expenditures in Years 2, 3 and 4. In Year 5, 66 percent of total spending went to services and incentives.
- In Year 1 all costs reported were administrative. Year 1 costs represent lower amounts than were actually incurred because some invoices had not been filed by the end of the grant year. California enrolled 913 participants in the first year and therefore incurred incentive and service costs, but these were recorded with a lag. Subsequently, enrollment quadrupled in the randomized evaluation alone (totaling 3,847 participants across three arms).
- Administrative costs, which included personnel, outreach and marketing, data systems, evaluation, and other administrative costs, were on average 26 percent of total costs. If we exclude evaluation costs (equal to \$240,920), the share of administrative costs as a fraction of total costs decreases to 24 percent.
- California only reported information on self-reported attempts to quit smoking among 3,221 people that participated in the randomized control trial (RCT). Seventy-eight percent of people in the nicotine replacement therapy (NRT) plus cash incentive made at least one quit attempt compared to 68 percent in the control group. Individuals in the incentive group of the RCT received on average \$55 (\$78,270 across 1,419 participants), which was associated with, on average, a 10 percent increase in the self-reported probability of quit attempts.



Figure 7-2 Annual expenditures and components: California

Connecticut

- *Figure 7-3* depicts reported total and component annual expenditures for Connecticut. The costs reported represent service incentive costs as well as personnel, training, outreach and marketing, data systems and evaluation, enrollment specialists, and in-kind expenditures. Total spending increased annually until Year 4 and decreased in the final year. The main reason for this was that services decreased.
- Administrative costs, which included personnel, outreach and marketing, data systems, outreach and marketing, evaluation, and other administrative costs, were on average 73 percent of total costs, higher than the 15 percent suggested in the solicitation, possibly because of a complex program design and partnership with Yale University, to carry out the evaluation, which is considered an administrative cost Administrative costs as a fraction of total costs were lowest in Years 3 and 4, equal to 64 and 61 percent of total costs, respectively. Evaluation costs represented 24 percent of administrative costs and 17 percent of total costs.
- Although we have grouped services and incentives together, services are, on average, 2.3 times higher than incentives. Services alone amounted to \$986,126 and include debit card production, survey incentive payments, vendor member surveys, enrollment and information material for program participants, breathalyzer equipment and consumables, and provider participation stipends.
- In-kind costs represent, on average, 4 percent of total costs, amounting to approximately \$170,000 dollars over 5 years. This number is likely to be an underestimate as reported in-kind contributions included only personnel and indirect expenses for the State department's staff. The Hispanic Health Council, for example provided a reduced indirect rate for focus group administration. Other key partners, particularly the Community Health Network of Connecticut, Inc., provided substantial in-kind time to grant implementation that is unaccounted for.
- Connecticut, like California, provided self-reported information on whether participants attempted to quit during program participation. Approximately 45 percent of participants responded to the self-reported questionnaire with no difference between treatment and controls. Both arms reported comparable quit attempts. Individuals received approximately \$70 on average in direct incentives (\$173,096 per 2,512 people in the incentives group).



Figure 7-3 Annual expenditures and components: Connecticut

Hawaii

- *Figure 7-4* shows a similar pattern of spending as most other States where costs, and in particular services and incentive costs, increase up to Year 4 and decrease in the last year.
- At the end of Year 1, Hawaii had not yet enrolled participants; thus, no costs were incurred in incentive and services categories during this period. The first year budget was approved as a carryover to Year 2 because of the delay of a fully executed contract. Charges were submitted to the Hawaii Department of Human Services (DHS) from the University of Hawaii at Manoa, but no funds were drawn down from the CMS account for Year 1.
- Reported administrative costs for Years 1 through 5 were 100, 84, 64, 54 and 70 percent of total costs, respectively. Evaluation costs (data systems, evaluation staff, consulting and services and satisfaction survey) over all 5 years amounted to \$1.35 million, equivalent to 26 percent of the total budget.
- Hawaii implemented two diabetes management programs: Kaiser (320 people) and HI-PRAISE (2,003 people). While Kaiser measured weight loss, HI-PRAISE tracked participants' HbA1c control. Kaiser showed no effect on weight loss, whereas 38 percent of HI-PRAISE participants with a baseline HbA1c at or above 7 percent were in control of their HbA1c at the end of the study at an average cost of \$198 per participant in terms of direct incentives paid (1,982 participants received monetary incentives totaling \$393,357).

 Although Hawaii did not provide a monetary value of its in-kind contributions, the DHS did not take payment for any of its personnel who assisted with the project, such as project coordinator, fiscal and information technology specialists, and administrators. Their estimated contributed time was more than 500 hours. The DHS worked in close partnership with the University of Hawaii at Manoa's John A. Burns School of Medicine, the university's Center on Disability Studies, and Section 330 Federally Qualified Health Centers (FQHCs). FQHCs and Community Health Centers (CHCs) enrolled patients using community outreach, flyers, and community health worker referral, among other strategies. CHCs were also responsible for hiring staff and producing quarterly reports. Private providers were responsible for enrolling participants and producing quarterly reports.



Figure 7-4 Annual expenditures and components: Hawaii

Minnesota

- *Figure 7-5* depicts reported total and component annual expenditures for Minnesota. The costs reported represent service and incentive costs as well as administrative costs (personnel, training, outreach and marketing, evaluation), and in-kind expenditures. Total program expenditures peaked at Year 3, driven by incentives and services representing 82 percent of total expenses. While overall costs decreased thereafter, administrative costs peaked in Year 5 because of evaluation costs.
- Administrative costs historically accounted for approximately 30 percent of total expenditures; these decreased from 46 percent to 16 percent from Year 1 to Year 3 as enrollment in the program increased. Administrative costs increased to 61 percent in Year 5 due to evaluation costs. Evaluation costs over the 5 years under consideration were equal to \$860,000. During Year 5, 53 percent of the evaluation costs were incurred. To calculate the administrative costs, the State recreated the totals for each

year on the basis of their internal accounting system and invoices submitted by partner organizations and clinics. Using this approach, Minnesota categorized costs by when they were incurred by the organizations, instead of when payment was processed by the Minnesota DHS. Several clinics had periods in which they did not submit correct invoices, which meant payments for multiple months were processed at one time by DHS, and in some instances, in different grant years.

- For every year of the program, Minnesota estimated \$52,191 for personnel in-kind costs, representing approximately 5 percent of the State's total spending.
- The average weight loss from baseline and within the program period equaled 3 pounds more for individuals receiving incentives compared to those who did not. This corresponds to \$57 spent in incentives per pound lost (on average people in the incentive group received \$171 in incentives, calculated as 728 people receiving in total \$124,645 in direct monetary incentives).



Figure 7-5 Annual expenditures and components: Minnesota

Montana

- *Figure 7-6* depicts reported total and component annual expenditures for Montana, the State with the smallest CMS award. Total program expenditures remained constant in the State throughout all 5 years. The costs reported represent service and incentive costs as well as administrative costs (personnel, outreach and marketing [i.e., printing and video/photography], evaluation, education materials, and travel).
- Administrative costs represent the bulk of the program's expenditures and approximately 96 percent of total costs in Year 1 and 68 percent of total costs in

Year 5. The biggest component of administrative costs is represented by personnel salary and contracts.

- The increased share of incentives and services of total costs incurred in Years 4 and 5 was driven by contract payments to the 11 diabetes prevention program sites that delivered the MIPCD project services and submitted data as their contract deliverable. In both years, each site received \$3,000. The total evaluation costs conducted by the Wyoming Survey and Analysis Center amounted to \$23,000, approximately 4 percent of total costs.
- Although Montana did not report in-kind contributions, it received significant contributions for its diabetes prevention classes from the Centers for Disease Control and Prevention (CDC) and from State funding. Because these contributions are not counted in the program's total costs, administrative costs account for such a large share of the State's total—and low—program costs.
- On average, participants in the incentive group lost half a pound more than controls. 142 participants received in total \$14,295, approximately \$101 per person.



Figure 7-6 Annual expenditures and components: Montana

Nevada

• *Figure 7-7* depicts reported total and component annual expenditures for Nevada. Nevada provided costs incurred on the basis of SF-425 filings. The costs reported represent incentive costs (no services were provided) as well as personnel; data systems; travel and other indirect costs; and, from Year 3 onward, evaluation costs. Total program expenditures peaked in Year 3 and decreased thereafter.

- Administrative costs have represented half of Nevada's budget over the 5-year period. In Year 1, administrative costs represented all costs reported; these costs decreased considerably to approximately 20 percent of the total budget in Year 3 and increased thereafter, driven by evaluation costs. Evaluation costs were \$105,000, approximately 10 percent of the total budget. The evaluation was conducted by researchers at the University of Nevada, Reno, working as subcontractors to the Nevada Division of Health Care Finance and Policy, which administers the State's Medicaid programs.
- Nevada provided both process and outcomes incentives. In Year 1, despite 200 enrolled beneficiaries, no payments were made to participants. The participants enrolled might not have become eligible for incentive payments by the end of the year.
- The State had several distinct programs aimed at very different populations. No intermediate outcomes were collected in the MIPCD State MDS. Nevada paid \$231,346 in incentives to the 755 people randomized into receiving direct payments.



Figure 7-7 Annual expenditures and components: Nevada

New Hampshire

- *Figure 7-8* depicts reported total and component annual expenditures for New Hampshire. The costs reported represent service and incentive costs as well as administrative costs—personnel, outreach and marketing (albeit minimal and incurred for the first 2 years only), evaluation, supplies, travel, and payments to consultants. Total program expenditures peaked at Year 3, similar to the pattern for Minnesota and Nevada.
- Administrative costs represented less than 16 percent of total costs in Years 1–5.

- While New Hampshire reports zero evaluation costs, the State lumps together as other costs \$260,759 in supplies, travel, and consultants. Together with data system costs, the State spent \$304,199 in what could be defined as evaluation efforts and therefore not part of the routine costs of running a program This cost represents 4 percent of the entire grant amount spent over 5 years.
- In the first year of the grant, as much as 7 percent of total expenditures came from inkind contributions. This includes the time of Dartmouth College employees whose work informed planning activities but was not funded directly by the CMS grant. New Hampshire Department of Health and Human Services personnel's in-kind contribution reflects recurring support for the InShape program in the State's managed care organizations (MCOs), independent of MIPCD activities. By Year 5, in-kind contributions represented less than 1 percent of total State expenditures.
- New Hampshire had four weight loss programs and three smoking cessation programs. Among participants with at least two BMI measurements, reductions in BMI were greater for the incentive groups as compared to the control group. However, none of these changes were statistically significantly different from zero. In the smoking cessation programs, the incentive group had a significant decrement of cotinine levels but the magnitude of the change was too small (< 1 ng/mL) to be considered medically relevant (Salimetrics, n.d.). Using direct payment from the MIPCD State MDS, participants in the incentive group received on average \$875.



Figure 7-8 Annual expenditures and components: New Hampshire

New York

• We did not receive Administrative Costs Forms from New York. We obtained from CMMI the State's SF-425 final forms, which provide information on total program expenditures over the 2011–2016 period. New York received \$5,408,251 in federal funds, but only used \$3,891,587 of these.

Texas

- *Figure 7-9* depicts reported total and component annual expenditures for Texas. The costs reported represent incentive and service costs. Services represent MCO billings for navigator functions. Total program expenditures peaked in Year 3 and decreased thereafter, following a pattern similar to Minnesota, Nevada, and New Hampshire.
- Texas's administrative costs do not comprise personnel costs. Administrative costs include only training, outreach, data system, evaluation, satisfaction survey, and staff travel costs associated with directing the project. Personnel costs are entirely captured by in-kind contributions and average 3 percent of total expenditures, with the exception of Year 5, where in-kind costs represent 14 percent of total expenditure and more than \$69,000. Administrative costs, however, remained high throughout the program.
- Recorded evaluation costs totaled \$2.6 million dollars or 27 percent of the total State MIPCD budget. Texas conducted their own satisfaction survey and that, together with data system and University of Florida deliverables (the State's External Quality Review Organization) represent the totality of evaluation costs. The University of Florida deliverables included management of patient navigators; this activity was recorded as an evaluation cost, but could have been counted alternatively as a service cost.
- Incentive and service costs as a fraction of total costs increased over time from 24 percent in Year 1 to 72 percent in Year 4 and 61 percent in Year 5, not taking into account in-kind contributions.

Participants were offered a \$1,150 per year flexible wellness account that supported the purchase of items to achieve specific health goals. The 625 individuals enrolled in the incentive arm spent approximately \$2,330 per person. However, because participants had different goals, it is not possible to estimate the cost per outcome achieved.


Figure 7-9 Annual expenditures and components: Texas

Wisconsin

- Wisconsin provided SF-425 returns. We are thus unable to differentiate costs across categories. We know, however, that since the program's launch in 2012, Wisconsin's First Breath has issued 7,383 gift cards (\$225,865) to women enrolled in this component and that the Wisconsin Tobacco Quit Line has issued 8,072 gift cards (\$284,320) to enrolled Medicaid beneficiaries since it launched in April 2013. The State spent roughly 10 percent of its budget on incentives.
- Like three other States, Wisconsin's costs were highest in Year 4. Costs increased steadily up until Year 4 and decreased in Year 5 (*Figure 7-10*). Similarly to most States, with the exception of California, Montana, and Texas, a substantial amount of Wisconsin's grant remained unused.
- The State engaged in several outreach programs, which might have contributed to high administrative costs. In Year 4, Wisconsin focused on transitioning from administration of services and delivery of incentives to program evaluation.



Figure 7-10 Annual expenditures: Wisconsin

7.4 Discussion

Three main conclusions can be drawn from the evaluation of program costs:

- 1. most States had substantial unused funds at the end of their program;
- 2. all States decreased spending in the final year of the program compared to the previous year; and
- 3. all States spent more in administrative costs than the 15 percent cap initially set in the FOA solicitation. CMS relaxed this requirement based on feedback from potential awardees.

Four of the States had total expenditures peak in Year 3 (New Hampshire, Minnesota, Nevada, and Texas); four States had total expenditures peak in Year 4 (California, Connecticut, Hawaii, and Wisconsin); and Montana showed constant expenditures over time. The share of administrative costs as a function of total costs decreased until Year 4 and then increased in Year 5, driven predominantly by evaluation costs.

We estimated administrative costs as the difference between total costs and the sum of incentive and service costs. We estimate that administrative costs accounted for about 41 percent of overall expenditures in MIPCD programs. This estimate comes with several caveats because the cost data are not reported uniformly across States and only 8 of the 10 States provided the information necessary for estimating administrative costs across all years. Wisconsin reported the bulk of planned expenditures as captured in the SF-425 form, and **New York** did not return the Administrative Costs Form or provide its SF-425 forms; therefore, we could not estimate their administrative costs.

The administrative cost share of total costs fell after Year 1 as enrollment in the programs increased for all the States providing information, with the exception of Montana. Administrative costs, though low in magnitude, accounted for a high share of overall costs in **Montana** across Years 1–3, averaging 94 percent per annum, before falling to 64 percent in Year 4 and 69 percent in Year 5. Montana had the lowest budget of the States, and a significant share of its service costs were paid for by a grant from the CDC; this combination caused administrative costs to account for a high share of total costs.

All the States conducted randomized tests of their programs and formally evaluated program impacts. As a result, they may have incurred costs for activities that would not be required in an operational program (e.g., IRB approval, service costs for persons in the control arms, data collection and analysis for evaluation purposes). We could not easily measure how much these activities add to the observed costs of the program. One imperfect measure is the share of total costs for evaluation. Among the States that report evaluation costs, these comprise from 10 percent (**Nevada**) to up to 27 percent (**Texas**) of total costs. **New Hampshire** reported only data system costs representing less than 1 percent of total program costs. For the eight States with administrative cost data, we estimate that evaluation costs accounted for 35 percent of administrative costs. Thus, administrative costs net of evaluation costs accounted for about 27 percent of total program costs in these States. For all States, administrative costs as a fraction of total costs rose in Year 5 driven by evaluation costs.

Four States (**Connecticut**, **New Hampshire**, **Minnesota**, and **Texas**) reported in-kind contributions. Across reporting States, in-kind contributions represented 4 percent of total costs and were predominantly unpaid MIPCD staff time. It is not necessarily true that non-reporting States had zero in-kind contributions. **Montana** for example, received significant contributions from the CDC and the State.

Among the eight States that provided complete information, programs spent, on average, about \$3.6 million on incentive payments and services to participants, for a total of about \$26.5 million across those States. This amount represents about 58 percent of total program costs. The fraction of spending going to incentives and services was lower than anticipated. The reason for lower-than-expected incentive and service payments and thus higher administrative costs is twofold: (1) delays in program implementation and enrollment have been expensive administratively and have slowed incentive payments and services; and (2) it appears likely that some States initially overestimated the amount that would be paid as incentives and services to participants. Several of the States revised their initial estimates of enrollment downward; if fewer people participated and incentive and service costs per person are fixed, total payments also decreased within these cost categories.

Incentive payments directly to participants as measured by the MIPCD State MDS were lower than the incentive costs reported in the Administrative Costs Form. The MIPCD State MDS reports \$3.6 million in incentive payments across all eight States completing the Administrative Costs Form, compared with the \$5.3 million reported by the States as incentives on the Administrative Costs Form. States sometimes included selected service costs as incentive costs when they filled out the Administrative Costs Form. [This page intentionally left blank]

SECTION 8 STATE EVALUATION FINDINGS ON BENEFICIARY OUTCOMES AND UTILIZATION

State final evaluation reports on health outcomes provide important information that complements and supplements the results of our assessment. Section 4108 required States receiving MIPCD awards to "...develop and implement a system to (1) track Medicaid beneficiary participation in the program and validate changes in health risk and outcomes with clinical data, including the adoption and maintenance of health behaviors by such beneficiaries; (2) to the extent practicable, establish standards and health status targets for Medicaid beneficiaries participating in the program and measure the degree to which such standards and targets are met; (3) evaluate the effectiveness of the program and provide the Secretary with such evaluations; ..." Each State was given the primary responsibility for assessing quality improvements and clinical outcomes of its MIPCD program.

We obtained each State's Final Evaluation Report and reviewed the major findings related to utilization, health outcomes, and—where available—Medicaid expenditures or cost-effectiveness analyses. In some cases, the reports stated that additional findings would be released in peer-reviewed journal articles. In this section, we summarize key findings from the State reports.

8.1 Diabetes Prevention, Weight Loss, and Diabetes Management Programs

Six States implemented diabetes prevention, diabetes management, or weight loss programs: **Hawaii, Minnesota, Montana, New Hampshire, Nevada,** and **New York**. Total incentives for the diabetes prevention, weight loss, and diabetes management programs differed substantially by State and ranged from \$14,295 in **Montana** to \$758,869 in **New Hampshire**. In each State, the program design and the number of enrollees determined the amount disbursed. The overall goal of each program and the structure of incentives are discussed in detail in Section 3 of this report.

8.1.1 Use of Program Services

Minnesota, Montana, New York, Nevada, and New Hampshire each evaluated the impact of incentives on the use of program services.

In **Minnesota's** diabetes prevention program (DPP), individual incentives increased attendance at DPP sessions (incentive: 11, control: 9; p < 0.01), with group incentives having a larger impact (incentive: 11.4, control: 9; p < 0.05). Likewise, incentives in **Montana's** DPP increased the number of DPP sessions attended (incentive: 14.5, control: 12.3; p < 0.05) and the completion of DPP classes (incentive: 60 percent, control: 47 percent; p < 0.10).

Nevada's Children's Heart Center program had two arms: one arm provided incentives only to children (focused incentive), and the other split incentives between the parent and the child (split incentives). Incentives decreased 12-week attendance of core session classes for both the focused (incentive 34.7 percent, control: 54.9 percent; p < 0.01) and split incentives group (incentive 39.8 percent, control: 54.9 percent; p < 0.01). In contrast, at the final 12-month session, incentives were associated with higher attendance rates for both the focused (incentive

8.4 percent, control: 4.2 percent; p < 0.01) and the split incentives group (incentive 7.3 percent, control: 4.2 percent; p < 0.10).

New Hampshire had multiple programs: gym, InShape, Weight Watchers, and InShape plus Weight Watchers. Provision of incentives increased attendance at Weight Watchers meetings per month in the Weight Watchers program (0.82 increase), the InShape plus Weight Watchers program (0.81 increase), and the InShape program (0.22 increase).¹³ Incentives also increased gym visits per participant per month by 0.75 in the InShape program, 1.14 in the Weight Watchers program, and 1.35 in the InShape plus Weight Watchers program. Incentives did not increase gym visits in the gym program.

New York had three incentive groups for its DPP: outcome incentives, process incentives, and the combined incentives group (outcome and process incentives). Each incentive group had more individuals attending classes at week 16 relative to the non-incentive arm. The outcomes, process, and combined incentives increased week 16 attendance rates by 11 (p < 0.01), 20 (p < 0.01), and 2 (p < 0.01) percentage points respectively.

8.1.2 Health Outcomes

Weight Loss

Minnesota, Montana, New York, Nevada, Hawaii, and New Hampshire each assessed the impact of program services on weight loss.

In **Minnesota's** DPP, the impact of incentives on body weight was mixed. Relative to the control group, the provision of group incentives decreased mean body weight (5.20 lbs compared to 4.90 lbs in control group; not significant) and increased the number of participants losing 5 percent of their body weight (19.6 percent compared to 11.70 percent; p < 0.05). In contrast, individual incentives did not decrease mean body weight (4.70 lbs compared to 4.90 lbs in the control group; not significant) even though the number of individuals losing 5 percent of their body weight (16.8 percent compared to 11.70 percent)

In **Montana's** DPP, incentives decreased body mass index (BMI: 1.4 in the incentive group compared to 1.1 in the control group) with a 7 percentage point increase in the number of individuals losing 5 percent of their body weight. Likewise, in **Nevada** providing incentives led to reductions in BMI. When children earned full incentives, BMI decreased by 0.45 kg/m² (p < 0.01) relative to the control group. With split incentives between the parent and child, BMI decreased by 0.15 kg/m² (p < 0.01).

New Hampshire had multiple arms with conflicting results. Relative to the control group, incentives decreased body weight in the gym program (1.4 lb decrease), Weight Watchers program (0.5 lb decrease), and the InShape plus Weight Watchers program (1.8 lb decrease). In contrast, the incentive group in the InShape program gained 1.4 lbs when compared to the control group.

¹³ Some members in the InShape program obtained Weight Watchers membership.

Relative to the control group, each of the three incentive groups in **New York's** DPP had a higher mean weight loss at week 16. The outcomes group lost 1 lb (p < 0.01), the process group lost 1.6 lbs (p < 0.01), and the combined incentive groups lost 1 lb (p < 0.01). In the control group, only 18 percent of participants achieved their weight loss goals by week 16, while 34 percent (p < 0.1) of the outcomes group, 40 percent (p < 0.1) of the process group, and 42.5 percent (p < 0.1) of the combined incentives group had achieved their goals.

Incentives in **Hawaii's** Kaiser program also increased weight loss (incentives: -1.77 lbs, controls: -0.2 lbs) even though the difference was not significant. The control group in the HI-PRAISE program differed from other programs because the group consisted of Medicaid beneficiaries that did not enroll in HI-PRAISE but who met the HI-PRAISE project eligibility criteria. The incentive group lost more weight compared to the control group (incentive: -0.25 lbs, control: 1.93 lbs; p < 0.05).

Physical Activity

Montana and **New Hampshire** measured how the provision of incentives impacted minutes of physical activity per week and distance walked during a 6-minute walk test (6MWT) respectively.

In **Montana**, State evaluators found that the participants in the incentive arm were more likely to indicate that they had met their physical activity goal (73 percent in the incentive arm compared to 58 percent in the control group) and spent more minutes per week on physical activity (180.5 minutes in the incentive arm compared to 163.1 minutes in the control group; p < 0.05).

The 6MWT measures the distance a patient could walk quickly on a flat, hard surface in 6 minutes. The impact of incentives on the 6MWT in **New Hampshire** was conflicting. Relative to the control group, the incentive arms in the InShape and Weight Watchers programs decreased walking distances by 17 and 42 feet, respectively. On the other hand, relative to the control group, provision of incentives increased distance walked in the gym program (10-foot increase), and the InShape plus Weight Watchers program (47-foot increase).

HbA1c and Blood Pressure

New York and **Hawaii** assessed the impact of incentives on blood pressure and HbA1c. The impacts of the provision of incentives on decreasing blood pressure and HbA1c levels were inconsistent.

Both diastolic (DBP) and systolic blood pressure (SBP) levels were measured. In New York's hypertension and Hawaii's HI-PRAISE program, incentives did not systematically reduce DBP or SBP levels. In Hawaii's Kaiser program, incentives reduced both DBP and SBP by more than in the control group, but the differences between the groups were not significant.

HbA1c levels decreased significantly in Hawaii's HI-PRAISE incentive program (-0.33 as compared to -0.09 in control group; p < 0.05) with no significant reductions in either New York's diabetes management or Hawaii's Kaiser MIPCD Program.

Other Health Outcomes

To calculate cardiovascular disease risk, **Hawaii's** programs also evaluated lipids (HDL, LDL, total cholesterol, and triglycerides). Results show mixed evidence for the role incentives played in reducing cardiovascular risks.

Relative to the control group, providing incentives resulted in reduced total cholesterol and triglycerides among HI-PRAISE participants (reduced total cholesterol by 5.67 and triglycerides by 50.51, p < 0.05) and Hawaii Kaiser Participants (reduced total cholesterol by 1.35 and triglycerides by 17.8). The provision of incentives in Hawaii's HI-PRAISE or Kaiser program did not significantly change HDL or LDL measures.

Nevada's MIPCD program for children calculated changes in health risk scores, computed by applying the Chronic Illness and Disability Payment System (CDPS) weights to demographic and diagnosis information specified in Medicaid claims data. When incentives were provided to only the child, State evaluators observed a 0.22 decrease in the health risk index when compared to the control group. When incentives were split between the parent and child, the decrease in the health risk index was 0.19. Children that earned full incentives and children that split incentives with parents were 2.7 and 3.3 percentage points more likely to attain their health goals when compared to the control group.

8.1.3 Expenditures

Expenditures were not evaluated in any of the six State reports.

8.2 Smoking Cessation Programs

Five States implemented smoking cessation programs: **California, Connecticut, New Hampshire, New York,** and **Wisconsin**. Disbursed incentives for the smoking cessation programs differed substantially by State and ranged from \$173,096 in **Connecticut** to \$758,869 in **New Hampshire**. In each State, the program design and the number of enrollees determined the amount disbursed. The overall goal of each State program and the structure of incentives are discussed in detail in Section 3 of this report.

8.2.1 Use of Program Services

Connecticut, New Hampshire, and **Wisconsin** each tested the impact of incentives on the use of program services. Incentives significantly increased the use of program services in **Connecticut, New Hampshire** (four of five measures tested), and **Wisconsin**, and resulted in a non-significant increase in **New Hampshire** (one of five measures tested).

In **Connecticut**, incentives increased the number of services used (incentives: 5.02, controls: 1.81; p < 0.01). Relative to the controls, the greatest increase was in the high process incentive group (3.47 sessions, p < 0.01), followed by original rewards (2.73 sessions, p < 0.01), and finally the high outcomes incentive group (2.08 sessions, p < 0.01).

New Hampshire measured use of program services in five ways: prescriber referrals, quitline prescriber visits, quitline calls, cognitive behavioral therapy (CBT) prescriber visits, and

CBT calls.¹⁴ With the exception of CBT calls, providing incentives increased the use of all program services. In particular, incentives increased prescriber referrals (incentives: 91 percent, controls: 79 percent), quitline prescriber visits (incentives: 84 percent, controls: 82 percent), quitline calls (incentives: 2.09, controls: 1.99), and CBT prescriber visits (incentives: 93 percent, controls: 84 percent). Incentives did not increase CBT calls (incentives: 9.02, controls: 9.03).

Wisconsin implemented two programs: the Wisconsin Tobacco Quit Line (WTQL), a general program for all smokers, and the First Breath Program, an evidence-based program for pregnant smokers. Among First Breath participants, incentives increased session completion (incentives: 54.1 percent, controls: 30.50 percent). In the WTQL program, relative to the control group, individuals that received incentives were more likely to complete five of five quitline calls (24.6 percent increase, p < 0.01), pick up medications (6.8 percent increase, p < 0.05), and spend more time in counselling sessions (19.1 minutes, p < 0.01).

8.2.2 Smoking Cessation

Connecticut, California, New Hampshire, and **Wisconsin** evaluated the impact of incentives on smoking cessation rates. All States with the exception of **California** analyzed smoking cessation rates using both self-reported smoking status and results from a biochemical test (expired air carbon monoxide, cotinine, or nicotine). In this section, we focus on results on smoking abstinence that were confirmed with a biochemical test.

Smoking abstinence determinations in **Wisconsin's** First Breath and **New Hampshire's** and **Connecticut's** MIPCD programs were based on an expired-air carbon monoxide test (a pass was based on having a value less than 7ppm). In Wisconsin's WTQL program, the Department of Health Services allowed participating clinics and sites to select the form of the biochemical test used (expired air carbon monoxide, cotinine, or nicotine) as well as the cut score for smoking. Consequently, lab test types and smoking confirmation levels differed across testing clinics or sites. For each enrollee, however, baseline and follow-up tests were performed at the same clinic or site. This allowed for a consistent method of smoking status determination for each enrollee.

California's smoking cessation rates was analyzed using self-reports from 3,760 participants in RCT 1. Research assistants called participants over a 2-week period to conduct a standard evaluation that included questions on smoking status and history of quitting since enrollment in the MIPCD program. Self-reports on smoking status were used to evaluate the impact of incentives on smoking cessation.

Connecticut and **New Hampshire** found similar increases in smoking cessation rates among their incentive groups using carbon monoxide tests. Relative to the control group,

¹⁴ New Hampshire's significant result for smoking cessation combines all three smoking cessation interventions (prescriber referral for smoking cessation alone; prescriber referral to smoking cessation and quitline; and prescriber referral to smoking cessation, quitline, and telephonic cognitive behavioral therapy) along with possibly Electronic Decision Support System and, the computerized smoking cessation learning module.

incentives increased smoking cessation rates by 7.2 percentage points (p < 0.01) in **Connecticut** and 9.8 percentage points in **New Hampshire**.

Wisconsin analyzed smoking abstinence for the First Breath and WTQL programs. In the First Breath Program, incentives increased smoking cessation rates as proxied by carbon monoxide tests by 5.5 percentage points (p < 0.01) relative to the control group. In the WTQL program, incentives resulted in smoking cessation rates that were 7.8 percentage points (p < 0.01) higher than the control group if a biochemical test was used and 4.05 percentage points (p < 0.01) higher if based on self-reporting.

California's nicotine replacement therapy (NRT) incentive group and NRT plus cash incentive group in their RCT 1 all had higher rates of smoking cessation than the non-incentive group. Random assignment to the NRT or NRT plus cash incentive group increased smoking cessation rates by 0.1 and 4.6 percentage points, respectively.

8.2.3 Health Outcomes

Health outcomes also improved with provision of incentives, according to simulations performed on **California** data. Evaluators developed a version of the cardiovascular disease policy model and used simulations to estimate the long-term impact of California's Medi-Cal Incentives to Quit Smoking (MIQS) program on cardiovascular disease morbidity. Using differences in quit rates between the incentive and control arms in RCT 1, extrapolated to all participants in California, evaluators found that NRT and NRT plus cash incentives averted myocardial infarctions and strokes (100 from NRT assignment, 800 from NRT plus cash incentives) and cardiovascular disease (CVD) deaths (0 from NRT assignment, 300 from NRT plus cash incentives) relative to the control group. Assignment to NRT and NRT plus cash incentives also improved quality adjusted life years (QALYs) by 400 and 11,800 respectively when compared to the control group.

8.2.4 Expenditures

In **Wisconsin's** WTQL program and **Connecticut's** MIPCD program, the additional cost of providing incentives was \$174 and \$169 per person, respectively. As a result of higher quit rates among the incentive group, the cost per quit value among the incentive group in **Wisconsin's** WTQL and First Breath program was smaller than the cost per quit value for the control group (in WTQL, \$4,108 per quit as compared to \$5,193 per quit; in First Breath, \$5,049 per quit as compared to \$6,056 per quit).

California's MIQS program had multiple incentive groups in its RCT 1. The first group had NRT shipped directly to the participant (NRT group). The second group received NRT and \$10 for each counselling session, up to \$40 (NRT plus cash). The cost of implementing NRT and NRT plus cash was \$87 and \$131 greater than the control group respectively. Evaluators used a simulation model to estimate health care expenditures in the intervention and compared the short-term savings on health care costs from smoking cessation with the cost of the intervention over the course of the year (excluding quality of life values). Compared to Medicaid beneficiaries who did not participate in the MIQS program, the control group in MIQS saved \$2.6 million health care dollars, the NRT group \$1.2 million, and the NRT plus cash group \$1.8 million. Net savings for the NRT plus cash group were greater than the NRT group because

cessation rates for the NRT plus cash group were higher than the NRT group. They also used a long-term cost-effectiveness simulation model to estimate the impact of the program on health outcomes and costs over a 60-year period. This analysis suggested that the incentives were cost-saving.

8.3 Other Programs

Texas's Wellness Incentive and Navigation (WIN) program differed from other State programs. WIN aimed to improve health self-management and reduce the incidence and consequences of chronic disease among Supplemental Security Income (SSI) beneficiaries with mental health and substance abuse diagnoses. In this section, we summarize how the provision of incentives within this program impacted the use of program services, health outcomes, and expenditures.

8.3.1 Patient Activation

Texas evaluated Patient Activation Measure (PAM) scores, which assess an individual's knowledge, skill, and confidence for managing one's health and health care. Provision of incentives increased PAM scores by four points.

8.3.2 Health Outcomes

Texas evaluated the impact of program incentives on self-reported physical and mental health-related quality of life (HRQOL) using the short form-12 questionnaire. Compared to the control group, the provision of incentives resulted in increased self-reported physical quality of life scores by 3.5 points (p < 0.05) and mental health quality of life scores by 6 points (p < 0.05).

8.3.3 Expenditures

Texas performed a cost-effectiveness analysis by converting the HRQOL values into QALYs and then applying a value of \$50,000 per QALY, a benchmark value often applied in cost-effectiveness studies. The analysis estimated that the mean predicted net monetary benefit for the intervention was \$33,888 versus only \$26,765 for usual care, yielding a difference of \$7,132 in favor of the intervention group. Details of the economic analysis are provided in the section, "WIN Economic Analysis Findings" in the Texas final report.

8.4 Key Lessons Learned

State evaluators analyzed and emphasized different health outcomes, utilization services, and expenditures in their reports. This was to be expected as MIPCD programs across States had different goals and incentives.

8.4.1 Diabetes Prevention, Diabetes Management, and Weight Loss Programs

Six States implemented diabetes prevention, diabetes management, or weight loss programs: **Hawaii**, **Minnesota**, **Montana**, **New Hampshire**, **Nevada**, and **New York**. Results from State evaluations consistently showed that incentives encouraged program participation and completion. In **Minnesota**, **Montana**, and **New York**, incentive groups were significantly more likely to attend core sessions and to complete their State's MIPCD programs upon enrollment. In **Nevada**, on the other hand, incentives reduced class attendance during the active phase of the program but increased class attendance in the post-core session.

The impact of incentives on health outcomes were mixed. In **Minnesota, Hawaii** HI-PRAISE, and **Nevada** the provision of incentives reduced body weight relative to the control group. However, in **Montana, New York, Hawaii Kaiser,** and **New Hampshire**, incentives did not significantly impact body weight. In addition, incentives across MIPCD programs did not systematically improve blood pressure or HbA1c levels

New Hampshire and **Montana** evaluated pathways that might explain weight loss (minutes of physical activity and the 6-minute walking test). In **Montana**, providing incentives led to significantly more minutes of physical activity (incentives: 180.5 minutes, controls: 163.1 minutes; p < 0.05). In **New Hampshire**, incentives did not improve distance walked during the 6MWT.

8.4.2 Smoking Cessation

Five States implemented smoking cessation programs: California, Connecticut, New Hampshire, New York, and Wisconsin.

Connecticut, New Hampshire, and **Wisconsin** each tested the impact of incentives on the use of program services. In **Connecticut,** significant increases were observed in the number of quitline calls and counseling services. In **Wisconsin,** significant increases were observed in the number of counseling sessions completed, quitline calls, and medications picked up for treatment. In **New Hampshire,** incentives were positively associated with the use of program services and the results were significant for four out of five measures.

The positive association between incentives and the use of MIPCD program services also led to higher smoking abstinence rates in **Connecticut**, **Wisconsin**, and **New Hampshire**.

Using simulations, **California** showed that the long-term health benefits of smoking cessation can be substantial. They found that over a span of 60 years, higher smoking cessation rates attributable to incentives (NRT plus cash) in the MIPCD program could reduce rates of myocardial infarctions and strokes by 900 and CVD by 300. These health improvements came at a higher cost. Compared to Medicaid beneficiaries who did not participate in the MIQS program, the control group in MIQS saved an estimated \$2.6 million health care dollars, the NRT group \$1.2 million, and the NRT plus cash group \$1.8 million during the first year after participants began the program. California estimated that the NRT plus cash group would be cost-saving over a 60-year time horizon compared to the control group.

Wisconsin also provided additional evidence for the cost effectiveness of incentives. They showed that as a result of higher smoking cessation rates, the cost per quit value for the incentive group was less than the cost per quit value for the control group (in WTQL, \$4,108 per quit as compared to \$5,193 per quit; in first breath, \$5,049 per quit as compared to \$6,056 per quit).

8.4.3 Other Programs

Incentives significantly improved mental and physical health among participants in **Texas.** Cost-effectiveness analysis showed that the net monetary benefit of providing program incentives in Texas was \$7,132, based on the assumed value of \$50,000 per QALY.

8.5 State Evaluation Report Availability

Information about final State evaluation reports is summarized in Table 8-1.

State	Program Name	State Report Availability
California	Medicaid Incentives for Prevention of Chronic Diseases (MIPCD): Medi-Cal Incentives to Quit (MIQS) Project	Contact: Neal Kohatsu <u>Neal.Kohatsu@dhcs.ca.gov</u>
Connecticut	Connecticut Rewards to Quit	Contact: Carolann Gardner Carolann.Gardner@ct.gov
Hawaii	Hawaii Patient Reward and Incentives for Supporting Empowerment Project (HI- PRAISE)	http://www.cds.hawaii.edu/hipraise
Minnesota	Minnesota Medicaid Incentives for Prevention of Diabetes	Contact: Gretchen Taylor gretchen.taylor@state.mn.us
Montana	Medicaid Incentives to Prevent Chronic Disease	Contact: Jessie Fernandes JFernandes@mt.gov
Nevada	Nevada Healthy Choices	Contact: Gloria MacDonald Gloria.macdonald@dhcfp.nv.gov
New Hampshire	Healthy Choices, Healthy Changes	Contact: Kelly Capuchino KCapuchino@dhhs.state.nh.us
New York	Medicaid Incentives for Prevention of Chronic Disease Program	Contact: Elizabeth Villamil elizabeth.villamil@health.ny.gov
Texas	Wellness Incentives and Navigation (WIN) Project	Contact: Jessie Aric Jessie.Aric@hhsc.state.tx.us
Wisconsin	Striving to Quit	Contact: Pam Rood Pamela.Rood@dhs.wisconsin.gov

Table 8-1State evaluation reports

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SECTION 9 DISCUSSION

9.1 Main Findings

The MIPCD initiatives represent the most comprehensive test to date of incentive programs to prevent chronic diseases in Medicaid beneficiaries. Our assessment focused on the overall implementation of MIPCD programs and the four mandated evaluation issues:

- Use of Medicaid services
- Beneficiary satisfaction
- Special populations
- Administrative costs

Based on the assessment, we arrive at the following conclusions.

Implementation. States implemented incentive programs for Medicaid beneficiaries in. all 10 States successfully. The States often met challenges, and the lessons they learned may benefit other States interested in implementing a program. Most States experienced delays in implementation, and most faced challenges in meeting their enrollment targets, a common problem for prevention programs. Future incentive programs should put special emphasis on recruiting and enrolling beneficiaries.

Utilization. Participants receiving incentives used more of the preventive services that were incentivized. Although this is not surprising, it is a prerequisite for achieving the stated goal of the MIPCD initiative: preventing chronic diseases. We examined Medicaid claims and found no systematic evidence that the incentives significantly changed utilization of other Medicaid services or total Medicaid expenditures, a global measure of utilization where services are valued and aggregated by Medicaid reimbursement rates. This finding was not completely surprising because we looked only at utilization and spending for the period up to 3 years after a participant enrolled in the program. The health and utilization benefits of delaying or preventing a chronic disease may not manifest themselves for years after an intervention occurs. Future studies may examine the long-term impact on chronic diseases.

Beneficiary Satisfaction. Through a beneficiary survey and focus groups, we found that beneficiaries receiving incentives were very satisfied with the MIPCD programs. Surveyed beneficiaries provided an average program rating of 8.5 out of 10, and the vast majority would recommend the programs to friends and family. Beneficiaries were happy with the incentive payments and believed that the programs helped them reach their health goals. Not surprisingly, satisfaction ratings increased with the amount of incentive received. However, beneficiaries noted that the incentives were most important when they started the program, but became less important as they started to receive health benefits from participating. Beneficiaries generally had enough information about the incentive programs, but in a few cases they did not understand how the programs worked or what they had to do to receive incentives. Future incentive

programs should include clear program instructions and ensure that the process for receiving incentives is straight forward.

Special Populations. Special populations were able to participate in the programs. All programs served adult Medicaid beneficiaries who were eligible for Medicaid based on disability, and each State targeted adults with or at risk of chronic disease. One program targeted children with special health needs. In addition to the special populations listed in the legislation, some programs also targeted other special populations, adapting the program to serve particular ethnic groups or persons with mental health or substance abuse problems. Special populations were at least as satisfied with the programs as other Medicaid beneficiaries. These results suggest that special populations can and should be included in future incentive programs for Medicaid beneficiaries. It is also possible to design incentive programs for specific special populations, as demonstrated by the **New Hampshire** and **Texas** programs designed for beneficiaries with mental health or substance abuse issues.

Administrative Costs. We found that administrative costs were higher than anticipated, accounting for an estimated 42 percent of program expenditures. This estimate has caveats because two States did not answer the voluntary Administrative Costs Form and States could not always distinguish between types of costs. In addition, administrative costs might have been higher than they would be in an operational program because States conducted randomized tests of incentives and performed formal program evaluations. In most States, program enrollment was lower than anticipated because of program delays and recruitment challenges, and this likely increased administrative costs' share of total costs. Future incentive programs should develop strategies to reduce administrative costs.

It is important to recognize that the State programs considered services—diabetes prevention classes, gym membership, nicotine replacement therapy, and others—to be integral parts of their incentive programs. Indeed, several States classified the costs of these services as incentives. Actual incentive payments to participants accounted for about 8 percent of program spending. Future incentive programs will need to plan and budget for service provision and costs.

9.2 **Potential Impacts on Chronic Disease**

Beyond the five focus areas of our evaluation, a broader question is whether Medicaid programs should offer incentives for beneficiaries to engage in behaviors that can prevent chronic diseases. To answer this question, an assessment must consider the benefits and costs of the incentive program. This comparison is complicated because the benefits of chronic disease prevention—if chronic disease is actually prevented—are likely to accrue after the 5-year period of our evaluation.

Before starting on a simple comparison of benefits and costs, it is useful to specify the theory of action describing how incentives are designed to lead to long-term benefits from the prevention of chronic diseases (*Figure 9-1*). First, incentives must lead to increased use of preventive services. Second, increased use of preventive services must lead to improvements in short-term health outcomes, such as smoking cessation, weight loss, reductions in blood pressure. Third, these improvements in short-term outcomes must be associated with long-term reductions in chronic disease (e.g., smoking cessation leads to a reduction in the probability of

heart disease, stroke, and cancer; weight loss reduces the probability of diabetes onset). The first stage may be viewed as a necessary, but not sufficient condition for the second stage: if the use of preventive services does not increase, there will not be an improvement in short-term health outcomes. The second stage may also be viewed as a necessary but not sufficient condition for the third stage: if short-term health outcomes do not improve, prevention of chronic diseases is unlikely.



Figure 9-1 Theory of action for MIPCD programs

Similarly, the chain of events on the cost side may also be specified. First, incentive programs are associated with higher short-term costs from the program itself due to incentive payments, increased use of preventive services, and program administrative costs. Second, it is possible that incentives may be associated with short-term reductions in utilization and costs of other Medicaid services. Third, if chronic diseases are prevented, future Medicaid costs may go down in the long term. Notably, this last relationship depends on the chain of events for benefits.

How does this discussion help our comparison of long-term benefits and costs? Looking at the benefit chain, we first know from the analysis of MIPCD State MDS in Section 4 that incentives increase the use of preventive services for most of the programs' target areas (*Table 9-1*). Thus, the necessary, but not sufficient condition for improvements in short-term health outcomes is met. Second, the State evaluation reports provide mixed evidence about whether incentives lead to improvements in short-term health outcomes. In diabetes prevention programs, incentives were associated with significantly higher percentages of participants reaching weight loss goals in two of the three States measuring this variable, but the average weight loss did not differ significantly between the incentive and control groups in these States. Incentives seemed to have a clearer effect on smoking cessation rates: cessation rates were higher for the incentive group in four of the five States that focused on smoking cessation. The improvement in cessation rates ranged from 4.0 to 9.8 percentage points. Incentives appeared to have no effect on short-term outcomes for blood pressure, although only a couple of State programs assessed this outcome. In **Texas**, the wellness program was associated with a significant improvement in a common measure of overall health.

	Benefits			Costs		
Program focus	Incentives increase use of preventive services (Source: MIPCD State MDS)	Incentives improve short-term health outcomes (Source: State evaluations)	Incentives prevent chronic diseases (Source: authors' interpretation)	Incentives increase program costs (Source: MIPCD State MDS, Administrative Costs Form)	Incentives reduce other Medicaid costs in short-term (Source: claims analysis)	Incentives reduce other Medicaid costs in long- term (Source: authors' interpretation of impact on chronic diseases)
Diabetes prevention	Yes	Questionable	Unlikely	Yes	Possibly	Unlikely
Smoking	Yes	Yes	Probable	Yes	No effect	Possible
Blood pressure	No	No	No	Yes	No effect	No
Diabetes management	No	No	No	Yes	No effect	No
Other (Texas)	Yes	Yes	Uncertain	Yes	No effect	Uncertain

 Table 9-1

 Short- and long-term benefits and costs of MIPCD programs

None of the State evaluations were long enough to directly test whether incentives prevented chronic diseases, so we must make inferences about the impact of incentive programs on these diseases. Based on the impact of incentives on short-term health outcomes, the case for incentives preventing chronic diseases is probably strongest for programs focusing on smoking cessation, because these programs increased smoking cessation rates and there is strong evidence that smoking cessation reduces the probability of heart disease, cancer, and respiratory disease (US DHHS, 2014). For diabetes prevention, incentives' insignificant effects on average weight loss suggest that the incentives' long-term impact on diabetes onset will be questionable. The original DPP clinical trial found that weight loss was the most important factor determining whether diabetes onset was prevented (Hamman et al., 2006). More people met weight loss goals in two of the three MIPCD diabetes prevention programs with incentives, but the increase in percentage was relatively small, and the average weight loss was similar between the incentive and no incentive arms of the programs. The insignificant impact of incentives on blood pressure suggest that incentives will not have an impact on blood pressure-related diseases. For diabetes

management, the significant effect of **Hawaii's** HI-PRAISE incentives on HbA1c shows promise for the long-term control of the disease, but this result is based on before and after measurements in the group receiving incentives; there was no corresponding control group. Incentives did not have an impact on HbA1c in **Hawaii's** Kaiser or **New York's** program, both of which had control groups. Finally, mapping the improvement in the health measurement in **Texas** to specific chronic diseases is difficult because of the general nature of the health measure and because the Texas program did not focus on a single disease.

With respect to costs, we have clear information from the MIPCD State MDS and the Administrative Costs Form about the intervention program costs. Program costs, including intervention payments and service costs, vary widely among the programs. We did not find consistent impacts of incentives on other Medicaid service costs in our claims analyses. There were significant reductions on costs in the incentive arms of two programs offering diabetes prevention, but insignificant effects on other diabetes prevention programs and most programs targeting other diseases. In the long-term, the impact on costs will depend on whether incentives reduce chronic diseases. Based on the preceding discussion, it is possible that incentives for smoking cessation will prevent chronic diseases and lower long-term costs. For the other types of programs, it appears less likely that incentives will reduce long-term costs. For **Texas**, we rated the effect as uncertain because we lack studies relating changes in the health outcome measured in Texas to future onset or severity of chronic diseases.

Should this discussion rule out the use of incentives for Medicaid preventive services outside of smoking cessation? Probably not. Beneficiaries expressed high levels of satisfaction with incentives in the survey and focus groups, suggesting that beneficiaries are likely to be interested in participating in future incentive programs. It may be possible to design incentive schemes that provide larger impacts on short-term health outcomes than the MIPCD programs did. Because incentives do appear to increase use of preventive services, they may be especially helpful for increasing use of one-time preventive services, such as vaccinations, where the service immediately produces a health benefit. Vaccinations are not usually associated with chronic diseases, but other one-time services, such as screenings, are. There also appears to be more that Medicaid programs can do to recruit participants and ensure that all beneficiaries understand how the incentive programs work.

Does our evaluation assess the impact of preventive services within Medicaid programs? No: the discussion in this section focuses on the impact of providing incentives in addition to and in conjunction with preventive services. Thus, our conclusions focus on the impact of incentives, not on the impact of preventive services. The evidence base supporting preventive services is strong even in cases where the evidence is weak for adding incentives to the preventive services. Blood pressure screening, diabetes screening, tobacco use counseling and intervention, and tobacco quitlines are all recommended by either the U.S. Preventive Services Task Force or the Community Preventive Services Task Force (CPSTF, 2012, 2015; USPSTF, 2017), [This page intentionally left blank]

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APPENDIX A: MIPCD STATE PROGRAM SUMMARIES AND INDEPENDENT EVALUATION KEY FINDINGS

The following summaries provide an overview of MIPCD State programs' design, incentive structures, total participants enrolled, and total incentives distributed. State MIPCD applications, operational protocols, quarterly reports, and other State-specific documents served as primary data sources for these descriptions. Enrollment data for each State are based on numbers reported by States in the final CMS MIPCD Dashboard on March 31, 2016. Total incentive dollars distributed by each State program were calculated based on incentive amounts received by participants reported in the MIPCD State Minimum Data Set (MIPCD MDS) data.

The following summaries also highlight State-specific results for each of the primary independent evaluation topics: lessons learned from program implementation, impacts on utilization and expenditures, participation by special populations, beneficiary satisfaction, and administrative costs incurred by State agencies administering the programs. To inform these conclusions, RTI used a mixed-methods approach to analyze and synthesize information from State quarterly reports, the MIPCD MDS, and other State-specific documents provided to CMS; information from the program's Learning Collaborative; site visits to each State; focus groups with beneficiaries; stakeholder interviews; a beneficiary survey; and Medicaid claims analysis of claims data provided directly to RTI from each State. Corresponding sections of the main report offer additional information on the methodology and data sources for these analyses.

Each State was given the primary responsibility for assessing quality improvements and program impacts on beneficiary health outcomes. Findings from the State-led evaluations are not included in the following overviews, but **Section 8** in the main report summarizes findings from the State Final Evaluation Reports.

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Medicaid Incentives for Prevention of Chronic Diseases

California

California's MIPCD program, Medi-Cal Incentives to Quit Smoking (MIQS), aimed to increase smoking cessation among Medi-Cal (California's Medicaid program) participants who smoked. California's Department of Public Health Services led and managed the program. Medi-Cal participants entered the program by calling the California Smokers' Helpline (Helpline) operated through the University of California, San Diego, were verified as Medi-Cal beneficiaries, completed an initial intake and counseling call, and agreed to have their Helpline and Medicaid data linked. Nicotine replacement therapy (NRT) and telephone counseling sessions were available services to support participants in establishing a smoking quit date and to help participants meet their goal to stop smoking.

Awardee Overview

Program Focus Areas:	Smoking Cessation		
Components:	Potential participants were adult smokers who called the Helpline and were verified to be Medi- Cal beneficiaries and agreed to link their Helpline and Medi-Cal utilization data. There were four entry points to the MIQS project: 1) those who asked for the \$20 promotional incentive for completing the enrollment intake and one counseling call; 2) those in the Policy Randomized Control Trial (RCT1), who consented to be in the study and be randomized into one of three groups: (a) standard counseling; (b) counseling plus NRT to their home; or (c) counseling plus NRT to their home, plus incentives for participating in counseling. This trial was held from July 2012 through May 2013; 3) Medi-Cal smokers who had called the Helpline 3, 6, 9, and 12 months earlier through a Re-engagement Randomized Control Trial (RCT2). Participants consented to be in the study and were randomized into one of four groups and eligible to receive NRT to their home, counseling session, and potential incentives, if in one of three intervention groups; 4) those who called from September 2013 to July 2015 and were provided with Enhanced services and offered NRT shipped directly to their home. From December 2014 to April 2015, Enhanced Services participants were also eligible for small financial incentives to engage in counseling.		
Incentives:	 Financial incentive gift cards: California offered a \$20 incentive for Medi-Cal members eligible for the promotional incentive who asked for the incentive and completed a 30-minute counseling call. In addition, those in the Enhanced Services from December 2014 through April 2015 and in one arm of the Policy Trial (RCT1) received financial incentives for engaging in counseling (\$20 for first session and \$10 each for follow-up counseling sessions, up to four sessions). The Re- engagement Trial (RCT2) had four incentive conditions and three provided money (\$10, \$20, or \$40) for re-engaging in counseling. Nicotine patches: MIQS participants were eligible to receive barrier-free nicotine patches shipped directly to their homes, beginning statewide in September 2013. This also included everyone in Enhanced Services, those in two of three arms in RCT1, and those who called back in RCT2. 		
Total Enrollment:	California served 4,300 participants.Total Incentive\$488,100Target enrollment was 9,000.Monies Distributed:		
State Evaluation Design:	 Randomized Control Trials: From July 2012 through May 2013, California conducted RCT1 on the effectiveness of barrier-free NRT patches, counseling, and monetary incentives to help Medi-Cal smokers quit smoking. Evaluations occurred at 7 months post enrollment. From May 2015 through December 2015, California conducted RCT2, a re-engagement study for Medi-Cal smokers who had previously called the Helpline but were still smoking. The outcome was whether smokers called and re-engaged in counseling. Quasi-experimental design: The \$20 promotional incentive tested the effects of outreach on calls to the Helpline. The outcome measure was the monthly call rate to the Helpline and number of smokers receiving the \$20. 		

Key Findings



Implementation and Lessons Learned: Working with trusted partners that were outside the Department of Health Services and contracting out most of the project with those partners helped move things along rapidly with California's implementation, because the partner organizations were nimble and ready to go. Being able to send patches directly to participants was helpful in keeping their motivation high. The convenience of participants being able to call the Helpline, rather than having to get to a clinic/provider appointment, facilitated participation and removed transportation barriers. People that participated in this demonstration were motivated and a small financial incentive was sufficient to have an impact. Rapid cycle evaluation allowed the program to test ideas, see whether data supported their adoption, and make any needed modifications. This provided an evolving, dynamic project that yielded results.



Utilization and Expenditures: Participants in RCT1 who were in the intervention arm that provided counseling, NRT, and incentives participated in significantly more counseling sessions than participants in the control group, with 78 percent of participants in this program arm self-reporting that they made a quit attempt. There was no statistically significant impact of participation on total Medicaid spending. Similarly, program participation had no statistically significant effect on the likelihood of having an inpatient admission or on emergency room department visits.



Special Populations: The program developed their own materials, which were available in English, Spanish, Chinese, Korean, and Vietnamese. Counseling sessions were also available in these languages to make the program accessible. Arrangements could also be made for translation through AT&T if a counselor was not available that spoke the participant's primary language.



Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. California MIPCD focus group participants reported that the incentives motivated them to enroll in the program and participate in follow-up counseling calls. They said that the patches were an important motivator, given the high cost if participants had to buy them on their own. They also said that the gift cards were important incentives and they appreciated having a choice of cards and getting the initial card so quickly after enrollment.



Administrative Costs: Administrative costs accounted for 29 percent of California's total costs over 5 years. The rest was spent on Helpline services and incentives.

Medicaid Incentives for Prevention of Chronic Diseases

Connecticut

The goal of the Rewards to Quit (R2Q) program, led by Connecticut's Department of Social Services, was to reduce smoking among Medicaid members and to test the impact of incentives on quitting smoking. The program targeted Medicaid recipients aged 18 or older who smoked, with a special focus on individuals with serious mental illness. Participating mental health clinics, Federally Qualified Health Centers (FQHCs), Person-Centered Medical Homes, and other primary care sites recruited participants and provided individual and group counseling and offered carbon monoxide (CO) breathalyzer tests. Participants could also call the statewide smoking quitline. In selected locations, participants had the option to receive assistance from a peer coach.

Awardee Overview

Program Focus Areas:	Smoking Cessation		
Components:	Program enrollees participated in smoking cessation counseling sessions—either individually with a health care provider or in group sessions—and used the state smoking cessation quitline. Participants could also receive CO breathalyzer tests to monitor their progress.		
Incentives:	Participants in the intervention condition received incentives for participating in counseling, using the quitline, and testing negative for tobacco in carbon monoxide (CO) breathalyzer tests. Monetary incentives (in the form of a gift card) were \$5 for participating in a counseling session or calling the quitline (up to 10 times each), with a bonus of \$15 after five calls or counseling sessions. In addition, participants received \$15 for up to 12 tobacco-free CO tests and a \$10 bonus for three consecutive tobacco-free CO tests. In the final year, the program added a high process incentives and outcomes incentives groups, with increased incentives for quitline calls or counseling sessions and tobacco-free CO tests. Peer coaching sessions were provided as an additional incentive in a subset of clinics in two communities.		
Total Enrollment:	Connecticut served 4,052 participants.Total Incentive\$173,096Target enrollment was 6,210.Monies Distributed:		
State Evaluation Design:	The program used an experimental design with clinics randomized to experimental or control conditions, with the exception of one clinical partner that randomized at the individual level.		

Key Findings



Implementation and Lessons Learned: Connecticut found that it is important to incentivize providers and provide them support to enroll participants. The State introduced a \$35 per enrollee incentive and added Enrollment Specialists to support the clinics, resulting in an increase in the number of participating clinics and in participant enrollment. Conducting a participant survey as part of the evaluation was challenging; switching from "robo-calls" to a combination of mail and in-person surveys together with adding an incentive for survey completion boosted the response rate.



Utilization and Expenditures: Participants in the incentive program arms used the quitline significantly more compared to participants in the control arm. Participants in some incentive arms participated in more counseling sessions compared to participants in the control arm. For most program arms, per-member-per-month (PMPM) Medicaid spending decreased following program participation for incentivized participants, although these differences are not statistically significant (there was no decrease for the high-outcome and peer coaching incentives arms). The standard incentive program had a significant decrease in inpatient Medicaid spending of \$68 PMPM (90 percent CI: -\$119, -\$24). Emergency department use decreased in the incentive arms, but differences compared to the control arm were not significant.



Special Populations: The program included participants with behavioral health or substance abuse disorders, dual enrollees in Medicare and Medicaid, disabled or Supplemental Security Income (SSI) recipients, pregnant women and mothers of newborns, and beneficiaries who speak languages other than English. About 30 percent of participants received disability or SSI. The program provided all materials in Spanish and Spanish-speaking staff in the clinical locations provided translation support as needed.

Key Findings continued



Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. Focus group participants were generally positive about the program, particularly the group counseling. Having the option of individual or group counseling and the quitline was beneficial.



Administrative Costs: Connecticut spent 73 percent of the grant on administrative costs and the remaining on incentives and services. Direct payments to participants accounted for 3.5% of costs. The State spent 51 percent of its grant.

Medicaid Incentives for Prevention of Chronic Diseases

Hawaii

Hawaii's Patient Reward and Incentives to Support Empowerment (HI-PRAISE) MIPCD Program aimed to improve the early detection of diabetes among individuals at high risk and to improve diabetes self-management. Hawaii's Department of Human Services led the program through a contract with the University of Hawaii. The University of Hawaii delivered the program through nine participating Federally Qualified Health Centers (FQHCs) and through a private Managed Care Organization (MCO), Kaiser Permanente Hawaii.

Awardee Overview

Program Focus Areas:	Diabetes Prevention	Diabetes Self-Manager	nent
Components:	All participating sites tested individuals at were enrolled by the FQHCs or Kaiser Pe diabetes education and health coaching. care coordination to screen and identify ri appointments, and followed up with patie	high risk for diabetes. For ermanente MCO, a progra The program provided sup isk factors and comorbiditi nts.	r individuals with diabetes who m was provided that included oport and motivation along with les, provided referrals, made
Incentives:	Participants were eligible to receive a maximum incentive amount of \$320 annually from the program. Each FQHC established its own procedures for determining the type and distribution of incentives based on a tiered financial schedule for achieving process and outcomes measures. Most FQHCs provided gift cards to supermarkets, pharmacies, farmers' markets, or gas stations. FQHCs were also able to adjust incentive amounts up to \$50 on the basis of cost-of-living increases. Incentives were provided to Kaiser participants on a debit card through a vendor.		
Total Enrollment:	Hawaii served 2,323 participants. Target enrollment was 1,400.	Total Incentive Monies Distributed:	\$393,357
State Evaluation Design:	Quasi-Experimental design: Hawaii's program used a quasi-experimental design with a pre-post intervention comparison for participants that were enrolled in the FQHCs. Randomized Control Trial Design: Hawaii's program used a randomized controlled trial design for participants that were enrolled in Kaiser Permanente Hawaii.		

Key Findings



Implementation and Lessons Learned: Administratively, it took a long time to get everything in place. Flexibility and rolling changes into the process were necessary. Recruiting FQHCs required working with the Executive and Medical Directors at each FQHC.

Utilization and Expenditures: Per-member-per-month Medicaid spending decreased following program participation for incentivized participants, but this change is not statistically significant. Similarly, program participation had no statistically significant effect on the likelihood of having an inpatient admission.

Special Populations: Specifically targeted populations were indigenous Native Hawaiians and immigrant Asian Americans and Pacific Islanders. Participating FQHCs were well experienced in working with these populations.

Beneficiary Satisfaction: Hawaii conducted their own beneficiary survey because of the high percentage of FQHC participants that did not have English as a first language. Participants indicated high overall satisfaction with the MIPCD program.

Administrative Costs: Administrative costs accounted for 64 percent of Hawaii's total costs over 5 years. Incentive paid directly to participants accounted for 2.5 percent of total costs. The State spent 53 percent of its grant.

Medicaid Incentives for Prevention of Chronic Diseases

Minnesota

Minnesota's We Can Prevent Diabetes Minnesota program aimed to prevent diabetes and encourage weight loss among Medicaid enrollees with increased risk of diabetes or diagnosed pre-diabetes. Minnesota's Office of the State Medicaid Director, the Department of Health, the YMCA of the Greater Twin Cities, and HealthPartners Institute for Education and Research led this program and its state-wide evaluation. Minnesota engaged 21 clinics to identify and recruit Medicaid enrollees for the program.

Awardee Overview

Program Focus Areas:	Diabetes Prevention	Weight Management	
Components:	Program enrollees participated in a standardized 12-month, group YMCA Diabetes Prevention Program (DPP). Trained lifestyle coaches delivered the DPP, which included 16 weekly sessions followed by 8 monthly sessions.		
Incentives:	All participants received \$25 for attending one of the first three sessions and for completing labs at follow-up. Participants in groups randomly assigned to the incentive condition were eligible to receive up to \$520 for achieving attendance and weight loss goals, provided via reloadable debit cards.		
Total Enrollment:	Minnesota served 1,100 participants. Target enrollment was 1,800.	Total Incentive Monies Distributed:	\$124,645
State Evaluation Design:	Randomized Controlled Trial: Minnesota's program used a three-arm, group randomized control trial design in which groups of participants were randomized to one of three cohorts of DPP classes. All classes were free to participants and presented the same materials and information; however, participants in cohort 1 received incentives for attaining individual attendance and weight loss goals, those in cohort 2 received incentives for individual and group goal attainment, and those in cohort 3 were in the control group and did not receive goal-related incentives.		

Key Findings



Implementation and Lessons Learned: Minnesota requested proposals from clinics interested in participating in the study. A study coordinator was hired in each participating clinic to work with providers to identify and recruit participants. Coordinators supported enrollees throughout the 12 months of DPP sessions; childcare and transportation were also provided to support attendance. Minnesota observed that incentives initially motivated participants to join the program, but staff and lifestyle coaches served as ongoing motivators that encouraged participants to continue in the program.



Utilization and Expenditures: Participants in Minnesota's individual incentive, and individual and group incentive cohorts were significantly more likely to attend the DPP classes than participants in the control cohort. Also, participants in the incentive cohort were 1.5 times more likely to meet or exceed the 5 percent weight loss goal compared to those in the control cohort. Minnesota's individual incentives cohort had a significant decrease in Medicaid spending of \$127 per-member-per-month (PMPM) (90 percent CI: \$17–\$236).



Special Populations: Hmong, Somali, Karen, and Latino immigrant populations enrolled in the study and efforts were made to provide native speaking DPP lifestyle coaches or interpreters for these groups. The DPP curriculum was available in English and Spanish; program staff translated some materials into Somali to accommodate the large number of participants that spoke Somali. However, not all materials were translated or available for low-literacy or non-English or non-Spanish speaking individuals. Quantitative analyses showed significant reduction in total expenditure of \$320 PMPM among disabled participants in the individual incentive cohort compared to non-disabled participants. No differential effects were observed among disabled participants in the individual and group incentive cohort or among dual-enrolled participants in any of the other cohorts of the MIPCD program on total expenditures.
Key Findings continued



Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. Minnesota's focus group discussion data indicate that participants enjoyed the DPP classes and recognized the value of the experience they received. However, for Somali participants, language access was a large challenge. Somali and Native American participants indicated that females typically cook their meals so education about healthy eating and diets should target either the family or the female members of the household. Also, participants expressed some confusion about how the incentive structure worked and what the targets were. In addition, non-monetary incentives were not always used by participants. The program may consider incentives that can more easily fit into participants' daily routines to have a more effective influence on lifestyle changes.



Administrative Costs: Minnesota spent 30 percent in administrative costs and 70 percent in incentives and services. The State spent only half of its grant.

Medicaid Incentives for Prevention of Chronic Diseases

Montana

Montana's MIPCD program aimed to prevent type 2 diabetes, reduce lipid and blood pressure levels, and reduce weight among adult Medicaid beneficiaries at high risk for developing cardiovascular disease and diabetes. Montana's Department of Public Health and Human Services' (DPHHS) Medicaid Managed Care Bureau and Chronic Disease Prevention and Health Promotion Bureau led the program. Montana delivered the program at 11 participating sites around the State.

Awardee Overview

Program Focus Areas:	Diabetes Prevention	Weight Management	Hypertension
Components:	Program enrollees participated in an ev National Institute of Health's Diabetes F	idence-based lifestyle inte Prevention Program (DPP)	ervention adapted from the).
Incentives:	Participants at incentive sites were eligible to receive up to \$320 annually from the program, provided via debit cards. The financial incentives were tiered and incrementally increased for (1) participant attendance, (2) participant self-monitoring and reduction of fat and caloric intake and (3) participant monitoring and achievement of the weekly goal for moderately vigorous physical activity.		
Total Enrollment:	Montana served 261 participants. Target enrollment was 724.	Total Incentive Monies Distributed:	\$14,295
State Evaluation Design:	Crossover design : Montana's program had a crossover design, in which half of the program sites distributed incentives for the first 18 months of the program and the remaining sites did not provide incentives. In January 2014, sites that did not previously distribute incentives began to d so and the remaining sites no longer provided incentives.		

Key Findings



Implementation and Lessons Learned: Building on an existing DPP program helped Montana implement its MIPCD program within the planned time frame. Effective recruitment strategies included provider referrals and targeted telephone outreach. Close communication and partnership between Montana DPHHS and state Medicaid staff facilitated implementation and helped overcome challenges. Adaptations to the curriculum and methods for tracking behavior change encouraged program engagement.



Utilization and Expenditures: Participants in the incentive program arm attended significantly more DPP classes than participants in the control group. Per-member-per-month Medicaid (PMPM) spending decreased following program participation for incentivized participants by \$99 PMPM (90 percent CI: -\$370, \$172) but this change is not statistically significant. Similarly, program participation had no statistically significant effect on the likelihood of having an inpatient admission.



Special Populations: Program staff in Montana adapted program materials to make them understandable for all participants. These modifications, such as allowing participants with lower numeracy skills to check off food choices in their food diaries instead of calculating fat grams, helped to address the needs of disabled participants. Dual-enrollees and blind or disabled participants comprised the majority of both incentive and control group participants in Montana.



Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. Focus groups held in Montana similarly show high satisfaction with the State's MIPCD program. Focus group participants viewed program instructors as helpful and supportive, and they enjoyed the camaraderie developed with peers in the classes. Some participants struggled with maintaining healthy behavior changes once the DPP classes switched from weekly to monthly sessions.



Administrative Costs: Administrative costs account for 83 percent of Montana's total costs over 5 years. Incentive costs account for 3 percent of total costs over the same period. Because many of the services provided by the program were covered by other funding sources, the share of administrative costs appears large compared to its relatively small total award.

Medicaid Incentives for Prevention of Chronic Diseases

Nevada

Nevada's MIPCD program, Nevada Healthy Choices, worked with Medicaid beneficiaries to try to control or reduce their weight, lower cholesterol, lower blood pressure, and avoid the onset of diabetes or improve management of diabetes. Nevada Healthy Choices was led by the State's Department of Health and Human Services' Division of Health Care Financing and Policy and was implemented through five program partners: Children's Heart Center, Amerigroup, United HealthCare, the YMCA of Southern Nevada, and the University Medical Center Lied Clinic Outpatient Facility. The Lied Clinic facility closed partway through the demonstration in 2014, terminating that arm of the study.

Awardee Overview

Program Focus Areas:	Diabetes Prevention	Diabetes Management	Weight Management	Hypertension
Components:	The Children's Heart (18 and provided one-of program. United Healt management program (MCOs). The YMCA of to participants with pre adults diagnosed with	Center's Healthy Hearts Progron-one counseling and motiva hCare and Amerigroup offerents to beneficiaries with diabeted offered the National Institute of ediabetes or at risk for type 2 diabetes or at risk for type 2	am enrolled children betw tional coaching and a mo d weight management ar es served by the manage f Health's Diabetes Preve diabetes. The Lied Clinic diabetes.	ween the ages of 7 and ponitored exercise and diabetes disease d care organizations ention Program (DPP) provided counseling to
Incentives:	Program enrollees rec programs, efforts at be achieving improved he available in the online Heart Center also had participants. The max	eived points redeemable for r ehavior change (including con ealth outcomes. Participants o catalog maintained by the inc a catalog worksheet that ena imum monetary value of the ir	ewards on a tiered basis opleting an evidence-bas ould redeem their points centive vendor, ChipRewa bled the center to order r ncentives was \$350.	for participating in ed program), and for reward items ards. The Children's rewards on behalf of
Total Enrollment:	Nevada served 1,840 Target enrollment was	participants. Total In s 2,000. Monies	centive \$231,34 Distributed:	6
<i>State Evaluation Design:</i>	Randomized Control randomized to one of points, and treatment child and the child's pay years prior served as the MCO program arm group that did not rece for each test or service tests and services and randomly assigned to obtaining tests and services	Ied Trial : Participants in the 0 two groups: treatment group 2 group 2 with the incentive poi arents. For this study arm, you the control group. For adults en s, Nevada randomly assigne eive any incentive payments, f e, and treatment group 2 that d achieving health goals. Parti a control and a treatment gro prvices.	Children's Heart Center s 1 with young people eligit nts earned by young peo ung people who complete enrolled in diabetes mana d participants to one of the treatment group 1 that re- could receive incentive p cipants at the YMCA and up wherein reward points	tudy arm were ble to earn incentive ple split between the ed the program several agement programs at aree groups: a control ceived incentive points oints for obtaining I Lied Clinic were a could be earned for

Key Findings



Implementation and Lessons Learned: Nevada faced implementation challenges due to the program's complex design and experimental groups that varied across program partners and study arms. In addressing challenges, communication between program partners and project administration was key. Nevada also faced difficulties in enrolling Medicaid participants, particularly during initial recruitment efforts. Recruitment and outreach to the Medicaid population required a greater focus and investment than initially anticipated. Using a redeemable points system and distributing incentives through a vendor added complexity and led to inefficiencies in the incentive process.



Utilization and Expenditures: Adult participants in the diabetes management programs at the Medicaid MCO program arms completed about the same number of HbA1c tests, LDL cholesterol tests, and eye exams, with no statistically significant differences between control and incentivized treatment groups. Incentivized participants were slightly more likely to have an outpatient visit compared with the control group, although this difference was not statistically significant and aligned with the program design to incentivize outpatient care. Per-member-per-month (PMPM) Medicaid spending increased for incentivized adult diabetes management program participants by \$88 PMPM, but this change is not statistically significant. In the Healthy Hearts Program, 32 percent of children in treatment group 1 with the child receiving the incentive points completed the program, compared with 26 percent of children in the treatment group 2 with incentives split between the child and parent. The Healthy Hearts Program reduced the likelihood of having an outpatient visit among both incentive groups relative to the control group. Total PMPM Medicaid spending decreased following Health Hearts Program participation for both groups of incentivized participants by \$38 PMPM for treatment group 1 and by \$49 PMPM for treatment group 2, but these changes are not statistically significant.

Special Populations: Nevada successfully engaged children with special needs in its Children's Heart Center Healthy Hearts program. Nevada also adapted some program materials to engage beneficiaries who speak English as a second language.

Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. Focus groups held in Nevada with parents of participants from the Children's Heart Center and participants from the Medicaid MCO program arms found positive feedback on Nevada Healthy Choices program staff and materials, but identified challenges to participation and confusion regarding the incentive component. Participants in diabetes management programs delivered via telephone reported some barriers in making contact with coaches, including limited cell phone minutes and changing contact information. Parents' schedules and lack of transportation presented some barriers to accessing program activities at the Children's Heart Center. Focus group participants had low understanding of the incentives available through Nevada Healthy Choices and faced barriers in using the online incentive vendor system.



Administrative Costs: Nevada spent 34 percent of its grant on administrative costs and the remaining funds went to incentives and services. Of the incentive and services costs, 23 percent of costs were direct payments to participants. The State spent 29 percent of its grant.

Medicaid Incentives for Prevention of Chronic Diseases

New Hampshire

New Hampshire's MIPCD program aimed to reduce cardiovascular risk factors including rates of obesity and smoking among a high-risk group of Medicaid beneficiaries: people with mental illness. New Hampshire's Department of Health and Human Services, Division of Community-Based Care Services; Bureau of Behavioral Health; and Office of Medicaid Business and Policy; along with 10 regional community mental health centers, Dartmouth Centers for Disease Control Prevention Research Center, and Dartmouth Institute for Health Policy and Clinical Practice.

Awardee Overview

Program Focus Areas:	Weight Management	moking Cessation
Components:	Program enrollees participated in one of four v 1) gym membership; 2) personal training (InSI personal training (InShape) and Weight Watch simultaneously or not, in one of three smoking for nicotine replacement therapy (NRT) only; 2 referral for NRT and telephonic cognitive beha	weight management program arms that entailed hape); 3) Weight Watchers; or 4) a combination of hers. Program enrollees also could participate, cessation program arms that entailed 1) a referral 2) a referral for NRT and quitline sessions; and, 3) a hvioral therapy.
Incentives:	Participants in the 24-month weight managem via debit cards during their full program particip programs were eligible to receive up to \$1,860 Participants in the smoking cessation program during their full program participation.	ent programs were eligible to receive up to \$3,097 pation. Those in 12-month weight management from the program provided via debit cards. s were eligible to receive up to \$415 via a debit card
Total Enrollment:	New Hampshire served 2,031 participants. Target enrollment was 2,600.	Total Incentive\$758,869Monies Distributed:
State Evaluation Design:	Equipoise-stratified randomized design: Ne stratified randomized design for its weight man Participants selected their treatment options w	ew Hampshire's program used an equipoise- nagement and smoking cessation programs. /ithin the program and within each treatment option.

Key Findings



Implementation and Lessons Learned: New Hampshire drew on its partnership with 10 community mental health centers to begin their phased implementation within 8 months of receiving its award. Over a year into the weight management program, New Hampshire changed its InShape program from having a 2-year duration to 1 year. New Hampshire indicated that trying to implement an equipoise program design and yield equal enrollment across programs proved challenging. Also, the programs learned the importance of educating program staff and providers about working with individuals with mental illness.



Utilization and Expenditures: For all programs, we observed few significant utilization and expenditure findings and also no patterns in significant findings emerged. Participants in InShape plus Weight Watchers, Weight Watchers alone, and InShape alone were significantly more likely (1.77 times, 1.50 times, and 4.19 times more likely) to attend the gym than the control. Participants in the Weight Watchers only group showed a significant increase in physical activity compared to those in the control group.

Difference-in-differences estimates demonstrate minimal impact of MIPCD program participation on inpatient Medicaid expenditures, except in New Hampshire's InShape plus Weight Watchers program, which had a significant decrease in inpatient spending of \$38 per-member-per-month (PMPM) (90 percent CI: \$2– \$69). We do note that the program was relatively small and that individuals with outlier spending before MIPCD could have accounted for the notable drop in spending.

For all programs, except New Hampshire's telephonic smoking cessation counseling program, the estimated changes in emergency department (ED) spending was small with negative estimates, indicating reductions in ED spending.

Key Findings continued



Special Populations: Across most program arms in New Hampshire, we observed no differential effects of the MIPCD program on total expenditure based on disabled or dual enrollee status. Disabled participants in the InShape plus Weight Watchers program arm and the guitline program arm showed a significant reduction in total expenditure (\$283 PMPM and \$284 PMPM, respectively) when compared to non-disabled participants.



Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. From focus group discussions, we learned that one-on-one mentoring and face-to-face group activities were viewed as most helpful for participants, particularly those struggling with significant depression, anxiety, and social anxiety. Monetary incentives were viewed as important for initial engagement in the programs, but over time as participants observed health changes they described becoming more self-motivated and less interested in the incentives. While participants described their satisfaction with the programs overall, they raised concerns about the duration of the weight management program, indicating that it was insufficient.



Administrative Costs: Administrative costs represented 16 percent of total costs, incentive payments were 16 percent, and services were 68 percent of total costs. The State spent 77 percent of its grant.

Medicaid Incentives for Prevention of Chronic Diseases

New York

The goal of New York's MIPCD program was to reduce smoking, lower high blood pressure, prevent the onset of diabetes, and enhance diabetes self-management. The program, led by the State Department of Health, Office of Quality and Patient Safety, targeted adult Medicaid members ages 18 to 64 who used tobacco or had high blood pressure, prediabetes, or diabetes. New York's 19 Medicaid managed care organizations (MCOs) and HIV special needs MCOs were required to implement three programs: diabetes prevention, blood pressure management, and diabetes management. Although not required to do so, all MCOs also agreed to implement the smoking cessation program.

Awardee Overview

Program Focus Areas:	Diabetes Prevention Manage	ement	n Smoking Cessation
Components:	In the diabetes prevention program (DI DPP classes and/or making progress to program, participants were incentivized related prescriptions, and/or decreasin participants were incentivized for atten related prescriptions, and/or decreasin participants were incentivized for partici- by eligible providers, including the quitt cessation confirmed through a saliva c	PP), participants were incentivized oward losing weight. For the diabe I for attending primary care appoin g HbA1c levels. For the blood pres ding primary care appointments, fi g blood pressure. For the smoking ipating in smoking cessation coun ine), filling smoking cessation pres otinine test.	for attending each of 16 tes management tments, filling diabetes- sure control program, lling blood pressure- cessation program, seling sessions (provided criptions, and smoking
Incentives:	New York provided financial incentives randomized to the control group, who e enrollment payment. Those randomized Participants were randomized into ince achieving specific health outcomes, or outcomes. For each of the four program \$250 (excluding the \$50 payment).	in the form of mailed checks. Part engaged in at least one program ac d to the control group did not recein ntive groups for (1) conducting cer (3) conducting certain activities an ns, New York capped the amount	icipants, including those ctivity received a \$50 ve any incentives. tain activities, (2) d achieving health of incentives disbursed at
Total Enrollment:	New York enrolled 4,279 participants. Target enrollment was 6,800.	Total Incentive Monies\$430Distributed:	0,520
State Evaluation Design:	Randomized Control Trial: For the sr management programs, participants w group. For the DPP, classes were rand	noking cessation, blood pressure, ere randomized into one of the inc omized into a particular incentive	and diabetes entive arms or the control arm or the control group.

Key Findings

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Implementation and Lessons Learned: Implementing four programs with multiple incentive arms was a very complex process; the simpler the program design, the easier it would be for participants and the Medicaid managed care plans to follow the program. At program start, the State did not have the necessary infrastructure to pay incentives, but creative work-arounds were achieved. Partnership with the Medicaid managed care programs was critical to the programs' success.



Utilization and Expenditures: Incentive recipients in the DPP attended more classes than the control group, but there were no differences in use of doctor visits, prescriptions filled, or quitline calls between incentive and control groups in the diabetes management, hypertension management, and smoking cessation programs. There were no statistically significant changes in total Medicaid expenditures, and inpatient utilization and expenditures between incentive and control groups. There were no clear patterns to suggest that one type of incentive design (i.e., paying for activities, paying for health outcomes, or paying for both) had a greater impact on expenditures compared to the others.

Key Findings continued



Special Populations: New York did not specifically target any special populations, and the Medicaid managed care plans were given flexibility in whether to enroll special populations (e.g., enrollees who spoke English as a second language).



Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. DPP participants who participated in focus groups reported high satisfaction with the program and the lifestyle coaches. Participants did report that lack of transportation and child care were barriers to regular attendance, and some found the incentive schedule confusing. Smoking cessation program participants who participated in focus groups had more mixed response, with some participants saying the quitline program was helpful while others disagreed. Confusion about the incentives was common and not considered an integral component to continued participation.



Administrative Costs: New York spent 72 percent of its awarded amount. No breakdown between types of expenditures is available for this State.

Medicaid Incentives for Prevention of Chronic Diseases

Texas

The goal of the Wellness Incentives and Navigation (WIN) project was to improve health self-management and reduce the incidence and consequences of chronic disease among non-elderly adult Medicaid beneficiaries with behavioral health diagnoses. WIN participants set personal wellness goals with the assistance of health navigators and used a flexible wellness account to pursue the wellness goals. The project was implemented in the Harris Service Delivery Area, which includes Houston and surrounding counties.

Awardee Overview

Program Focus Areas:	Other (Texas)		
Components:	WIN participants set personal wellness goals with the assistance of health navigators and used a flexible wellness account to pursue their wellness goals. The navigators used motivational interviewing techniques to help participants develop their wellness goals.		
Incentives:	WIN incentives included a flexible wellne	ss account of \$1,150 per	year for up to 3 years.
Total Enrollment:	Texas served 1,259 participants. Target enrollment was 1,250.	Total Incentive Monies Distributed:	\$1,454,995
State Evaluation Design:	Non-elderly, adult Medicaid Supplemental Security Income (SSI) and disability-related beneficiaries with mental health or substance abuse diagnoses were randomly assigned to incentive and control groups. The incentive group received health navigation services and flexible wellness accounts; the control group received neither. Both groups received small incentives to complete baseline and follow-up surveys.		

Key Findings



Implementation and Lessons Learned: Texas achieved its target enrollment on schedule because it drew from the pool of eligible beneficiaries from the single state Medicaid agency's Medicaid enrollment files, used its external evaluator to enroll participants, and offered a large incentive. Implementation was also streamlined by adding tasks to an existing contract with the State's External Quality Review Organization. Embedding health navigators within MCOs facilitated operations. Texas developed processes to ensure that participants used incentives on approved wellness activities.



Utilization and Expenditures: On average, incentive group participants had 22 monthly and 6 quarterly visits with health navigators. The incentive group had higher, statistically significant improvements in self-reported health status than the comparison group, as measured by the SF12 physical health and mental health short form surveys. Incentive group members had monthly expenditures that were \$154 (90% CI: -\$325–\$18) lower than for control group members, but the difference in spending was not significantly different.



Special Populations: The WIN program served adult Medicaid beneficiaries with mental health or substance abuse diagnoses. All participants qualified for Medicaid because of disability; all had or were at elevated risk of chronic disease.

Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. Satisfaction ratings were even higher in Texas than in other States. In focus groups, participants were very enthusiastic about the WIN program and said that the strength of WIN was the combination of both incentives and a navigator. Some participants worried about what they would do when the program ended.



Administrative Costs: Incentive and service costs accounted for about 57 percent of program spending with administrative costs accounting for the remaining 43 percent. Direct incentive payments to participants totaled \$1,454,995, more than was paid in any other participating State.

Medicaid Incentives for Prevention of Chronic Diseases

Wisconsin

Wisconsin's MIPCD program aimed to provide smoking cessation services to adult Medicaid smokers enrolled in one of two programs: (1) a general program for all smokers, who enrolled through the Wisconsin Tobacco Quit Line (WTQL), or (2) First Breath (FB), an evidence-based program for pregnant smokers. The Wisconsin Department of Human Services' Division of Health Care Access and Accountability led the program in partnership with the Office of Policy Initiatives and Budget (OPIB), the Division of Public Health (Tobacco Prevention and Control Program), the University of Wisconsin School of Medicine and Public Health—Center for Tobacco Research and Intervention (UW-CTRI), and the Wisconsin Women's Health Foundation (WWHF).

Awardee Overview

Program Focus Areas:	Smoking Cessation		
Components:	Medicaid and Supplemental Security Income (SSI) members who smoke could participate in the WTQL and received counseling though the quitline. FB participants received prenatal and postpartum face-to-face and telephone smoking cessation counseling. Each treatment option in each of the two programs had participants receive services and cash incentives (both for process and outcomes) and a control group that received the same services as the treatment group but smaller incentives (only if they took biochemical tests).		
Incentives:	WTQL participants in the intervention group could receive a maximum of \$270 in incentives over 6 months, while those in the control group could receive \$80. FB intervention group participants could receive a maximum of \$600 over the course of their pregnancy plus 12 months postpartum (this was changed to 6 months after year 3); those in the control group could receive up to \$160.		
Total Enrollment:	Wisconsin served 2,928 participants. Target enrollment was 3,250.	Total Incentive Monies Distributed:	\$449,320
State Evaluation Design:	Randomized Controlled Trial in both programs.		

Key Findings



Implementation and Lessons Learned: Recruitment was more challenging and time consuming than anticipated. It proved difficult to get primary care providers to make referrals. Allowing stakeholders flexibility (e.g., using different types of nicotine tests) was positive.



Utilization and Expenditures: The WTQL program achieved significant savings in total costs (\$108 permember-per-month [PMPM]) at the 10 percent level, emergency department (ED) costs (\$12 PMPM) at the 5 percent level, but no statistically significant savings for inpatient visits (\$49 PMPM). The FB program did not show statistically significant changes in total expenditures, inpatient, or ED expenditures. These were on average \$10, \$2, and \$4 lower PMPM for the incentive group compared to the control group for total expenditures, inpatient, and ED visits respectively.



Special Populations: SSI recipients. Other non-legislated special populations were pregnant women, mothers of newborns, and beneficiaries who speak English as a second language



Beneficiary Satisfaction: Beneficiary survey results pooled across all States indicate high overall satisfaction with MIPCD programs. Focus group participants in Wisconsin reported that the program helped them with their smoking cessation efforts, even if they had not quit. Some reported cutting back while a few had quit for a sustained period of time. Several participants thought the program should last longer than 6 months as quitting smoking often involves setbacks and they could benefit from longer term support.



Administrative Costs: The State did not provide information to allow us to differentiate costs across categories (evaluation costs, program costs, incentives, and services). However, in gift cards alone, the State spent 7.3 percent of its budget. Overal, Wisconsin spent 65 percent of the grant.

APPENDIX B: FINAL LEARNING COLLABORATIVE ASSESSMENT (DECEMBER 2016)

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Medicaid Incentives for Prevention of Chronic Diseases Evaluation

Final Learning Collaborative Assessment

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MEDICAID INCENTIVES FOR PREVENTION OF CHRONIC DISEASES EVALUATION

FINAL LEARNING COLLABORATIVE ASSESSMENT

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SECTION 1 EXECUTIVE SUMMARY

Section 4108 of the Patient Protection and Affordable Care Act mandated the creation of the Medicaid Incentives for Prevention of Chronic Diseases (MIPCD) program for States to develop evidence-based prevention programs that provide incentives to Medicaid beneficiaries to participate in and complete the MIPCD program. In September 2011, 10 States (California, Connecticut, Hawaii, Minnesota, Montana, Nevada, New Hampshire, New York, Texas, and Wisconsin) were awarded demonstration grants to implement chronic disease prevention approaches for their Medicaid enrollees to test the use of incentives to encourage behavior change related to tobacco use, weight loss, and/or heart health and nutrition. The Centers for Medicare & Medicaid Services (CMS), through a contract with Econometrica, Inc. and its subcontractors, collectively referred to as the Implementation Contractor, supported participating States with a Learning Collaborative system to engage, educate, and share lessons learned with each other. Learning Collaborative activities included virtual and In-Person meetings, a webbased support forum (MIPCD.net), and direct technical assistance. RTI International and the National Academy for State Health Policy (NASHP) evaluated the MIPCD Learning Collaborative. The evaluation activities that informed this report took place from August 2012 through September 2016.

1.1 **Purpose of the Report**

This report focuses on the evaluation of the MIPCD Learning Collaborative. It describes the Learning Collaborative and its activities, explains the research questions that RTI International and NASHP sought to answer in evaluating the Learning Collaborative, summarizes the evaluation findings, and identifies lessons learned from the Learning Collaborative and their implications for future CMS projects.

1.2 Research Questions

The MIPCD Learning Collaborative evaluation was guided by three research questions.

- 1. How did Learning Collaborative activities align with stakeholder goals?
- 2. How did Learning Collaborative activities influence the short- and long-term activities of each State project?
 - What program changes (e.g., incentives offered, populations targeted) did States make as a result of the Learning Collaborative activities?
- 3. How did the Learning Collaborative contribute to participant and overall program outcomes?
 - What, if any, program changes that affected utilization could be attributed to the Learning Collaborative?
 - What, if any, program changes that affected beneficiary satisfaction could be attributed to the Learning Collaborative?

• What, if any, program changes that affected administrative costs could be attributed to the Learning Collaborative?

The evaluation aims to assess participants' experience and also determine whether Learning Collaborative activities informed program changes that affected program outcomes. Evaluators collected and extracted information from a variety of sources to address these research questions.

1.3 Learning Collaborative Activities

Learning Collaborative activities included virtual and In-Person meetings, a web-based forum (MIPCD.net), and technical assistance (TA). Over the course of the Learning Collaborative, States rated In-Person meetings as the activity that best met their Learning Collaborative goals, followed by webinars, technical assistance, and grantee calls, with MIPCD.net ranked as least useful for meeting Learning Collaborative goals. During site visit interviews and follow-up telephone calls, States indicated that In-Person meetings were the most beneficial activities for peer-to-peer learning because they provided an opportunity for meaningful face-to-face conversations.

1.4 Influence of Learning Collaborative on the Short- and Long-Term Activities of State Programs

States consistently reported that MIPCD Learning Collaborative activities were generally useful, with seven States reporting in follow-up calls that the Learning Collaborative contributed to participant and program outcomes, such as participant recruitment and provider engagement. For example, States reported they recruited more participants as a result of information shared during the Learning Collaborative about direct-to-client outreach and leveraging existing programs such as Wisconsin's First Breath to recruit participants. Areas of particular impact on State programs included participant outreach and marketing, use of incentives, data collection and evaluation, and program closeout.

1.5 Comparison to Other Learning Collaboratives and the Role of Camaraderie in the MIPCD Learning Collaborative

The MIPCD Learning Collaborative shared some but not all of the methods, goals, and characteristics of other health care and public health learning collaboratives. At least three States reported that the MIPCD Learning Collaborative was similar to other learning collaboratives in which they had participated, and two said that it was better than others. One State reported that MIPCD Learning Collaborative participants did not have as much in common as those in other learning collaboratives because of the diversity of Grantee programs.

Supportive conditions are required to facilitate learning collaborative participant learning and sharing. MIPCD Grantee States reported that supportive relationships formed with other Grantees through the Learning Collaborative helped them maintain morale throughout the program. Most States formed relationships outside the Learning Collaborative that they expected to continue beyond the end of the program. Seven States reported speaking independently with other Grantees outside of Learning Collaborative activities. For six of those States, those connections were forged with people with whom they had not previously communicated. Five of those States plus one additional State anticipated maintaining those relationships after the end of the Learning Collaborative. Topics that States reported discussing independently with other Grantees included marketing and recruitment strategies (four States) and data collection and analysis (two States).

1.6 Limitations to the Evaluation of the MIPCD Learning Collaborative

Two main factors limited the evaluation of the MIPCD Learning Collaborative:

- A lack of consensus among States about the Learning Collaborative goal(s) and differences in how well Learning Collaborative activities supported each State's goals, and;
- The inability to determine quantitatively if the Learning Collaborative contributed to participant and overall program outcomes.

1.7 Lessons Learned from the MIPCD Learning Collaborative

A number of lessons emerged from the evaluation of the MIPCD Learning Collaborative:

- It is important to establish clear, measureable goals to maximize the usefulness of future State health policy learning collaboratives and to facilitate evaluation.
- Sample State health policy learning collaborative measures are needed to better define and evaluate learning collaborative successes.
- Continually assessing progress on learning collaborative evaluation measures affords the opportunity to respond to assessment findings in real time. Shared learning collaborative goals facilitate rapid cycle improvement during the learning collaborative process.
- Having a federal learning collaborative evaluator in place before the launch of a collaborative or during its early stages is preferable.
- Evidence suggests that States benefited from the MIPCD Learning Collaborative and that State health policy learning collaboratives are generally valuable to both States and federal officials.

1.8 Findings Related to the Research Questions and Implications for Other CMS Projects

1.8.1 Findings Related to the Research Questions

Evaluators used qualitative methods in trying to answer the three research questions.

With regard to the first research question of how Learning Collaborative activities aligned with stakeholder goals, States reported that Learning Collaborative activities aligned well with their established goals. On average, nine of the 10 States reported the Learning Collaborative activities met their Learning Collaborative goals, and seven States indicated that more than half the activities met their overarching program goals.ⁱ All other interviewed stakeholders (the CMS program and implementation

teams and the Implementation Contractor) reported that the complement of activities met their respective Learning Collaborative goals.

- In response to the second research question of how Learning Collaborative activities influenced each State's short- and long term project activities and program changes, the evaluation shows that activities contributed to a range of implementation, evaluation, closeout, and sustainability planning decisions in nine States.
- The final research question asked how the Learning Collaborative contributed to participant and overall program outcomes and whether any program changes affecting service utilization, participant satisfaction, and/or administrative costs could be attributed to the Learning Collaborative. Seven States reported the Learning Collaborative contributed to outcomes, but most found it difficult to demonstrate or identify how. Based on self-report by States, the Learning Collaborative did contribute to outcomes in small ways by informing program changes that affected service utilization and to a lesser extent beneficiary satisfaction and administrative costs in at least two States. The evaluators did not confirm examples identified by States through quantitative analysis.

1.8.2 Implications for Other CMS Projects

Overall, States and stakeholders indicated that future CMS projects should include learning collaboratives. Suggestions for future learning collaboratives based on the MIPCD evaluation include:

- Host regular In-Person meetings. While all MIPCD Learning Collaborative components supported States' work, States reported that most program changes attributable to the MIPCD Learning Collaborative resulted from In-Person meetings.
- Empower States to lead activities. States rated peer-led activities that addressed State-requested topics highly. With support from the Implementation Contractor, States shaped and guided Learning Collaborative activities without undue burden.
- Evaluate regularly and revise in real time. Implement rapid-cycle improvements in response to evaluation findings.

SECTION 2 MIPCD LEARNING COLLABORATIVE AND THE EVALUATION ACTIVITIES

Section 4108 of the Patient Protection and Affordable Care Act mandated the creation of the MIPCD program. Through MIPCD, States implemented evidence-based disease prevention and management programs for Medicaid beneficiaries. The programs provided beneficiaries with incentives for their program participation and completion. The programs aimed to test the effectiveness of providing incentives to Medicaid beneficiaries to change their health risk behaviors to better prevent or control conditions related to tobacco use, diabetes, obesity, hyperlipidemia, and hypertension. In September 2011, 10 States—California, Connecticut, Hawaii, Minnesota, Montana, Nevada, New Hampshire, New York, Texas, and Wisconsin—received MIPCD grants from CMS.

CMS awarded a contract to Econometrica, Inc. and its subcontractors, collectively referred to as the Implementation Contractor, to support the MIPCD program and its State Grantees. The Implementation Contractor planned, implemented, and maintained a collaborative learning structure for States to engage and share information with each other. RTI was awarded a contract from CMS to conduct an independent, national evaluation of the 10 Grantee States. As part of its evaluation, RTI subcontracted with NASHP to evaluate the MIPCD Learning Collaborative.

2.1 Learning Collaborative Activities

The Learning Collaborative included virtual and In-Person meetings, a web-based support forum, and technical assistance (TA). *Table 1* provides an overview of the types and frequencies of these Learning Collaborative activities, which began in June 2012 and concluded in September 2016.

Learning Collaborative Activity	Description	Frequency
Grantee conference calls	 Discussions included State updates, conversations exploring specific program topics or challenges 	Generally monthly
	 Opportunities for States to ask questions 	
Webinars	 Conducted as needed to provide information and solutions to States and offer expert presentations Topics included success stories and sustainability 	Once or twice a year, sporadically
In-Person meetings	 States met in person to exchange program information and strategies Meetings included in-depth conversations about program topics, challenges, and successes, and presentations by States, evaluators, and experts 	Biannual, in May and November or December
MIPCD.net	Web-based tool that included a discussion forum, library, webinar/meeting schedule, tools or resources created by States, and grant program summaries	Ongoing
Technical assistance (TA)	Implementation Contractor provided TA in response to States' programmatic or evaluation questions (e.g., literature or expert contacts)	Ongoing

Table 1MIPCD Learning Collaborative Activities: August 2012– September 2016ⁱⁱ

2.2 MIPCD Learning Collaborative Evaluation Strategy

RTI and NASHP evaluated the MIPCD Learning Collaborative by:

- Attending all Learning Collaborative activities;
- Fielding Quarterly Assessments to collect State feedback on Learning Collaborative activities;
- Working with the Implementation Contractor to develop questions for webinar and In-Person meeting evaluations;
- Analyzing Grantees' feedback about webinars and In-Person meetings;
- Assessing Grantees' Learning Collaborative goals;
- Reviewing quarterly progress reports submitted by Grantees;
- Tracking Grantee program changes and TA requests;

- Collecting data during site visits to the Grantee States illustrating how peer-to-peer learning shaped Grantees' programs;
- Interviewing Grantee States by telephone to collect feedback on the impact of the Learning Collaborative on program activities and outcomes, and;
- Conducting interviews with federal partners, TA faculty, and the Implementation Contractor to collect feedback on the Learning Collaborative design, implementation, and evaluation.

2.3 Alignment of Learning Collaborative Activities with MIPCD Program Goals and Learning Collaborative-Specific Goals

NASHP collected and analyzed information on the extent to which the MIPCD Learning Collaborative activities met both States' program goals and Learning Collaborative goals from August 2012 through September 2016. This information was collected through questions in the Quarterly Assessments administered to participating States. Program goals were States' overall goals for their MIPCD programs, whereas Learning Collaborative goals were those that States hoped to achieve by participating in the MIPCD Learning Collaborative activities.

2.3.1 Alignment of Learning Collaborative Activities with MIPCD Program Goals

In their original proposals and quarterly progress reports to CMS, States reported on their MIPCD program goals, which are listed in *Table 2*.

State	Program Goals (as of May 31, 2015)
California	 Increase tobacco cessation among Medi-Cal beneficiaries who smoke.
Connecticut	 Reduce smoking rates among the estimated 25–30 percent of Connecticut Medicaid recipients who currently smoke. Test the efficacy of financial incentives in increasing quit rates.
Hawaii	 Improve early detection of diabetes among individuals at high risk for diabetes. Improve diabetes self-management among individuals with diabetes; address barriers to self-management, such as smoking, behavioral issues, and lack of diabetes education.
Minnesota	 Determine whether incentives can increase weight loss as a primary step toward long-term goals of reduced diabetes incidence, improved cardiovascular health, and reduced health care expenditures.
Montana	 Reduce weight, lipid, and blood pressure levels, and prevent type 2 diabetes, among adult Medicaid beneficiaries at high risk for developing cardiovascular disease and diabetes.
Nevada	 Control or reduce weight, lower cholesterol, lower blood pressure, and avoid the onset of diabetes or (in the case of a diabetic) improve the management of the condition.

Table 2 States' Program Goals

State	Program Goals (as of May 31, 2015)	
New Hampshire	Leduce cardiovascular risk factors, including rates of obesity and smoking, mong a high-risk group of Medicaid beneficiaries: people with mental illness. ncrease exercise, improve nutrition, increase smoking cessation to lower blood pressure, reduce weight, reduce cholesterol and blood glucose levels, and nodify other related risk factors for cardiovascular disease.	
New York	 Increase smoking cessation, lower high blood pressure, prevent diabetes onset, and enhance diabetes self-management. 	
Texas	 Improve health self-management; increase use of preventive services and encourage more appropriate use of health care services, and increase satisfaction with health care and with personal progress toward wellness. 	
Wisconsin	Engage a minimum of 2,000 (up to 4,000) targeted BadgerCare Plus and Supplemental Security Income (SSI) smokers in Strive to Quit (STQ) evidence- based treatment via Wisconsin Department of Health Services' Tobacco Quit Line. Engage a minimum of 1,250 targeted BadgerCare Plus and SSI pregnant mokers in STQ evidence-based treatment via First Breath.	

Each State's program goals were specific to its chronic condition(s), interventions, and target populations. Six States identified the diversity of State program goals as a barrier to their benefitting fully from Learning Collaborative activities, or expressed the need for smaller-group discussion between States with similar programs.

As a whole, States' program goals were to test whether incentives could positively modify participant behavior related to tobacco use, weight loss, and/or heart health and nutrition. To determine the extent to which Learning Collaborative activities met States' program goals, Quarterly Assessments asked States whether each Learning Collaborative activity addressed their program priorities and challenges to support them in meeting their program goals. Learning Collaborative activities overall met program goals for at least half of the States. By September 2016, States had completed 16 Quarterly Assessments. Of the 38 monthly program activities (calls and webinars) across these Quarterly Assessments, most (22) met the program goals of at least two-thirds of the responding States, and 30 met the program goals of five or more States.

Responses about monthly grantee calls, TA, and MIPCD.net, about which States reported in every Quarterly Assessment, are in *Figure 1*.

Figure 1 Number of States Reporting Learning Collaborative Activities Met Their Program Goals, by Quarterly Assessment



Note: For Quarterly Assessment periods with multiple Grantee calls, the data points are averages of all Grantee calls within the period.

MIPCD.net: In all Quarterly Assessments, six or fewer States reported that MIPCD.net met their program goals. Six States reported that MIPCD.net met their program goals during two Quarterly Assessment periods: November 2012-January 2013 (Quarterly Assessment 2) and March-May 2013 (Quarterly Assessment 7). For both periods, States reported that MIPCD.net was helpful in providing access to other States' presentations and resources. One State reported that the MIPCD.net resources were helpful in training a new staff member during the period of November 2012-January 2013 (Quarterly Assessment 2).

Technical Assistance: The number of States reporting that TA met their program goals declined over time. During the period covered by the July-September 2016 Quarterly Assessment (Quarterly Assessment 16), no State indicated that TA met its program goals. Seven States reported not using TA during this period, perhaps because States were engaged in closeout and evaluation activities and no longer sought TA.

Grantee Calls: Most grantee calls met the program goals of at least half of the States. Two calls met the program goals of nine out of 10 States—the February 2013 call (Quarterly Assessment 3) and the April 2014 call (Quarterly Assessment 7). The February 2013 call addressed data sharing agreements and data dry run requirements, and States reported that it helped them better understand the data submission process and the role of RTI and the Implementation Contractor. The high rating of the April 2014 call reflected States' positive response to a change in the format of the monthly calls to feature more State presentations and peer-to-peer discussion. Five States presented program updates during the call.

Webinars: All but one webinar met program goals for at least seven States. Three of the eight Learning Collaborative webinars met program goals for eight States, including the March 2014 (Quarterly Assessment 7) webinar on success stories; and two webinars on sustainability held September 2014 (Quarterly Assessment 9) and March 2015 (Quarterly Assessment 11). The webinar meeting the fewest number of States' program goals (held in April 2013 during Quarterly Assessment 3) was attended by only seven States, and met the program goals of six of them.

In-Person Meetings: The seven In-Person meetings met program goals for every attending State except one, which reported that the last two meetings did not address its program goals. This State reported that information shared during the May 2015 meeting led to a good discussion, but did not help it meet its program goals at that stage of its project. Earlier, In-Person meetings did meet that State's program goals.

There was no discernable link between the type of State initiative—either the conditions targeted or the design of the incentive or study—and the extent to which Learning Collaborative activities met program goals. There were also no major differences in trends between activities meeting program goals versus meeting Learning Collaborative goals.

State engagement with Learning Collaborative components ebbed and flowed over the lifespan of the grant, and States reported that some Learning Collaborative activities were more useful at meeting program goals during certain stages of the project than others. As noted earlier, States reported greater use of MIPCD.net and TA during the first three Quarterly Assessments (covering August 2012 through April 2013) than during any other period, suggesting that those components were more valuable to States during program planning, ramp-up, and early implementation. TA requests during that time involved support with marketing materials and administrative processes, such as working with vendors and handling participant grievances. MIPCD.net contained examples of recruitment and marketing materials during this time. There was also an uptick in States' use of and satisfaction with MIPCD.net in May-June 2016 (Quarterly Assessment 15), suggesting States valued the availability of materials related to cost analyses and preliminary State evaluation results later in the program.

Starting September 2014 (Quarterly Assessment 9), one or two States reported that the monthly program activity calls either addressed topics that should have been covered earlier, or were overall less useful or not useful at that stage of the project. This pattern continued through April 2016 (Quarterly Assessment 14) until the relevant questions were removed from the survey. Examples of calls that had lower ratings due to the timing of the topics included presentations and discussions about sustainability options and handling staff turnover. These calls were offered in 2015 and would have been more helpful to States earlier. Overall, States valued Learning Collaborative activities that addressed the challenges they faced when they were facing them. The Implementation Contractor's use of rapid-cycle evaluation techniques enabled it to quickly respond to States' requests to address certain topics, and as a result States rated timely and topical Learning Collaborative activities more highly than others.

2.3.2 Alignment of Learning Collaborative Activities with Learning Collaborative Goals

Grantees were asked to identify Learning Collaborative goals that represented what they hoped to gain from participating in the MIPCD Learning Collaborative activities during an initial Learning Collaborative Goals Assessment in September 2012. They were then asked to reassess those goals two years later in August 2014 (see *Table 3*).

Table 3
Comparison of September 2012 Learning Collaborative Goals with August 2014 Learning
Collaborative Goals Reassessment

September 2012 Learning Collaborative	 Learn about other States' program implementation, development progress, and daily operations (seven States). 		
Goals Assessment	• Learn about strategies for recruiting participants and providers (five States).		
Findings	 Hear from experts, particularly those with on-the-ground experience in providing incentives to Medicaid enrollees (five States). 		
	 Learn data collection strategies (three States). 		
	 Learn about successful partnerships (three States). 		
	• Develop working relationships with colleagues in other States (two States).		
	 Learn about other States' program design details (two States). 		
	 Hear from CMS about the "national context" for MIPCD programs to help States think about sustainability after the conclusion of the initiative and understand CMS" "continued expression of commitment" to project goals and rapid cycle innovation (two States). 		
August 2014 Learning	 Discuss sustainability through the Learning Collaborative (four States). 		
Collaborative Goals Reassessment Findings	 Keep up-to-date with other States' successes, challenges, and lessons learned (three States). 		
	 Talk with States facing similar challenges (two States). 		
	 Learn about RTI's evaluation and Report to Congress (two States). 		
	 Discuss successful participant and provider recruitment strategies (two States). 		
	 Receive assistance from subject matter experts (one State). 		
	 Learn about how to analyze return on investment and how to use a continuous quality improvement model (one State). 		
	 Learn what motivates the Medicaid population and about effective incentive strategies (one State). 		
	 Learn how technology can support participants (one State). 		

In each Quarterly Assessment, States rated (on a scale of poor (1) to excellent (5)) how well Learning Collaborative Activities met their Learning Collaborative goals. Activity ratings from 3 (good) to 5 (excellent) were considered to have met the States' Learning Collaborative goals for this report. *Figures 2, 3, and 4* show the average ratings of how well the Learning Collaborative activities supported States in meeting their Learning Collaborative goals over the course of all relevant Quarterly Assessments. Responses about monthly program activities, TA, and MIPCD.net, which States rated in every Quarterly Assessment, are in *Figure 2. Figures 3 and 4* summarize responses about webinars and In-Person meetings, which occurred less often.

It was possible for Learning Collaborative activities to meet States' program goals, but not their Learning Collaborative goals, or vice versa. For example, State updates during monthly Grantee calls may not have directly addressed a specific State's efforts to increase tobacco cessation, but could have met the State's Learning Collaborative goal of staying up-to-date with other States' challenges, strategies for addressing them, and program implementation.

Figure 2 Average Rating of How Well MIPCD Learning Collaborative Activities Met States' Learning Collaborative Goals on a Scale of 1-5, by Quarterly Assessment*



*Note: QA refers to Quarterly Assessment. Most Quarterly Assessments covered a three-month interval, except for Quarterly Assessments 5 and 12, which covered four months, and Quarterly Assessment 15, which covered two months.

MIPCD.net: *Figure 2* shows that States rated MIPCD.net the highest in July-September 2016, followed by May-June 2016 and October–December 2015 (Quarterly Assessments 16, 15, and 13 respectively). In nine of the 16 Quarterly Assessments, the number of States reporting that MIPCD.net met their goals was equaled or exceeded by the number of States that reported not using it. This was true of May-July 2013, December 2013-February 2014, and June 2014-April 2016 (Quarterly Assessments 4, 6, and 8 through 14), suggesting that States generally used MIPCD.net more in the first few quarters of the program ("did not attend/use" was added as a possible response starting with the November 2012-January 2013 Quarterly Assessment [Quarterly Assessment 2]). However, May-June 2016 (Quarterly Assessment 15) showed a marked increase in States' use of MIPCD.net, with five States reporting that it met their needs, and the four States that used it in July-September 2016 (Quarterly Assessment 16) gave it its highest rating during the program. This increase in use and rating could be due to States' interest

in seeing other Grantees' results presentations, which were posted on MIPCD.net. States also reported using journal abstracts from MIPCD.net or sharing them with providers and stakeholders. One State noted that it obtained marketing and outreach ideas from the site.

Four States said that MIPCD.net was the least useful component of the Learning Collaborative. In the February and July 2013 Interim Reports, RTI and NAHSP suggested that the Implementation Contractor provide regular weekly or monthly summary emails of new postings to MIPCD.net. The Implementation Contractor implemented weekly email updates during the period of March-May 2014 (Quarterly Assessment 7), and began providing direct links to helpful resources and article summaries posted to MIPCD.net in weekly updates. States appreciated these changes, and ratings for MIPCD.net increased during some subsequent Quarterly Assessments.

Technical Assistance: States reported that the most useful aspects of TA were calls with other States, facilitated by the Implementation Contractor, to discuss areas of common ground, and timely responses to State requests. The TA from the Implementation Contractor received its highest rating in July-September 2016 (Quarterly Assessment 16), but only one State rated the TA activity during this period. Highly rated TA in June-August 2014 (Quarterly Assessment 8) addressed recruitment and outreach, as well as post-grant sustainability. Highly-rated TA provided to two States in October-December 2015 (Quarterly Assessment 13) addressed evaluations and helped the States prepare for their presentations at the December 2015 In-Person meeting. In 11 of 16 Quarterly Assessments, the number of States reporting that TA met their goals was equaled or exceeded by the number of States that reported not using TA. This was true of May-July 2013, December 2013-February 2014, and June 2014-September 2016 (Quarterly Assessments 4, 6, and 8 through 16), suggesting that States generally used TA more in the first few quarters of the program than later.

Grantee Calls: Figure 2 shows that States rated the Grantee calls the highest in July-September 2016, followed by October–December 2015 and May-June 2016 (Quarterly Assessments 16, 13, and 15). The September 2016 call was the final Learning Collaborative activity. The call was the highest-rated call of the program, extended from the normal 60 minutes to 90 minutes to give States ample time to present their preliminary evaluation findings. On the call, the Implementation Contractor also shared a compilation video featuring program teams and participants from the Grantee States. The July 2016 call featuring preliminary evaluation findings from two States was the second-highest-rated call, with an average rating of 3.63. The May 2016 call was also rated highly, tying with the October 2015 call as the third-highest-rated Grantee call, with an average rating of 3.60. The May 2016 call featured a discussion of program accomplishments, challenges, and lessons learned, along with methods to share evaluation findings. The October 2015 call featuring State updates and discussion about their use of an evaluation template developed by Minnesota to lay out the elements of their State evaluation activities was rated particularly highly, with five States reporting that it helped them understand other States' evaluation plans and closeout activities. One State reported that it reminded them to keep all partners informed about the end-of-program incentives. States reported they appreciated the opportunity to understand other Grantees' approaches to data collection and analysis.

States rated the Grantee calls lowest in May–July 2013 (Quarterly Assessment 4). The Grantee calls in June and July 2013 included discussions of the Paperwork Reduction Act package materials and the pilot test for the administrative cost form, respectively. The lack of

emphasis on peer-to-peer sharing may have contributed to their low rating. Additionally, one State reported that the June 2013 call was "very general and minimally helpful."

The February 2016 call, which focused on State participant exit interviews, focus groups, and surveys, was rated low compared to other Grantee calls during the previous two quarters, with two States reporting that it did not meet their Learning Collaborative goals. The low rating may have resulted from the States' wide diversity of programs and closeout experiences, and the sentiment (reported by one State) that calls were no longer necessary until evaluation results were available.

Webinars: *Figure 3* shows that States' ratings for webinars varied slightly, with the March 2014 webinar on sharing success stories rated highest. This may have resulted from Grantees' interest in the topics and the applicability of the techniques discussed to States' outreach efforts. In response to State interest, the April and June 2016 webinars both included presentations on cost analysis. They were the third- and second-highest ranked webinars of the project period, respectively. While eight of the nine responding States attended the September 2014 webinar on program sustainability and rated it a least a 3 (good), it was the lowest-rated webinar of the program. Although program sustainability was generally an area of interest, the webinar contained high-level information and had limited time for State-to-State discussion, which may have affected the rating.

Figure 3 Average Rating of How Well Webinars Met States' Learning Collaborative Goals, by Relevant Quarterly Assessment



In-Person Meetings: *Figure 4* shows that States consistently rated the In-Person meetings highly in terms of meeting their Learning Collaborative goals. During site visit interviews and follow-up telephone calls, States indicated that In-Person meetings were the most beneficial activities for peer-to-peer learning because they provided an opportunity for meaningful face-to-face conversations. States were asked in Quarterly Assessments whether they had made the changes that they reported considering in their In-Person meeting evaluations. States primarily reported implementing changes related to participant and provider recruitment and marketing as a result of the early In-Person meetings.

Figure 4 Average Rating of How Well In-Person Meetings Met States' Learning Collaborative Goals, by Relevant Quarterly Assessment



The December 2015 In-Person meeting was the highest rated In-Person meeting, although only eight States (the fewest ever) attended. Based on the In-Person meeting evaluations, having the opportunity to learn from State presenters during State-led breakout sessions and engage in group discussions drove the high rating. Breakout session topics included cost analyses, data collection, and incentives distribution. The group cohesion that developed during the project period may also have contributed to this high rating.

As *Table 4* shows, over the course of the Learning Collaborative, States rated In-Person meetings as the most useful activity for meeting their Learning Collaborative goals, followed by webinars, TA, and Grantee calls, with MIPCD.net ranked least useful.

Table 4	
Ranking of Activities in Meeting States' Learning Collaborative Goals*	

Ranking	Activity	Average Rating
1	In-Person Meetings	4.20
2	Grantee Calls	3.70
3=	Technical Assistance	3.60
3=	Webinars	3.60
5	MIPCD.net	3.10

*Note: As reported in Quarterly Assessment 16.

SECTION 3 INFLUENCE OF LEARNING COLLABORATIVE ON THE SHORT- AND LONG-TERM ACTIVITIES OF STATE PROGRAMS

States consistently reported that the MIPCD Learning Collaborative influenced their program activities, with seven States reporting in follow-up conference calls with RTI and NASHP that the Learning Collaborative contributed to participant and program outcomes by informing or confirming program changes that impacted outcomes. Based on some State self-reports, the Learning Collaborative informed program changes that affected service utilization and, to a lesser extent, beneficiary satisfaction. To more explicitly gauge the Learning Collaborative's contributions, in June 2016 (Quarterly Assessment 15), evaluators provided each State with a list of program changes identified in earlier evaluation activities, and asked States to indicate whether each change was informed by the Learning Collaborative, confirmed by the Learning Collaborative, neither informed nor confirmed by the Learning Collaborative, or not made. Evaluators defined "informed" as a change made at least partially on the basis of information shared in the Learning Collaborative. "Confirmed" meant that a program component or change was not made as a result of Learning Collaborative activities.

All but one State reported at least one program change informed or confirmed by the Learning Collaborative, and eight States reported four or more program changes that were informed or confirmed by the Learning Collaborative. *Figure 5* shows the number of changes that States reported to be informed or confirmed by the Learning Collaborative. The three States that reported making the most such changes were Minnesota, Montana, and California, which reported 10, nine, and eight changes, respectively. Overall, States reported more changes informed or confirmed by the Learning Collaborative than informed by it. In addition to changes informed or confirmed by the Learning Collaborative, States also reported implementing changes based on information from non-MIPCD sources, such as conferences, a CMS affinity group, and feedback from consultants, health plans, participants, and other stakeholders.

Figure 5 Number of Changes Reported to Be Informed or Confirmed by the MIPCD Learning Collaborative, by State*



*Notes: LC refers to MIPCD Learning Collaborative. Figure 5 represents changes that States confirmed in June 2016, with Quarterly Assessment 15.

One State reported having no program changes informed or confirmed by the Learning Collaborative. This, coupled with the State's consistently low ratings of activities, suggests that the Learning Collaborative did not meet the State's needs. However, on a follow-up call, the State reported satisfaction with the Learning Collaborative.

The *Appendix* shows the program elements and changes reported by States in the June 2016 Quarterly Assessment (Quarterly Assessment 15), on State follow-up calls, and through other sources, as being informed or confirmed by Learning Collaborative activities. As the following sections describe, States reported that the Learning Collaborative influenced or confirmed Grantee program design features or changes in the following areas: provider- and participant-focused outreach, recruitment and retention, incentive design and implementation, data collection, evaluation strategies, closeout activities, and sustainability planning.

3.1 Participant and Provider Outreach, Recruitment, and Retention

Engaging and educating program stakeholders, particularly participants and providers, was a key focus of States during the first two years of the project. States turned to providers to help with recruitment and enrollment of potential participants. As States transitioned into the final phases of their programs, provider recruitment became less of a focus, although States remained committed to retaining and engaging program staff to ensure successful completion of programming for participants. States also used non-provider-driven strategies to reach and recruit study participants, and made decisions about participant engagement within the context of enrollment and evaluation goals. States used a number of methods to retain participants for the duration of their programs, and shared information about their strategies during Learning Collaborative activities.

All but two States reported that the Learning Collaborative influenced program elements related to participant outreach and marketing, including the use of social media. The July 2014 social media call resulted in New Hampshire adding a question to its standard baseline assessment as to whether participants heard about the program through the use of social media. California reported using social media posts in multiple languages to reach targeted populations after the July 2014 call. In 2014, the Implementation Contractor developed two surveys for New Hampshire that the State distributed to clinic providers and management staff. The Implementation Contractor analyzed the results of the survey and provided New Hampshire with a summary. The survey confirmed that increased enrollment in the State's tobacco education program was the result of both higher participant incentives and involving health mentors in the recruitment process. Using the survey results, the State made recommendations to several provider sites detailing how to increase program enrollment. The Learning Collaborative could therefore be seen as impacting service utilization by supporting the State's successful efforts to increase enrollment.

Conversations about participant retention took place during monthly program activities and In-Person meetings, with States sharing strategies for retaining participants over the course of the program and supporting participants' ongoing engagement in health improvement activities after the completion of the program. One State reported that the Learning Collaborative confirmed its decision to pursue direct-to-client recruitment and retention strategies, rather than work through providers.

Seven States reported that the Learning Collaborative informed or confirmed provider recruitment and/or retention strategies, such as developing brochures and "cheat sheet" cards specifically for providers, as well as giving providers financial incentives for enrolling participants. Connecticut discussed its use of provider enrollment incentives at the May 2013 In-Person meeting and the July 2013 program activity call. At least four States (Minnesota, Montana, Nevada, and New Hampshire) subsequently implemented incentives for providers to enroll beneficiaries in the program. New Hampshire reported in a follow-up call and in the June-August 2014 Quarterly Assessment (Quarterly Assessment 8) that the Learning Collaborative inspired it to create a pool of incentive funds for providers that met enrollment targets and award additional funds to providers who exceeded the target quota. It credited information on provider incentives shared at the May 2014 In-Person meeting with informing that change.
Another State said in the June-August 2014 Quarterly Assessment (Quarterly Assessment 8), "Provider outreach strategies and engaging the Hmong community were two challenges addressed through technical assistance. Both are helping us rethink how we promote the program and build awareness with these different audiences."

- In August 2014, the State requested TA with developing a magazine advertisement encouraging physicians to refer patients to diabetes programs. The TA team provided examples of other States' provider-based outreach materials, which the State found helpful.
- In April 2014, the State also requested TA from the Implementation Contractor about engaging the Hmong population and potential resources the State could create for this population, such as healthy recipe books. The State indicated in the June-August 2014 Quarterly Assessment (Quarterly Assessment 8) that this TA confirmed its understanding of some of the cultural considerations to be aware of when working with the Hmong population. The State is now partnering with culturally appropriate organizations to engage this population.

3.2 Incentive Design and Implementation

State programs tested the effectiveness of providing incentives to Medicaid beneficiaries to change their health risk behavior. All States provided some type of incentive to experimental group participants, such as prepaid debit cards or cash rewards. Some programs also provided non-monetary incentives, such as gym memberships or cookbooks. At least four States (Connecticut, Montana, New Hampshire, and Texas) reported that the Learning Collaborative informed or confirmed their incentive design and/or implementation, including incentive amounts, incentive delivery methods, and incentive schedule. For example, Hawaii reported adjusting its incentive schedule as a result of the September 2013 Medicaid incentive research webinar. The TA team also put Hawaii in touch with an expert to discuss methods for phasing out incentives. During the November 2013 In-Person meeting, Hawaii discussed the use of an incentive tracking tool to keep participants engaged. Montana reported during the December 2013-February 2014 Quarterly Assessment (Quarterly Assessment 6) that it had adapted Hawaii's incentive tracking tool. Montana also selected the timing of incentives for its program's final cohort on the basis of the closeout planning discussion that took place on the April 2015 Grantee call.

The Learning Collaborative informed or confirmed both participant and provider incentives. For example, Texas reported that the Learning Collaborative confirmed its use of large incentives and incentive flexibility for beneficiaries, and Montana reported that activity discussions helped it decide on the last cohort to receive incentives. Connecticut noted that Hawaii's experience paying participants to increase survey response rates helped Connecticut determine an amount to pay participants in a similar situation.

3.3 Data Collection and Evaluation Strategies

Six States reported that Learning Collaborative activities informed or confirmed program changes related to data collection and evaluation, including cost-benefit analysis strategies. States shared techniques for collecting incentive data, participant data, and outcomes data throughout the Learning Collaborative, and some States reported receiving TA from the Implementation Contractor on data collection issues. For example, in July 2012 Hawaii received TA on the interfaces used by other Grantees for data collection and data analytics for the Minimum Data Set (MDS). Hawaii wanted a user-friendly system with different functionality than the current system, and asked if any Grantees had developed customized software for MDS data collection. Hawaii reported that the TA and information shared during a monthly call informed its selection of a new data submission system.

On the July 2015 Grantee call, Minnesota presented a summary evaluation template it developed in collaboration with the Implementation Contractor to support discussions of State evaluation activities. With support from the Implementation Contractor, all States completed the template in 2015 and used completed templates to facilitate cross-State comparisons and sharing about incentive studies and analytic evaluation approaches. Montana and Nevada specifically reported completing their evaluation plans based on Minnesota's template, and other States reported that learning about each other's evaluation and sustainability plans was helpful.

3.4 Closeout Activities and Sustainability Planning

In the last two years of their projects, States expressed interest in sharing approaches for program closeout, and evaluation and dissemination of program results. States conveyed that program evaluation and dissemination of results were also key to helping them make the case for the continuation of their initiatives. Although States saw anecdotal evidence of success, final evaluation results were not available in time to support arguments to continue the initiatives after grant funding ended. As a result, States were interested in sharing strategies for sustaining the program elements that appeared to be working for their target populations. States also were interested in sharing closeout activities to assist participants in transitioning to other (non-MIPCD) community-based services and supports to continue to address relevant health needs.

Program closeout and evaluation were discussed during a number of 2015 and 2016 monthly program activities, and at several December 2015 In-Person meeting sessions. At least five States (Connecticut, Hawaii, Minnesota, Montana, and Texas) reported that the Learning Collaborative informed or confirmed their strategies for program closeout and final communications with beneficiaries. Strategies included collecting participant success stories, completing medical record reviews, and conducting exit surveys and focus groups to collect participant feedback. Some States also provided termination counseling to help participants transition out of the program.

States also shared sustainability strategies during a number of 2015 and 2016 Learning Collaborative activities. Policy changes reported by States during the August 2016 program activity call included:

- Legislation introduced by California to allow the Quitline to furnish cessation services directly to Medi-Cal members,
- New Hampshire's Section 1115 demonstration application for more flexibility in funding services such as the IN SHAPE program, and;
- State Plan Amendments to approve new billing codes in Minnesota and California that would enable diabetes prevention and tobacco cessation services to continue with Medicaid reimbursement after the grant's conclusion.

Four States (California, Montana, Texas, and Wisconsin) reported in the May-June 2016 Quarterly Assessment (Quarterly Assessment 15) that the Learning Collaborative either informed or confirmed program changes related to sustainability. For example, Montana reported that information shared from Minnesota confirmed its sustainability plans for continuing to train lifestyle coaches. Wisconsin reported that the Learning Collaborative confirmed its efforts to identify grant-specific costs in order to incorporate program sustainability into State budget requests.

New Hampshire created a sustainability workgroup for its MIPCD program and indicated that In-Person meeting discussions confirmed this approach. California noted that the March 2015 webinar on sustainability confirmed the importance of partnering with Medicaid managed care plans to continue support of smoking cessation programming. California reported at the May 2015 In-Person meeting that its team met with the medical directors of each of the State's health plans to discuss smoking cessation incentives for Medicaid beneficiaries.

The Learning Collaborative had a notable impact on States' use of success stories to put a human face on the programs to make the case for sustainability to State policymakers. At the November 2013 In-Person meeting, New Hampshire shared a participant testimonial video documenting the personal impact of the program on participants. Montana also shared testimonials staff had gathered. States requested more information on how to use testimonials and storytelling to make the case for their programs. In response, the March 2014 webinar focused entirely on techniques for developing and sharing success stories, and the presenter identified New Hampshire's video as a good example of compelling storytelling. This was the highest-rated webinar of the project period. By the third quarter of 2014, at least five States in addition to New Hampshire (Hawaii, Minnesota, Montana, Texas, and Wisconsin) were developing or discussing ways to develop their own testimonials. The Implementation Contractor shared participant and staff testimonials from nearly all States at the conclusion of the Learning Collaborative.

SECTION 4 COMPARISON OF MIPCD LEARNING COLLABORATIVE TO OTHER LEARNING COLLABORATIVES

To maximize the utility of lessons learned from the MIPCD Learning Collaborative for future State health policy learning collaboratives, this section discusses the MIPCD Learning Collaborative in the context of other health-related learning collaboratives, and identifies similarities and differences between the MIPCD Learning Collaborative and others.ⁱⁱⁱ

The term "learning collaborative" is most commonly seen in the health care and education sectors, with the federal government incorporating learning collaboratives into some of its health care programs.^{iv} For example, CMS established the Medicaid and CHIP Learning Collaboratives (MAC Learning Collaboratives), which bring together federal and State officials to support State health coverage programs. The MAC Learning Collaboratives are organized into workgroups focused on a subtopic, such as data analytics or the Basic Health Program.^v

Learning collaboratives—including the professional learning communities model used in the education field—are used in education and health care to collaboratively solve problems and share knowledge.^{vi} Ideas vary about what constitutes a learning collaborative. In fact, according to a 2011 Urban Institute analysis, researchers have called for greater consensus, so one could "describe a 'learning collaborative' and have others know what that means, and on what key dimensions learning collaboratives may vary."^{vii} In its 2015 evaluation of the Children's Health Insurance Program Reauthorization Act (CHIPRA) Quality Demonstration Grant Program, the federal Agency for Healthcare Research and Quality (AHRQ) articulated some common characteristics of learning collaboratives. The evaluation reported that learning collaboratives are "typically characterized by:

- (1) A focus on a specific topic (often one in which current practice lags behind the available evidence base);
- (2) The delivery of content by clinical and quality improvement experts;
- (3) Multidisciplinary teams sharing knowledge and learning across several participating organizations;
- (4) Structured, in-person and virtual learning activities that include meetings, webinars, and conference calls; and
- (5) The use of an improvement model based on setting targets, collecting data, and testing changes on a small scale."^{viii}

Although not referred to explicitly as a "learning collaborative," the Institute for Healthcare Improvement (IHI) Breakthrough Series model has influenced many learning collaboratives in health care and public health. Key components of the IHI Breakthrough Series model include: the selection of a topic "ripe for improvement," recruitment of expert faculty, participant engagement, face-to-face learning sessions, action periods during which participants implement changes and collect data on their impact, and measurement and evaluation of the collaborative.^{ix} IHI's Breakthrough Series also incorporates the "Model for Improvement,"^x which articulates four elements of successful process improvement: "specific and measurable aims, measures of improvement that are tracked over time, key changes that will result in the desired improvement, and a series of testing 'cycles' during which teams learn how to apply key change ideas to their own organizations."^{xi} IHI views collaborative learning as important to health care quality improvement.

4.1 Similarities and Differences between the MIPCD Learning Collaborative and Other Learning Collaboratives

The MIPCD Learning Collaborative shared some but not all of the methods, goals, and characteristics of other health care and public health learning collaboratives. For example, like the CHIPRA learning collaboratives, the MIPCD Learning Collaborative included individualized TA. Unlike other learning collaboratives described by AHRQ, the MIPCD Learning Collaborative did not require multidisciplinary teams from Grantee States. MIPCD Learning Collaborative participants were not providers, health plans, or other stakeholders, as is the case with other health care quality improvement learning collaboratives. Like the public health officials who participated in a public health Multi-State Learning Collaborative,^{xii} MIPCD Learning Collaborative participants did not have a direct clinical relationship with beneficiaries. In this regard, the MIPCD Learning Collaborative has more in common with learning collaborative, than those testing clinical practice improvements.

On follow-up phone calls with MIPCD Grantees, at least three States reported that the MIPCD Learning Collaborative was similar to other learning collaboratives in which they had participated, and two said that it was better than others. One State said that it had more face-to-face interaction than another learning collaborative that relied on Skype interaction. Another State reported that the Learning Collaborative compared favorably to past learning collaboratives in that the engagement with CMS and other States was excellent and ongoing, and continued to provide support and help their project. States' ongoing engagement with the Learning Collaborative was facilitated in part by the monthly program activity calls. The Implementation Contractor reported that the monthly Grantee conference calls, which were in progress when evaluation activities began in August 2012, were not in their original scope of work from the federal funder, but were incorporated to better meet the needs of States after States themselves initiated biweekly calls on topics such as diabetes or tobacco cessation.

Some States rated the MIPCD Learning Collaborative less favorably than other Learning Collaboratives. One State reported that the MIPCD Learning Collaborative did not have as many regional meetings or opportunities for small group work as others, and one State reported that MIPCD Learning Collaborative participants did not have as much in common as those in other learning collaboratives. Six States reported on Quarterly Assessments or on follow-up phone calls that the lack of commonality across States was a barrier to the effectiveness of the MIPCD Learning Collaborative. Also, MIPCD Grantees articulated their own goals for their participation in the Learning Collaborative, set their own targets, and collected data to assess the effectiveness of their interventions. Some other learning collaboratives in the literature also allowed participants to set their own goals, and evaluators of the public health Multi-State Learning Collaborative determined that the lack of clear, measurable goals was a barrier to success for some participants.

State MIPCD programs varied across multiple parameters. States targeted a range of conditions and behaviors including smoking, diabetes, obesity, hyperlipidemia, and hypertension and varied interventions, depending upon the chronic condition(s) and target populations within Medicaid. Population groups recruited into programs also varied by State initiative and program arm. States also differed in the types of incentives offered and in their evaluation design. Some States also implemented their programs more quickly than others. This diversity of programs proved challenging for the Learning Collaborative. A TA faculty member stated, "The States were in such different places on their readiness to implement [incentives] that it wasn't until halfway through that the States were at similar points where there was opportunity for more cross-sharing."

4.2 Camaraderie in the Learning Collaborative

The MIPCD Learning Collaborative strove to create supportive conditions for learning and sharing across States, both virtually and at the In-Person meetings. Educational literature^{xiii} suggests that successful professional learning communities for adults require supportive conditions, such as a sense of trust and respect among participants and a shared foundation of skill and knowledge that allows participants to teach and learn from one another. To gauge the value of information-sharing and support among Learning Collaborative participants, evaluators collected information on camaraderie from stakeholders, and asked States to report on their interactions with fellow State Grantees outside official Learning Collaborative activities.

Most States formed relationships outside the Learning Collaborative that they expected to maintain beyond the end of the program. In the May-June 2016 Quarterly Assessment (Quarterly Assessment 15), seven States reported speaking independently with other Grantees outside Learning Collaborative activities. For six of those States, connections were forged with people with whom they had not communicated prior to the Learning Collaborative. Five of those six States anticipated maintaining those new relationships after the end of the Learning Collaborative. One of those five States identified, "developing working relationships with colleagues in other States," as one of its Learning Collaborative goals in a September 2012 survey—a goal that the State appeared to have met according to the May-June 2016 Quarterly Assessment (Quarterly Assessment 15). Topics that States reported most frequently discussing independently with other Grantees included marketing and recruitment strategies (four States) and data collection and analysis (two States). Interestingly, the TA faculty reported facilitating more State-to-State contacts in the middle and end of the Learning Collaborative. This suggests that States requested more direct State-to-State support as they became more familiar with other States' programs.

While most States reported cultivating relationships with fellow Grantees outside the Learning Collaborative, Grantees rated the helpfulness of those relationships an average of 3.2 on a scale of 1 (not helpful) to 5 (extremely helpful). All States ranked the helpfulness of the relationships at least a 2 (a little helpful); two States (Hawaii and Nevada) found the relationships extremely helpful. A member of the Implementation Contractor team noted that professional friendships developed during the Learning Collaborative and were fostered by dinners and other informal contact at In-Person meetings. The person said, "At the start, [States were] separate entities, but by the end, they [had] knitted themselves together.... At the first In-Person meeting, all States got together for dinner. Later on, States set up their own dinners with

other States [for] more networking, more friendships." One federal official said, "I have never seen a group of such unselfish people working together."

In follow-up calls in fall 2015, at least four States acknowledged the importance of the camaraderie fostered by the Learning Collaborative:

- The Learning Collaborative, "...kept our spirits up while struggling with participant recruitment."
- "It's just inspirational to hear progress from other people working on similar programs."
- "It was really a supportive group and I think a lot of that was created as result of the Learning Collaborative and the TA team and getting us to talk and relate... Overall, it was a very positive experience with the Learning Collaborative... I do think it benefits the Grantee, and I think it creates a supportive environment for everyone involved, particularly if the grant is challenging. The people in the States can provide encouragement for each other and support for each other and can also provide tools to assist each other; and saying 'Oh, I went down this path and it wasn't that successful, so maybe it's best if you circumvent that in your approach and try to find another avenue.' Those types of things are helpful to understand."
- The In-Person meetings, "...helped the States to have a 'team' mentality, and to help develop the relationships between the programs. These were good opportunities to connect and talk informally about the programs' successes and challenges."

SECTION 5 LIMITATIONS TO THE EVALUATION OF THE MIPCD LEARNING COLLABORATIVE

Two main factors limit the evaluation of the MIPCD Learning Collaborative: the lack of consensus among States about Learning Collaborative goals and differences in how well Learning Collaborative activities supported individual States' Learning Collaborative goal(s), and the challenges in determining whether the Learning Collaborative contributed to participant and overall program outcomes.

5.1 Different Goals

The lack of consensus among States about the Learning Collaborative goal(s) posed challenges for evaluating its effectiveness. Because there were no prescribed goals for the Learning Collaborative, the evaluators asked Grantees to identify Learning Collaborative goals that represented what they hoped to gain from participating in the MIPCD Learning Collaborative activities. As noted earlier, this was done through an initial Learning Collaborative Goals Assessment in September 2012 and then a reassessment of those goals in August 2014 (see *Table 3*).

During phone interviews conducted during the spring of 2016, the Implementation Contractor (including TA faculty) and CMS evaluation and program teams reported their goals for the Learning Collaborative. In general, the goals of these stakeholders were to:

- Facilitate collaborative learning among Grantees, and foster cross-Grantee communication and relationships;
- Identify State needs for additional learning; and/or
- Serve as a resource for States.

When there was consensus on States' Learning Collaborative goals, the shared goals were not easily quantifiable. In 2012, most Grantees shared the goal of learning about other States' programs. No specific measures were established for that goal. To quantify progress toward this goal, the evaluation team tracked instances of peer learning by States, and conducted Quarterly Assessments of State experiences with the Learning Collaborative. However, measuring the quality of the information sharing and its impact on State activities was more difficult to assess.

Although there were some common themes across States' MIPCD Learning Collaborative goals, States varied in terms of prioritizing peer sharing over wanting to learn about specific program topics and vice versa. For example, a State might have been most interested in learning about tobacco cessation strategies, and not as interested in learning how other States distributed incentives, or vice versa. This made it difficult at times to craft concrete, rapid-cycle improvement suggestions that would meet the priorities of all States. When States have different goals, a Learning Collaborative may meet the goals of one State but not another. The evaluator's approach in the Quarterly Assessments was to look at the average of States' responses and conclude that an activity was successful if it met more than half of States' goals. While some States reported that the Learning Collaborative was valuable for informing program changes that built upon the experiences of other Grantees, other State Grantees reported that their participation in the Learning Collaborative primarily benefited other States who learned from their program ideas.

5.2 Determining the Learning Collaborative's Influence on Outcomes

At the time of the final assessment, final outcomes and cost data were not available, making it difficult to connect Learning Collaborative activities to program outcomes. Evaluators gauged the Learning Collaborative's influence on program or participant outcomes only through self-reported State information, not through objective or quantitative methods. Working with self-reported information collected over several years was challenging in part because, in half the States, the same person did not complete each Quarterly Assessment. The final Quarterly Assessment, fielded in September 2016, included questions about States' survey-taking patterns. Five States (Hawaii, Montana, New Hampshire, New York, and Texas) reported that the same individual completed each of the 16 Quarterly Assessments, while the other five States (California, Connecticut, Minnesota, Nevada, and Wisconsin) reported that two or three different individuals responded to the Quarterly Assessments over the lifespan of the project. In one State, the change in respondent was due to program staff turnover, which is to be expected in projects spanning several years. As a result, differences in activity ratings may have resulted in part from differences in survey respondents' perceptions, rather than differences in the activities themselves. Respondents also might have had different perceptions of the influence of the Learning Collaborative on program changes or overall outcomes. However, eight States (California, Connecticut, Hawaii, Minnesota, Montana, New Hampshire, New York, and Texas) reported that the person responding to the survey discussed it with colleagues at least half the time.

While some States (Minnesota, Montana, and New Hampshire) identified program elements that were informed by the Learning Collaborative, others struggled to identify a connection between their Learning Collaborative activities and program implementation. As noted in a previous section, some States implemented program changes (such as using participant success stories in sustainability, or using provider incentives) after discussing those elements in the Learning Collaborative. However, the only feasible way to confirm that the Learning Collaborative caused those changes was to ask the Grantees.

For example, New Hampshire reported in a follow-up call that the Learning Collaborative inspired it to create a pool of incentive funds for providers meeting enrollment targets and award additional funds to providers who exceeded the target quota. However, other States were unable to produce similar examples. One State on a follow-up telephone call observed:

> "It's certainly hard to say the Learning Collaborative had a direct relation to utilization of services provided to the participants ... because the Learning Collaborative is so far removed from the program. But the ... activities that are established by the Learning Collaborative help facilitate that success, which trickles down to the participants."

Some federal partners and other non-State stakeholders questioned whether it was appropriate to assess the impact of the MIPCD Learning Collaborative on participant or program outcomes. One stakeholder said, "It's a stretch to expect a learning collaborative to have an effect on outcomes. There might be anecdotal examples, but you can't expect a learning collaborative to contribute to outcomes."

Another stakeholder acknowledged the difficulty determining whether project changes affecting outcomes were prompted by the Learning Collaborative or by the State Grantees' own internal learning processes. As the listing of States' Learning Collaborative Goals in *Table 3* illustrates, States did not aim to affect participant outcomes through the Learning Collaborative.

Finally, the evaluation started after the early Learning Collaborative activities had been planned and implemented. This made it difficult to analyze the effectiveness of those early activities for meeting States' goals and to assess the activities' potential impact.

Neither the diversity of State goals nor the limitations associated with determining the Learning Collaborative's influence on outcomes were insurmountable challenges, however, they were barriers to producing a complete and comprehensive evaluation.

SECTION 6 LESSONS LEARNED FROM THE MIPCD LEARNING COLLABORATIVE

A number of lessons emerge from the MIPCD Learning Collaborative evaluation. The evaluation underscores the importance of the funding entity and/or the learning collaborative administrator establishing clear, measureable goals to maximize the usefulness of future State health policy learning collaboratives and facilitate evaluation. When developing goals, it is important to consider both process and outcome goals. For instance, a learning collaborative could set a process goal of meeting telephonically every month and in person twice a year. Outcomes goals could measure implementation of a specific State policy or establishment of a self-sustaining network of colleagues, perhaps using pre- and post-testing surveys of the activities' measurable results on State policy and peer relationships. Outcomes can be measured in multiple phases, with initial, intermediate, and final outcomes all providing information about the effectiveness of the learning collaborative activities. It is possible for an activity to have a significant initial impact on States that diminishes in intermediate or final assessments, or vice versa. For example, more than half of the MIPCD States reported that TA helped them meet their program goals in the first two Quarterly Assessments by supporting their program design or work with an Institutional Review Board (IRB). However, only two States during February-April 2016 (QA 14), three States during May-June 2016 (QA 15), and no States during July-September 2016 (QA 16) reported that TA helped them meet their program goals. Identifying the activities with the greatest impact at specific phases in a program's implementation could be valuable information for future State health policy learning collaboratives.

Sample State health policy learning collaborative measures are needed to aid in defining and evaluating learning collaborative success. Defining success can be a subjective process. It might be sufficient for a participant to define State health policy learning collaborative success as feeling supported in the research or implementation stage of a program or policy. On the other hand, a funder might want a more rigorous definition (e.g., success means policy implementation directly resulting from learning collaborative activity) to justify learning collaborative financing. Given the challenges of isolating the effect of State health policy learning collaborative activities upon State policies or programmatic changes, measuring success or goals will likely require selfreported information from States. Based on MIPCD State feedback, it appears some combination of these two definitions is preferable. Possible measures to begin to provide necessary data include:

- States' knowledge of other States' models and lessons learned. This could be assessed by polling States pre- and post-learning collaborative activity.
- The degree to which States used information or strategies obtained through the learning collaborative. (This was the primary measure for the MIPCD Learning Collaborative).
 - Have States ever used a measure, tool, resource, or technique that they learned from another State or from the learning collaborative?
 - What strategies related to program design, data collection, or intra-State collaboration were changed or confirmed as a result of learning collaborative activities?

The robustness of the support network developed through the learning collaborative. How many times have States reached out to one another or contacted the federal partner (or funder) with topical questions arising from learning collaborative activities? What was the quality and outcome of those interactions?

Another takeaway is that continually assessing progress on learning collaborative evaluation measures affords the opportunity to respond to assessment findings in real time. For instance, when Quarterly Assessment responses indicated that States were interested in different topics or formats for MIPCD Learning Collaborative activities, the Implementation Contractor was able to adjust activities to better meet State needs. While retrospective assessments may provide valuable information about the effectiveness of learning collaborative activities, they cannot inform mid-stream improvements to activities.

Also, the diversity of State MIPCD approaches and program focus areas limited the extent of peer learning. Most States mentioned the unique nature of their programs when asked about peer-to-peer learning. Several States indicated that the benefits of peer-to-peer learning would have been greater had there been more similarity among program approaches.

It is advisable to revisit goals with State health policy learning collaborative participants. As States moved from program planning and early implementation to full implementation and program closeout, it became clear that the MIPCD Learning Collaborative goals they initially identified might have changed.

Finally, there are trade-offs and key considerations when working with and across State and federal partners. Initiating State health policy learning collaborative activities after—or even at the same time as—securing a federal learning collaborative evaluator might not always be possible, but is preferable. The MIPCD evaluators adapted the original evaluation plan in an effort to limit State burden, which affected results. For example, the evaluators originally planned to have States complete monthly surveys, but changed the strategy to quarterly assessments to minimize State effort. Some States indicated that they had difficulty remembering an activity and related discussions several months after the fact. This may have affected the quality of their responses. Also, the Implementation Contractor could have shifted focus areas or made other changes sooner with more frequent input.

Evidence suggests that States benefited from the MIPCD Learning Collaborative and that State health policy learning collaboratives generally are valuable to States. During follow up calls, eight States indicated that they would recommend that CMS include a State health policy learning collaborative in future initiatives similar to MIPCD; none of the States said they would recommend *against* a future learning collaborative. Of the States recommending a future State health policy learning collaborative; six were unequivocal in their support, the other two replied in the affirmative but added caveats (i.e., "I would say [learning collaboratives] need to be more malleable and more responsive if all Grantees identify needs so they can actually mold to those needs better;" and, "It might depend on the program.").

Two States did not recommend or advise against a future learning collaborative; they suggested learning collaboratives would be advisable for some CMS projects but not others:

- "It depends on the type of demonstration. The learning collaborative needs to be tailored to the program or demonstration."
- "I don't know how much money was spent on it, but there would have to be a cost benefit analysis. I think it was interesting and valuable to have the contacts and learn about what other States had going on. Creating that healthy peer pressure and competition can be good for programs. It would be good to offer learning collaboratives to projects that are more similar than across the MIPCD States."

States that unequivocally recommended a future learning collaborative mentioned the value of the MIPCD Learning Collaborative for leveraging others' lessons learned, accessing needed comparative information, and/or fostering camaraderie, as mentioned previously:

- "It enhanced the ability to do that rapid cycle response because you could see it going on across the country. Just by listening, you could pick up a variety of small pieces of information that might have us thinking differently."
- "It made the program more efficient and effective because you get to use the other States' programs as a resource to build upon and because the States were able to share learnings with one another."
- "You can't always find what you need by yourself. If you're looking for information or guidance, you can't work in a vacuum. It helps to know you're not the only one with an issue. You never know what you'll find out from other States. You can make connections [and] get great ideas and concepts you can bring back and implement."

SECTION 7 SUMMARY

7.1 Findings Related to the Research Questions

With the use of qualitative methods, the evaluators can partially answer each of the three research questions:

(1) How did Learning Collaborative activities align with stakeholder goals?

Learning Collaborative activities definitively aligned well with program and Learning Collaborative goals.

Program Goals: Seven States (Connecticut, California, Hawaii, Minnesota, Montana, Texas, and Wisconsin) indicated that more than half of activities met their overarching program goals related to chronic disease prevention and management.^{xiv}

Learning Collaborative Goals: The average State rating of how well activities supported States in meeting their Learning Collaborative goals was "good" (3.41 on a five point scale). On average, nine States (Connecticut, California, Hawaii, Minnesota, Montana, New Hampshire, Nevada, Texas, and Wisconsin) reported that the Learning Collaborative activities met their Learning Collaborative goals, by hearing about each other's projects, discussing specific implementation or evaluation strategies, and receiving assistance from experts (See *Figure 6*). All other interviewed stakeholders (the Implementation Contractor, including TA faculty, and CMS) reported that the complement of activities met their respective Learning Collaborative goals, which included providing a venue for State networking and learning, addressing State challenges, and learning from State experiences.

Figure 6 Average Rating of How Well Activities Met States' Learning Collaborative Goals, by State*



*Note: Activity ratings from 3 (good) to 5 (excellent) were considered to have met the States' Learning Collaborative goals.

(2) How did Learning Collaborative activities influence each State's short- and longterm project activities and program changes?

The evaluation shows that activities contributed to a range of implementation, evaluation, closeout, and sustainability planning decisions in nine States. The Learning Collaborative activities, primarily In-Person meetings, confirmed or informed State strategies for engaging or retaining participants and providers, designing and implementing incentives, collecting and analyzing data, disseminating program results, and implementing Medicaid policy changes to help sustain MIPCD components.

(3) How did the Learning Collaborative contribute to participant and overall program outcomes and could any program changes affecting service utilization, beneficiary satisfaction, and/or administrative costs be attributed to the Learning Collaborative?

Based on States' self-reports, the Learning Collaborative did contribute to outcomes in small ways by informing program changes that affected service utilization and, to a lesser extent, beneficiary satisfaction and administrative costs in some States. The evaluators did not confirm

examples identified by States through quantitative analysis to determine, for example, that utilization increased to a certain point in a State's program. Most States reported that the Learning Collaborative contributed to outcomes, but they found it difficult to demonstrate or identify how. In follow-up calls, seven States reported that the Learning Collaborative contributed to participant and program outcomes overall, but only two States (Montana and Wisconsin) identified a specific program change and related outcome. Based on an idea from Hawaii, Montana created a card for participants that summarized goals and incentives and allowed them to check off their goals met and incentives earned. Montana reported that the card increased participants' awareness of incentives. Wisconsin used provider engagement materials adapted from other Grantees, and collected participant success data as a result of information shared in the Learning Collaborative. Wisconsin reported that those changes contributed to participant and program outcomes. The State shared that requiring regular reporting on participant progress was a strategy informed by the Learning Collaborative, and it helped keep stakeholders accountable by showing how they compared to others.

7.2 Implications for Other CMS Projects

Overall, States and stakeholders indicated that future projects should include learning collaboratives. States consistently cited the benefits of learning and borrowing from each other through the MIPCD Learning Collaborative activities. States reported they benefitted not only from concrete strategies they heard from peers, but also from the shared experience of tackling implementation of a large program. They were not alone in feeling frustrated or in overcoming challenges to achieve implementation, which they all did successfully. The Learning Collaborative proved to be valuable to federal officials as well. One observed, "This was a huge opportunity for [federal officials] to engage directly with the States."

Below is a list of suggestions for future learning collaboratives based on the MIPCD evaluation:

- Include regular In-Person meetings. Most program changes attributable to the MIPCD Learning Collaborative stemmed from conversations or presentations at one of the biannual In-Person meetings. Participants expressed interest in meeting in person more frequently. One federal stakeholder said that incorporating more In-Person meetings into the Learning Collaborative would have been preferable had it been feasible under federal government fiscal constraints.
- Empower States to lead activities. MIPCD Learning Collaborative activity ratings rose when States facilitated discussions, e.g., as part of In-Person meeting breakout sessions or during monthly calls. Providing support and guidance to States to carry out these activities, as the Implementation Contractor did, appeared to reduce State burden. Activity topics increasingly reflected State requests and activities that directly arose out of State requests were among the highest rated. A federal stakeholder reported that monthly calls were more productive when States led the discussions instead of the Implementation Contractor.
- **Evaluate regularly.** The Implementation Contractor, TA faculty, and federal officials benefited from feedback received from regular evaluations. The Implementation

Contractor used this information to identify activity topics and plan agendas. Several States and stakeholder interviewees indicated a desire for States to have the opportunity to provide feedback more frequently than quarterly. One stakeholder suggested that periodic assessments occur when States are implementing a project, and then decrease in frequency once States transition to a project's maintenance phase. Future projects could consult with State participants to identify the preferred evaluation schedule.

Be flexible. TA faculty initially planned to provide TA about specific interventions, e.g., smoking cessation or the Diabetes Prevention Program, but shifted to broader strategies (e.g., provider engagement) that were applicable across States regardless of disease focus. This rapid cycle feedback provided to the Implementation Contractor included a suggestion to implement weekly email updates to States with any new information posted to MIPCD.net because most States did not seek out the website on their own. States greatly appreciated the weekly emails.

Two key considerations are important for future learning collaboratives:

First, stakeholders noted the element of chance. They mentioned that a successful learning collaborative requires engaged, trusting participants who actively participate and are willing to share their challenges as readily as their successes. Had less forthcoming or generous participants been part of the MIPCD Learning Collaborative, it might have been viewed less favorably by States and stakeholders or informed program changes.

Second, a learning collaborative with a website and regular calls provides a way to offset the challenges of staff turnover in State government. Having activity recordings and materials posted on MIPCD.net enabled new participants to access pertinent information. The MIPCD Learning Collaborative activities also offered an infrastructure and resource where new participants could ask questions or get input.

7.3 Looking Ahead

Questions remain about how to assess the impact of a State health policy learning collaborative upon health care program outcomes. Is impact on program participants or on overall program clinical outcome a reasonable expectation for a State health policy learning collaborative? A few participating States and other key stakeholders did not think so. Due to the difficulty of isolating factors associated with participant-level outcomes, the MIPCD Learning Collaborative evaluation used qualitative data to examine impact on program outcomes and found limited impact.

Future research could explore expanding the use of quantitative data (e.g., Medicaid claims, program-specific reporting) to identify potential State health policy learning collaborative points of impact on beneficiary outcomes. Future research also might continue to consider appropriate goals and expectations for State health policy learning collaboratives generally.

7.4 Conclusion

States and stakeholders recommended including learning collaboratives in future projects. States reported benefitting from the concrete information and strategies shared in the MIPCD Learning Collaborative, as well as from the camaraderie and peer support that developed from their shared experiences implementing a large program. Not all States confirmed the implementation of a specific MIPCD program element or strategy based on a MIPCD Learning Collaborative activity, but every State expressed some degree of support for future State health policy learning collaboratives. This finding indicates there was value to States even without resulting program changes or quantifiable policy impact. For example, all States expressed appreciation for regular opportunities to connect with each other, federal partners, and other experts.

It is difficult to assess what challenges or delays States avoided and what insights they gleaned that would have otherwise been missed without the MIPCD Learning Collaborative. At least two States indicated that the ability to learn from each other's stumbles, to avoid reinventing the wheel, and to experience implementation together made their use of grant dollars more effective and efficient. For them, peer learning saved time and money. States expressed their appreciation for the Learning Collaborative in the July-September 2016 Quarterly Assessment (Quarterly Assessment 16):

- "The Learning Collaborative of States was helpful as we all faced similar challenges in every aspect from contracts, engagement, enrollment, implementation and data collection."
- "The Learning Collaborative created an effective network for us as Grantees to interact with each other, access resources, share materials, and connect with our TA team. It was helpful to stay in touch regularly throughout the project period, share updates from our implementation, and learn from each other. I appreciated the variety of ways in which the Learning Collaborative was set up: In-Person meetings, conference calls, forums, online resources, and webinars. The documentation was organized and accessible so that we could always refer back to the materials again or in case we had to miss an event. Thank you for all the effort put into this!"
- "In general, the technical assistance provided and the support through the Learning Collaborative and In-Person meetings were very helpful as we developed, implemented, and evaluated our study."
- "This was a great experience...There were many lessons learned throughout this process that will be beneficial to the development of other programs. The support given to the States was also fantastic and very much appreciated. I hope there will be other grants available like this in the future. Thank you."

Results suggest that convening States with more similar programs would increase the usefulness and perhaps effectiveness and efficiency of a State health policy learning collaborative. For demonstrations like MIPCD, it might be advisable to include sets of learning

collaborative activities for subgroups of States with similar program features (e.g., for States supporting weight loss among individuals with serious and persistent mental illness).

Overall, the MIPCD Learning Collaborative evaluation indicates that as CMS and other federal entities support health and health care policy innovation among States, health policy learning collaboratives are a worthwhile mechanism to foster diffusion and collaboration.

APPENDIX PROGRAM CHANGES INFORMED OR CONFIRMED BY THE MIPCD LEARNING COLLABORATIVE (LC), AS REPORTED BY STATES IN JUNE 2016

*Note: Changes listed under "Previously Reported as Informed or Confirmed by LC" were reported by the State in a follow-up call or Quarterly Assessment prior to June 2016 as being either informed or confirmed by the LC. However, in June 2016 (Quarterly Assessment 15) the State reported the change as neither informed nor confirmed by the LC.

Stata	Change Informed by the LC	Change Confirmed by the LC	Change Previously Reported as	Total
State	Change Informed by the LC	Change Commined by the EC	Informed or Confirmed by LC*	Changes
California	 Recruited quitters to share stories Filmed videos for provider trainings 	 Confirmed the need to expand beyond physician contact Confirmed the importance of reaching out to targeted populations Used Twitter and Facebook; translated messages and sent to partners for posting Confirmed the importance of sustainability efforts and evaluation Confirmed the decision to get feedback from Managed Care Health Educators on reaching members through Medi-Cal Incentives to Quit Smoking mailings Confirmed the importance of informing 	 Initiated new provider engagement plans 	Changes
		partners about program closing	1	
Subtotal		0		9

State	Change Informed by the LC	Change Confirmed by the LC	Change Previously Reported as Informed or Confirmed by LC*	Total Changes
Connecticut	 Informed provider recruitment strategies Helped with negotiations between the Department of Social Services and the Department of Public Health Quitline that were influenced by information from California and Wisconsin regarding their Quitline costs per call Confirmed State's decision to provide providers with additional resources Used Hawaii's experience with paying Medicaid members to increase survey response rate to guide determination of an amount to pay members in a similar situation Outreach strategies, including to pregnant/post-partum women, were influenced by Wisconsin and New Hampshire Worked with vendors, providers and enrollees to identify key close-out activities and evaluation plans 		Informed or Confirmed by LC*	Changes
Subtotal	6	0	0	6

State	Change Informed by the LC	Change Confirmed by the LC	Change Previously Reported as	Total
State	Change informed by the EC	Change Commined by the LC	Informed or Confirmed by LC*	Changes
Hawaii	 Adapted data submission based upon the questions answered in monthly call Made data changes as a result of input from TA contractor Made a pocket "cheat sheet" card for providers based on New Hampshire's idea Used testimonials and success stories in promotional materials Preliminarily discussed 1115 waiver option with the Hawaii Department of Human Services 	 Added a randomized controlled trial design to the project Developed a stakeholder exit survey and conducted close-out interviews 	 Confirmed provider recruitment strategies involving community health workers Reinforced strategy for collecting incentive data Revised incentive schedule Planned for closeout and made a timeline for final reports Developed a newsletter for each community health center with specific data and an aggregate newsletter to be shared with all executive directors Confirmed the need to continue outreach efforts to ensure sustainability Created a control group of Medicaid adults with diabetes 	
Subtotal	5	2	7	14

State	Change Informed by the LC	Change Confirmed by the LC	Change Previously Reported as	Total
State	change informed by the EC	Change Comminde by the LC	Informed or Confirmed by LC*	Changes
Minnesota	 Built provider engagement into clinic training; conducted individual clinic visits to develop and implement a plan in each clinic; developed a provider-specific letter and brochure; incorporated other provider engagement strategies Implemented recruitment strategies: borrowed from Montana's provider recruitment and communication materials; spoke with Wisconsin about recruitment, implemented refer-a-friend voucher based on TA Implemented provider outreach strategies and engaged the Hmong community with the help of TA Confirmed the use of Facebook as an effective recruitment tool 	 Established the process for a dry data run Confirmed the need for more targeted broad outreach and revisions to marketing materials Confirmed ongoing training as an approach to addressing staff turnover Talked with New York about how they met with insurance plans to bring them on board with the project Tweaked the evaluation template based on feedback from States State sharing helped confirm close-out activities like exit interviews and focus groups 	Drafted a clinic follow-up lab letter and disseminated it to clinic partners	
Subtotal	4	6	1	11

State	Change Informed by the LC	Change Confirmed by the LC	Change Previously Reported as Informed or Confirmed by LC*	Total Changes
Montana	 Adapted materials from Texas for phone recruitment script Decided the last cohort to receive incentives with help of Learning Collaborative discussion Completed the evaluation plan template from Minnesota and added lessons learned Learned from Texas and Wisconsin about close-out communication with contractors and Medicaid beneficiaries 	 Implemented satisfaction survey pretesting in October/November and received feedback Confirmed sustainability plans for lifestyle coach trainings and turnover after hearing from Minnesota. Included time at a diabetes prevention program (DPP) lifestyle coach training to share tips on participant retention. Worked on publishing and sharing work with encouragement from Minnesota Promoted and monitored Medicaid reimbursement; arranged a phone call with Minnesota Reached out to Minnesota on including DPP referrals in electronic health records (EHRs) 		
Subtotal	4	5	0	9
Nevada	 Confirmed recruitment strategies and motivations, such as using the Latin press and telephonic recruitment. Drafted a recruitment plan using strategies from Wisconsin and Texas. 	• Created provider education modeled after some of the other MIPCD grantee States.	 Shifted to phased implementation Developed training about the MIPCD grant for program partners and their staff members Made an effort to have telephone and in-person meetings with program partners in Las Vegas. Considered sending a weekly enrollment update to program partners. 	
Subtotal	1	1	3	5

Stata	Change Informed by the LC	Change Confirmed by the LC	Change Previously Reported as	Total
State	Change Informed by the EC	Change Commined by the LC	Informed or Confirmed by LC*	Changes
New Hampshire	• Worked with the TA team to develop a survey to learn more about the increase in the incentive for tobacco education	 Confirmed the value and importance of estimating program costs Began conversations with leaders at participating sites to identify in-house champions, particularly for the smoking cessation portion Tracked individual referrals to recognize the highest producing individuals at each provider site. Requested approval from CMS to provide financial incentives to sites that meet recruitment strategies. 	 Implemented recruitment ideas and marketing strategies Increased incentives for tobacco education Created a sustainability committee Shared with leaders of participating sites the data on enrollment for all sites as a way to motivate staff to refer consumers Broadened base for enrolling people in the Tobacco Education and Smoking Cessation programs. Worked to engage peer support centers around the State as well as select federally qualified health centers (FQHCs) 	
Subtotal	1	3	5	9
New York			 Confirmed that sustainability efforts will help support the program Finalized evaluation plans Planned to conduct cost benefit and cost effectiveness analysis Discussed collaborating with other States on program dynamics Investigated using social media for advertising 	
Subtotal	0	0	5	5

State	Change Informed by the LC	Change Confirmed by the LC	Change Previously Reported as Informed or Confirmed by LC*	Total Changes
Texas	 Made progress on sustaining individual components of the project Informed strategies for keeping participants engaged and for post-intervention transition planning, closeout, and evaluation activities 	 Collected participant success stories on an ongoing basis Informed and confirmed use of large incentives and incentive flexibility Confirmed recruitment strategies, such as direct-to-client recruitment rather than provider-centric recruitment and focus on MHSA (Mental Health Service Act) population Confirmed enrollment and benefit management choices Validated and reinforced commitment to the Zelen design 	Developed a report detailing participant outcomes rather than process outcomes	
Subtotal	2	5	1	8

State	Change Informed by the LC	Change Confirmed by the LC	Change Previously Reported as	Total
State	Change Informed by the EC	Change Commined by the LC	Informed or Confirmed by LC*	Changes
Wisconsin		 Explored post-grant sustainability, particularly incorporating sustainability into State budget requests. Worked to identify the costs, services, and evaluation pieces specific to the grant versus long term Confirmed strategies for and importance of communicating with stakeholders Recruited pregnant women through existing First Breath program, promoted the program to MA beneficiaries, and acknowledged the importance of member recruitment. Used social media for outreach; considered using TV ads Collected and shared participant stories Worked to increase provider engagement 	 Reported on participation progress to hold stakeholders accountable Used focus groups Considered streamlining lab/clinic reporting to ensure potential participants are not left without hearing from the program Chose a bio-chemical test with input from MIPCD State experts Included dual-eligible participants Implemented clinic support payments 	
Subtotal	0	6	6	12
Total	25	34	29	88

ENDNOTES

ⁱThis calculation counts MIPCD.net and TA as separate activities each quarter, for a total of 15 activities each in August 2016.

ⁱⁱ Quarterly Assessments began with the August 2012 Learning Collaborative activities and did not include Learning Collaborative activities that took place prior to August 2012, such as the May 2012 In-Person meeting and the June and July 2012 monthly program activity calls.

ⁱⁱⁱ "Learning Collaborative" is capitalized when referring to the MIPCD Learning Collaborative, but not when referring to learning collaboratives in general.

^{iv} While this document focuses on learning collaboratives in the field of health care, other work has examined learning collaboratives in the field of education. For example, Cynthia L. Blitz examined the effectiveness of online and traditional learning communities for teachers. The literature surveyed by this article concludes that traditional (i.e., not entirely online) professional learning communities in the field of education are most effective when the learning community is centered on a problem, and participants' learning is self-directed. While most evaluations of professional learning collaboratives are case studies relying on self-reported information, the few studies that rigorously examine the effectiveness of professional learning communities suggest that they have some positive impact on student achievement by changing teachers' classroom practices. Factors identified as key to the success of the learning communities are high-quality technical support, staff expertise, robust data, and ample time for peer-to-peer collaboration. (See Blitz, Cynthia L. "Can Online Learning Communities Achieve the Goals of Traditional Professional Leaning Communities? What the Literature Says." Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Mid-Atlantic, 2013. http://ies.ed.gov/ncee/edlabs).

^v Medicaid.gov, "Medicaid and CHIP Learning Collaboratives," <u>https://www.medicaid.gov/state-resource-center/mac-learning-collaboratives/medicaid-and-chip-learning-collab.html</u>, accessed August 24, 2016.

^{vi} Chilingerian, J., Flieger, S., and Hart, A.R. Establishing an AHRQ Learning Collaborative: A

White Paper. (Prepared by Professional and Scientific Associates under contract 290-10-000190). AHPO Publication No. 12 0037 FF. Pockville, MD: Agency for Healthcare Pescarch and

000190). AHRQ Publication No. 12-0037-EF. Rockville, MD: Agency for Healthcare Research and Quality; March 2012. <u>http://www.ahrq.gov/sites/default/files/publications/files/learningcollab.pdf</u>, accessed October 24, 2016.

See also Stoll, Louise et al. "Professional Learning Communities: A Review of the Literature," *Journal of Educational Change* 7 (2006): 221-258.

http://schoolcontributions.cmswiki.wikispaces.net/file/view/PROFESSIONAL%20LEARNING%20COMMUNITIE S%20A%20REVIEW%20OF.pdf, accessed October 24, 2016.

^{vii} Devers, Kelly J. "Summary: The State of Quality Improvement Science in Health: What do we Know About How to Provide Better Care?" The Urban Institute (2011), p.2. <u>http://research.urban.org/uploadedpdf/412454-State-of-Quality-Improvement-Science-in-Health-Summary.pdf</u>

^{viii} Schouten L, Hulscher M, Everdingen J, et al. Evidence for the impact of quality improvement collaboratives: systematic review. BMJ 2008; 336(7659):1491-94; qtd. in Peters, Rebecca, Rachel Burton, and Kelly Devers. "How Did CHIPRA Demonstration States Employ Learning Collaboratives to Improve Children's Health Care Quality?" *The National Evaluation of the CHIPRA Quality Demonstration Grant Program, Evaluation Highlight* 13. Rockville: U. S. Agency for Healthcare Research and Quality, June 2015.

http://www.ahrq.gov/policymakers/chipra/demoeval/what-we-learned/highlight13.html, accessed October 24, 2016. ^{ix} Ibid.

^x Associates in Process Improvement, <u>http://www.apiweb.org</u>, accessed February 26, 2016.

^{xi} *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement*. IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003, p. 6. Available at:

http://www.ihi.org/resources/pages/ihiwhitepapers/thebreakthroughseriesihiscollaborativemodelforachievingbreakth roughimprovement.aspx, accessed October 24, 2016

^{xii} Joly, Brenda M., Maureen Booth, George Shaler, and Ann Conway. "Quality Improvement Learning Collaboratives in Public Health: Findings from a Multi-Site Case Study." *Journal of Public Health Management & Practice* 18.1 (2012): 87-94. See also AcademyHealth, "Quality Improvement in Public Health: Lessons Learned from the Multi-State Learning Collaborative," which draws upon and summarizes the work of Joly et al. on the public health Multi-State Learning Collaborative. Available at:

https://www.academyhealth.org/files/interestgroups/phsr/AH RI Quality Improvement.pdf

^{xiii} From "Professional Learning Communities: Key Themes from the Literature," conducted by The Education Alliance at Brown University under a subcontract from Hezel Associates, LLC, general evaluation contractor for PBS TeacherLine, under a U.S. Department of Education Ready to Teach grant.) http://www.misalondon.ca/PDE/BIP/SupportMaterials/Professional_Learning_Communities.pdf

http://www.misalondon.ca/PDF/BIP/SupportMaterials/Professional_Learning_Communities.pdf xiv This calculation counts MIPCD.net and TA as separate activities each quarter. [This page intentionally left blank]

APPENDIX C: EXPENDITURE AND USE RESULTS

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	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
Diabetes Control					
Hawaii HI-PRAISE - Pre/Post Only ^a					
Incentive Group	\$571	\$740	\$169		169* (109, 229)
Hawaii - HI-PRAISE matched to a comparison group not selected for evaluation					
Incentive Group	\$571	\$741	\$169	\$66	66 (-46, 178)
Control Group	\$531	\$634	\$103		
Hawaii Kaiser					
Incentive Group	\$397	\$371	-\$26	-\$44	-42 (-195, 111)
Control Group	\$335	\$353	\$18		
Nevada-Adult Diabetes Management					
Incentive Group	\$46	\$57	\$11	\$91	88 (-10, 186)
Control Group	\$129	\$49	-\$80		
New York - Diabetes Management					
Process Incentive Group	\$1,444	\$1,562	\$118	-\$46	-40 (-288, 208)
Outcome Incentive Group	\$1,418	\$1,767	\$349	\$185	196 (-218, 610)
Process + Outcome Incentive Group	\$1,261	\$1,454	\$193	\$29	27 (-233, 287)
Control Group	\$1,366	\$1,530	\$164		
New York - Hypertension Management					
Process Incentive Group	\$1,337	\$1,581	\$244	\$326	312* (63, 561)
Outcome Incentive Group	\$1,594	\$1,536	-\$58	\$24	17 (-240, 274)
Process + Outcome Incentive Group	\$1,466	\$1,288	-\$179	-\$97	-95 (-476, 286)
Control Group	\$1,474	\$1,392	-\$82		
<i>Diabetes Prevention</i> Minnesota					
Individual Incentive Group	\$375	\$351	-\$24	-\$90	-127* (-236, -18)
Individual + Group Incentive Group	\$445	\$526	\$81	\$14	7 (-104, 118)
Control Group	\$425	\$492	\$67		
Montana					
Incentive Group	\$1,050	\$915	-\$135	-\$92	-99 (-370, 172)
Control Group	\$1,049	\$1,005	-\$44		

Table C-1Average total PMPM Medicaid expenditures in diabetes prevention, diabetes management,
and weight management programs, by State

(continued)

	Pre	Post	Difference	Difference-in-	Covariate-Adjusted Regression: Difference-in- Differences
	(mean)	(mean)	(mean)	Differences	(coefficient, 90% CI)
New York					
Process Incentive Group	\$1,260	\$1,283	\$23	\$82	58 (-213, 329)
Outcome Incentive Group	\$758	\$606	-\$152	-\$93	-148 (-343, 47)
Process + Outcome Incentive Group	\$1,047	\$733	-\$314	-\$255	-311 (-841, 219)
Control Group	\$1,110	\$1,051	-\$59		
<i>Weight Management</i> Nevada-Children's Healthy Hearts Study					
Child Only Incentive Group	\$63	\$68	\$5	-\$55	-38 (-101, 25)
Child + Parent Incentive Group	\$67	\$64	-\$3	-\$63	-49 (-112, 14)
Control Group	\$108	\$169	\$60		
New Hampshire-Gym Membership					
Incentive Group	\$868	\$816	-\$52	\$41	101 (-90, 292)
Control Group	\$902	\$809	-\$93		
New Hampshire-InShape					
Incentive Group	\$1,004	\$836	-\$168	-\$50	-69 (-193, 55)
Control Group	\$1,067	\$949	-\$118		
New Hampshire-Weight Watchers					
Incentive Group	\$1,006	\$915	-\$91	\$62	-1 (-293, 291)
Control Group	\$1,074	\$920	-\$153		
New Hampshire-InShape + Weight Watchers					
Incentive Group	\$1,028	\$782	-\$246	-\$181	-175* (-333, -16)
Control Group	\$973	\$907	-\$66		

Table C-1 (continued)Average total PMPM Medicaid expenditures in diabetes prevention, diabetes management,
and weight management programs, by State

Notes: * p < 0.10

^a There is no control group for this intervention. Covariate-adjusted regression is pre/post difference.

	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
Diabetes Control					
Hawaii HI-PRAISE - Pre/Post Only ^a					
Incentive Group	\$122.27	\$144.96	\$22.69		17 (-21, 56)
Hawaii - HI-PRAISE matched to a comparison group not selected for evaluation					
Incentive Group	\$122.28	\$145.10	\$22.82	-\$35.69	-36 (-133, 62)
Control Group	\$104.32	\$162.84	\$58.52		
Hawaii Kaiser					
Incentive Group	\$69.44	\$97.86	\$28.42	-\$3.64	-4 (-106, 98)
Control Group	\$34.38	\$66.43	\$32.05		
Nevada-Adult Diabetes Management					
Incentive Group	—	—		—	—
Control Group	_	—	—		
New York - Diabetes Management					
Process Incentive Group	\$262.93	\$272.20	\$9.27	-\$24.88	-22 (-203, 159)
Outcome Incentive Group	\$259.09	\$238.33	-\$20.76	-\$54.90	-50 (-225, 126)
Process + Outcome Incentive Group	\$190.04	\$194.06	\$4.03	-\$30.12	-27 (-202, 149)
Control Group	\$287.59	\$321.73	\$34.14		
New York - Hypertension Management					
Process Incentive Group	\$271.56	\$335.11	\$63.54	\$151.33	148* (17, 280)
Outcome Incentive Group	\$348.61	\$278.71	-\$69.89	\$17.90	17 (-102, 137)
Process + Outcome Incentive Group	\$303.04	\$269.47	-\$33.57	\$54.22	54 (-71, 179)
Control Group	\$290.78	\$202.99	-\$87.79		
Diabetes Prevention					
Minnesota					
Individual Incentive Group	\$42.17	\$13.07	-\$29.10	-\$21.15	-23 (-51, 6)
Individual + Group Incentive Group	\$35.95	\$23.34	-\$12.61	-\$4.66	-5 (-30, 20)
Control Group	\$37.68	\$29.72	-\$7.96		
Montana					
Incentive Group	\$127.95	\$57.62	-\$70.32	-\$55.56	-58 (-131, 15)
Control Group	\$74.13	\$59.36	-\$14.77		

Table C-2 Average inpatient PMPM Medicaid expenditures in diabetes prevention, diabetes management, and weight management programs, by State

(continued)

					Covariate-Adjusted Regression:
	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Differences (coefficient, 90% CI)
New York					
Process Incentive Group	\$253.37	\$239.81	-\$13.56	\$13.10	11 (-138, 160)
Outcome Incentive Group	\$66.36	\$21.53	-\$44.84	-\$18.18	-21 (-129, 88)
Process + Outcome Incentive Group	\$148.70	\$130.46	-\$18.24	\$8.42	-2 (-150, 146)
Control Group	\$212.96	\$186.30	-\$26.66		
Weight Management					
Nevada-Children's Healthy Hearts Study					
Child Only Incentive Group		—	—	_	—
Child + Parent Incentive Group		—	—	—	_
Control Group	—	—	—	—	
New Hampshire-Gym Membership					
Incentive Group	\$17.43	\$3.97	-\$13.46	-\$7.32	-6 (-23, 11)
Control Group	\$24.57	\$18.44	-\$6.14		
New Hampshire-InShape					
Incentive Group	\$30.06	\$22.31	-\$7.75	\$11.05	11 (-12, 35)
Control Group	\$35.42	\$16.62	-\$18.80		
New Hampshire-Weight Watchers					
Incentive Group	\$27.83	\$16.76	-\$11.07	\$3.81	6 (-26, 37)
Control Group	\$33.27	\$18.35	-\$14.92		
New Hampshire-InShape + Weight Watchers					
Incentive Group	\$48.85	\$20.68	-\$28.16	-\$37.80	-38* (-69, -8)
Control Group	\$22.48	\$32.11	\$9.63		

Table C-2 (continued)Average inpatient PMPM Medicaid expenditures in diabetes prevention, diabetes
management, and weight management programs, by State

Notes: * p < 0.10

^a There is no control group for this intervention. Covariate-adjusted regression is pre/post difference.

Rates of inpatient visits were very low in Nevada, so inpatient expenditures are not reported for Nevada's programs.
	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
Diabetes Control			. ,		
Hawaii HI-PRAISE - Pre/Post Only ^a					
Incentive Group	5.12	5.62	0.50		1 (0,1)
Hawaii - HI-PRAISE matched to a comparison group not selected for evaluation					
Incentive Group	5.12	5.62	0.50	0.11	0 (-1,1)
Control Group	4.63	5.02	0.38		
Hawaii Kaiser					
Incentive Group	8.31	5.54	-2.77	-2.36	-2 (-7,3)
Control Group	7.22	6.81	-0.41		
Diabetes Prevention					
Minnesota					
Individual Incentive Group	8.66	7.76	-0.91	-0.09	0 (-5,4)
Individual + Group Incentive Group	16.91	12.52	-4.40	-3.59	-3 (-11,4)
Control Group	8.92	8.11	-0.81		
Montana					
Incentive Group	9.61	7.95	-1.66	-1.18	-1 (-5,2)
Control Group	5.90	5.41	-0.49		
Weight Management					
New Hampshire-Gym Membership					
Incentive Group	15.63	12.96	-2.67	-1.32	-2 (-10,6)
Control Group	18.59	17.24	-1.34		
New Hampshire-InShape					
Incentive Group	28.18	20.55	-7.64	-3.34	-3 (-11,5)
Control Group	28.50	24.21	-4.30		
New Hampshire-Weight Watchers					
Incentive Group	14.98	15.69	0.72	0.72	1 (-10,12)
Control Group	27.94	27.94	-0.01		
New Hampshire-InShape + Weight Watchers					
Incentive Group	30.28	25.13	-5.14	-4.53	-5 (-14,5)
Control Group	28.59	27.98	-0.61		

Table C-3 Average emergency department PMPM Medicaid expenditures in diabetes prevention, diabetes management, and weight management programs, by State

Notes: * p<0.10

^a There is no control group for this intervention. Covariate-adjusted regression is pre/post difference.

Rates of ED visits were very low in Nevada, so ED expenditures are not reported for Nevada's programs. New York's data related to ED visits were not reliable, so ED expenditures are not reported for New York's programs.

	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
Diabetes Control & Weight					
Management					
Hawaii HI-PRAISE - Pre/Post Only ^a					
Incentive Group	5.6%	5.5%	-0.04%		5.28* (4.75, 5.81)
Hawaii - HI-PRAISE matched					
to a comparison group not selected for evaluation					
Incentive Group	5.6%	5.5%	0.0%	-0.1%	-0.24 (-1.13, 0.65)
Control Group	5.4%	5.5%	0.1%		
Hawaii Kaiser					
Incentive Group	3.2%	2.5%	-0.8%	-0.8%	-0.77 (-4.16, 2.62)
Control Group	2.3%	2.4%	0.1%		
New York - Diabetes					
Management					
Process Incentive Group	6.1%	5.7%	-0.4%	0.1%	0.18 (-1.91, 2.27)
Outcome Incentive Group	5.7%	5.9%	0.2%	0.7%	0.83 (-1.19, 2.85)
Process + Outcome Incentive Group	4.0%	3.7%	-0.2%	0.3%	0.21 (-1.37, 1.79)
Control Group	5.6%	5.1%	-0.5%		
New York - Hypertension Management					
Process Incentive Group	7.0%	7.6%	0.6%	1.5%	1.58 (-0.54, 3.7)
Outcome Incentive Group	7.6%	6.6%	-1.0%	-0.1%	0.12 (-2.1, 2.34)
Process + Outcome Incentive Group	6.8%	5.7%	-1.0%	-0.2%	-0.01 (-1.98, 1.96)
Control Group	5.9%	5.0%	-0.9%		
Diabetes Prevention & Weight Management					
Minnesota					
Individual Incentive Group	4.6%	3.2%	-1.3%	-1.7%	-1.81* (3.32, -0.30)
Individual + Group Incentive Group	5.3%	4.5%	-0.9%	-1.3%	-1.3 (-2.86, 0.26)
Control Group	4.3%	4.7%	0.4%		
Montana					
Incentive Group	4.9%	3.7%	-1.2%	-2.4%	-2.6 (-6.12, 0.92)
Control Group	4.0%	5.2%	1.2%		
New York					
Process Incentive Group	4.3%	3.1%	-1.2%	-0.8%	-1.03 (-3.1, 1.04)
Outcome Incentive Group	2.2%	1.0%	-1.3%	-0.9%	-1.15 (-2.43, 0.13)
Process + Outcome Incentive	3.5%	3.6%	0.2%	0.5%	0.3 (-2.04, 2.64)
Control Group	4.9%	4.5%	-0.4%		

Table C-4Prevalence of having an inpatient admission per quarter in diabetes prevention, diabetes
management, and weight management programs, by State

(continued)

Table C-4 (continued) Prevalence of having an inpatient admission per quarter in diabetes prevention, diabetes management, and weight management programs, by State

					Covariate-Adjusted
					Difference-in-
	Pre	Post	Difference	Difference-in-	Differences
	(mean)	(mean)	(mean)	Differences	(coefficient, 90% CI)
Obesity/Weight Management					
New Hampshire-Gym Membership					
Incentive Group	2.7%	1.5%	-1.1%	-0.8%	-0.88 (-3, 1.24)
Control Group	3.8%	3.4%	-0.4%		
New Hampshire-InShape					
Incentive Group	3.4%	3.5%	0.1%	0.4%	0.47 (-0.76, 1.7)
Control Group	3.3%	3.0%	-0.3%		
New Hampshire-Weight Watchers					
Incentive Group	3.6%	3.4%	-0.2%	0.4%	0.32 (-2.34, 2.98)
Control Group	3.8%	3.2%	-0.6%		
New Hampshire-InShape + Weight Watchers					
Incentive Group	4.1%	3.2%	-0.9%	-0.3%	-0.3 (-1.68, 1.08)
Control Group	3.5%	2.9%	-0.6%		

Notes: * p<0.10

^a There is no control group for this intervention. Covariate-adjusted regression is pre/post difference.

Participants in Nevada' adult diabetes management program and the children's Healthy Hearts program had few inpatient admissions, so we did not examine that outcome for Nevada.

The Puhani method was used to convert the covariate adjusted difference-in-difference estimate into a difference of predicted probabilities of using the service.

Table C-5

Prevalence of having an emergency department visit per quarter in diabetes prevention, diabetes management, and weight management programs, by State

					Covariate-Adjusted
				Difference	Regression:
	Pre	Post	Difference	in-	Differences
	(mean)	(mean)	(mean)	Differences	(coefficient, 90% CI)
Diabetes Control & Weight Management					
Hawaii HI-PRAISE - Pre/Post Only ^a					
Incentive Group	11.9%	14.3%	2.4%		13.73* (12.87, 14.59)
Hawaii - HI-PRAISE matched to a					
comparison group not selected for evaluation					
Incentive Group	11.9%	14.3%	2.4%	-0.7%	-0.33 (-1.74, 1.08)
Control Group	12.7%	15.8%	3.1%		
Hawaii Kaiser					
Incentive Group	8.7%	7.4%	-0.8%	-1.6%	-1.59 (-6.76, 3.58)
Control Group	7.8%	8.1%	0.3%		
Diabetes Prevention & Weight Management					
Minnesota					
Individual Incentive Group	21.1%	20.3%	-0.8%	-0.2%	-0.39 (-3.12, 2.34)
Individual + Group Incentive Group	24.7%	22.9%	-1.9%	-1.3%	-1.22 (-4.23, 1.79)
Control Group	22.2%	21.6%	-0.6%		
Montana					
Incentive Group	24.8%	17.9%	-6.9%	-9.1%	-10.12* (-16.17, - 4.07)
Control Group	16.3%	18.5%	2.2%		
Obesity/Weight Management					
New Hampshire-Gym Membership					
Incentive Group	20.1%	21.3%	1.2%	7.7%	6.2* (1.22, 11.18)
Control Group	24.8%	18.3%	-6.5%		
New Hampshire-InShape					
Incentive Group	29.0%	22.8%	-6.3%	-2.9%	-3.04 (-6.46, 0.38)
Control Group	28.2%	24.9%	-3.3%		
New Hampshire-Weight Watchers					
Incentive Group	25.7%	22.2%	-3.5%	5.2%	4.41 (-3.17, 11.99)
Control Group	27.4%	18.7%	-8.7%		
New Hampshire-InShape + Weight Watchers					
Incentive Group	31.2%	26.2%	-5.0%	-0.5%	-0.29 (-3.83, 3.25)
Control Group	29.9%	25.4%	-4.6%		

Notes: * p < 0.10

^a There is no control group for this intervention. Covariate-adjusted regression is pre/post difference.

The Puhani method was used to convert the covariate adjusted difference-in-difference estimate into a difference of predicted probabilities of using the service.

Rates of ED visits were very low in Nevada, so ED expenditures are not reported for Nevada's programs. New York's data related to ED visits were not reliable, so ED expenditures are not reported for New York's programs.

	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
Minnesota		· · ·	· · ·		
Individual Incentive Group	76.5%	76.8%	0.3%	0.1%	-0.42 (-3.32, 2.48)
Individual + Group Incentive Group	77.3%	75.7%	-1.6%	-1.9%	-2.07 (-5, 0.86)
Control Group	73.1%	73.4%	0.3%		
Nevada-Children's Healthy Hearts Study					
Child Only Incentive Group	10.1%	12.3%	2.2%	-2.5%	-1.86 (-5.81, 2.09)
Child + Parent Incentive Group	9.5%	11.7%	2.2%	-2.4%	-2.46 (-6.54, 1.62)
Control Group	9.6%	14.2%	4.6%		
New York - Diabetes Management					
Process Incentive Group	10.4%	8.8%	-1.6%	0.6%	0.47 (-2.08, 3.02)
Outcome Incentive Group	13.1%	10.9%	-2.2%	0.0%	0.34 (-2.62, 3.3)
Process + Outcome Incentive Group	11.5%	9.2%	-2.3%	-0.1%	-0.09 (-2.69, 2.51)
Control Group	11.4%	9.2%	-2.2%		
New York - Hypertension Management					
Process Incentive Group	15.4%	11.9%	-3.5%	2.1%	2.62 (-0.31, 5.55)
Outcome Incentive Group	15.2%	9.2%	-6.0%	-0.4%	0.06 (-2.87, 2.99)
Process + Outcome Incentive Group	12.9%	9.7%	-3.2%	2.4%	1.97 (-0.69, 4.63)
Control Group	14.2%	8.6%	-5.6%		

Table C-6 Prevalence of having an office visit per quarter in diabetes prevention, diabetes management, and weight management programs, by State

Notes: * p<0.10

The Puhani method was used to convert the covariate adjusted difference-in-difference estimate into a difference of predicted probabilities of using the service.

	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
California					
Counseling+NRT Group	\$785	\$707	-\$79	-\$20	-30 (-107, 47)
Counseling+NRT+Incentive Group	\$758	\$678	-\$80	-\$21	-28 (-103, 47)
Control Group	\$724	\$665	-\$59		
Connecticut					
Original Incentive Group	\$1,443	\$1,753	\$310	-\$15	-4 (-114, 106)
High Process Incentive Group	\$915	\$1,199	\$284	-\$40	-39 (-291, 213)
High Outcome Incentive Group	\$1,422	\$2,124	\$702	\$378	424 (-63, 911)
Peer Coaching Group	\$1,058	\$1,758	\$701	\$376	344 (-20, 708)
Control Group	\$1,185	\$1,510	\$324		
New Hampshire-Prescriber Referral					
Incentive Group	\$1,149	\$1,043	-\$106	\$123	15 (-304, 334)
Control Group	\$1,601	\$1,372	-\$229		
New Hampshire-Quitline					
Incentive Group	\$1,038	\$882	-\$156	\$166	173 (-5, 351)
Control Group	\$1,105	\$782	-\$322		
New Hampshire-Telephonic cessation counseling					
Incentive Group	\$1,093	\$870	-\$223	-\$30	-16 (-226, 194)
Control Group	\$1,127	\$934	-\$193		
New York					
Process Incentive Group	\$1,741	\$1,697	-\$43	-\$139	-154 (-387, 79)
Outcome Incentive Group	\$1,507	\$1,758	\$251	\$155	178 (-68, 424)
Control Group	\$1,383	\$1,479	\$96		
Wisconsin-Quit Line					
Incentive Group	\$758	\$452	-\$306	-\$115	-108* (-214, -3)
Control Group	\$721	\$534	-\$191		
Wisconsin-First Breath					
Incentive Group	\$359	\$381	\$22	-\$9	-10 (-52, 32)
Control Group	\$333	\$363	\$31		

 Table C-7

 Average total PMPM Medicaid expenditures in smoking cessation programs, by State

Notes: * p<0.10

	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
California					
Counseling+NRT Group	\$79.76	\$46.81	-\$32.95	\$1.88	2 (-113, -30)
Counseling+NRT+Incentive Group	\$89.39	\$34.31	-\$55.07	-\$20.24	-20 (-56, 16)
Control Group	\$70.49	\$35.65	-\$34.84		
Connecticut					
Original Incentive Group	\$258.98	\$206.85	-\$52.12	-\$68.72	-68* (-119, -24)
High Process Incentive Group	\$212.84	\$132.32	-\$80.52	-\$97.12	-99 (-252, 54)
High Outcome Incentive Group	\$161.20	\$275.27	\$114.07	\$97.47	102 (-94, 299)
Peer Coaching Group	\$123.68	\$163.46	\$39.78	\$23.18	20 (-120, 161)
Control Group	\$177.54	\$194.13	\$16.60		
New Hampshire-Prescriber Referral					
Incentive Group	\$13.24	\$20.07	\$6.83	\$16.36	17 (-15, 49)
Control Group	\$30.56	\$21.03	-\$9.53		
New Hampshire-Quitline					
Incentive Group	\$52.83	\$25.64	-\$27.19	-\$18.83	-20 (-47, 6)
Control Group	\$24.60	\$16.24	-\$8.36		
New Hampshire-Telephonic cessation counseling					
Incentive Group	\$44.56	\$19.58	-\$24.98	-\$11.75	-13 (-54, 29)
Control Group	\$30.01	\$16.78	-\$13.23		
New York					
Process Incentive Group	\$295.31	\$263.18	-\$32.13	-\$30.28	-31 (-119, 56)
Outcome Incentive Group	\$275.05	\$347.29	\$72.25	\$74.10	78 (-21, 177)
Control Group	\$285.86	\$284.01	-\$1.85		
Wisconsin-Quit Line					
Incentive Group	\$164.03	\$85.20	-\$78.83	-\$47.80	-49 (-127, 28)
Control Group	\$138.12	\$107.09	-\$31.03		
Wisconsin-First Breath					
Incentive Group	\$52.52	\$98.36	\$45.83	-\$1.44	-2 (-22, 19)
Control Group	\$52.83	\$100.10	\$47.27		

 Table C-8

 Average inpatient PMPM Medicaid expenditures in smoking cessation programs, by State

Note: * p<0.10

					Covariate-Adjusted Regression: Difference-in-
	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Differences (coefficient, 90% CI)
California					
Counseling+NRT Group	59.84	34.02	-25.82	-13.08	-13 (-47, 20)
Counseling+NRT+ Incentive Group	57.27	25.79	-31.48	-18.74	-19 (-52, 14)
Control Group	50.50	37.76	-12.74		
Connecticut					
Original Incentive Group	48.17	46.10	-2.07	-2.58	-3 (-8, 3)
High Process Incentive Group	35.82	32.67	-3.16	-3.66	-4 (-13, 5)
High Outcome Incentive					
Group	54.66	36.38	-18.29	-18.79	-18* (-32, -4)
Peer Coaching Group	25.37	24.58	-0.79	-1.29	-1 (-13, 11)
Control Group	39.61	40.12	0.51		
New Hampshire-Prescriber Referral					
Incentive Group	29.57	22.67	-6.90	-11.34	-9 (-27, 9)
Control Group	29.33	33.76	4.44		
New Hampshire-Quitline					
Incentive Group	39.42	29.02	-10.41	0.19	-1 (-11, 9)
Control Group	30.23	19.64	-10.59		
New Hampshire-Telephonic cessation counseling					
Incentive Group	34.35	25.42	-8.93	4.54	6 (-17, 28)
Control Group	41.50	28.03	-13.47		
Wisconsin-Quit Line					
Incentive Group	36.37	13.48	-22.89	-10.72	-12* (-20, -4)
Control Group	32.25	20.08	-12.17		
Wisconsin-First Breath					
Incentive Group	31.93	23.57	-8.36	-3.62	-4 (-9, 1)
Control Group	31.20	26.46	-4.74		

Table C-9Average emergency department PMPM Medicaid expenditures in smoking cessation
programs, by State

Notes: * p<0.10

New York's data related to ED visits were not reliable, so ED expenditures are not reported for New York's programs.

Table C-10 Prevalence of having an inpatient admission per quarter in smoking cessation programs, by State

					Covariate-Adjusted Regression: Difference-in-
	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Differences (coefficient, 90% CI)
California					
Counseling+NRT Group	6.2%	4.4%	-1.8%	-0.2%	-0.06 (-0.88, 0.76)
Counseling+NRT+Incentive Group	6.0%	4.5%	-1.5%	0.1%	0.16 (-0.65, 0.97)
Control Group	5.7%	4.1%	-1.6%		
Connecticut					
Original Incentive Group	7.4%	6.2%	-1.2%	-0.6%	-0.58 (-1.45, 0.29)
High Process Incentive Group	5.7%	5.0%	-0.7%	-0.1%	-0.26 (-2.41, 1.89)
High Outcome Incentive Group	5.8%	8.6%	2.8%	3.3%	3.4 (-0.48, 7.28)
Peer Coaching Group	4.6%	6.4%	1.9%	2.4%	2.25 (-1.06, 5.56)
Control Group	6.5%	6.0%	-0.6%		
New Hampshire-Prescriber Referral					
Incentive Group	2.4%	3.1%	0.7%	3.3%	N/A
Control Group	5.7%	3.2%	-2.6%		
New Hampshire-Quitline					
Incentive Group	5.7%	3.2%	-2.5%	-2.1%	-1.99 (-4.42, 0.44)
Control Group	3.6%	3.2%	-0.4%		
New Hampshire-Telephonic cessation counseling					
Incentive Group	3.3%	3.4%	0.1%	0.8%	0.59 (-1.3, 2.48)
Control Group	4.5%	3.8%	-0.7%		
New York					
Process Incentive Group	9.0%	8.5%	-0.5%	-1.0%	-1.04 (-2.95, 0.87)
Outcome Incentive Group	7.7%	9.5%	1.8%	1.2%	1.38 (-0.45, 3.21)
Control Group	8.5%	9.0%	0.5%		
Wisconsin-Quit Line					
Incentive Group	4.4%	2.1%	-2.3%	-0.1%	-0.3 (-1.07, 0.47)
Control Group	4.5%	2.3%	-2.2%		
Wisconsin-First Breath					
Incentive Group	4.9%	9.8%	5.0%	-0.6%	-0.82 (-2.83, 1.19)
Control Group	4.6%	10.1%	5.5%		

Notes: * p < 0.10

The Puhani method was used to convert the covariate adjusted difference-in-difference estimate into a difference of predicted probabilities of using the service.

N/A – Not available; the regression model could not converge.

	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
California					
Counseling+NRT Group	7.9%	9.7%	1.8%	-0.4%	-0.3 (-1.81, 1.21)
Counseling+NRT+Incentive Group	8.5%	9.2%	0.7%	-1.5%	-1.45 (-3, 0.1)
Control Group	8.7%	10.8%	2.2%		
Connecticut					
Original Incentive Group	31.4%	28.7%	-2.7%	-1.1%	-1.2 (-2.71, 0.31)
High Process Incentive Group	33.0%	28.3%	-4.7%	-3.0%	-2.9 (-7, 1.2)
High Outcome Incentive Group	37.9%	31.7%	-6.2%	-4.5%	-3.81 (-11.16, 3.54)
Peer Coaching Group	22.4%	26.9%	4.6%	6.2%	6.35* (1.3, 11.4)
Control Group	28.8%	27.1%	-1.7%		
New Hampshire-Prescriber Referral					
Incentive Group	27.2%	22.5%	-4.7%	-4.7%	-3.01 (-9.84, 3.82)
Control Group	31.7%	31.7%	0.0%		
New Hampshire-Quitline					
Incentive Group	33.9%	28.2%	-5.7%	1.3%	1.31 (-3.79, 6.41)
Control Group	30.1%	23.2%	-6.9%		
New Hampshire-Telephonic cessation counseling					
Incentive Group	34.9%	29.6%	-5.3%	-3.8%	-3.65 (-9.87, 2.57)
Control Group	31.8%	30.2%	-1.5%		
Wisconsin-Quit Line					
Incentive Group	26.5%	14.7%	-11.8%	-1.0%	-0.72 (-2.35, 0.91)
Control Group	26.3%	15.4%	-10.9%		
Wisconsin-First Breath					
Incentive Group	22.7%	22.0%	-0.7%	-1.9%	-2.19 (-4.61, 0.23)
Control Group	21.9%	23.1%	1.2%		

Table C-11Prevalence of having an emergency department visit per quarter in smoking cessation
programs, by State

Notes: * p < 0.10

The Puhani method was used to convert the covariate adjusted difference-in-difference estimate into a difference of predicted probabilities of using the service.

New York's data related to ED visits were not reliable, so ED expenditures are not reported for New York's programs.

	Pre (mean)	Post (mean)	Difference (mean)	Difference-in- Differences	Covariate-Adjusted Regression: Difference-in- Differences (coefficient, 90% CI)
Total PMPM					
Incentive Group	\$1,552	\$1,290	-\$261	-\$142	70 (406, -267)
Control Group	\$1,254	\$1,135	-\$119		
Inpatient PMPM					
Incentive Group	\$551	\$334	-\$217	-\$66	-73 (-210, 63)
Control Group	\$461	\$310	-\$150		
Emergency Department PMPM					
Incentive Group	\$81	\$58	-\$23	-\$8	-9 (-28, 9)
Control Group	\$85	\$70	-\$15		
Inpatient Admissions					
Incentive Group	15.9%	15.2%	-0.7%	-1.1%	-1.28 (-3.2, 0.64)
Control Group	13.6%	14.0%	0.4%		
Emergency Department Visits					
Incentive Group	31.1%	28.0%	-3.1%	-2.3%	-2.28 (-4.43, -0.13)
Control Group	29.0%	28.1%	-0.9%		

Table C-12Texas PMPM and utilization outcomes

Notes: * p < 0.10

The Puhani method was used to convert the covariate adjusted difference-in-difference estimate into a difference of predicted probabilities of using the service.

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APPENDIX D: SURVEY SCHEDULE

States were assigned to Wave 1, Wave 2, or both based on the States' progress in meeting their target enrollment and the duration of their programs. This approach ensured that we were able to survey participants who had current or recent experience in the program. *Table D-1* summarizes the two survey waves and which States were involved in each wave. *Table D-2* provides an overview of the data collection timeline.

State	Wave 1	Wave 2
California	_	\checkmark
Connecticut	\checkmark	\checkmark
Hawaii ¹	_	_
Minnesota	\checkmark	\checkmark
Montana ²	\checkmark	_
Nevada	_	\checkmark
New Hampshire	\checkmark	\checkmark
New York	_	\checkmark
Texas	\checkmark	_
Wisconsin	\checkmark	\checkmark
Total	6	7

Table D-1Overview of survey waves

¹ Survey was not conducted in Hawaii due to language barriers

 Table D-2

 Timeline of data collection activities by State and wave of survey administration

Activity	Wave 1	Wave 2
Prenotification letter mailed	11/7/14	3/9/15
Questionnaire #1 mailed	11/14/14	3/16/15
Questionnaire #2 mailed	12/12/14	4/13/15
Telephone follow-up	1/5/15-2/14/15	5/1/15-6/7/15

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APPENDIX E: BENEFICIARY SURVEY QUESTIONNAIRE

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Survey of Program Participants (English)

(12-11-2013)

State Program Name> Survey of Program Participants (12-13-13)

This survey is about a special program for Medicaid beneficiaries in <state>, called the <statewide name> program. You might also know this special program as:

- <specific name>
- <specific name>
- <specific name>

When you answer these questions, please think about your experience in this special program. You could be participating in the program now, or you could have finished the program already.

Some questions ask about the program staff. The **program staff** can be anyone who helps you as part of the State Program Name, such as a [tailored for state: e.g., ifestyle coach, wellness coach, incentives counselor, educator, counselor, nurse, or other health care provider].

The special program could be about different kinds of health issues, such as diabetes prevention, diabetes control, tobacco use, weight management, blood pressure, or cholesterol. The program could be about one health issue or about more than one health issue.

Please follow the instructions in the survey for answering the questions.

Thank you for your time!

Tips for Filling out the Questionnaire

- Please share your honest opinions. All of your answers are kept private. The information is not reported back to program staff
- Please use a **BLACK** or **DARK BLUE** ink pen to mark your answers.
- Be sure to read all of the answer choices before marking your answer.
- Sometimes the instruction will say to skip one or more questions. Look for notes telling you whether you should skip a question. If there is no note, go to the next question.
- Answer all questions by putting an "X" in the box next to your answer, like this:

F	vamnl	e	
	лашрі		
	1.	In the pa	ast month, did you have any headaches?
		X	Yes \rightarrow Go to next question
			No \rightarrow Go to Question 3
			Don't know → Go to Question 3
	2.	In the pa	ast month, how many times did you have a headache?
		X	1–2 times
			3–5 times
			6 times or more

□ Don't know

Section A. Satisfaction with the Program

These questions ask about your satisfaction with this special program for Medicaid beneficiaries.

1. How would you rate this program? Choose a number between 1 and 10, where 1 is the worst program possible and 10 is the best program possible.

Worst program possible										Best program possible
	1	2	3	4	5	6	7	8	9	10

- 2. Would you recommend this program to your family and friends?
 - Yes, definitelyYes, probablyNo
- 3. Overall, how satisfied were you with this program?
 - Very satisfied
 - Somewhat satisfied
 - Somewhat dissatisfied
 - Very dissatisfied

Section B. Experiences with the Program

These questions ask about your experiences with this special program. When you answer these questions, please think about your experiences over the past few months.

Some of the questions ask about the program staff. The program staff can be anyone who helped you as part of this program.

4. How often were you able to contact program staff when you wanted to?

Always	
Usually	
Sometimes	
Never	I did not try to contact program staff.

5. The following statements are about the program. *[Please answer "yes" or "no" for each.]*

		Yes	No	
a.	I was able to start the program as soon as I wanted.			
b.	The amount of time I spent on the program was about right.			
C.	The program schedule was convenient for me.			
d.	The program location was convenient for me.			
e.	The program staff spoke my language.			
f.	I was able to get child care when I needed it to attend the program.			I did not need child care.
g.	I was able to get transportation when I needed it to attend the program.			I did not need transportation.

6. How often were you able to get the help you wanted from the program staff?



7. Did the program give you any educational materials or information about your health issue(s) (for example, written materials or a website)?

Yes	
□ No → Go to Question	ı 9

- 8. How helpful were these materials or information?
 - Very helpfulSomewhat helpful
 - Not helpful
- 9. The following statements are about ways the program may have helped you. *[Please mark how much you agree or disagree with each statement]*

The program....

		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a.	helped me understand my health issue(s).				
b.	helped me learn ways to take better care of my health.				
c.	encouraged me to make lifestyle changes to improve my health.				

10. The following statements are about your communication with program staff. *[Please mark how much you agree or disagree with each statement.]*

The program staff.....

		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a.	explained things in a way I can understand.				
b.	listened carefully to what I have to say.				
c.	encouraged me to ask questions.				
d.	encouraged me to talk about my health concerns.				
e.	seemed to care about me as a person.				

Section C. Program Rewards or Incentives

These questions ask about any rewards, incentives, or anything else you may have received for participating in this special program. Rewards or incentives could be cash or a debit card, a gift card, points you can use to pick something from a catalog, membership in a gym or health program, or something else.

The program you participated in may not offer all these different types of rewards or incentives.

11. Did you get (or do you expect to get) any rewards or incentives for participating in the program?

Yes
No
Unsure

12. Which kinds of rewards or incentives did you get (or do you expect to get) for participating in the program?

[Please mark **Yes** or **No** for each one.]

		Yes	No
a.	Cash or debit card		
b.	Gift card		
c.	Spending wellness account (for example, a bank account that you can spend on items)		
d.	Points you can use to pick something from a catalog		
e.	Supplies or medicines that can help you improve your health (for example, a scale, exercise or cooking equipment, nicotine replacement patch)		
f.	Activities that can help you improve your health (for example, a gym membership or a Weight Watchers membership, or counseling sessions)		
g.	Transportation assistance, child care, or other support to help you participate in the program		
h.	Other (please specify):		
i.	None. \rightarrow Go to Section D		

13. These statements are about the rewards or incentives for participating in the program. *[Please mark how much you agree or disagree with each statement.]*

		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a.	Rewards or incentives helped me (or will help me) set goals and work toward them.				
b.	Rewards or incentives helped me (or will help me) make positive changes in my life.				
c.	I like getting rewards or incentives for taking good care of my health.				
d.	I am happy with the rewards or incentives.				
e.	I am happy with how often I got (or will get) the rewards or incentives.				
f.	The rewards or incentives are fair.				

Questions about Different Health Issues

The special program could be about different kinds of health issues, such as diabetes prevention, diabetes control, tobacco use, weight management, blood pressure, or cholesterol. The program could be about one health issue or about more than one health issue.

You may be participating in the program now or you could have finished the program already.

Section D. Diabetes Prevention Program

A diabetes prevention program is for people who have a risk of getting diabetes. The purpose of the program is to help people so they don't get diabetes.

Please answer these questions if the special program you participated in was about diabetes prevention. The program could be about other health issues, too.

14. Was the program you participated in about diabetes prevention?



		Yes	No
a.	help you learn ways to prevent diabetes?		
b.	help you set goals to prevent diabetes?		
c.	help you deal with problems that might come up with reaching your goals?		
d.	give you medicines to help prevent diabetes?		
e.	give you supplies or equipment to help prevent diabetes?		

Section E. Diabetes Management Program

A diabetes management program is for people who have been told by a doctor that they have diabetes. The purpose of the program is to help people manage their diabetes.

Please answer these questions if the special program you participated in was about diabetes management. The program could be about other health issues, too.

16. Was the program you participated in about diabetes management?

Yes	
\square No \rightarrow Go to Section	F

		Yes	No
a.	help you learn ways to manage your diabetes?		
b.	help you set goals to manage your diabetes?		
c.	help you deal with problems that might come up with reaching your goals?		
d.	give you medicines to help manage your diabetes?		
e.	give you supplies or equipment to help manage your diabetes?		

Section F. Tobacco Program

A tobacco program can help people quit smoking or using other kinds of tobacco.

Please answer these questions if the special program you participated in was about quitting smoking or using other kinds of tobacco. The program could be about other health issues, too.

18. Was the program you participated in about quitting smoking or using other kinds of tobacco?

☐ Yes
☐ No → Go to Section G

		Yes	No
a.	help you learn ways to quit using tobacco?		
b.	help you set goals to quit using tobacco?		
c.	help you deal with problems that might come up reaching your goals?		
d.	give you medicines to help you quit using tobacco?		
e.	give you supplies or equipment to help you quit using tobacco?		

Section G. Weight Management Program

A weight management program can help people manage their weight or help them lose weight.

Please answer these questions if the special program you participated in was about weight management. The program could be about other health issues, too.

20. Was the program you participated in about weight management?

Yes
$\square \text{ No} \rightarrow \text{Go to Section H}$

		Yes	No
a.	help you learn ways to manage your weight or lose weight?		
b.	help you set goals to manage your weight or lose weight?		
c.	help you deal with problems that might come up with reaching your goals?		
d.	give you medicines to help with your weight?		
e.	give you supplies or equipment to help with your weight?		

Section H. Blood Pressure Program

A blood pressure program can help people manage or lower their blood pressure.

Please answer these questions if the special program you participated in was about blood pressure. The program could be about other health issues, too.

22. Was the program you participated in about blood pressure?



		Yes	No
a.	help you learn ways to manage your blood pressure?		
b.	help you set goals to manage your blood pressure?		
c.	help you deal with problems that might come up with reaching your goals?		
d.	give you medicines to help you with your blood pressure?		
e.	give you supplies or equipment to help you with your blood pressure?		

Section I. Cholesterol Program

A cholesterol program can help people manage their cholesterol or lower their cholesterol.

Please answer these questions if the special program you participated in was about managing your cholesterol. The program could be about other health issues, too.

24. Was the program you participated in about cholesterol?

Yes
$\square \text{ No} \rightarrow \text{Go to Section J}$

		Yes	No
a.	help you learn ways to lower your cholesterol?		
b.	help you set goals to lower your cholesterol?		
c.	help you deal with problems that might come up with reaching your goals?		
d.	give you medicines to help lower your cholesterol?		
e.	give you supplies or equipment to help lower your cholesterol?		

SECTION J. ABOUT YOU

These questions ask about your background.

26. In general, how would you rate your overall health?



- 27. In general, how would you rate your overall mental or emotional health?
 - Excellent
 Very good
 Good
 Fair
 Poor
- 28. What year were you born?
- 29. What is your sex?
 - MaleFemale
- 30. What is your marital status?
 - Now married or living with a partner
 - U Widowed
 - Divorced
 - Separated
 - Never married
- 31. What is the highest grade or level of school that you completed?
 - 8th grade or less

Some high school, but did not graduate

High school graduate or GED

Some college or 2-year college degree

4-year college degree

- More than 4-year college degree
- 32. What is your current employment status? [Mark all that apply.]
 - Employed full-time
 - Employed part-time
 - Unemployed and looking for work
 - Student
 - Homemaker

Retired

- Other (please specify):
- 33. Are you of Hispanic or Latino origin or descent?
 - Yes, Hispanic or Latino
 - No, not Hispanic or Latino
- 34. What is your race? [Mark all that apply.]
 - American Indian or Alaska Native
 - Asian
 - Black or African American
 - Native Hawaiian or Other Pacific Islander
 - White
- 35. Did someone help you complete this survey?
 - Yes

 \square No \rightarrow Go to Question 37

36. How did that person help you? *[Mark all that apply.]*



Answered some or all of the questions for me Read the questions to me



Wrote down the answers I gave

Translated the questions into my language

Helped in some other way, please specify:

37. If you have more comments about the program, please write them here.

Thank you!

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APPENDIX F: BENEFICIARY SATISFACTION TABLES

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Table F-1

 Descriptive and bivariate analyses for satisfaction with incentives by demographic characteristics

	Respond or incent	ent liked ives for t of he	getting r aking go alth	ewards od care	Respond	lent happ incentiv	by with re es overall	wards	Responde got r	ent happy wewards o	with ho or incentiv	w often ves	Rewar	ds or ince	entives ar	e fair
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
No.	115	327	1,572		160	350	1,494		235	416	1,343		163	384	1,456	
%	5.7	16.2	78.1		8.0	17.5	74.6		11.8	20.9	67.4		8.1	19.2	72.7	
Age	_	_		0.409	_	_		0.768				0.846		_		0.738
44 years or younger	4.5	16.4	79.1		7.0	17.1	75.9	_	12.4	23.0	64.6		6.8	20.0	73.2	_
45 to 52 years	6.0	15.7	78.3		7.6	17.8	74.5		11.2	20.9	67.9		8.2	18.8	73.1	
53 to 58 years	4.9	14.9	80.2		7.4	17.2	75.4		11.8	19.5	68.8		9.6	17.5	72.9	
59 years or older	7.2	17.6	75.2		9.6	17.7	72.7		11.8	20.1	68.1		8.1	20.1	71.8	
Sex				0.079				0.002				0.017				0.237
Male	7.1	17.0	75.9		9.1	20.9	70.0		13.9	22.5	63.6		8.9	20.6	70.5	
Female	4.9	15.8	79.3		7.3	15.5	77.2		10.6	19.9	69.5		7.7	18.4	74.0	
Married				0.276				0.422				0.953				0.555
Yes	7.2	16.7	76.2		6.5	18.6	74.9		11.7	21.5	66.8		7.9	17.5	74.5	
No	5.2	16.3	78.5		8.3	17.3	74.4		11.5	20.9	67.6		8.2	19.8	72.1	
Education				0.121				0.632				0.002				0.335
Less than high school	6.5	14.4	79.1	_	7.0	16.3	76.7	—	8.9	19.6	71.4		8.3	17.7	74.0	—
High school graduate or	6.7	15.9	77.4	_	7.6	18.3	74.2	_	11.2	20.5	68.3	—	7.8	18.9	73.3	_
Some college or 2-year	3.7	17.3	79.0	_	8.5	17.4	74.0		12.5	22.9	64.6		7.4	19.7	72.9	
college degree 4-year college degree or	6.9	19.4	73.8	_	11.3	17.5	71.3	_	20.9	17.7	61.4		12.5	21.9	65.6	
more				0.215				0.402				0.026				0.020
Vos	7 2	171	75.6	0.215	6.6	16.0	76.5	0.492	11.6	20.2	68.2	0.920	76	19 /	74.0	0.839
I CS	1.5	1/.1	13.0 70 7		0.0	10.9	70.5		11.0	20.2	67.2		/.0	10.4	74.0 72.5	
1NO	5.3	16.0	/8./		8.3	17.5	/4.2		11./	21.0	67.3		8.2	19.3	12.5	

Table F-1 (continued) Descriptive and bivariate analyses for satisfaction with incentives by demographic characteristics

	Respond or incent	ent liked ives for t of hea	getting r aking go alth	ewards od care	Respond	lent happ incentive	y with re es overal	ewards	Respond got 1	ent happy ewards o	with ho r incentiv	w often ves	Rewar	ds or ince	entives ar	e fair
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Receiving Disability or Supplemental Security Income	—	—		0.159	—	—		0.038				0.435			—	0.057
Yes	5.6	14.1	80.3		9.0	14.7	76.3		12.3	19.3	68.5		8.8	16.3	74.9	
No	5.8	17.4	76.9		7.5	18.9	73.6		11.5	21.7	66.8		7.8	20.7	71.5	
Race	_			0.109	_		_	0.650			_	0.815	_			0.356
White alone	4.8	17.3	77.9		8.6	17.3	74.0		12.4	21.0	66.5		8.1	17.9	73.9	
Black alone	6.6	13.7	79.8		7.6	18.0	74.5		10.7	20.2	69.1		8.8	19.9	71.3	
Other	4.8	18.8	76.4		6.6	15.6	77.9		11.4	21.1	67.5		5.6	20.6	73.9	
Ethnicity				0.001				0.561				0.756	_			0.794
Hispanic/Latino	10.2	15.6	74.2		8.7	15.4	75.9		12.9	19.6	67.5		9.0	19.6	71.4	
Not Hispanic/Latino	4.9	16.3	78.8		7.9	17.8	74.3		11.7	21.0	67.3		8.0	19.1	72.9	

 Table F-2

 Bivariate analyses for satisfaction with incentives by program and incentive characteristics

	Respond or incent	lent liked tives for t of he	getting r aking go alth	ewards od care	Respond	ent happy ncentives	with rev s overall	wards or	Respond got	lent happy rewards o	v with ho or incenti	ow often ves	Rewar	ds or ince	entives a	e fair
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Health Focus of Program	-	_	_	< 0.001	-	_	-	< 0.001	-	-	_	< 0.001	-	_	-	< 0.001
Diabetes prevention	10.5	18.7	70.8	_	8.6	21.6	69.8	_	12.0	25.1	62.9	_	8.7	25.9	65.4	_
Diabetes control	8.6	18.4	73.0	—	12.8	18.8	68.5	_	18.1	20.1	61.7	-	13.3	23.3	63.3	
Weight loss	5.8	21.7	72.5	-	9.2	21.4	69.4	-	14.3	21.7	64.0	-	10.2	17.1	72.7	_
Smoking cessation	5.3	16.2	78.4	_	9.1	17.0	73.9	_	12.7	21.7	65.6	-	8.4	19.1	72.5	
Hypertension	6.5	19.6	73.9	_	6.7	18.9	74.4	_	15.6	22.2	62.2	-	6.7	25.6	67.8	
Other	0.9	7.6	91.5	_	1.3	11.1	87.6	_	3.5	13.7	82.9	-	3.8	10.7	85.5	
Program Delivery Method	-	-	-	< 0.001	-	_	_	0.068	—	-	_	0.149				0.012
In-person	8.1	19.3	72.6	_	9.2	19.9	71.0	_	13.4	22.2	64.4	-	9.4	22.5	68.1	
Telephonic	4.6	18.8	76.6	-	7.3	17.3	75.5	-	12.3	21.3	66.4	-	7.0	18.3	74.6	
Both in-person and telephonic	4.2	12.6	83.2	_	7.3	15.5	77.2	-	10.4	19.5	70.1	_	7.7	16.6	75.7	_
Incentive Form	_	_	-	< 0.001	—	_	_	< 0.001	—	_	_	< 0.001				< 0.001
Money-valued incentives	6.6	17.7	75.7	_	9.1	18.5	72.4	_	13.0	22.1	64.9	_	8.7	20.7	70.6	
Flexible wellness account	0.9	7.6	91.5	_	1.3	11.1	87.6	_	3.5	13.7	82.9	_	3.8	10.7	85.5	
Points redeemable for rewards	8.0	28.0	64.0	_	20.0	28.0	52.0	_	36.0	28.0	36.0	_	24.0	28.0	48.0	—
Incentive Target	_	_	_	< 0.001	_	_	_	< 0.001	_	_	_	< 0.001				< 0.001
Process incentives alone	3.8	15.3	80.9	_	5.4	15.7	78.9	_	9.5	18.0	72.5	_	6.4	15.7	77.9	
Outcome incentives alone	13.3	20.4	66.3	_	12.6	25.3	62.1	_	18.8	28.1	53.1	_	12.5	31.3	56.3	
Process and outcome incentives	6.8	16.5	76.7	_	10.2	18.3	71.5	_	13.5	22.9	63.6	_	9.6	21.3	69.1	—
Dollar Amount of Incentive	_	_	_	< 0.001	_	_	_	< 0.001	_	_	_	< 0.001			_	< 0.001
Mean	\$215	\$384	\$705		\$234	\$456	\$707		\$268	\$458	\$743		\$385	\$400	\$715	
Standard error	30	39	13		36	44	14	_	34	40	17	_	56	38	15	
Confidence interval	156-	307-	680-		164-	370-	678-	_	203-	380-	709-	_	275-	325 -	685-	
	275	460	730		304	541	735		334	537	776		494	475	744	

	Rewards or inc	entives helped	set goals and work	toward them	Rewards or in	ncentives helpe	d make positive cha	inges in life
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
No.	184	502	1,320		179	515	1,319	
0⁄0	9.2	25.0	65.8		8.9	25.6	65.5	
Age				0.329				0.525
44 years or younger	9.7	23.7	66.6		9.1	24.9	66.0	
45 to 52 years	7.8	23.3	68.9		8.1	25.6	66.3	
53 to 58 years	8.1	26.7	65.2		7.1	27.1	65.8	
59 years or older	10.8	26.4	62.8		10.8	25.0	64.2	
Sex				0.113				0.012
Male	10.8	23.4	65.8		11.1	23.4	65.5	
Female	8.3	25.9	65.8		7.6	26.9	65.5	
Married				0.379				0.689
Yes	9.6	22.7	67.8		7.9	26.4	65.7	
No	9.0	26.0	65.0		9.2	25.3	65.6	
Education				0.113				0.068
Less than high school graduate or GED	7.4	22.5	70.2		6.8	24.0	69.2	
High school graduate or GED	8.9	24.8	66.4		9.5	24.9	65.6	
Some college or 2-year college degree	10.1	27.3	62.6		8.7	26.5	64.8	
4-vear college degree or more	12.7	25.9	61.4		13.8	29.4	56.9	
Employed Full- or Part-Time				0.454				0.427
Yes	10.8	24.5	64.7		10.0	27.0	63.0	
No	8.8	25.1	66.1		8.6	25.1	66.3	
Receiving Disability or Supplemental				0.792				0.107
Security Income								
Yes	9.4	24.1	66.5		8.9	22.8	68.3	
No	9.1	25.5	65.4		8.9	27.1	64.1	
Race				0.004				0.009
White alone	9.7	28.1	62.2		9.2	28.3	62.6	
Black alone	8.2	20.7	71.1		8.9	21.0	70.1	
Other	8.3	24.1	67.6		6.6	26.0	67.5	
Ethnicity				0.217				0.996
Hispanic/Latino	11.0	21.8	67.2		9.0	25.3	65.7	
Not Hispanic/Latino	8.8	25.7	65.5		9.0	25.5	65.5	

 Table F-3

 Descriptive and bivariate analyses for perception of impact of incentives by demographic characteristics

	Rewar	rds or incentive work tow	s helped set goa vard them	ls and	Rewards or in	centives helped	make positive	changes in life
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Health Focus of Program	_	_	_	< 0.001	_	_	_	< 0.001
Diabetes prevention	10.5	25.1	64.4	_	11.6	26.2	62.2	_
Diabetes control	10.5	26.3	63.2	_	12.6	26.5	60.9	—
Weight loss	13.7	28.3	58.0	_	14.6	27.3	58.0	_
Smoking cessation	10.1	27.7	62.3	_	8.8	28.2	63.0	—
Hypertension	10.1	31.5	58.4	_	12.0	29.3	58.7	—
Other	1.9	11.4	86.8	_	0.9	12.0	87.1	—
Program Delivery Method	_	_	—	< 0.001				< 0.001
In-person	11.1	27.4	61.5	_	12.5	27.6	60.0	—
Telephonic	14.2	31.1	54.7	_	12.1	29.1	58.8	—
Both in-person and telephonic	6.0	20.7	73.3	_	5.1	22.0	72.9	—
Incentive Form	_	_	—	< 0.001				< 0.001
Money-valued incentives	10.5	27.7	61.8	_	10.3	28.2	61.5	—
Flexible wellness account	1.9	11.4	86.8	_	0.9	12.0	87.1	—
Points redeemable for rewards	16.0	20.0	64.0	_	16.0	20.0	64.0	_
Incentive Target	_	_	—	0.116				0.001
Process incentives alone	9.1	23.2	67.7	_	8.8	22.2	69.0	
Outcome incentives alone	10.2	34.7	55.1	_	12.1	38.4	49.5	—
Process and outcome incentives	9.3	25.5	65.3	_	8.8	26.9	64.4	—
Dollar Amount of Incentives	_	_	—	_				—
Mean	\$238	\$381	\$774	< 0.001	\$212	\$372	\$779	< 0.001
Standard error	38	32	17	_	28	31	17	—
Confidence interval	163–314	318-444	741-807	_	156–268	311 -433	746-812	_

 Table F-4

 Bivariate Analyses for Perception of Impact of Incentives by Program and Incentive Characteristics

				Et	ffect	90%	6 CI
	Characteristic	Group	Reference	OR	P-value	LB	UB
1	Program delivery method	Telephonic	In person	1.57	0.186	0.9	2.75
	5	Both in person and telephonic	In person	1.56	0.055*	1.07	2.29
2	Incentive target	Outcome incentives alone	Process incentives alone	0.74	0.319	0.45	1.22
	C	Process and outcome incentives	Process incentives alone	0.94	0.774	0.65	1.36
3	Age	45 to 52 years	44 years or younger	0.89	0.503	0.68	1.18
	0	53 to 58 years	44 years or younger	0.96	0.834	0.72	1.29
		59 years or older	44 years or younger	0.88	0.424	0.67	1.15
4	Sex	Female	Male	1.32	0.019*	1.09	1.61
5	Married	Yes	No	0.93	0.619	0.74	1.17
6	Education	Less than high school graduate or GED	High school graduate or GED	1.07	0.674	0.83	1.38
		Some college or 2-year college degree	High school graduate or GED	1.16	0.296	0.92	1.46
		4-year college degree or more	High school graduate or GED	1.04	0.843	0.73	1.49
7	Employed full- or part-time	Yes	No	0.95	0.715	0.75	1.2
8	Race	Black alone	White alone	1.04	0.785	0.82	1.31
		Other	White alone	1.07	0.692	0.81	1.42
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	0.72	0.069*	0.53	0.97
10	Incentive form	Flexible wellness account	Money-valued incentives	1.01	0.988	0.43	2.34
		Points redeemable for rewards	Money-valued incentives	0.55	0.292	0.21	1.4
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.01	0.968	0.71	1.44
		\$100-<\$400	\$0-<\$25	1.13	0.587	0.78	1.63
		\$400-<\$2,500	\$0-<\$25	1.9	0.061*	1.08	3.33
		\$2,500 or more	\$0-<\$25	3.44	0.017*	1.47	8.08

 Table F-5

 Ordinal proportional odds model displaying odds of levels having higher agreement that the respondent liked getting rewards or incentives for taking good care of health (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

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Ordinal proportional odds model displaying odds of levels having higher agreement that the respond	lent was happy with
rewards of incentives overall (strongly agree, somewhat agree, vs. somewhat or strongly o	disagree)
Effect	90% CI

Table F-6
Ordinal proportional odds model displaying odds of levels having higher agreement that the respondent was happy with
rewards of incentives overall (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

				Ef	fect	90% CI	
	Characteristic	Group	Reference	OR	P-value	LB	UB
1	Program delivery method	Telephonic	In person	1.95	0.006*	1.3	2.92
		Both in person and telephonic	In person	1.29	0.133	0.98	1.7
2	Incentive target	Outcome incentives alone	Process incentives alone	0.77	0.332	0.49	1.2
		Process and outcome incentives	Process incentives alone	0.88	0.489	0.64	1.2
3	Age	45 to 52 years	44 years or younger	0.89	0.443	0.68	1.15
		53 to 58 years	44 years or younger	0.93	0.659	0.71	1.22
		59 years or older	44 years or younger	0.86	0.318	0.67	1.1
4	Sex	Female	Male	1.59	0.000*	1.33	1.91
5	Married	Yes	No	1.09	0.543	0.87	1.35
6	Education	Less than high school graduate or GED	High school graduate or GED	1.03	0.866	0.8	1.31
		Some college or 2-year college degree	High school graduate or GED	0.93	0.602	0.75	1.16
		4-year college degree or more	High school graduate or GED	0.93	0.736	0.66	1.32
7	Employed full- or part-time	Yes	No	1.34	0.040*	1.06	1.69
8	Race	Black alone	White alone	1.02	0.882	0.82	1.26
		Other	White alone	1.23	0.231	0.93	1.63
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.09	0.623	0.81	1.47
10	Incentive form	Flexible wellness account	Money-valued incentives	1.41	0.378	0.74	2.70
		Points redeemable for rewards	Money-valued incentives	0.35	0.037*	0.15	0.80
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.45	0.054*	1.06	2.00
		\$100-<\$400	\$0-<\$25	2.20	0.000*	1.63	2.97
		\$400-<\$2,500	\$0-<\$25	2.42	0.002*	1.52	3.86
		\$2,500 or more	\$0-<\$25	3.36	0.006*	1.63	6.95

				Ef	fect	90%	6 CI
	Characteristic	Group	Reference	OR	P-value	LB	UB
1	Program delivery method	Telephonic	In person	1.75	0.015*	1.20	2.54
		Both in person and telephonic	In person	1.18	0.296	0.91	1.52
2	Incentive target	Outcome incentives alone	Process incentives alone	0.79	0.371	0.52	1.22
		Process and outcome incentives	Process incentives alone	0.95	0.786	0.71	1.28
3	Age	45 to 52 years	44 years or younger	1.08	0.600	0.85	1.36
		53 to 58 years	44 years or younger	1.11	0.476	0.87	1.42
		59 years or older	44 years or younger	1.23	0.137	0.98	1.56
4	Sex	Female	Male	1.42	0.001*	1.20	1.69
5	Married	Yes	No	1.05	0.686	0.86	1.29
6	Education	Less than high school graduate or GED	High school graduate or GED	1.11	0.462	0.88	1.39
		Some college or 2-year college degree	High school graduate or GED	0.86	0.205	0.70	1.05
		4-year college degree or more	High school graduate or GED	0.71	0.078*	0.52	0.98
7	Employed full- or part-time	Yes	No	1.25	0.080*	1.01	1.55
8	Race	Black alone	White alone	1.09	0.474	0.89	1.33
		Other	White alone	1.03	0.829	0.80	1.33
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.09	0.603	0.83	1.42
10	Incentive form	Flexible wellness account	Money-valued incentives	1.28	0.487	0.71	2.32
		Points redeemable for rewards	Money-valued incentives	0.21	0.001*	0.10	0.46
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.74	0.002*	1.29	2.35
		\$100-<\$400	\$0-<\$25	2.26	0.000*	1.71	3.00
		\$400-<\$,2500	\$0-<\$25	3.16	0.000*	2.03	4.91
		\$2,500 or more	\$0-<\$25	4.27	0.000*	2.20	8.30

Table F-7 Ordinal proportional odds model displaying odds of levels having higher agreement that the respondent was happy with how often got rewards or incentives (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

				Ef	ffect	90%	6 CI
	Characteristic	Group	Reference	OR	P-value	LB	UB
1	Program delivery method	Telephonic	In person	1.77	0.018*	1.19	2.63
		Both in person and telephonic	In person	1.36	0.061*	1.04	1.77
2	Incentive target	Outcome incentives alone	Process incentives alone	0.68	0.144	0.43	1.05
		Process and outcome incentives	Process incentives alone	0.8	0.226	0.59	1.08
3	Age	45 to 52 years	44 years or younger	0.99	0.926	0.77	1.27
		53 to 58 years	44 years or younger	0.95	0.734	0.73	1.23
		59 years or older	44 years or younger	1.04	0.779	0.82	1.33
4	Sex	Female	Male	1.29	0.020*	1.08	1.54
5	Married	Yes	No	1.18	0.204	0.95	1.47
6	Education	Less than high school graduate or GED	High school graduate or GED	0.99	0.960	0.78	1.26
		Some college or 2-year college degree	High school graduate or GED	0.96	0.734	0.77	1.19
		4-year college degree or more	High school graduate or GED	0.75	0.149	0.54	1.04
7	Employed full- or part-time	Yes	No	1.31	0.049*	1.05	1.64
8	Race	Black alone	White alone	0.87	0.264	0.71	1.07
		Other	White alone	1.1	0.577	0.84	1.44
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1	0.999	0.75	1.33
10	Incentive form	Flexible wellness account	Money-valued incentives	0.89	0.749	0.49	1.63
		Points redeemable for rewards	Money-valued incentives	0.3	0.016*	0.13	0.69
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.31	0.152	0.96	1.80
		\$100-<\$400	\$0-<\$25	1.89	0.000*	1.41	2.54
		\$400-<\$2,500	\$0-<\$25	2.06	0.010*	1.30	3.27
		\$2,500 or more	\$0-<\$25	4.82	0.000*	2.40	9.68

 Table F-8

 Ordinal proportional odds model displaying odds of levels having higher agreement that the rewards or incentives are fair (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

				Ef	fect	90%	6 CI
	Characteristic	Group	Reference	OR	P-value	LB	UB
1	Program delivery method	Telephonic	In person	1.13	0.630	0.74	1.74
		Both in person and telephonic	In person	1.45	0.048*	1.06	1.96
2	Incentive target	Outcome incentives alone	Process incentives alone	0.95	0.857	0.6	1.51
		Process and outcome incentives	Process incentives alone	1.02	0.936	0.71	1.46
3	Age	45 to 52 years	44 years or younger	1.11	0.456	0.88	1.41
		53 to 58 years	44 years or younger	0.94	0.673	0.74	1.20
		59 years or older	44 years or younger	0.97	0.823	0.77	1.22
4	Sex	Female	Male	1.08	0.435	0.91	1.29
5	Married	Yes	No	1.21	0.132	0.98	1.48
6	Education	Less than high school graduate or GED	High school graduate or GED	1.03	0.841	0.82	1.29
		Some college or 2-year college degree	High school graduate or GED	0.89	0.343	0.73	1.09
		4-year college degree or more	High school graduate or GED	0.9	0.571	0.65	1.23
7	Employed full- or part-time	Yes	No	1.07	0.607	0.87	1.31
8	Race	Black alone	White alone	1.32	0.023*	1.08	1.61
		Other	White alone	1.30	0.089*	1.01	1.67
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.08	0.635	0.82	1.42
10	Incentive form	Flexible wellness account	Money-valued incentives	1.09	0.853	0.51	2.32
		Points redeemable for rewards	Money-valued incentives	1.24	0.695	0.50	3.07
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.07	0.693	0.80	1.44
		\$100-<\$400	\$0-<\$25	1.56	0.025*	1.12	2.16
		\$400-<\$2,500	\$0-<\$25	3.19	0.000*	1.87	5.45
		\$2,500 or more	\$0-<\$25	4.37	0.001*	2.04	9.36

 Table F-9

 Ordinal proportional odds model displaying odds of levels having higher agreement that rewards of incentives helped set goals and work towards them (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

				Ef	ffect	90%	o CI
	Characteristic	Group	Reference	OR	P-value	LB	UB
1	Program delivery method	Telephonic	In person	1.33	0.281	0.86	2.04
		Both in person and telephonic	In person	1.54	0.025*	1.12	2.11
2	Incentive target	Outcome incentives alone	Process incentives alone	0.8	0.417	0.51	1.26
		Process and outcome incentives	Process incentives alone	0.99	0.957	0.69	1.42
3	Age	45 to 52 years	44 years or younger	1.01	0.953	0.80	1.28
		53 to 58 years	44 years or younger	0.94	0.661	0.73	1.20
		59 years or older	44 years or younger	1.05	0.735	0.83	1.33
4	Sex	Female	Male	1.1	0.358	0.93	1.31
5	Married	Yes	No	1.12	0.362	0.91	1.37
6	Education	Less than high school graduate or GED	High school graduate or GED	1.13	0.366	0.90	1.41
		Some college or 2-year college degree	High school graduate or GED	1.04	0.768	0.85	1.27
		4-year college degree or more	High school graduate or GED	0.8	0.231	0.59	1.09
7	Employed full- or part-time	Yes	No	1	0.981	0.81	1.22
8	Race	Black alone	White alone	1.26	0.059*	1.03	1.54
		Other	White alone	1.27	0.113	0.99	1.64
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.08	0.648	0.82	1.41
10	Incentive form	Flexible wellness account	Money-valued incentives	0.97	0.947	0.46	2.04
		Points redeemable for rewards	Money-valued incentives	0.87	0.801	0.37	2.09
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.26	0.195	0.94	1.69
		\$100-<\$400	\$0-<\$25	1.67	0.009*	1.21	2.30
		\$400-<\$2,500	\$0-<\$25	3.22	0.000*	1.91	5.40

\$0-<\$25

\$2,500 or more

0.000*

2.85

12.69

6.02

Table F-10 Ordinal proportional odds model displaying odds of levels having higher agreement that rewards or incentives helped make positive changes in life (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

 Table F-11

 Change in predicted marginal probability relative to reference category: Respondent liked getting rewards or incentives for taking good care of health

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	-0.023	(-0.050– 0.003)	-0.052	(-0.113– 0.009)	0.076	(-0.011– 0.163)
		Both in person and telephonic	In person	-0.023	(-0.043 0.003)	-0.052	(-0.096 0.008)	0.075	(0.011– 0.138)
2	Incentive target	Outcome incentives alone	Process incentives alone	0.016	(-0.013– 0.046)	0.035	(-0.025– 0.095)	-0.052	(-0.141– 0.038)
		Process and outcome incentives	Process incentives alone	0.003	(-0.015– 0.021)	0.007	(-0.035– 0.049)	-0.010	(-0.071– 0.050)
3	Age	45 to 52 years	44 years or younger	0.005	(-0.008– 0.019)	0.012	(-0.018– 0.043)	-0.018	(-0.062– 0.026)
		53 to 58 years	44 years or younger	0.002	(-0.012– 0.015)	0.004	(-0.028– 0.036)	-0.006	(-0.051– 0.040)
		59 years or older	44 years or younger	0.006	(-0.007– 0.020)	0.015	(-0.015– 0.045)	-0.021	(-0.064– 0.022)
4	Sex	Female	Male	-0.014	(-0.025 0.004)	-0.032	(-0.055 0.009)	0.046	(0.013– 0.080)
5	Married	Yes	No	0.003	(-0.008– 0.015)	0.008	(-0.018– 0.034)	-0.011	(-0.049– 0.027)
6	Education	Less than high school graduate or GED	High school graduate or GED	-0.003	(-0.016– 0.010)	-0.007	(-0.036– 0.022)	0.011	(-0.031– 0.053)
		Some college or 2-year college degree	High school graduate or GED	-0.007	(-0.019– 0.004)	-0.017	(-0.043– 0.010)	0.024	(-0.014– 0.062)
		4-year college degree or more	High school graduate or GED	-0.002	(-0.021– 0.016)	-0.005	(-0.046– 0.036)	0.007	(-0.052– 0.066)

Table F-11 (continued) Change in predicted marginal probability relative to reference category: Respondent liked getting rewards or incentives for taking good care of health

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Employed full- or part- time	Yes	No	0.003	(-0.009– 0.015)	0.006	(-0.021– 0.033)	-0.008	(-0.047– 0.030)
8	Race	Black alone	White alone	-0.002	(-0.014– 0.010)	-0.004	(-0.031– 0.022)	0.006	(-0.032– 0.044)
		Other	White alone	-0.003	(-0.017– 0.010)	-0.008	(-0.039– 0.024)	0.011	(-0.034– 0.057)
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	0.018	(-0.000– 0.037)	0.039	(0.003– 0.076)	-0.058	(-0.112 0.003)
10	Incentive form	Flexible wellness account	Money-valued incentives	-0.001	(-0.042– 0.041)	-0.001	(-0.096– 0.093)	0.002	(-0.134– 0.138)
		Points redeemable for rewards	Money-valued incentives	0.039	(-0.037– 0.115)	0.073	(-0.045– 0.192)	-0.112	(-0.307– 0.082)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.001	(-0.022– 0.021)	-0.001	(-0.046– 0.044)	0.002	(-0.064– 0.068)
		\$100-<\$400	\$0-<\$25	-0.007	(-0.029– 0.015)	-0.015	(-0.061– 0.031)	0.022	(-0.045– 0.090)
		\$400-<\$2,500	\$0-<\$25	-0.029	(-0.056 0.003)	-0.072	(-0.134 0.010)	0.101	(0.013– 0.189)
		\$2,500 or more	\$0-<\$25	-0.045	(-0.073–- 0.017)	-0.119	(-0.189–- 0.048)	0.164	(0.066– 0.261)

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	-0.045	(-0.069–- 0.020)	-0.070	(-0.108 0.031)	0.114	(0.052– 0.177)
		Both in person and telephonic	In person	-0.020	(-0.042– 0.002)	-0.028	(-0.058– 0.003)	0.048	(-0.005– 0.100)
2	Incentive target	Outcome incentives alone	Process incentives alone	0.020	(-0.016– 0.056)	0.029	(-0.021– 0.080)	-0.049	(-0.136– 0.038)
		Process and outcome incentives	Process incentives alone	0.009	(-0.013– 0.032)	0.014	(-0.020– 0.049)	-0.024	(-0.081– 0.033)
3	Age	45 to 52 years	44 years or younger	0.008	(-0.010– 0.027)	0.013	(-0.015– 0.041)	-0.022	(-0.068– 0.025)
		53 to 58 years	44 years or younger	0.005	(-0.014– 0.023)	0.008	(-0.021– 0.037)	-0.013	(-0.060– 0.035)
		59 years or older	44 years or younger	0.011	(-0.007– 0.029)	0.017	(-0.011– 0.044)	-0.028	(-0.073– 0.018)
4	Sex	Female	Male	-0.035	(-0.050 0.020)	-0.051	(-0.072 0.031)	0.086	(0.052– 0.121)
5	Married	Yes	No	-0.006	(-0.021– 0.010)	-0.009	(-0.032– 0.015)	0.015	(-0.024– 0.054)
6	Education	Less than high school graduate or GED	High school graduate or GED	-0.002	(-0.019– 0.015)	-0.003	(-0.029– 0.023)	0.004	(-0.039– 0.047)
		Some college or 2-year college degree	High school graduate or GED	0.005	(-0.011– 0.021)	0.008	(-0.016– 0.031)	-0.013	(-0.052– 0.027)
		4-year college degree or more	High school graduate or GED	0.005	(-0.020– 0.031)	0.008	(-0.030– 0.045)	-0.013	(-0.076– 0.050)

 Table F-12

 Change in predicted marginal probability relative to reference category: Respondent happy with rewards or incentives overall

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Employed full- or part- time	Yes	No	-0.019	(-0.034 0.005)	-0.031	(-0.055 0.007)	0.050	(0.012– 0.089)
8	Race	Black alone	White alone	-0.001	(-0.017– 0.014)	-0.002	(-0.025– 0.021)	0.003	(-0.035– 0.042)
		Other	White alone	-0.014	(-0.032– 0.004)	-0.022	(-0.052– 0.008)	0.036	(-0.012– 0.084)
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.006	(-0.026– 0.014)	-0.009	(-0.041– 0.022)	0.016	(-0.036– 0.067)
10	Incentive form	Flexible wellness account	Money-valued incentives	-0.022	(-0.059– 0.015)	-0.037	(-0.103– 0.029)	0.059	(-0.044– 0.161)
		Points redeemable for rewards	Money-valued incentives	0.115	(-0.011– 0.241)	0.113	(0.041 - 0.185)	-0.228	(-0.425 0.032)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.038	(-0.072 0.004)	-0.043	(-0.080 0.006)	0.081	(0.011– 0.151)
		\$100-<\$400	\$0-<\$25	-0.070	(-0.102 0.037)	-0.090	(-0.124 0.056)	0.160	(0.094– 0.225)
		\$400-<\$2,500	\$0-<\$25	-0.076	(-0.116 0.035)	-0.100	(-0.152 0.048)	0.176	(0.085– 0.267)
		\$2,500 or more	\$0-<\$25	-0.092	(-0.139 0.045)	-0.132	(-0.204 0.060)	0.225	(0.108– 0.341)

Table F-12 (continued) Change in predicted marginal probability relative to reference category: Respondent happy with rewards or incentives overall

 Table F-13

 Change in predicted marginal probability relative to reference category: Respondent happy with how often got rewards or incentives

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	-0.052	(-0.084 0.020)	-0.059	(-0.097 0.021)	0.111	(0.041– 0.180)
		Both in person and telephonic	In person	-0.017	(-0.045– 0.010)	-0.017	(-0.044– 0.010)	0.035	(-0.020– 0.089)
2	Incentive target	Outcome incentives alone	Process incentives alone	0.025	(-0.023– 0.073)	0.025	(-0.021– 0.071)	-0.050	(-0.143– 0.044)
		Process and outcome incentives	Process incentives alone	0.005	(-0.024– 0.034)	0.005	(-0.027– 0.037)	-0.010	(-0.071– 0.051)
3	Age	45 to 52 years	44 years or younger	-0.008	(-0.032– 0.017)	-0.008	(-0.033– 0.017)	0.016	(-0.034– 0.065)
		53 to 58 years	44 years or younger	-0.011	(-0.036– 0.014)	-0.011	(-0.037– 0.015)	0.022	(-0.029– 0.073)
		59 years or older	44 years or younger	-0.021	(-0.044– 0.002)	-0.022	(-0.047– 0.002)	0.043	(-0.005– 0.091)
4	Sex	Female	Male	-0.037	(-0.055 0.018)	-0.038	(-0.056 0.020)	0.075	(0.038– 0.111)
5	Married	Yes	No	-0.005	(-0.025– 0.015)	-0.005	(-0.027– 0.016)	0.010	(-0.031– 0.052)
6	Education	Less than high school graduate or GED	High school graduate or GED	-0.009	(-0.030– 0.011)	-0.011	(-0.035– 0.014)	0.020	(-0.025– 0.066)
		Some college or 2-year college degree	High school graduate or GED	0.016	(-0.005– 0.036)	0.017	(-0.005– 0.038)	-0.033	(-0.075– 0.010)
		4-year college degree or more	High school graduate or GED	0.037	(-0.000– 0.074)	0.036	(0.003– 0.069)	-0.073	(-0.143 0.003)

Table F-13 (continued) Change in predicted marginal probability relative to reference category: Respondent happy with how often got rewards or incentives

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Employed full- or part- time	Yes	No	-0.022	(-0.041 0.002)	-0.024	(-0.047 0.002)	0.046	(0.004– 0.087)
8	Race	Black alone	White alone	-0.009	(-0.028– 0.011)	-0.009	(-0.031– 0.012)	0.018	(-0.023– 0.059)
		Other	White alone	-0.003	(-0.029– 0.022)	-0.004	(-0.031– 0.023)	0.007	(-0.045– 0.059)
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.008	(-0.034– 0.017)	-0.009	(-0.038– 0.020)	0.017	(-0.037– 0.072)
10	Incentive form	Flexible wellness account	Money-valued incentives	-0.023	(-0.073– 0.027)	-0.027	(-0.093– 0.038)	0.050	(-0.065– 0.166)
		Points redeemable for rewards	Money-valued incentives	0.254	(0.082– 0.425)	0.100	(0.082– 0.118)	-0.354	(-0.515 0.192)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.077	(-0.121 0.033)	-0.054	(-0.084 0.025)	0.131	(0.060– 0.202)
		\$100-<\$400	\$0-<\$25	-0.105	(-0.148 0.062)	-0.084	(-0.110 0.059)	0.189	(0.123– 0.255)
		\$400-<\$2,500	\$0-<\$25	-0.133	(-0.185 0.081)	-0.122	(-0.166 0.077)	0.254	(0.162– 0.347)
		\$2,500 or more	\$0-<\$25	-0.152	(-0.212 0.093)	-0.153	(-0.218 0.088)	0.305	(0.185– 0.426)

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	-0.040	(-0.065 0.015)	-0.065	(-0.108 0.022)	0.105	(0.038– 0.173)
		Both in person and telephonic	In person	-0.024	(-0.044 0.003)	-0.036	(-0.068 0.004)	0.060	(0.007– 0.112)
2	Incentive target	Outcome incentives alone	Process incentives alone	0.030	(-0.007– 0.067)	0.047	(-0.007– 0.100)	-0.076	(-0.167– 0.014)
		Process and outcome incentives	Process incentives alone	0.016	(-0.006– 0.038)	0.027	(-0.010– 0.063)	-0.043	(-0.101– 0.015)
3	Age	45 to 52 years	44 years or younger	0.001	(-0.017– 0.019)	0.002	(-0.028– 0.031)	-0.003	(-0.050– 0.045)
		53 to 58 years	44 years or younger	0.004	(-0.015– 0.023)	0.006	(-0.024– 0.036)	-0.010	(-0.059– 0.039)
		59 years or older	44 years or younger	-0.003	(-0.020– 0.014)	-0.005	(-0.033– 0.024)	0.008	(-0.038– 0.054)
4	Sex	Female	Male	-0.019	(-0.033 0.005)	-0.030	(-0.051 0.009)	0.049	(0.014– 0.083)
5	Married	Yes	No	-0.012	(-0.026– 0.003)	-0.019	(-0.044– 0.005)	0.031	(-0.008– 0.071)
6	Education	Less than high school graduate or GED	High school graduate or GED	0.001	(-0.016– 0.017)	0.001	(-0.027– 0.028)	-0.001	(-0.045– 0.043)
		Some college or 2-year college degree	High school graduate or GED	0.003	(-0.012– 0.018)	0.005	(-0.020– 0.030)	-0.008	(-0.048– 0.032)
		4-year college degree or more	High school graduate or GED	0.023	(-0.005– 0.050)	0.034	(-0.005– 0.073)	-0.056	(-0.123– 0.010)

 Table F-14

 Change in predicted marginal probability relative to reference category: Rewards or incentives are fair

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Employed full- or part- time	Yes	No	-0.018	(-0.033 0.004)	-0.031	(-0.056 0.006)	0.049	(0.010– 0.089)
8	Race	Black alone	White alone	0.010	(-0.005– 0.026)	0.016	(-0.008– 0.041)	-0.027	(-0.067– 0.013)
		Other	White alone	-0.006	(-0.024– 0.012)	-0.011	(-0.041– 0.020)	0.017	(-0.032– 0.066)
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.000	(-0.020– 0.020)	-0.000	(-0.033– 0.033)	0.000	(-0.053– 0.053)
10	Incentive form	Flexible wellness account	Money-valued incentives	0.009	(-0.038– 0.055)	0.014	(-0.057– 0.084)	-0.022	(-0.140– 0.095)
		Points redeemable for rewards	Money-valued incentives	0.134	(0.004– 0.265)	0.128	(0.066– 0.189)	-0.262	(-0.452 0.071)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.028	(-0.061– 0.005)	-0.034	(-0.072– 0.005)	0.062	(-0.009– 0.133)
		\$100-<\$400	\$0-<\$25	-0.057	(-0.088 0.026)	-0.079	(-0.114 0.043)	0.136	(0.071– 0.201)
		\$400-<\$2,500	\$0-<\$25	-0.062	(-0.103 0.022)	-0.089	(-0.144 0.034)	0.151	(0.058– 0.245)
		\$2,500 or more	\$0-<\$25	-0.100	(-0.140 0.061)	-0.172	(-0.235 0.109)	0.272	(0.173– 0.371)

Table F-14 (continued) Change in predicted marginal probability relative to reference category: Rewards or incentives are fair

 Table F-15

 Change in predicted marginal probability relative to reference category: Rewards or incentives helped set goals and work toward them

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	-0.011	(-0.047– 0.025)	-0.016	(-0.073– 0.040)	0.027	(-0.065– 0.120)
		Both in person and telephonic	In person	-0.029	(-0.054 0.005)	-0.049	(-0.090 0.008)	0.078	(0.014– 0.143)
2	Incentive target	Outcome incentives alone	Process incentives alone	0.004	(-0.034– 0.042)	0.007	(-0.053– 0.067)	-0.011	(-0.109– 0.087)
		Process and outcome incentives	Process incentives alone	-0.001	(-0.030– 0.027)	-0.002	(-0.049– 0.044)	0.004	(-0.072– 0.079)
3	Age	45 to 52 years	44 years or younger	-0.008	(-0.027– 0.010)	-0.014	(-0.045– 0.017)	0.022	(-0.027– 0.072)
		53 to 58 years	44 years or younger	0.005	(-0.015– 0.025)	0.008	(-0.024– 0.040)	-0.013	(-0.065– 0.038)
		59 years or older	44 years or younger	0.003	(-0.016– 0.021)	0.004	(-0.026– 0.034)	-0.007	(-0.056– 0.042)
4	Sex	Female	Male	-0.007	(-0.020– 0.007)	-0.011	(-0.033– 0.012)	0.017	(-0.019– 0.053)
5	Married	Yes	No	-0.014	(-0.029– 0.001)	-0.024	(-0.051– 0.002)	0.039	(-0.003– 0.080)
6	Education	Less than high school graduate or GED	High school graduate or GED	-0.002	(-0.019– 0.015)	-0.004	(-0.033– 0.026)	0.006	(-0.041– 0.052)
		Some college or 2-year college degree	High school graduate or GED	0.009	(-0.007– 0.025)	0.015	(-0.011– 0.041)	-0.024	(-0.066– 0.018)
		4-year college degree or more	High school graduate or GED	0.009	(-0.017– 0.035)	0.014	(-0.027– 0.055)	-0.023	(-0.090– 0.044)

Table F-15 (continued) Change in predicted marginal probability relative to reference category: Rewards or incentives helped set goals and work toward them

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Employed full- or part- time	Yes	No	-0.005	(-0.021– 0.011)	-0.008	(-0.035– 0.018)	0.013	(-0.029– 0.056)
8	Race	Black alone	White alone	-0.022	(-0.038 0.006)	-0.036	(-0.063 0.010)	0.058	(0.017– 0.100)
		Other	White alone	-0.021	(-0.040 0.002)	-0.034	(-0.067 0.001)	0.055	(0.003– 0.107)
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.006	(-0.027– 0.015)	-0.010	(-0.046– 0.025)	0.016	(-0.040– 0.073)
10	Incentive form	Flexible wellness account	Money-valued incentives	-0.007	(-0.064– 0.051)	-0.011	(-0.111– 0.089)	0.018	(-0.139– 0.175)
		Points redeemable for rewards	Money-valued incentives	-0.016	(-0.077– 0.045)	-0.028	(-0.146– 0.089)	0.044	(-0.135– 0.223)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.008	(-0.040– 0.024)	-0.009	(-0.048– 0.029)	0.017	(-0.054– 0.087)
		\$100-<\$400	\$0-<\$25	-0.042	(-0.077 0.008)	-0.061	(-0.105 0.018)	0.104	(0.026– 0.181)
		\$400-<\$2,500	\$0-<\$25	-0.085	(-0.126 0.044)	-0.157	(-0.225 0.089)	0.242	(0.136– 0.349)
		\$2,500 or more	\$0-<\$25	-0.097	(-0.141 0.053)	-0.192	(-0.278 0.106)	0.289	(0.162– 0.416)

 Table F-16

 Change in predicted marginal probability relative to reference category: Rewards or incentives helped make positive changes in life

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	-0.024	(-0.059– 0.011)	-0.037	(-0.093– 0.019)	0.061	(-0.030– 0.152)
		Both in person and telephonic	In person	-0.035	(-0.060 0.009)	-0.057	(-0.099–- 0.015)	0.092	(0.025– 0.158)
2	Incentive target	Outcome incentives alone	Process incentives alone	0.019	(-0.021– 0.059)	0.029	(-0.029– 0.087)	-0.048	(-0.146– 0.050)
		Process and outcome incentives	Process incentives alone	0.001	(-0.027– 0.029)	0.002	(-0.046– 0.049)	-0.002	(-0.078– 0.073)
3	Age	45 to 52 years	44 years or younger	-0.001	(-0.019– 0.018)	-0.001	(-0.032– 0.030)	0.002	(-0.048– 0.051)
		53 to 58 years	44 years or younger	0.005	(-0.014– 0.025)	0.008	(-0.023– 0.040)	-0.014	(-0.065– 0.038)
		59 years or older	44 years or younger	-0.004	(-0.022– 0.014)	-0.006	(-0.037– 0.024)	0.010	(-0.039– 0.059)
4	Sex	Female	Male	-0.008	(-0.021– 0.006)	-0.012	(-0.035– 0.010)	0.020	(-0.016– 0.056)
5	Married	Yes	No	-0.009	(-0.024– 0.007)	-0.015	(-0.041– 0.012)	0.023	(-0.018– 0.065)
6	Education	Less than high school graduate or GED	High school graduate or GED	-0.009	(-0.026– 0.008)	-0.016	(-0.046– 0.013)	0.026	(-0.021– 0.072)
		Some college or 2-year college degree	High school graduate or GED	-0.003	(-0.019– 0.013)	-0.005	(-0.031– 0.022)	0.008	(-0.035– 0.050)
		4-year college degree or more	High school graduate or GED	0.020	(-0.009– 0.048)	0.029	(-0.010– 0.069)	-0.049	(-0.116– 0.019)

Table F-16 (continued) Change in predicted marginal probability relative to reference category: Rewards or incentives helped make positive changes in life

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Employed full- or part- time	Yes	No	0.000	(-0.016– 0.016)	0.000	(-0.026– 0.027)	-0.001	(-0.043– 0.042)
8	Race	Black alone	White alone	-0.018	(-0.034 0.003)	-0.030	(-0.056 0.004)	0.048	(0.007– 0.090)
		Other	White alone	-0.019	(-0.038 0.000)	-0.032	(-0.065– 0.001)	0.051	(-0.001– 0.102)
9	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.006	(-0.026– 0.015)	-0.010	(-0.045– 0.025)	0.015	(-0.040– 0.071)
10	Incentive form	Flexible wellness account	Money-valued incentives	0.002	(-0.057– 0.062)	0.004	(-0.092– 0.100)	-0.006	(-0.162– 0.150)
		Points redeemable for rewards	Money-valued incentives	0.011	(-0.065– 0.087)	0.017	(-0.095– 0.130)	-0.029	(-0.217– 0.160)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.025	(-0.058– 0.008)	-0.030	(-0.069– 0.008)	0.056	(-0.015– 0.126)
		\$100-<\$400	\$0-<\$25	-0.051	(-0.087 0.015)	-0.070	(-0.111 0.029)	0.120	(0.044– 0.197)
		\$400-<\$2500	\$0-<\$25	-0.091	(-0.134 0.049)	-0.159	(-0.224 0.094)	0.250	(0.145– 0.355)
		\$2500 or more	\$0-<\$25	-0.113	(-0.156 0.070)	-0.225	(-0.301 0.150)	0.339	(0.224– 0.453)

Figure F-1

Ordinal proportional odds model of respondent happy with how often got rewards or incentives: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0–<\$25



Figure F-2

Ordinal proportional odds model of rewards or incentives helped set goals and work towards them: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0–<\$25



Figure F-3

Ordinal proportional odds model of rewards or incentives helped make positive changes in life: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0–<\$25



	Overall pro	ogram rating	Respond	ent would reco family and	mmend pro friends	gram to	Overall program satisfaction			
			Yes, definitely	Yes, probably	No		Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied	
Characteristic	Mean	P-value		Row %		P-value		Row %		P-value
Frequency of Contact with Program Staff	_	_	_	_	_	< 0.001		_	_	< 0.001
Always	9.0	< 0.001	87.4	11.6	1.1	-	81.4	16.0	2.6	_
Usually	8.3	< 0.001	71.1	27.6	1.3	-	60.7	35.8	3.5	_
Sometimes	7.5	0.006	50.7	38.9	10.4	-	39.8	42.9	17.3	_
Never	6.3	reference	35.7	42.9	21.4	_	26.8	42.9	30.4	_
I did not try to contact program staff	8.0	< 0.001	61.9	31.8	6.3	-	57.3	33.3	9.3	_
Started Program as Soon as Wanted		< 0.001	_	_	_	< 0.001	_	_	_	< 0.001
Yes	8.6	-	76.9	20.5	2.6		69.9	25.0	5.1	_
No	7.2	_	51.5	35.0	13.5		39.3	41.8	18.9	_
Amount of Time Spent on Program Was About Right	—	< 0.001	—		_	< 0.001	—	_	_	< 0.001
Yes	8.7	-	77.8	20.4	1.8	_	72.2	24.2	3.6	_
No	7.0	-	48.4	35.7	15.9	-	27.4	45.2	27.4	_
Program Schedule Was Convenient		< 0.001	_	_	_	< 0.001	_	_	_	< 0.001
Yes	8.7	-	78.1	20.0	1.9	_	71.4	24.5	4.1	_
No	6.3	-	35.5	42.6	21.9	_	21.9	48.1	30.1	_
Program Location Was Convenient	_	< 0.001	_	_	_	< 0.001	_	_	_	< 0.001
Yes	8.6	-	77.1	20.4	2.5	_	70.2	24.8	5.1	_
No	6.9	-	42.0	41.4	16.6	_	31.5	46.4	22.0	_
Program Staff Spoke Respondent's Language		0.004	_	_	_	< 0.001	_	_	_	< 0.001
Yes	8.5	-	75.2	21.7	3.2	-	67.8	26.2	6.1	-
No	7.7	-	57.9	27.6	14.5	_	46.7	37.3	16.0	_

 Table F-17

 Descriptive and bivariate analyses for overall program satisfaction by satisfaction with program access

	Overall pro	ogram rating	Respond	lent would reco family and	mmend pro friends	gram to	Overall program satisfaction			
			Yes, definitely	Yes, probably	No		Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied	
Characteristic	Mean	P-value		Row %		P-value		Row %		P-value
Got Child Care When Needed to Attend the Program	—	_	—		—	0.013	—	—	—	0.002
Yes	8.9	< 0.001	79.5	18.9	1.5	_	75.6	22.9	1.5	-
No	7.9	reference	62.3	30.7	7.0	-	53.4	36.2	10.3	_
I did not need child care.	8.5	0.017	74.8	21.6	3.5	-	67.5	26.0	6.5	_
Got Transportation When Needed to Attend the Program	—	-	—		—	< 0.001	—	—	—	< 0.001
Yes	8.7	< 0.001	77.8	19.1	3.1	_	74.4	21.5	4.1	-
No	7.4	reference	56.5	35.2	8.3	_	40.4	43.5	16.1	-
I did not need transportation.	8.5	< 0.001	75.1	21.7	3.1	-	67.2	26.8	6.0	_
Frequency that Respondent Got Help Wanted from Program Staff	—	-	—		_	< 0.001	—	—	—	< 0.001
Always	9.1	< 0.001	87.5	11.6	0.9	_	82.8	14.8	2.4	-
Usually	8.0	< 0.001	64.2	34.6	1.2	-	50.9	45.3	3.9	-
Sometimes	7.0	0.112	37.1	47.3	15.5	-	27.0	50.4	22.6	_
Never	6.4	reference	38.5	34.6	26.9	_	33.8	29.9	36.4	_

Table F-17 (continued) Descriptive and bivariate analyses for overall program satisfaction by satisfaction with program access

 Table F-18

 Descriptive and bivariate analyses for overall program satisfaction by satisfaction with program materials, resources, and communication with staff

	Overall pr	ogram rating	Respond	ent would record family and	mmend pro friends	gram to	(Overall progra	m satisfaction	
Characteristic	Moon	D value	Yes, definitely	Yes, probably	No	D volue	Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied	- D voluo
Halpfulness of Education Materials or	Weall	r-value		KUW /0		<0.001		KUW /0		<0.001
Information About Health Issues	_	_	_	_		<0.001		_		<0.001
Received not helpful or no materials	7.6	reference	58.5	31.3	10.2	-	46.7	37.6	15.7	-
Received materials that were somewhat helpful	7.7	0.729	59.1	37.1	3.9	_	47.6	44.6	7.8	_
Received materials that were very helpful	9.1	< 0.001	86.2	12.7	1.1	-	82.0	15.5	2.4	-
Program Staff Explained Things in a Way Respondent Could Understand	—	-	—	—	_	< 0.001	—	—	—	< 0.001
Somewhat or strongly disagree	5.8	reference	33.7	37.3	28.9	-	18.1	39.8	42.2	-
Somewhat agree	7.4	< 0.001	47.2	45.1	7.7	_	36.0	52.4	11.6	_
Strongly agree	8.8	< 0.001	82.7	16.0	1.3	-	76.6	20.1	3.3	-
Program Staff Listened Carefully to What Respondent Had to Say	—	_	_	_	_	< 0.001	—	—	_	< 0.001
Somewhat or strongly disagree	5.8	reference	27.2	44.7	28.2	-	20.4	34.0	45.6	_
Somewhat agree	7.4	< 0.001	47.9	45.5	6.6	-	34.7	53.4	11.8	_
Strongly agree	8.9	< 0.001	83.0	15.6	1.4	-	76.8	20.3	2.9	-
Program Staff Encouraged Respondent to Ask Questions	_	_	—	—	—	< 0.001	_	—	—	< 0.001
Somewhat or strongly disagree	6.0	reference	28.3	44.8	26.9		19.2	40.4	40.4	-
Somewhat agree	7.7	< 0.001	52.8	41.6	5.6		43.3	48.4	8.3	_
Strongly agree	8.9	< 0.001	84.2	14.8	1.0		77.5	19.6	2.8	-
Program Staff Encouraged Respondent to Talk About Health Concerns	—	_	_	_	_	< 0.001	—	—	_	< 0.001
Somewhat or strongly disagree	6.4	Reference	39.0	37.2	23.8		27.3	40.1	32.6	_
Somewhat agree	7.7	< 0.001	55.1	39.8	5.1		43.7	46.6	9.7	-
Strongly agree	8.9	< 0.001	83.3	15.8	1.0		77.4	19.9	2.7	_

Table F-18 (continued) Descriptive and bivariate analyses for overall program satisfaction by satisfaction with program materials, resources, and communication with staff

	Overall pro	ogram rating	Respond	Respondent would recommend program to family and friends			Overall program satisfaction			
			Yes, definitely	Yes, probably	No		Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied	
Characteristic	Mean	P-value		Row %		P-value		Row %		P-value
Program Staff Seemed to Care About Respondent as a Person	_	_	—	_	_	< 0.001	_	—	—	< 0.001
Somewhat or strongly disagree	5.7	reference	30.7	41.4	27.9		12.9	45.3	41.7	-
Somewhat agree	7.4	< 0.001	46.8	45.7	7.5	-	34.8	54.3	10.9	-
Strongly agree	8.9	< 0.001	83.6	15.6	0.8	—	78.1	19.3	2.6	_

	Overall pro	ogram rating	Respond	ent would record	mmend pro	gram to		Overall progra	m satisfaction	
			Yes, definitely	Yes, probably	No		Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied	
Characteristic	Mean	P-value		Row %		P-value		Row %		P-value
Respondent Liked Getting Rewards or Incentives For Taking Good Care of Health	_	_	—	—	—	< 0.001	—	—	—	< 0.001
Somewhat or strongly disagree	7.6	reference	55.0	33.3	11.7	-	46.0	35.4	18.6	-
Somewhat agree	7.8	0.588	56.5	35.2	8.3	-	46.9	41.4	11.7	-
Strongly agree	8.7	< 0.001	80.7	17.4	1.9	-	73.5	22.0	4.6	_
Respondent Happy with Rewards or Incentives Overall	_	-	—	—	—	< 0.001	—	—	—	< 0.001
Somewhat or strongly disagree	6.7	reference	41.7	42.9	15.4	-	26.1	46.5	27.4	_
Somewhat agree	7.8	< 0.001	55.9	38.0	6.1	-	42.5	48.3	9.2	_
Strongly agree	8.8	< 0.001	83.6	14.8	1.6	-	77.9	18.4	3.6	-
Respondent Happy with How Often Got Rewards or Incentives	_	_	—	—	—	< 0.001	_	—	—	< 0.001
Somewhat or strongly disagree	7.0	reference	48.3	37.9	13.8	-	32.8	44.8	22.4	_
Somewhat agree	7.8	< 0.001	61.6	33.3	5.1	_	48.9	43.8	7.3	-
Strongly agree	8.9	< 0.001	84.7	14.1	1.2	-	79.8	16.9	3.3	_
Rewards or Incentives Are Fair	_	_	_	_	_	< 0.001	_	_	_	< 0.001
Somewhat or strongly disagree	7.0	reference	48.1	36.5	15.4	-	32.7	42.8	24.5	-
Somewhat agree	7.6	0.006	55.5	38.4	6.1	-	43.8	46.4	9.8	-
Strongly agree	8.9	< 0.001	83.7	14.8	1.5	_	78.0	18.4	3.6	_

 Table F-19

 Descriptive and bivariate analyses for overall program satisfaction by satisfaction with incentives

			Respond	ent would reco	mmend pro	gram to				
	Overall pro	ogram rating	_	family and	friends			Overall progra	m satisfaction	
		_	Yes, definitely	Yes, probably	No	_	Very satisfied	Somewhat satisfied	Somewhat or very dissatisfied	_
Characteristic	Mean	P-value		Row %		P-value		Row %		P-value
Rewards or Incentives Helped Set Goals and Work Toward Them						< 0.001				< 0.001
Somewhat or strongly disagree	7.1	reference	52.2	34.4	13.3		38.1	40.3	21.5	
Somewhat agree	7.9	< 0.001	59.6	35.4	5.0		49.7	41.9	8.5	
Strongly agree	8.9	< 0.001	84.7	13.6	1.7		78.8	17.4	3.7	
Rewards or Incentives Helped Make Positive Changes in Life						< 0.001				< 0.001
Somewhat or strongly disagree	7.0	reference	48.0	34.5	17.5		35.6	39.0	25.4	
Somewhat agree	7.9	< 0.001	60.5	35.6	3.9		49.1	43.5	7.4	
Strongly agree	8.9	< 0.001	85.2	13.4	1.4		79.6	16.9	3.5	

Table F-20 Descriptive and bivariate analyses for overall program satisfaction by perception of impact of incentives

				Ef	fect	909	% CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
1	Program delivery method	Telephonic	In person	0.99	0.980	0.68	1.46
		Both in person and telephonic	In person	0.59	0.001*	0.45	0.76
2	Incentive target	Outcome incentives alone	Process incentives alone	1.07	0.819	0.67	1.68
		Process and outcome incentives	Process incentives alone	1.06	0.729	0.79	1.43
3	Incentive form	Flexible wellness account	Money-valued incentives	1.87	0.061*	1.08	3.25
		Points redeemable for rewards	Money-valued incentives	0.47	0.114	0.22	1.03
4	Age	45 to 52 years	44 years or younger	1.02	0.910	0.81	1.28
		53 to 58 years	44 years or younger	1.2	0.223	0.94	1.53
		59 years or older	44 years or younger	1.58	0.001*	1.25	1.99
5	Sex	Female	Male	1.41	0.001*	1.19	1.67
6	Married	Yes	No	0.8	0.060*	0.65	0.97
7	Education	Less than high school graduate or GED	High school graduate or GED	0.85	0.222	0.68	1.06
		Some college or 2-year college degree	High school graduate or GED	0.79	0.052*	0.65	0.96
		4-year college degree or more	High school graduate or GED	0.91	0.603	0.66	1.24
8	Employed full- or part-time	Yes	No	1.44	0.004*	1.17	1.78
9	Race	Black alone	White alone	1.11	0.378	0.91	1.36
		Other	White alone	1.1	0.521	0.86	1.41
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.28	0.115	0.99	1.67
11	Started program as soon as wanted	Yes	No	1.18	0.396	0.86	1.63
12	Amount of time spent on program was about right	Yes	No	1.39	0.063*	1.04	1.86
13	Program schedule was convenient	Yes	No	2.5	0.000*	1.72	3.63
14	Program location was convenient	Yes	No	1.36	0.169	0.94	1.96
15	Program staff spoke respondent's language	Yes	No	1.14	0.695	0.65	2.01

Table F-21Ordinal proportional odds model displaying odds of levels having higher overall satisfaction scores (scores of 1–7, 8, 9, 10)

Table F-21 (continued)Ordinal proportional odds model displaying odds of levels having higher overall satisfaction scores (scores of 1–7, 8, 9, 10)

				Effect		90	% CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
16	Got help wanted from program staff	Always	Sometimes or never	1.89	0.001*	1.39	2.56
		Usually	Sometimes or never	0.82	0.295	0.6	1.12
17	Helpfulness of education materials or information about health issues	Received materials that were somewhat helpful	Received not helpful or no materials	0.64	0.006*	0.49	0.84
		Received materials that were very helpful	Received not helpful or no materials	1.52	0.005*	1.19	1.94
18	Incentives helped make positive changes	Somewhat agree	Somewhat or strongly disagree	0.91	0.689	0.63	1.33
		Strongly agree	Somewhat or strongly disagree	1.54	0.066*	1.05	2.27
19	Liked getting incentives for taking care of health	Somewhat agree	Somewhat or strongly disagree	0.42	0.002*	0.26	0.67
		Strongly agree	Somewhat or strongly disagree	0.5	0.013*	0.32	0.79
20	Happy with rewards or incentives overall	Somewhat agree	Somewhat or strongly disagree	1.52	0.084*	1.02	2.25
		Strongly agree	Somewhat or strongly disagree	2.12	0.001*	1.44	3.11
21	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.16	0.429	0.85	1.59
		\$100-<\$400	\$0-<\$25	1.71	0.004*	1.25	2.32
		\$400-<\$2,500	\$0-<\$25	2	0.011*	1.28	3.12
		\$2,500 or more	\$0-<\$25	5.03	0.000*	2.64	9.59
22	Communication with program staff (score 0–10)	9.6105	8.6105	1.19	0.000*	1.13	1.25

 Table F-22

 Ordinal proportional odds model displaying odds of having higher likelihood of recommending the program to family and friends (yes definitely, yes probably, vs. no)

				Effect		90%	% CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
1	Program delivery method	Telephonic	In person	1.73	0.078*	1.04	2.87
		Both in person and telephonic	In person	1.19	0.424	0.83	1.7
2	Incentive target	Outcome incentives alone	Process incentives alone	1.06	0.862	0.6	1.87
		Process and outcome incentives	Process incentives alone	1.2	0.448	0.81	1.77
3	Incentive form	Flexible wellness account	Money-valued incentives	0.71	0.438	0.34	1.48
		Points redeemable for rewards	Money-valued incentives	0.32	0.048*	0.12	0.83
4	Age	45 to 52 years	44 years or younger	1.14	0.490	0.83	1.57
		53 to 58 years	44 years or younger	0.95	0.783	0.68	1.31
		59 years or older	44 years or younger	1.12	0.568	0.81	1.53
5	Sex	Female	Male	1.01	0.935	0.8	1.28
6	Married	Yes	No	0.89	0.454	0.68	1.16
7	Education	Less than high school graduate or GED	High school graduate or GED	0.91	0.601	0.67	1.23
		Some college or 2-year college degree	High school graduate or GED	1.2	0.286	0.91	1.58
		4-year college degree or more	High school graduate or GED	1.25	0.388	0.82	1.9
8	Employed full- or part-time	Yes	No	0.93	0.670	0.7	1.23
9	Race	Black alone	White alone	1.26	0.167	0.96	1.67
		Other	White alone	0.87	0.474	0.62	1.21
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.27	0.282	0.88	1.84
11	Started program as soon as wanted	Yes	No	0.82	0.381	0.57	1.19
12	Amount of time spent on program was about right	Yes	No	1.71	0.006*	1.24	2.36
13	Program schedule was convenient	Yes	No	2.42	0.000*	1.66	3.51
14	Program location was convenient	Yes	No	1.43	0.135	0.96	2.12
15	Program staff spoke respondent's language	Yes	No	0.63	0.264	0.32	1.24

Table F-22 (continued) Ordinal proportional odds model displaying odds of having higher likelihood of recommending the program to family and friends (yes definitely, yes probably, vs. no)

				Effect		909	% CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
16	Got help wanted from program staff	Always	Sometimes or never	3.64	0.000*	2.58	5.14
		Usually	Sometimes or never	1.92	0.001*	1.37	2.69
17	Helpfulness of education materials or information about health issues	Received materials that were somewhat helpful	Received not helpful or no materials	0.75	0.134	0.55	1.03
		Received materials that were very helpful	Received not helpful or no materials	1.51	0.030*	1.11	2.06
18	Incentives helped make positive changes	Somewhat agree	Somewhat or strongly disagree	1.11	0.675	0.74	1.66
		Strongly agree	Somewhat or strongly disagree	1.91	0.014*	1.24	2.94
19	Liked getting incentives for taking care of health	Somewhat agree	Somewhat or strongly disagree	0.44	0.011*	0.26	0.75
		Strongly agree	Somewhat or strongly disagree	0.77	0.399	0.45	1.29
20	Happy with rewards or incentives overall	Somewhat agree	Somewhat or strongly disagree	1.22	0.434	0.8	1.85
		Strongly agree	Somewhat or strongly disagree	1.84	0.015*	1.22	2.79
21	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.1	0.689	0.74	1.64
		\$100-<\$400	\$0-<\$25	1.2	0.442	0.81	1.78
		\$400-<\$2,500	\$0-<\$25	1.19	0.616	0.67	2.1
		\$2,500 or more	\$0-<\$25	3.95	0.012*	1.6	9.74
22	Communication with program staff (score 0–10)	9.6105	8.6105	1.21	0.000*	1.15	1.28

				Ef	fect	90%	% CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
1	Program delivery method	Telephonic	In person	1.11	0.714	0.7	1.77
		Both in person and telephonic	In person	0.8	0.252	0.58	1.1
2	Incentive target	Outcome incentives alone	Process incentives alone	1.15	0.685	0.65	2.03
		Process and outcome incentives	Process incentives alone	0.96	0.862	0.66	1.4
3	Incentive form	Flexible wellness account	Money-valued incentives	1.79	0.197	0.85	3.75
		Points redeemable for rewards	Money-valued incentives	0.74	0.593	0.29	1.88
4	Age	45 to 52 years	44 years or younger	1.22	0.264	0.91	1.63
		53 to 58 years	44 years or younger	1.13	0.483	0.84	1.53
		59 years or older	44 years or younger	1.62	0.007*	1.21	2.18
5	Sex	Female	Male	0.86	0.265	0.7	1.07
6	Married	Yes	No	0.82	0.181	0.64	1.05
7	Education	Less than high school graduate or GED	High school graduate or GED	0.74	0.082*	0.56	0.98
		Some college or 2-year college degree	High school graduate or GED	0.96	0.788	0.74	1.24
		4-year college degree or more	High school graduate or GED	0.95	0.822	0.64	1.4
8	Employed full- or part-time	Yes	No	1.28	0.116	0.99	1.67
9	Race	Black alone	White alone	1.04	0.777	0.81	1.34
		Other	White alone	0.87	0.448	0.64	1.18
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.44	0.079*	1.02	2.03
11	Started program as soon as wanted	Yes	No	0.99	0.954	0.7	1.39
12	Amount of time spent on program was about right	Yes	No	2.92	0.000*	2.15	3.97
13	Program schedule was convenient	Yes	No	2.43	0.000*	1.69	3.49
14	Program location was convenient	Yes	No	1.31	0.243	0.89	1.93
15	Program staff spoke respondent's language	Yes	No	0.93	0.865	0.49	1.79

 Table F-23

 Ordinal proportional odds model displaying odds of levels having higher overall program satisfaction (very satisfied, somewhat satisfied, vs. dissatisfied)

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Table F-23 (continued)Ordinal proportional odds model displaying odds of levels having higher overall program satisfaction (very satisfied, somewhat satisfied, vs. dissatisfied)

				Effect		90%	∕₀ CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
16	Got help wanted from program staff	Always	Sometimes or never	3.05	0.000*	2.19	4.25
		Usually	Sometimes or never	1.46	0.053*	1.06	2.02
17	Helpfulness of education materials or information about health issues	Received materials that were somewhat helpful	Received not helpful or no materials	0.93	0.695	0.7	1.25
		Received materials that were very helpful	Received not helpful or no materials	1.86	0.000*	1.39	2.48
18	Incentives helped make positive changes	Somewhat agree	Somewhat or strongly disagree	1.39	0.163	0.94	2.06
		Strongly agree	Somewhat or strongly disagree	2.18	0.002*	1.44	3.3
19	Liked getting incentives for taking care of health	Somewhat agree	Somewhat or strongly disagree	0.47	0.013*	0.28	0.78
		Strongly agree	Somewhat or strongly disagree	0.66	0.170	0.4	1.09
20	Happy with rewards or incentives overall	Somewhat agree	Somewhat or strongly disagree	1.56	0.071*	1.04	2.33
		Strongly agree	Somewhat or strongly disagree	2.77	0.000*	1.87	4.12
21	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.01	0.947	0.71	1.45
		\$100-<\$400	\$0-<\$25	1.47	0.074*	1.03	2.1
		\$400-<\$2,500	\$0-<\$25	1.67	0.117	0.97	2.85
		\$2,500 or more	\$0-<\$25	2.44	0.094*	1.02	5.85
22	Communication with program staff (score 0–10)	9.6105	8.6105	1.2	0.000*	1.14	1.26

9 Characteristic Group Reference 8 90% CI 90% CI 10 90% CI Program delivery method Telephonic In person 0.000 (-0.019-0.000 (-0.006 --0.001(-0.069 -1 0.019) 0.006) 0.067) (0.001 -Both in person and In person 0.024 (0.013 -0.004 -0.094 (-0.138 - telephonic 0.036) 0.007) 0.050) (-0.006-(-0.070 -2 Incentive target Outcome incentives Process incentives alone -0.003 (-0.025 --0.001 0.011 0.019) alone 0.004) 0.093) Process and outcome Process incentives alone -0.003 (-0.017 --0.001 (-0.004-0.011 (-0.042 incentives 0.011) 0.002) 0.064) Incentive form Money-valued incentives -0.033 -0.013 (-0.028 -(0.013 -3 Flexible wellness (-0.065---0.115 0.002) 0.003) account 0.217) Points redeemable for Money-valued incentives 0.030 (0.008 --0.004 (-0.020 --0.132 (-0.261-rewards 0.053) 0.013) 0.004) 4 -0.000 (-0.001 -0.003 (-0.038 -Age 45 to 52 years 44 years or younger -0.001 (-0.011 -0.010) 0.001) 0.044)-0.008 (-0.020 --0.001 (-0.003 -0.032 (-0.011 -53 to 58 years 44 years or younger 0.003) 0.001) 0.075) 59 years or older 44 years or younger -0.022 (-0.034---0.005 (-0.009--0.082 (0.040 -0.011) 0.002)0.123) 5 Sex Female (-0.024----0.003 (-0.005---(0.031 -Male -0.0160.061 0.008) 0.001) 0.092) Yes No 0.011 (0.002 -0.002 (0.000 --0.040 (-0.075 - -6 Married 0.020)0.003)0.005) Education (-0.003 -(-0.001 -(-0.070 -7 Less than high school High school graduate or 0.008 0.002 -0.030 graduate or GED GED 0.019) 0.005) 0.010) Some college or 2-year High school graduate or 0.011 (0.002 -0.003 (0.000 --0.042 (-0.078 - college degree GED 0.021) 0.005)0.006) (-0.010 -0.001 (-0.003 -(-0.074 -4-year college degree or High school graduate or 0.005 -0.018 more GED 0.020) 0.005) 0.039) Employed full- or part-(-0.029---(-0.009---(0.028 -8 Yes No -0.018 -0.005 0.066 0.007) 0.001) 0.103) time

Table F-24Change in predicted marginal probability relative to reference category: Overall satisfaction score, 1–7,8,9,10

	Characteristic	Group	Reference	8	90% CI	9	90% CI	10	90% CI
9	Race	Black alone	White alone	-0.005	(-0.015– 0.005)	-0.001	(-0.003– 0.001)	0.019	(-0.017– 0.055)
		Other	White alone	-0.005	(-0.017– 0.007)	-0.001	(-0.004– 0.002)	0.017	(-0.027– 0.062)
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.012	(-0.025– 0.001)	-0.003	(-0.008– 0.001)	0.045	(-0.002– 0.092)
11	Started program as soon as wanted	Yes	No	-0.008	(-0.022– 0.007)	-0.001	(-0.003– 0.000)	0.030	(-0.028– 0.087)
12	Amount of time spent on program was about right	Yes	No	-0.015	(-0.028 0.002)	-0.002	(-0.003 0.000)	0.059	(0.007– 0.111)
13	Program schedule was convenient	Yes	No	-0.034	(-0.044 0.025)	0.006	(-0.003– 0.016)	0.158	(0.098– 0.218)
14	Program location was convenient	Yes	No	-0.014	(-0.030– 0.002)	-0.002	(-0.003 0.000)	0.055	(-0.010– 0.119)
15	Program staff spoke respondent's language	Yes	No	-0.006	(-0.032– 0.019)	-0.001	(-0.004– 0.002)	0.024	(-0.076– 0.124)
16	Got help wanted from program staff	Always	Sometimes or never	-0.034	(-0.049 0.019)	-0.004	(-0.007 0.000)	0.119	(0.063– 0.175)
		Usually	Sometimes or never	0.008	(-0.005– 0.021)	-0.002	(-0.006– 0.001)	-0.035	(-0.090– 0.020)
17	Helpfulness of education materials or information about health issues	Received materials that were somewhat helpful	Received not helpful or no materials	0.019	(0.007– 0.031)	-0.004	(-0.008– 0.000)	-0.079	(-0.126 0.032)
		Received materials that were very helpful	Received not helpful or no materials	-0.023	(-0.037 0.010)	-0.004	(-0.006 0.002)	0.079	(0.033– 0.125)
18	Incentives helped make positive changes	Somewhat agree	Somewhat or strongly disagree	0.004	(-0.013– 0.021)	-0.000	(-0.001– 0.001)	-0.016	(-0.083– 0.051)
		Strongly agree	Somewhat or strongly disagree	-0.022	(-0.041 0.003)	-0.003	(-0.005 0.001)	0.080	(0.009– 0.150)

Table F-24 (continued)Change in predicted marginal probability relative to reference category: Overall satisfaction score, 1–7,8,9,10

	Characteristic	Group	Reference	8	90% CI	9	90% CI	10	90% CI
19	Liked getting incentives for taking care of health	Somewhat agree	Somewhat or strongly disagree	0.043	(0.019– 0.068)	0.015	(0.002– 0.028)	-0.154	(-0.234 0.074)
		Strongly agree	Somewhat or strongly disagree	0.035	(0.011– 0.059)	0.014	(0.001– 0.027)	-0.122	(-0.201 0.044)
20	Happy with rewards or incentives overall	Somewhat agree	Somewhat or strongly disagree	-0.016	(-0.030 0.002)	0.004	(-0.003– 0.010)	0.072	(0.005– 0.140)
		Strongly agree	Somewhat or strongly disagree	-0.032	(-0.046 0.018)	0.001	(-0.005– 0.008)	0.133	(0.068– 0.199)
21	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.007	(-0.020– 0.007)	0.001	(-0.002- 0.003)	0.027	(-0.029– 0.084)
		\$100-<\$400	\$0-<\$25	-0.026	(-0.040 0.012)	-0.002	(-0.005– 0.002)	0.099	(0.043– 0.156)
		\$400-<\$2,500	\$0-<\$25	-0.035	(-0.058 0.012)	-0.004	(-0.011– 0.002)	0.130	(0.046– 0.214)
		\$2,500 or more	\$0-<\$25	-0.088	(-0.125 0.051)	-0.034	(-0.055 0.013)	0.298	(0.183– 0.413)
22	Communication with program staff (score 0–10)	9.6105	8.6105	-0.008	(-0.011 0.006)	-0.002	(-0.003 0.001)	0.031	(0.023– 0.040)

Table F-24 (continued)Change in predicted marginal probability relative to reference category: Overall satisfaction score, 1–7,8,9,10

Yes. Yes. Group Reference Characteristic No 90% CI 90% CI 90% CI probably definitely Program delivery Telephonic -0.014 (-0.025----0.050 (-0.095---0.064 (0.008 -1 In person method 0.002)0.006) 0.120) Both in person and In person -0.005 (-0.015 --0.017 (-0.051-0.022 (-0.023 telephonic 0.005) 0.018) 0.066) Incentive target (-0.017 -(-0.060 -(-0.063 -2 Outcome incentives Process incentives alone -0.002 -0.006 0.007 alone 0.014) 0.049) 0.077) Process and outcome Process incentives alone -0.005 (-0.015 --0.017 (-0.054 -0.022 (-0.026 incentives 0.006)0.020) 0.069) 3 Flexible wellness (-0.013 -0.034 (-0.040 --0.044 (-0.142 -Incentive form Money-valued incentives 0.010 account 0.033) 0.109) 0.053) Points redeemable for Money-valued incentives 0.042 (-0.005 -0.121 (0.012 --0.162 (-0.318--rewards 0.089) 0.230) 0.007) 44 years or younger -0.003 (-0.012 --0.013 (-0.043 -0.016 (-0.022 -4 45 to 52 years Age 0.005) 0.018) 0.055) (-0.027 -(-0.048 -53 to 58 years 44 years or younger 0.002 (-0.008 -0.005 -0.007 0.011)0.037) 0.034) 59 years or older -0.003 (-0.011 --0.011 (-0.041 -0.013 (-0.025 -44 years or younger 0.005) 0.020) 0.052) 5 Sex Female Male -0.000 (-0.006 --0.001 (-0.023 -0.001 (-0.027 -0.006) 0.021) 0.030) 6 Married Yes No 0.003 (-0.004 -0.012 (-0.014 --0.015 (-0.048 -0.011) 0.038) 0.018) 7 Education Less than high school High school graduate or 0.003 (-0.006-0.009 (-0.020--0.012 (-0.050 graduate or GED GED 0.011) 0.039) 0.026) Some college or 2-year High school graduate or -0.005 (-0.012 --0.017 (-0.043 -0.022 (-0.012 college degree GED 0.003) 0.009) 0.055) 4-year college degree or High school graduate or -0.006 (-0.016 --0.021 (-0.060 -0.026 (-0.023 -GED 0.005) 0.018) 0.076) more (-0.006 -0.007 (-0.020-(-0.043 -8 Employed full- or part-Yes No 0.002 -0.009 0.009)0.034) 0.026) time

 Table F-25

 Change in predicted marginal probability relative to reference category: Recommend program to family and friends

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	Characteristic	Group	Reference	No	90% CI	Yes, probably	90% CI	Yes, definitely	90% CI
9	Race	Black alone	White alone	-0.006	(-0.013-	-0.022	(-0.048-	0.028	(-0.005-
		Other	White alone	0.004	(-0.006 - 0.014)	0.014	(-0.019– 0.047)	-0.018	(-0.061 - 0.024)
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.006	(-0.015 - 0.003)	-0.023	(-0.056– 0.011)	0.029	(-0.014 - 0.071)
11	Started program as soon as wanted	Yes	No	0.005	(-0.004– 0.014)	0.018	(-0.015– 0.051)	-0.023	(-0.065– 0.019)
12	Amount of time spent on program was about right	Yes	No	-0.016	(-0.026 0.005)	-0.056	(-0.093 0.019)	0.072	(0.025– 0.119)
13	Program schedule was convenient	Yes	No	-0.028	(-0.043 0.013)	-0.098	(-0.145 0.050)	0.126	(0.065– 0.187)
14	Program location was convenient	Yes	No	-0.010	(-0.022– 0.002)	-0.036	(-0.078– 0.006)	0.046	(-0.008– 0.100)
15	Program staff spoke respondent's language	Yes	No	0.011	(-0.003– 0.024)	0.041	(-0.015– 0.097)	-0.052	(-0.121– 0.018)
16	Got help wanted from program staff	Always	Sometimes or never	-0.036	(-0.048 0.023)	-0.157	(-0.207 0.107)	0.193	(0.132– 0.253)
		Usually	Sometimes or never	-0.022	(-0.035 0.010)	-0.085	(-0.132 0.038)	0.108	(0.049– 0.166)
17	Helpfulness of education materials or information about health issues	Received materials that were somewhat helpful	Received not helpful or no materials	0.008	(-0.001– 0.018)	0.032	(-0.003– 0.066)	-0.040	(-0.083– 0.003)
		Received materials that were very helpful	Received not helpful or no materials	-0.010	(-0.017 0.002)	-0.042	(-0.076 0.008)	0.052	(0.011– 0.093)
18	Incentives helped make positive changes	Somewhat agree	Somewhat or strongly disagree	-0.003	(-0.016– 0.010)	-0.012	(-0.058– 0.035)	0.015	(-0.044– 0.074)
		Strongly agree	Somewhat or strongly disagree	-0.017	(-0.030 0.004)	-0.068	(-0.119–- 0.018)	0.085	(0.022– 0.149)

Table F-25 (continued) Change in predicted marginal probability relative to reference category: Recommend program to family and friends

	Characteristic	Group	Reference	No	90% CI	Yes, probably	90% CI	Yes, definitely	90% CI
19	Liked getting incentives for taking care of health	Somewhat agree	Somewhat or strongly disagree	0.022	(0.009– 0.034)	0.081	(0.033– 0.129)	-0.103	(-0.163 0.043)
		Strongly agree	Somewhat or strongly disagree	0.006	(-0.005– 0.017)	0.025	(-0.021– 0.070)	-0.030	(-0.087– 0.026)
20	Happy with rewards or incentives overall	Somewhat agree	Somewhat or strongly disagree	-0.006	(-0.020– 0.007)	-0.022	(-0.070– 0.025)	0.029	(-0.033– 0.090)
		Strongly agree	Somewhat or strongly disagree	-0.017	(-0.030 0.004)	-0.065	(-0.114 0.017)	0.082	(0.021– 0.144)
21	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.003	(-0.014– 0.009)	-0.010	(-0.052– 0.032)	0.013	(-0.041– 0.067)
		\$100-<\$400	\$0-<\$25	-0.005	(-0.016– 0.006)	-0.019	(-0.061– 0.022)	0.024	(-0.029– 0.077)
		\$400-<\$2,500	\$0-<\$25	-0.005	(-0.021– 0.011)	-0.018	(-0.077– 0.041)	0.023	(-0.052– 0.098)
		\$2,500 or more	\$0-<\$25	-0.027	(-0.042 0.012)	-0.119	(-0.190 0.047)	0.145	(0.060– 0.230)
22	Communication with program staff (score 0– 10)	9.6105	8.6105	-0.005	(-0.007 0.003)	-0.018	(-0.023 0.013)	0.023	(0.017– 0.029)

 Table F-25 (continued)

 Change in predicted marginal probability relative to reference category: Recommend program to family and friends

	Characteristic	Group	Reference	Very or somewhat dissatisfied combined	90% CI	Somewhat satisfied	90% CI	Very satisfied	90% CI
1	Program delivery method	Telephonic	In person	-0.004	(-0.020– 0.013)	-0.010	(-0.054– 0.034)	0.014	(-0.047– 0.074)
		Both in person and telephonic	In person	0.009	(-0.004– 0.022)	0.022	(-0.009– 0.053)	-0.031	(-0.075– 0.013)
2	Incentive target	Outcome incentives alone	Process incentives alone	-0.005	(-0.026– 0.015)	-0.013	(-0.068– 0.041)	0.019	(-0.056– 0.093)
		Process and outcome incentives	Process incentives alone	0.002	(-0.013– 0.016)	0.004	(-0.033– 0.040)	-0.005	(-0.056– 0.046)
3	Incentive form	Flexible wellness account	Money-valued incentives	-0.020	(-0.042– 0.002)	-0.055	(-0.123– 0.013)	0.075	(-0.015– 0.165)
		Points redeemable for rewards	Money-valued incentives	0.013	(-0.030– 0.056)	0.032	(-0.068– 0.131)	-0.045	(-0.187– 0.098)
4	Age	45 to 52 years	44 years or younger	-0.008	(-0.020– 0.004)	-0.020	(-0.049– 0.009)	0.028	(-0.013– 0.069)
		53 to 58 years	44 years or younger	-0.005	(-0.018– 0.007)	-0.013	(-0.043– 0.017)	0.018	(-0.024– 0.060)
		59 years or older	44 years or younger	-0.018	(-0.030 0.007)	-0.047	(-0.076 0.019)	0.066	(0.026– 0.105)
5	Sex	Female	Male	0.006	(-0.003– 0.014)	0.014	(-0.007– 0.035)	-0.020	(-0.049– 0.009)
6	Married	Yes	No	0.008	(-0.002– 0.018)	0.020	(-0.005– 0.044)	-0.028	(-0.062– 0.007)

 Table F-26

 Change in predicted marginal probability relative to reference category: Overall program satisfaction

	Characteristic	Group	Reference	Very or somewhat dissatisfied combined	90% CI	Somewhat satisfied	90% CI	Very satisfied	90% CI
7	Education	Less than high school graduate or GED	High school graduate or GED	0.012	(0.000– 0.023)	0.029	(0.002– 0.057)	-0.041	(-0.080 0.002)
		Some college or 2-year college degree	High school graduate or GED	0.002	(-0.008– 0.011)	0.004	(-0.021– 0.029)	-0.006	(-0.040– 0.029)
		4-year college degree or more	High school graduate or GED	0.002	(-0.013– 0.017)	0.005	(-0.033– 0.043)	-0.007	(-0.060– 0.045)
8	Employed full- or part- time	Yes	No	-0.009	(-0.019– 0.000)	-0.024	(-0.049– 0.001)	0.033	(-0.001– 0.068)
9	Race	Black alone	White alone	-0.002	(-0.011– 0.008)	-0.004	(-0.029– 0.020)	0.006	(-0.028– 0.040)
		Other	White alone	0.006	(-0.007– 0.018)	0.014	(-0.017– 0.045)	-0.020	(-0.064– 0.024)
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.013	(-0.025 0.002)	-0.035	(-0.067 0.003)	0.048	(0.005– 0.091)
11	Started program as soon as wanted	Yes	No	0.000	(-0.013– 0.014)	0.001	(-0.032– 0.035)	-0.002	(-0.048– 0.045)
12	Amount of time spent on program was about right	Yes	No	-0.052	(-0.071 0.033)	-0.117	(-0.154 0.080)	0.169	(0.115– 0.224)
13	Program schedule was convenient	Yes	No	-0.042	(-0.063 0.021)	-0.095	(-0.137 0.053)	0.137	(0.075– 0.199)
14	Program location was convenient	Yes	No	-0.011	(-0.028– 0.006)	-0.027	(-0.067– 0.012)	0.039	(-0.018– 0.095)
15	Program staff spoke respondent's language	Yes	No	0.003	(-0.022– 0.027)	0.007	(-0.056– 0.069)	-0.009	(-0.096– 0.078)

Table F-26 (continued) Change in predicted marginal probability relative to reference category: Overall program satisfaction

	Characteristic	Group	Reference	Very or somewhat dissatisfied combined	90% CI	Somewhat satisfied	90% CI	Very satisfied	90% CI
16	Got help wanted from program staff	Always	Sometimes or never	-0.046	(-0.062 0.029)	-0.131	(-0.176 0.087)	0.177	(0.118– 0.236)
		Usually	Sometimes or never	-0.019	(-0.036 0.002)	-0.047	(-0.088 0.006)	0.066	(0.008– 0.124)
17	Helpfulness of education materials or information about health issues	Received materials that were somewhat helpful	Received not helpful or no materials	0.003	(-0.010– 0.016)	0.008	(-0.026– 0.042)	-0.011	(-0.058– 0.036)
		Received materials that were very helpful	Received not helpful or no materials	-0.023	(-0.035 0.011)	-0.067	(-0.101 0.033)	0.091	(0.045– 0.136)
18	Incentives helped make positive changes	Somewhat agree	Somewhat or strongly disagree	-0.015	(-0.035– 0.004)	-0.038	(-0.083– 0.008)	0.053	(-0.011– 0.118)
		Strongly agree	Somewhat or strongly disagree	-0.032	(-0.052 0.013)	-0.086	(-0.135 0.036)	0.118	(0.049– 0.187)
19	Liked getting incentives for taking care of health	Somewhat agree	Somewhat or strongly disagree	0.028	(0.011– 0.045)	0.074	(0.027– 0.121)	-0.102	(-0.165 0.039)
		Strongly agree	Somewhat or strongly disagree	0.014	(-0.001– 0.029)	0.039	(-0.005– 0.083)	-0.053	(-0.112– 0.006)
20	Happy with rewards or incentives overall	Somewhat agree	Somewhat or strongly disagree	-0.023	(-0.045 0.001)	-0.052	(-0.099–- 0.004)	0.075	(0.005– 0.144)
		Strongly agree	Somewhat or strongly disagree	-0.046	(-0.067 0.024)	-0.115	(-0.164–- 0.066)	0.161	(0.091– 0.231)

Table F-26 (continued) Change in predicted marginal probability relative to reference category: Overall program satisfaction

Table F-26 (continued)
Change in predicted marginal probability relative to reference category: Overall program satisfaction

	Characteristic	Group	Reference	Very or somewhat dissatisfied combined	90% CI	Somewhat satisfied	90% CI	Very satisfied	90% CI
21	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.001	(-0.017– 0.015)	-0.002	(-0.040– 0.037)	0.002	(-0.052– 0.057)
		\$100-<\$400	\$0-<\$25	-0.016	(-0.031 0.000)	-0.040	(-0.078 0.002)	0.056	(0.003– 0.109)
		\$400-<\$2,500	\$0-<\$25	-0.020	(-0.041– 0.001)	-0.053	(-0.108– 0.003)	0.073	(-0.004– 0.149)
		\$2,500 or more	\$0-<\$25	-0.032	(-0.059–- 0.004)	-0.088	(-0.171 0.005)	0.120	(0.009– 0.230)
22	Communication with program staff (score 0–10)	9.6105	8.6105	-0.007	(-0.009–- 0.005)	-0.018	(-0.023 0.013)	0.025	(0.018– 0.032)

Figure F-4

Ordinal proportional odds model of recommending the program to family and friends: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0–<\$25



Figure F-5

Ordinal proportional odds model of overall program satisfaction: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0-<\$25



	Program	helped und	lerstand healt	h issues	Program he	elped learn of h	ways to take lealth	better care	Program encouraged lifestyle changes to improve health			
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
No.	174	625	1,432		150	508	1,571		117	419	1,695	
%	7.8	28.0	64.2		6.7	22.8	70.5		5.2	18.8	76.0	
Age				0.132				0.059				0.587
44 years or younger	9.7	29.5	60.8		6.3	26.4	67.3		5.0	18.7	76.3	
45 to 52 years	6.7	25.0	68.4		7.0	19.0	73.9		4.6	16.4	79.0	
53 to 58 years	8.2	27.5	64.3		8.0	20.8	71.2		5.3	20.0	74.8	
59 years or older	6.8	29.8	63.4		5.8	24.5	69.7		6.0	19.9	74.1	
Sex				0.852				0.817				0.343
Male	7.6	27.4	64.9		7.1	22.4	70.4		5.8	20.0	74.3	
Female	7.9	28.3	63.8		6.5	23.0	70.5		4.9	18.1	77.0	
Married				0.060				0.134				0.393
Yes	5.6	26.7	67.7		4.7	23.1	72.2		4.7	16.9	78.4	
No	8.6	28.2	63.2		7.3	22.7	70.0		5.4	19.3	75.3	
Education				0.006				0.571				0.260
Less than high school graduate or GED	7.0	26.0	67.0		6.7	21.8	71.5		5.8	17.8	76.4	
High school graduate or GED	6.8	25.5	67.7		6.0	22.4	71.6		4.9	20.1	75.0	
Some college or 2-year college degree	9.2	30.8	60.0		7.2	23.1	69.7		5.3	16.7	78.0	
4-year college degree or more	9.6	35.4	55.1		8.4	27.4	64.2		5.1	24.7	70.2	
Employed Full- or Part-Time				0.904				0.606				0.132
Yes	7.9	28.8	63.3		7.0	21.0	72.0		6.1	21.4	72.5	
No	7.8	27.8	64.4		6.6	23.2	70.2		5.0	18.0	77.0	

 Table F-27

 Descriptive and bivariate analyses for program impact on behavior change by demographic characteristics

	Program	helped unde	erstand healt	th issues	Program he	lped learn w of he	vays to take l ealth	better care	Program encouraged lifestyle changes to improve health			
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Receiving Disability or Supplemental Security Income				0.047				0.145				0.086
Yes	8.7	30.6	60.7		8.1	23.1	68.8		5.6	16.3	78.1	
No	7.3	26.7	66.0		6.0	22.6	71.4		5.0	20.1	74.9	
Race				< 0.001				0.001				0.043
White alone	9.6	30.7	59.7		7.6	25.4	67.0		6.0	20.4	73.6	
Black alone	5.2	24.8	70.0		5.8	18.1	76.1		4.3	15.9	79.8	
Other	8.5	26.1	65.3		6.4	23.5	70.0		4.6	19.3	76.1	
Ethnicity				0.032				0.379				0.703
Hispanic/Latino	5.8	24.2	70.0		5.3	21.9	72.9		5.5	17.4	77.1	
Not Hispanic/Latino	8.2	28.9	62.9		7.0	23.1	69.9		5.2	19.2	75.6	

Table F-27 (continued) Descriptive and bivariate analyses for program impact on behavior change by demographic characteristics

 Table F-28

 Descriptive and bivariate analyses for program impact on behavior change by program and incentive characteristics

	Program	helped unde	rstand healt	h issues	Program he	lped learn w of he	vays to take⊺ alth	better care	Program	encouraged improve	lifestyle cha health	anges to
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Health Focus of Program				< 0.001				< 0.001				< 0.001
Diabetes prevention	3.5	21.2	75.3		3.5	13.9	82.6		2.1	14.9	83.0	
Diabetes control	8.6	31.5	59.9		7.6	24.9	67.5		8.2	26.0	65.8	
Weight loss	16.3	32.6	51.1		8.6	30.3	61.1		5.4	24.4	70.1	
Smoking cessation	8.8	29.6	61.6		8.8	24.4	66.9		6.8	19.3	74.0	
Hypertension	7.2	30.6	62.2		6.4	27.5	66.1		6.4	27.5	66.1	
Other	2.7	21.5	75.8		1.8	15.8	82.4		1.2	9.6	89.3	
Program Delivery Method				0.020				0.105				0.001
In-person	8.6	28.2	63.3		6.3	22.6	71.2		4.7	21.3	74.0	
Telephonic	8.7	33.0	58.3		8.8	26.0	65.3		7.7	21.4	70.9	
Both in-person and telephonic	6.9	25.5	67.6		6.5	21.1	72.4		4.9	15.6	79.5	
Incentive Form				< 0.001				< 0.001				< 0.001
Money-valued incentives	8.6	29.0	62.4		7.7	23.8	68.5		5.9	20.2	74.0	
Flexible wellness account	2.7	21.5	75.8		1.8	15.8	82.4		1.2	9.6	89.3	
Points redeemable for rewards	12.2	36.6	51.2		4.9	34.1	61.0		10.0	32.5	57.5	
Incentive Target				0.617				0.494				0.327
Process incentives alone	7.8	27.8	64.4		6.0	23.0	71.1		4.7	17.9	77.4	
Outcome incentives alone	5.3	33.3	61.4		5.3	23.9	70.8		4.4	23.7	71.9	
Process and outcome incentives	8.1	27.1	64.8		7.8	21.8	70.4		6.0	19.1	74.9	

	Program	helped unde	rstand healt	h issues	Program he	lped learn w of he	ays to take	better care	Program	encouraged improve	lifestyle cha health	anges to
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Frequency of Contact with Program Staff				< 0.001				< 0.001				< 0.001
Always	4.5	18.0	77.5		3.3	12.6	84.1		2.3	9.8	87.9	
Usually	6.5	38.1	55.5		6.9	29.7	63.4		4.0	24.3	71.7	
Sometimes	14.5	43.8	41.7		11.7	40.3	47.9		10.0	34.1	55.9	
Never	29.8	40.4	29.8		26.8	39.3	33.9		26.8	35.7	37.5	
I did not try to contact program staff	11.9	32.5	55.6		10.8	31.1	58.1		9.5	26.2	64.3	
Started Program as Soon as Wanted				< 0.001				< 0.001				< 0.001
Yes	6.1	27.2	66.7		5.6	21.7	72.8		4.3	17.6	78.2	
No	23.5	34.0	42.5		16.7	34.3	49.0		14.6	29.3	56.1	
Amount of Time Spent on Program Was About Right				< 0.001				< 0.001				< 0.001
Yes	5.3	27.2	67.5		4.3	22.0	73.8		3.7	17.4	78.9	
No	25.7	34.3	40.0		23.7	30.6	45.7		16.3	29.4	54.3	
Program Schedule Was Convenient				< 0.001				< 0.001				< 0.001
Yes	5.8	27.0	67.2		4.7	21.3	74.0		3.6	17.5	78.9	
No	30.4	36.5	33.1		28.9	37.8	33.3		22.3	31.8	45.8	
Program Location Was Convenient				< 0.001				< 0.001				< 0.001
Yes	6.7	26.5	66.7		5.3	21.6	73.0		4.1	17.4	78.4	
No	21.8	43.0	35.2		22.6	37.2	40.2		18.2	35.2	46.7	

 Table F-29

 Descriptive and bivariate analyses for program impact on behavior change by satisfaction with program access

	Program	Program helped understand health issues			Program he	lped learn w of he	ays to take	better care	Program encouraged lifestyle changes to improve health			
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Program Staff Spoke Respondent's Language				< 0.001				< 0.001				< 0.001
Yes	7.3	27.6	65.0		6.2	22.4	71.4		4.7	18.0	77.3	
No	23.7	31.6	44.7		22.7	30.7	46.7		22.4	34.2	43.4	
Got Child Care When Needed to Attend the Program				< 0.001				0.001				0.012
Yes	1.5	26.3	72.2		3.1	16.8	80.2		2.3	16.7	81.1	
No	19.0	25.0	56.0		14.5	26.5	59.0		11.2	22.4	66.4	
I did not need child care.	7.8	28.0	64.2		6.7	23.0	70.3		5.2	18.6	76.2	
Got Transportation When Needed to Attend the Program				< 0.001				< 0.001				< 0.001
Yes	5.1	23.3	71.6		4.1	17.6	78.3		2.4	14.6	83.0	
No	21.2	37.8	40.9		17.0	35.1	47.9		13.5	28.0	58.5	
I did not need transportation.	7.4	29.0	63.6		6.7	23.8	69.4		5.7	19.7	74.7	
Frequency that Respondent Got Help Wanted from Program Staff				< 0.001				< 0.001				< 0.001
Always	3.4	19.1	77.5		2.6	13.3	84.2		2.0	10.0	87.9	
Usually	6.8	42.6	50.7		5.6	35.6	58.8		3.7	29.3	67.0	
Sometimes	23.6	44.3	32.1		20.7	44.3	35.0		15.0	40.5	44.5	
Never	38.3	30.9	30.9		39.7	32.1	28.2		36.4	29.9	33.8	

Table F-29 (continued) Descriptive and bivariate analyses for program impact on behavior change by satisfaction with program access

Table F-30 Descriptive and bivariate analyses for program impact on behavior change by satisfaction with educational materials and information and communication with staff

	Program	helped unde	erstand healt	th issues	Program he	lped learn w of he	vays to take ealth	better care	Program	encouraged improve	lifestyle cha health	anges to
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Helpfulness of Education Materials or Information About Health Issues				< 0.001				<0.001				< 0.001
Received not helpful or no materials	25.8	38.5	35.6		22.1	37.1	40.8		17.9	31.5	50.7	
Received materials that were somewhat helpful	8.4	52.8	38.8		7.1	44.7	48.2		3.9	34.0	62.1	
Received materials that were very helpful	1.0	15.0	83.9		1.0	9.6	89.4		1.2	8.7	90.1	
Program Staff Explained Things in a Way Respondent Could Understand				<0.001				<0.001				<0.001
Somewhat or strongly disagree	57.0	25.6	17.4		54.7	33.7	11.6		47.7	32.6	19.8	
Somewhat agree	16.2	59.4	24.4		13.7	52.6	33.8		11.3	47.2	41.5	
Strongly agree	3.3	21.0	75.6		2.6	15.6	81.8		1.7	11.7	86.7	
Program Staff Listened Carefully to What Respondent Had to Say				< 0.001				< 0.001				< 0.001
Somewhat or strongly disagree	54.3	31.4	14.3		53.8	35.6	10.6		47.1	29.8	23.1	
Somewhat agree	15.7	59.8	24.5		12.4	56.7	30.9		8.8	48.6	42.6	
Strongly agree	3.4	21.1	75.5		2.7	14.8	82.5		1.9	11.7	86.4	

Table F-30 (continued) Descriptive and bivariate analyses for program impact on behavior change by satisfaction with educational materials and information and communication with staff

	Program	helped unde	erstand healt	h issues	Program he	lped learn w of he	ays to take alth	better care	Program	encouraged improve	lifestyle ch health	anges to
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Program Staff Encouraged Respondent to Ask Questions				< 0.001				< 0.001				< 0.001
Somewhat or strongly disagree	48.3	34.9	16.8		45.6	40.3	14.1		38.3	36.9	24.8	
Somewhat agree	10.4	58.7	30.9		8.7	53.0	38.3		7.7	42.4	49.9	
Strongly agree	3.5	19.6	77.0		2.6	13.4	84.0		1.6	10.9	87.5	
Program Staff Encouraged Respondent to Talk About Health Concerns				< 0.001				<0.001				<0.001
Somewhat or strongly disagree	50.0	34.3	15.7		50.0	34.3	15.7		39.9	34.7	25.4	
Somewhat agree	10.2	59.6	30.3		6.8	55.8	37.4		5.6	46.5	47.9	
Strongly agree	2.6	19.1	78.3		1.9	13.1	85.0		1.4	9.7	88.9	
Program Staff Seemed to Care About Respondent as a Person				< 0.001				< 0.001				< 0.001
Somewhat or strongly disagree	55.3	28.4	16.3		54.6	34.0	11.3		40.8	39.4	19.7	
Somewhat agree	12.0	59.0	28.9		8.1	56.2	35.7		8.4	47.4	44.2	
Strongly agree	3.1	21.7	75.3		2.5	15.1	82.4		1.6	11.2	87.2	

 Table F-31

 Descriptive and bivariate analyses for program impact on behavior change by satisfaction with incentives

	Program	Program helped understand health issues			Program he	lped learn w of he	vays to take ealth	better care	Program encouraged lifestyle changes to improve health			
Characteristic	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value	Somewhat or strongly disagree	Somewhat agree	Strongly agree	P-value
Respondent Liked Getting Rewards or Incentives For Taking Good Care of Health				<0.001				<0.001				<0.001
Somewhat or strongly disagree	21.9	33.3	44.7		18.6	25.7	55.8		15.9	24.8	59.3	
Somewhat agree	11.5	42.4	46.1		10.8	39.9	49.2		8.4	34.5	57.1	
Strongly agree	5.7	24.6	69.7		4.7	17.7	77.6		3.4	13.8	82.8	
Respondent Happy with Rewards or Incentives Overall				< 0.001				< 0.001				< 0.001
Somewhat or strongly disagree	28.5	39.2	32.3		26.6	32.9	40.5		17.7	32.9	49.4	
Somewhat agree	11.6	43.4	45.1		9.6	42.3	48.1		7.0	33.6	59.4	
Strongly agree	4.4	23.1	72.5		3.7	15.7	80.6		3.1	12.2	84.7	
Respondent Happy with How Often Got Rewards or Incentives				< 0.001				< 0.001				< 0.001
Somewhat or strongly disagree	24.6	37.1	38.4		22.1	32.0	45.9		16.5	28.1	55.4	
Somewhat agree	10.5	41.8	47.7		7.8	37.3	54.9		4.6	32.2	63.2	
Strongly agree	3.6	21.8	74.6		3.3	15.1	81.6		2.9	11.6	85.5	
Rewards or Incentives Are Fair				< 0.001				< 0.001				< 0.001
Somewhat or strongly disagree	29.6	34.6	35.8		24.8	32.9	42.2		21.1	29.2	49.7	
Somewhat agree	13.0	42.9	44.2		10.1	41.5	48.4		6.1	37.4	56.5	
Strongly agree	3.6	23.1	73.3		3.5	15.4	81.2		2.8	11.4	85.9	

				Ef	fect	90	% CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
1	Program delivery method	Telephonic	In person	0.96	0.943	0.42	2.22
		Both in person and telephonic	In person	0.86	0.602	0.53	1.4
2	Incentive target	Outcome incentives alone	Process incentives alone	0.89	0.687	0.56	1.42
		Process and outcome incentives	Process incentives alone	0.82	0.409	0.55	1.22
3	Incentive form	Flexible wellness account	Money-valued incentives	0.65	0.477	0.24	1.76
		Points redeemable for rewards	Money-valued incentives	0.58	0.417	0.2	1.74
4	Age	45 to 52 years	44 years or younger	1.34	0.030*	1.07	1.68
		53 to 58 years	44 years or younger	1.17	0.253	0.93	1.47
		59 years or older	44 years or younger	1.2	0.168	0.97	1.49
5	Sex	Female	Male	0.96	0.687	0.82	1.13
6	Married	Yes	No	1.33	0.016*	1.1	1.62
7	Education	Less than high school graduate or GED	High school graduate or GED	0.85	0.214	0.69	1.05
		Some college or 2-year college degree	High school graduate or GED	0.74	0.009*	0.61	0.89
		4-year college degree or more	High school graduate or GED	0.59	0.003*	0.44	0.79
8	Employed full- or part-time	Yes	No	1.16	0.211	0.95	1.42
9	Race	Black alone	White alone	1.31	0.023*	1.08	1.59
		Other	White alone	0.99	0.965	0.79	1.26
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.42	0.023*	1.1	1.83
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.16	0.390	0.87	1.53
		\$100-<\$400	\$0-<\$25	1.62	0.008*	1.2	2.2
		\$400-<\$2,500	\$0-<\$25	2.84	0.000*	1.78	4.53
		\$2.500 or more	\$0-<\$25	4.56	0.000*	2.44	8.52

Table F-32 Ordinal proportional odds model displaying odds of levels of agreement that the program helped understand health issues (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

				Ef	ffect	909	% CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
1	Program delivery method	Telephonic	In person	1.00	0.998	0.5	2.02
		Both in person and telephonic	In person	0.74	0.269	0.48	1.16
2	Incentive target	Outcome incentives alone	Process incentives alone	1.34	0.320	0.83	2.16
		Process and outcome incentives	Process incentives alone	1.05	0.844	0.71	1.56
3	Incentive form	Flexible wellness account	Money-valued incentives	1.34	0.590	0.55	3.31
		Points redeemable for rewards	Money-valued incentives	0.62	0.409	0.24	1.61
4	Age	45 to 52 years	44 years or younger	1.35	0.034*	1.07	1.71
		53 to 58 years	44 years or younger	1.21	0.182	0.96	1.54
		59 years or older	44 years or younger	1.19	0.193	0.95	1.5
5	Sex	Female	Male	1.03	0.788	0.87	1.22
6	Married	Yes	No	1.17	0.214	0.95	1.43
7	Education	Less than high school graduate or GED	High school graduate or GED	0.89	0.362	0.71	1.1
		Some college or 2-year college degree	High school graduate or GED	0.95	0.675	0.78	1.16
		4-year college degree or more	High school graduate or GED	0.68	0.033*	0.5	0.91
8	Employed full- or part-time	Yes	No	1.26	0.072*	1.02	1.56
9	Race	Black alone	White alone	1.28	0.047*	1.04	1.58
		Other	White alone	0.99	0.968	0.78	1.27
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.26	0.144	0.97	1.64
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.72	0.002*	1.28	2.3
		\$100-<\$400	\$0-<\$25	1.96	0.000*	1.43	2.68
		\$400-<\$2,500	\$0-<\$25	2.65	0.001*	1.64	4.27
		\$2 500 or more	\$0-<\$25	3 83	0.001*	1.95	75

Table F-33 Ordinal proportional odds model displaying odds of levels of agreement that the program helped learn ways to take better care of health (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

				Et	ffect	90	% CI
	Characteristic	Group	Reference	OR	P-value	OR	P-value
1	Program delivery method	Telephonic	In person	1.25	0.536	0.69	2.25
		Both in person and telephonic	In person	0.91	0.713	0.61	1.37
2	Incentive target	Outcome incentives alone	Process incentives alone	1.2	0.520	0.75	1.93
		Process and outcome incentives	Process incentives alone	1.04	0.871	0.7	1.55
3	Incentive form	Flexible wellness account	Money-valued incentives	1.24	0.665	0.55	2.81
		Points redeemable for rewards	Money-valued incentives	0.3	0.019*	0.13	0.7
4	Age	45 to 52 years	44 years or younger	1.18	0.280	0.92	1.53
		53 to 58 years	44 years or younger	0.94	0.671	0.72	1.21
		59 years or older	44 years or younger	0.94	0.684	0.74	1.2
5	Sex	Female	Male	1.16	0.162	0.97	1.39
6	Married	Yes	No	1.25	0.105	1	1.56
7	Education	Less than high school graduate or GED	High school graduate or GED	1.02	0.909	0.81	1.28
		Some college or 2-year college degree	High school graduate or GED	1.26	0.075*	1.02	1.57
		4-year college degree or more	High school graduate or GED	0.9	0.602	0.66	1.24
8	Employed full- or part-time	Yes	No	0.9	0.414	0.72	1.11
9	Race	Black alone	White alone	1.28	0.063*	1.03	1.6
		Other	White alone	1.05	0.745	0.81	1.37
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	1.21	0.271	0.91	1.6
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	1.46	0.039*	1.08	1.99
		\$100-<\$400	\$0-<\$25	1.87	0.002*	1.34	2.59
		\$400-<\$2,500	\$0-<\$25	2.36	0.005*	1.43	3.88
		\$2,500 or more	\$0-<\$25	5.39	0.000*	2.54	11.44

Table F-34 Ordinal proportional odds model displaying odds of levels of agreement that the program encouraged lifestyle changes to improve health (strongly agree, somewhat agree, vs. somewhat or strongly disagree)

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	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	0.003	(-0.058– 0.064)	0.005	(-0.110– 0.120)	-0.008	(-0.184– 0.168)
		Both in person and telephonic	In person	0.012	(-0.026– 0.049)	0.021	(-0.045– 0.088)	-0.033	(-0.137– 0.071)
2	Incentive target	Outcome incentives alone	Process incentives alone	0.008	(-0.026– 0.043)	0.016	(-0.048– 0.079)	-0.024	(-0.122– 0.074)
		Process and outcome incentives	Process incentives alone	0.015	(-0.015– 0.046)	0.028	(-0.027– 0.083)	-0.043	(-0.128– 0.042)
3	Incentive form	Flexible wellness account	Money-valued incentives	0.037	(-0.061– 0.135)	0.056	(-0.065– 0.178)	-0.094	(-0.313– 0.125)
		Points redeemable for rewards	Money-valued incentives	0.048	(-0.067– 0.163)	0.069	(-0.062– 0.200)	-0.117	(-0.363– 0.128)
4	Age	45 to 52 years	44 years or younger	-0.022	(-0.040 0.005)	-0.040	(-0.071 0.010)	0.063	(0.015– 0.111)
		53 to 58 years	44 years or younger	-0.013	(-0.031– 0.006)	-0.021	(-0.052– 0.009)	0.034	(-0.015– 0.083)
		59 years or older	44 years or younger	-0.014	(-0.032– 0.003)	-0.025	(-0.054– 0.005)	0.039	(-0.008– 0.086)
5	Sex	Female	Male	0.003	(-0.009– 0.015)	0.005	(-0.017– 0.027)	-0.008	(-0.042– 0.026)
6	Married	Yes	No	-0.020	(-0.034 0.007)	-0.039	(-0.067–- 0.012)	0.060	(0.020– 0.100)

 Table F-35

 Change in predicted marginal probability relative to reference category: Program helped understand health issues

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Education	Less than high school graduate or GED	High school graduate or GED	0.011	(-0.004– 0.026)	0.022	(-0.007– 0.051)	-0.033	(-0.076– 0.011)
		Some college or 2-year college degree	High school graduate or GED	0.022	(0.007– 0.037)	0.042	(0.015– 0.068)	-0.064	(-0.104 0.024)
		4-year college degree or more	High school graduate or GED	0.043	(0.015– 0.071)	0.073	(0.034– 0.112)	-0.116	(-0.180 0.051)
8	Employed full- or part- time	Yes	No	-0.011	(-0.025– 0.003)	-0.021	(-0.048– 0.007)	0.032	(-0.009– 0.073)
9	Race	Black alone	White alone	-0.020	(-0.034 0.005)	-0.037	(-0.065 0.010)	0.057	(0.016– 0.099)
		Other	White alone	0.001	(-0.019– 0.020)	0.001	(-0.031– 0.033)	-0.001	(-0.053– 0.050)
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.024	(-0.041 0.008)	-0.048	(-0.083 0.013)	0.072	(0.022– 0.123)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.015	(-0.046– 0.015)	-0.019	(-0.055– 0.017)	0.034	(-0.031– 0.100)
		\$100-<\$400	\$0-<\$25	-0.045	(-0.078–- 0.012)	-0.066	(-0.104 0.027)	0.111	(0.042– 0.180)
		\$400-<\$2,500	\$0-<\$25	-0.080	(-0.121 0.039)	-0.144	(-0.202 0.087)	0.224	(0.130– 0.318)
		\$2,500 or more	\$0-<\$25	-0.099	(-0.143 0.055)	-0.202	(-0.271 0.133)	0.301	(0.194– 0.408)

Table F-35 (continued) Change in predicted marginal probability relative to reference category: Program helped understand health issues

 Table F-36

 Change in predicted marginal probability relative to reference category: Program helped learn ways to take better care of health

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	0.000	(-0.041- 0.042)	0.000	(-0.090– 0.091)	-0.001	(-0.132– 0.131)
		Both in person and telephonic	In person	0.020	(-0.011– 0.051)	0.039	(-0.018– 0.097)	-0.059	(-0.148– 0.029)
2	Incentive target	Outcome incentives alone	Process incentives alone	-0.017	(-0.045– 0.010)	-0.037	(-0.098– 0.023)	0.055	(-0.033– 0.143)
		Process and outcome incentives	Process incentives alone	-0.003	(-0.029– 0.023)	-0.006	(-0.058– 0.046)	0.009	(-0.069– 0.088)
3	Incentive form	Flexible wellness account	Money-valued incentives	-0.018	(-0.066– 0.031)	-0.038	(-0.154– 0.077)	0.056	(-0.108– 0.220)
		Points redeemable for rewards	Money-valued incentives	0.039	(-0.053– 0.131)	0.064	(-0.063– 0.191)	-0.103	(-0.321– 0.115)
4	Age	45 to 52 years	44 years or younger	-0.020	(-0.036 0.004)	-0.040	(-0.071 0.009)	0.060	(0.013– 0.107)
		53 to 58 years	44 years or younger	-0.013	(-0.030– 0.003)	-0.026	(-0.057– 0.006)	0.039	(-0.009– 0.087)
		59 years or older	44 years or younger	-0.012	(-0.029– 0.004)	-0.024	(-0.054– 0.006)	0.036	(-0.010– 0.082)
5	Sex	Female	Male	-0.002	(-0.013– 0.009)	-0.004	(-0.026– 0.019)	0.005	(-0.028– 0.039)
6	Married	Yes	No	-0.010	(-0.022– 0.003)	-0.020	(-0.047– 0.006)	0.030	(-0.009– 0.069)

Table F-36 (continued) Change in predicted marginal probability relative to reference category: Program helped learn ways to take better care of health

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Education	Less than high school graduate or GED	High school graduate or GED	0.008	(-0.006– 0.022)	0.016	(-0.013– 0.045)	-0.024	(-0.067– 0.019)
		Some college or 2-year college degree	High school graduate or GED	0.003	(-0.009– 0.016)	0.007	(-0.020– 0.033)	-0.010	(-0.049– 0.029)
		4-year college degree or more	High school graduate or GED	0.028	(0.004– 0.053)	0.052	(0.012– 0.093)	-0.081	(-0.145– -0.016)
8	Employed full- or part- time	Yes	No	-0.014	(-0.027– -0.002)	-0.030	(-0.057– -0.003)	0.044	(0.005 - 0.084)
9	Race	Black alone	White alone	-0.016	(-0.029– -0.003)	-0.033	(-0.060 0.005)	0.049	(0.009– 0.089)
		Other	White alone	0.000	(-0.017– 0.018)	0.001	(-0.032– 0.034)	-0.001	(-0.051– 0.049)
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.014	(-0.030– 0.001)	-0.030	(-0.064– 0.003)	0.045	(-0.004– 0.094)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.048	(-0.077– -0.019)	-0.074	(-0.114– -0.035)	0.122	(0.056– 0.189)
		\$100-<\$400	\$0-<\$25	-0.057	(-0.090– -0.024)	-0.092	(-0.133– -0.052)	0.149	(0.078– 0.221)
		\$400-<\$2,500	\$0-<\$25	-0.074	(-0.114– -0.034)	-0.132	(-0.193– -0.072)	0.206	(0.109– 0.304)
		\$2,500 or more	\$0-<\$25	-0.089	(-0.133– -0.046)	-0.176	(-0.253– -0.098)	0.265	(0.149– 0.382)

 Table F-37

 Change in predicted marginal probability relative to reference category: Program encouraged lifestyle changes to improve health

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
1	Program delivery method	Telephonic	In person	-0.011	(-0.037– 0.016)	-0.027	(-0.095– 0.041)	0.038	(-0.057– 0.132)
		Both in person and telephonic	In person	0.005	(-0.017– 0.027)	0.011	(-0.039– 0.062)	-0.016	(-0.089– 0.056)
2	Incentive target	Outcome incentives alone	Process incentives alone	-0.009	(-0.031– 0.013)	-0.023	(-0.080– 0.034)	0.032	(-0.047– 0.111)
		Process and outcome incentives	Process incentives alone	-0.002	(-0.023– 0.018)	-0.005	(-0.055– 0.045)	0.007	(-0.063– 0.077)
3	Incentive form	Flexible wellness account	Money-valued incentives	-0.010	(-0.045– 0.025)	-0.027	(-0.124– 0.071)	0.037	(-0.096– 0.169)
		Points redeemable for rewards	Money-valued incentives	0.104	(-0.003– 0.211)	0.157	(0.064– 0.249)	-0.261	(-0.458 0.064)
4	Age	45 to 52 years	44 years or younger	-0.008	(-0.021– 0.004)	-0.021	(-0.052– 0.011)	0.029	(-0.015– 0.073)
		53 to 58 years	44 years or younger	0.003	(-0.010– 0.017)	0.008	(-0.024– 0.041)	-0.012	(-0.058– 0.034)
		59 years or older	44 years or younger	0.003	(-0.010– 0.016)	0.008	(-0.023– 0.039)	-0.011	(-0.055– 0.033)
5	Sex	Female	Male	-0.008	(-0.017– 0.002)	-0.019	(-0.042– 0.004)	0.027	(-0.005– 0.059)
6	Married	Yes	No	-0.011	(-0.021 0.000)	-0.027	(-0.054 0.000)	0.038	(0.001– 0.074)

Table F-37 (continued) Change in predicted marginal probability relative to reference category: Program encouraged lifestyle changes to improve health

	Characteristic	Group	Reference	Somewhat or strongly disagree	90% CI	Somewhat agree	90% CI	Strongly agree	90% CI
7	Education	Less than high school graduate or GED	High school graduate or GED	-0.001	(-0.013– 0.012)	-0.002	(-0.031– 0.027)	0.003	(-0.039– 0.045)
		Some college or 2-year college degree	High school graduate or GED	-0.012	(-0.022 0.001)	-0.029	(-0.056 0.002)	0.041	(0.003– 0.078)
		4-year college degree or more	High school graduate or GED	0.006	(-0.013– 0.024)	0.013	(-0.028– 0.055)	-0.019	(-0.079– 0.041)
8	Employed full- or part- time	Yes	No	0.006	(-0.006– 0.017)	0.014	(-0.014– 0.041)	-0.019	(-0.058– 0.020)
9	Race	Black alone	White alone	-0.012	(-0.023 0.002)	-0.031	(-0.058 0.004)	0.043	(0.006– 0.081)
		Other	White alone	-0.003	(-0.017– 0.011)	-0.007	(-0.040– 0.027)	0.009	(-0.038– 0.057)
10	Ethnicity	Hispanic or Latino	Not Hispanic or Latino	-0.009	(-0.022– 0.004)	-0.023	(-0.057– 0.011)	0.032	(-0.014– 0.078)
11	Dollar amount of incentive received	\$25-<\$100	\$0-<\$25	-0.027	(-0.051 0.004)	-0.054	(-0.097 0.011)	0.082	(0.016– 0.147)
		\$100-<\$400	\$0-<\$25	-0.041	(-0.067–- 0.014)	-0.087	(-0.133 0.041)	0.127	(0.056– 0.198)
		\$400-<\$2,500	\$0-<\$25	-0.051	(-0.083 0.019)	-0.116	(-0.180 0.051)	0.167	(0.072– 0.262)
		\$2,500 or more	\$0-<\$25	-0.074	(-0.107 0.042)	-0.194	(-0.264 0.123)	0.268	(0.168– 0.368)

Figure F-6

Ordinal proportional odds model of agreement that the program encouraged lifestyle changes to improve health: Average marginal effects, change in predictive probability for each category of incentive amount relative to reference category of \$0-<\$25

