Medicare Savings Programs: Findings on Eligibility and Enrollment Trends Final Report

Prepared for
**the Office of the Assistant Secretary for Planning and Evaluation (ASPE)
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by
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MEDICARE SAVINGS PROGRAMS: FINDINGS ON ELIGIBILITY AND ENROLLMENT TRENDS FINAL REPORT

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Disclaimer

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Acronyms

ASPE = Office of the Assistant Secretary for Planning and Evaluation

CMS = Centers for Medicare & Medicaid Services

EDB = Enrollment Database

FFS = fee-for-service

FPL = federal poverty level

FSRDC = Federal Statistical Research Data Centers

LIS = Low-Income Subsidy

MA = Medicare Advantage

MIPPA = Medicare Improvements for Patients and Providers Act of 2008

MSIS = Medicaid Statistical Information System

MSP = Medicare Savings Program

OOP = out-of-pocket

PIK = Protected Identification Key

QDWI = Qualified Disabled and Working Individual

QI = Qualifying Individual

QMB = Qualified Medicare Beneficiary

SIPP = Survey of Income and Program Participation

SLMB = Specified Low-Income Medicare Beneficiary

SNAP = Supplemental Nutrition Assistance Program

SSA = Social Security Administration

SSI = Supplemental Security Income

T-MSIS = Transformed Medicaid Statistical Information System

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Executive summary

Introduction. Between 1988 and 1998, Congress established four Medicare Savings Programs (MSPs): the Qualified Medicare Beneficiary (QMB) program, the Specified Low-Income Medicare Beneficiary (SLMB) program, the Qualifying Individual (QI) program, and the Qualified Disabled and Working Individual (QDWI) program. MSPs are Medicaid programs that subsidize the cost of Medicare premiums, deductibles, co-insurance, and other cost sharing for Medicare beneficiaries with low income. Although previous studies have captured some point-in-time estimates of MSP participation (the proportion of eligible people who are actually enrolled in MSPs), few studies examine how participation trends in these programs have changed over time. To help fill this gap, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) at the U.S. Department of Health and Human Services contracted with Mathematica to analyze data[1] from the Survey of Income and Program Participation (SIPP) linked to the Medicare Enrollment Database (EDB) and Medicaid Statistical Information System (MSIS) to address the following research questions: (1a) To what extent have the MSP-eligible population, MSP-enrolled population, and MSP participation rate changed over time?; (1b) Are there differences in the characteristics of MSP enrollees and the MSP-eligible-but-not-enrolled population?; (2) Was the MSP participation rate affected by the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA) legislation that was implemented in 2010?; and (3) Are there differences in the out-of-pocket (OOP) spending of MSP enrollees and the MSP-eligible-but-not-enrolled population?

Methods. To simulate each survey respondents' eligibility for the QMB, SLMB, or QI programs, we used SIPP data to determine age, marital status, state of residence, income, and assets in each of 23 select observation months included in our study period from 2006 to 2013[2] and compared these values with the corresponding state MSP eligibility thresholds. We classified people older than 65 as eligible for an MSP based on financial eligibility alone, and we required people younger than 65 to also have Medicare Part A enrollment in the Medicare EDB. We then used MSIS data to determine MSP enrollment. After completing the eligibility simulation, we: (1a) estimated the MSP-eligible populations, the MSP-enrolled populations, and the MSP participation rates for each of the 23 observation months; (1b) examined differences between the population enrolled in MSP and the population that was eligible for MSP but not enrolled and used multivariable logistic regression models to identify characteristics associated with MSP enrollment; (2) tested the effect of MIPPA[3] on MSP eligibility, enrollment, and participation rates; and (3) compared self-reported OOP spending for medical care and other indicators of financial well-being among MSP enrollees with that reported by the MSP-eligible-but-not-enrolled population.

Results. The MSP participation rate increased slowly and steadily from about 60 percent in January 2006 to 72 percent in December 2012.[4] We found increases in the overall MSP participation rate were driven primarily by increased enrollment among those age 65 and older (relative to those ages 18 to 64) and

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[1] We accessed SIPP, Medicare EDB, and MSIS data through the Census Bureau's Data Linkage Infrastructure at the Federal Statistical Research Data Centers (FSRDCs).
[2] We initially planned to assess outcomes for at least 2006 to 2016, but we could not determine MSP enrollment for 2014 to 2016 because of Medicaid data limitations.
[3] MIPPA legislation increased MSP eligibility by increasing the standard federal asset limits for MSPs, to align them with the asset limits used for the Medicare Part D Low-Income Subsidy (LIS) program, effective January 1, 2010. MIPPA also encouraged MSP enrollment through other efforts. The MIPPA asset requirement increased MSP asset limits in 41 states but did not expand eligibility in the remaining 10 states (including the District of Columbia).
[4] Our methodology for calculating the population-level participation rate differs from the methodology Caswell and Waidmann (2017) used for their 2009 to 2010 estimates; in particular, we include people who are enrolled but not simulated eligible, whereas they exclude them. Therefore, we estimate higher participation rates.

those enrolled in the SLMB and QI programs (relative to those in the QMB program). When we examined the correlation between different characteristics and MSP enrollment, controlling for all other characteristics, we found those enrolled in Supplemental Security Income (SSI) or Supplemental Nutrition Assistance Program (SNAP) were more likely to be enrolled in an MSP. In our models examining the effect of MIPPA, we found no strong evidence that the implementation of MIPPA in 2010 had any meaningful impact on MSP eligibility, enrollment, or participation. In our cross-sectional regression models examining OOP spending, we found that MSP enrollees reported lower total OOP spending for medical costs than their MSP-eligible-but-not-enrolled peers.

Discussion. Although MSP participation rates increased slowly but steadily between 2006 and 2012,[5] MIPPA changes implemented in 2010 do not appear to have had a significant impact on these increases, as MSP participation rates were increasing before MIPPA and continued to increase after MIPPA implementation. These findings are consistent with observations over the past decade about states' practices with regard to MSPs. Over time, policymakers and advocates have realized that additional federal and state policy steps are needed to achieve the changes to MSP eligibility and enrollment processes intended under MIPPA. As many barriers to MSP enrollment still exist, such as burdensome MSP application and recertification processes and stigma about public benefits programs, the Centers for Medicare & Medicaid Services and states should consider continuing to identify strategies to reduce the burdens associated with applying for and maintaining MSP benefits. Our findings that SNAP and SSI receipt were positively associated with MSP enrollment indicate that people who are more connected to other public benefits and have experience applying for other programs might also be more likely to enroll in MSPs. These findings also highlight a need to reach people who have little or no experience with other public benefits programs, but who nonetheless might be eligible for MSP benefits—a potentially substantial population, as MSP financial eligibility thresholds are often higher than those used for other public benefits. We found some evidence MSPs are associated with lower self-reported OOP spending, but no evidence MSPs are associated with better financial well-being after controlling for observable differences. Many of these results might stem from data and study limitations, such as being unable to fully capture underlying medical care needs of the population, so further examination of OOP spending and financial well-being among MSP enrollees is needed.

Limitations. There are several limitations to consider when interpreting the results from our analyses. First, we are undercounting MSP eligibility and enrollment because the SIPP excludes people in institutional residences. Second, we relied on self-reported income and assets data to determine respondents' financial eligibility for MSPs and self-reports for comparisons of OOP spending. Last, we could report participation rate findings only through 2013 because of the limitations of Medicaid administrative data during the transition from MSIS to the Transformed Medicaid Statistical Information System.

Conclusions. Additional research is needed on a variety of topics related to MSPs, some of which will require creative approaches and new data to address. Despite its limitations, our study provides important information on trends in MSP eligibility and enrollment and addresses gaps in prior research, including by examining MSP enrollment and participation rates over a substantial time period and examining the potential effect of MIPPA on MSP participation. Our findings show promising trends in MSP participation rates and areas where policymakers and advocates can continue improvements, such as in outreach to people who are not currently connected to other public benefits programs.

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[5] Although we estimated a small decline in participation rates in 2013, it appears to be due to a different sample composition in 2013 and not necessarily reflective of a decrease in participation rates overall.

I. Introduction

Between 1988 and 1998, Congress established four Medicare Savings Programs (MSPs): the Qualified Medicare Beneficiary (QMB) program, the Specified Low-Income Medicare Beneficiary (SLMB) program, the Qualifying Individual (QI) program, and the Qualified Disabled and Working Individual (QDWI) program. MSPs are Medicaid programs that subsidize the cost of Medicare premiums, deductibles, co-insurance, and other cost sharing for Medicare beneficiaries with low income. For the many Medicare beneficiaries with modest incomes—nearly one-third have incomes below 150 percent of the federal poverty level (FPL)—and high out-of-pocket (OOP) medical expenses, MSPs confer important financial protections (Schoen et al. 2017). In 2023, MSPs cover at least $1,979 in Medicare Part B premium expenses,[6] which is about 14 percent of the income of someone at the FPL.[7] Because MSPs are Medicaid programs that help Medicare beneficiaries with Medicare costs, MSP enrollees are considered dually eligible for both Medicare and Medicaid, but some of them might not receive or qualify for full Medicaid benefits. Table I.1 lists the benefits for MSP and non-MSP dual eligibility categories.[8]

Table I.1. Categories of Medicare-Medicaid dual eligibility

Eligibility category	Covers Medicare Part A premium (when applicable)	Covers Medicare Part B premium	Covers Medicare Part A and B cost sharing	Enrollees have full Medicaid benefits[a]
MSP				
QMB only	Yes	Yes	Yes	No
QMB+	Yes	Yes	Yes	Yes
SLMB only	No	Yes	No	No
SLMB+	No	Yes	Depends on state plan[b]	Yes
QI	No	Yes	No	No
QDWI	Yes	No	No	No
Non-MSP				
Full Medicaid benefits only[a]	No	Depends on state plan[b]	Depends on state plan[b]	Yes

Source: Centers for Medicare & Medicaid Services (n.d.).

[a] Enrollees with full Medicaid benefits are covered for the services in the Medicaid state plan benefit package they are eligible for.

[b] States must provide Medicaid coverage for benefits in their state plan offered by health care providers registered with the state to provide Medicaid services. Beneficiaries might have to pay a small co-payment for certain services if the state plan requires. For services covered by Medicare but not Medicaid, states may choose to cover Medicare Parts A and B cost sharing for SLMB+ enrollees. States may also choose to cover Medicare Part B premiums or Medicare Parts A and B cost sharing for people who have full Medicaid benefits but are not enrolled in QMB.

MSP = Medicare Savings Program; QDWI = Qualified Disabled and Working Individuals; QI = Qualifying Individual; QMB = Qualified Medicare Beneficiary; SLMB = Specified Low-Income Medicare Beneficiary.

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[6] In 2023, the standard monthly premium for Medicare Part B was $164.90 (CMS 2022).
[7] The federal poverty level in 2023 for one person is $14,580 (ASPE 2023).
[8] People who are dually eligible for Medicare and Medicaid and who receive full Medicaid benefits (QMB+, SLMB+, and non-MSP full Medicaid beneficiaries) are often referred to as "full-benefit" dually eligible individuals, while MSP enrollees who do not receive full Medicaid benefits (QMB-only, SLMB-only, QI, and QDWI) are often referred to as "partial-benefit" or "limited-benefit" dually eligible individuals.

From 2006 to 2019, enrollment in MSPs increased substantially (by 46 percent for QMB, 70 percent for SLMB, 90 percent for QI, and 2,274 percent for QDWI).[9] Yet, without knowing how MSP eligibility and participation (the proportion of eligible people who are actually enrolled in MSPs) have changed, it is unclear whether enrollment increased because more people became eligible for these programs over time or because of improvements in outreach, data sharing between the Social Security Administration (SSA) and states, and accessibility of application materials. In the early 2000s, several studies examined MSP participation rates for the QMB and SLMB programs and found a range of results because of differing methodologies and model assumptions (Sears 2001/2002; Haber et al. 2003; CBO 2004). In 2017, the most recent study of MSP participation rates found that in mid-to-late 2009 and 2010, 53 percent of people eligible for QMB and 32 percent of people eligible for SLMB were enrolled in these programs (Caswell and Waidmann 2017). Each of these studies has provided evidence that MSP participation rates lag the participation rates of other means-tested programs, such as Supplemental Security Income (SSI; GAO 2005).

Although previous studies have captured some point-in-time estimates of participation in MSPs, few studies examine how participation trends in these programs have changed over time. This knowledge gap is important, because several major policy changes have been implemented over the past two decades with implications for MSP eligibility and enrollment. For example, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 established the Medicare Part D Low-Income Subsidy (LIS) program starting in 2006, spurred new outreach to and education for beneficiaries with low income potentially eligible for MSPs, and required states to screen LIS applicants for MSP eligibility (Lipson et al. 2007). More recently, the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA) triggered the most substantial MSP policy changes since the programs began. These changes included increasing the federal baseline MSP asset limits to align with those used for the LIS program (resulting in increased eligibility in 41 states), a requirement that the SSA transfer data from LIS applications to states daily and state Medicaid agencies use the information from the LIS application data in initiating MSP applications, and new funding for outreach about LIS and MSPs (GAO 2012).

To help fill this important research gap, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) at the U.S. Department of Health and Human Services contracted with Mathematica to analyze data from the Survey of Income and Program Participation (SIPP) linked to the Medicare Enrollment Database (EDB) and the Medicaid Statistical Information System (MSIS) to understand eligibility and enrollment trends in MSPs. We addressed the following research questions:

1. (a) To what extent have the MSP-eligible population, MSP-enrolled population, and the MSP participation rate changed over time? (b) Are there differences in the characteristics of MSP enrollees and the MSP-eligible-but-not-enrolled population?

2. Was the MSP participation rate affected by the MIPPA legislation that was implemented in 2010?

3. Are there differences in the OOP spending between MSP enrollees and the MSP-eligible-but-not-enrolled population?

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[9] QDWI enrollment increased from 73 enrollees in 2006 to 1,733 in 2019 (https://www.cms.gov/files/zip/medicaremedicaiddualenrollmenteverenrolledtrendsdata.zip).

For all research questions, we focused on the QMB, SLMB, and QI programs. The fourth MSP—QDWI—provides assistance to pay Part A premiums for people with disabilities who are employed and meet their state's income and asset requirements, but the number of QDWI enrollees (1,733 nationwide at any point in 2019 and lower in prior years) was too small to include the program in this study.

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II. Data sources

We accessed the SIPP data, Medicare EDB, and MSIS files through the Census Bureau's Data Linkage Infrastructure at the Federal Statistical Research Data Centers (FSRDCs).

A. SIPP

The SIPP is a longitudinal survey of U.S. households that collects information monthly on income, state of residence, and other demographic information, including marital status. It also collects annual data on asset holdings.[10] A new sample, constituting a "panel," is drawn every few years, and the same people are surveyed regularly until the next panel is initiated. We used data from the 2004, 2008, and 2014 SIPP panels to identify people who were eligible for MSPs in each of 23 select observation months from 2006 to 2013.[11] In the 2004 and 2008 SIPP panels, respondents were interviewed every four months about the prior four months, over about four years. With the 2014 redesign, the three interviews per year were replaced by an annual interview between February and May (or June), collecting data on the prior calendar year. Our approach carefully considered these changes to the SIPP design to produce robust estimates for MSP eligibility, enrollment, and participation at several time points (listed in Appendix A, Table A.1) over an eight-year period. Appendix A includes more information about SIPP.

B. Medicare EDB

The Medicare EDB is the Centers for Medicare & Medicaid Services' (CMS's) database of record for Medicare enrollment information. We used these data to determine whether a person was enrolled in Medicare Part A, which was a criterion to identify MSP eligibility in the population younger than 65 years old.

C. MSIS

MSIS data contain information on Medicaid enrollment.[12] Because the Medicare EDB did not contain data elements that enabled us to identify whether each person in our sample was enrolled in the QMB, SLMB, or QI programs in a given month, we used the dual status code variable from the MSIS data to determine MSP enrollment.

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[10] SIPP excludes people residing in institutional group quarters or military barracks or without a fixed address.
[11] We initially planned to assess outcomes for at least 2006 to 2016, but we could not determine MSP enrollment for 2014 to 2016 because of Medicaid data limitations in the FSRDCs. We had also planned to extend the analysis to 2017 and 2018, but we could not due to data limitations and availability in the FSRDCs.
[12] CMS required that states transition from reporting Medicaid administrative data in MSIS to the Transformed Medicaid Statistical Information System (T-MSIS) beginning in 2014; however, actual dates of transition varied by state, and some states did not complete the transition until 2015.

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III. Methods

A. Data linkage

To enable linking across data sets while protecting the confidentiality of the people these data represent, the Census Bureau developed the Data Linkage Infrastructure. Central to this system is the assignment of a Protected Identification Key (PIK) to nearly every respondent in Census Bureau surveys and censuses and to people in the many administrative data files that the Census Bureau receives. When the PIKs are assigned to a file, the personal identifiers, such as name, address, and Social Security number, are removed.[13] Users who access files through the Data Linkage Infrastructure can link individual records across files by matching on the PIK, so no personal identifiers were required to link the SIPP, Medicare EDB, and Medicaid MSIS data to determine MSP eligibility and enrollment. Not all persons in the SIPP can be assigned a PIK, however, and some PIK assignments might be incorrect. PIKs are limited to persons with valid Social Security numbers, and PIK assignment depends on the completeness and accuracy of the information respondents provide. We excluded respondents without PIKs from our analysis and reweighted the sample to account for their absence.

B. MSP eligibility simulation

1. Identifying the sample conditionally eligible for MSPs from the SIPP

After linking the data sources, we used SIPP data to determine age, marital status, state of residence, income, and assets for each survey respondent in each of the 23 months. Appendix B includes more details about determining these values in SIPP. We compared the SIPP data values for each included survey respondent with the corresponding state MSP eligibility thresholds to simulate people's eligibility for the QMB, SLMB, or QI programs. Appendix B, Table B.1, identifies the federal income and asset thresholds for each MSP program from 2006 through 2016,[14] and state-specific thresholds that differ from the federal baseline limits.

2. Identifying MSP-eligible population based on Medicare Part A enrollment

In addition to meeting income and asset requirements, to be eligible for MSP benefits, a person must also be enrolled in Medicare Part A. Therefore, the study sample should exclude, to the extent possible, people who the SIPP identifies as meeting the income and asset requirements for MSPs but who are not eligible for Medicare Part A. Most people ages 65 or older are eligible for Medicare Part A—either with or without a monthly premium—even if they are not enrolled. Thus, we considered all conditionally eligible sample members 65 and older who we identified from the SIPP to be fully eligible. For people younger than age 65, however, eligibility for Medicare is much less common. Those younger than age 65 can qualify for Medicare because of disability, amyotrophic lateral sclerosis, or end-stage renal disease. For most of these people, enrollment is automatic, and for those for whom it is not automatic, the severity of their qualifying medical condition and the high cost of treatment make it highly likely that they will enroll (Wysocki et al. 2019). Therefore, for conditionally eligible people younger than age 65 identified by the

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[13] Although each PIK corresponds to a unique Social Security number, the PIK is not derived mathematically from the Social Security number.

[14] Although we initially intended to examine MSP participation rates from 2006 through 2016, we ultimately had to exclude data for 2014–2016 from the study because of the Transformed Medicaid Statistical Information System (T-MSIS) data limitations in the FSRDCs and issues linking these data to the SIPP.

SIPP, we required evidence of Medicare eligibility to presume MSP eligibility. We gathered evidence of Medicare eligibility for this group using the Medicare EDB annual extract to determine whether they were enrolled in Medicare Part A. In other words, we classified each person or couple as MSP eligible if they met all income, asset, and Medicare Part A enrollment criteria. Those who failed to meet one or more criteria in a given month were classified as ineligible for that month.

3. Identifying MSP enrollees

Finally, to identify MSP enrollment, we linked the SIPP records of all persons, including those simulated eligible and ineligible, to the MSIS. We determined enrollment in QMB, SLMB, and QI based on the dual status code monthly indicators in the MSIS data for each person, regardless of their simulated MSP eligibility based on their responses to the SIPP.

C. Approach for analyzing the data to address each research question

1. Research Question 1 (RQ1)

After completing the eligibility simulation, we estimated the MSP-eligible, the MSP-enrolled populations, and the MSP participation rates for the QMB, SLMB, and QI programs—separately and combined—by age group (18 to 64 versus 65 and older), for each of the 23 observation months for our analyses. We also calculated standard errors for all sample estimates.

Next, we examined mean differences between the MSP-enrolled and MSP-eligible-but-not-enrolled populations for the following characteristics:

- Demographics—age, marital status, sex, race and ethnicity, language other than English, and education

- Government program participation—receiving SSI benefits and receiving Supplemental Nutrition Assistance Program (SNAP) benefits

- Health—self-reported core disability[15] and self-reported health status

- Insurance—self-reported possession of private insurance

- Medical care use—self-reported days hospitalized, number of doctor's visits, number of dentist's visits, and any prescription drug use

- State MSP eligibility criteria—survey respondent's state of residence has more generous asset limits for MSP benefits than the federal baseline limits (in other words, the state's MSP asset limits are at or above the federal baseline limits)

We also used multivariable logistic regression models to estimate, for each year of data from 2006 to 2013, the probability an eligible person is enrolled in each program (QMB, SLMB, or QI), to identify characteristics associated with MSP enrollment in each year.[16] Appendix B includes more information about our methodological approach for each research question.

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[15] Starting with the 2014 panel, the SIPP began using the six core disability questions that are used in the American Community Survey. It asks about: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty. Respondents who report any one of the six disability types are considered to have a disability.

[16] The covariates in the regression model specifically exclude characteristics that are likely to be impacted directly by MSP enrollment, including medical care use and OOP spending.

2.   Research Question 2 (RQ2)

To understand whether the policies enacted under MIPPA[17] affected MSP eligibility, enrollment, or participation rates at a national level, we used single interrupted time series models to test the effect of MIPPA on the level and trend of each of these outcomes, represented as a rate per Medicare beneficiary in the sample.[18] The single interrupted time series design is appropriate for studying this type of intervention because there was a sharp change in program rules on January 1, 2010, and a stable trend in the outcome variables from 2006 to 2009.

In a sensitivity analysis, we estimated the effect of MIPPA on a subgroup of 41 states[19] where MSP eligibility was affected by the new asset limits. All beneficiaries across the nation were affected by some new aspects of MIPPA, but we isolated these 41 states to provide insight into whether any changes in eligibility, enrollment, or participation were driven by the new asset requirements alone, other policies embedded within MIPPA, or a combination of both.

3.   Research Question 3 (RQ3)

Last, we compared self-reported OOP spending for medical care, including premiums, for MSP enrollees with that of the MSP-eligible-but-not-enrolled population. To further explore the association of MSP enrollment with financial stress, we also assessed three additional outcome variables reported in the SIPP: being unable to pay rent or mortgage, being unable to pay utility bills, and ever reducing the size of meals or skipping meals because there was not enough money to pay for food. We examined mean differences in these outcomes between MSP enrollees and the MSP-eligible-but-not-enrolled population and used regression models to estimate their association with MSP enrollment.

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[17] MIPPA legislation increased MSP eligibility by increasing the standard federal asset limits for MSPs, to align them with the asset limits used for the Medicare Part D Low-Income Subsidy (LIS) program. MIPPA also encouraged MSP enrollment through other efforts, such as streamlined sharing of LIS application data with states and translation of MSP application materials into several non-English languages (Wysocki et al. 2019). States were required to accept and participate in all MIPPA-required policy changes starting January 1, 2010. Raising federal asset limits for MSPs affected states differently than the other changes, however, because of state-specific MSP eligibility policies when MIPPA went into effect. For 41 states, the MIPPA asset requirement increased the states' MSP asset limits, which expanded the MSP-eligible population in these states. The MIPPA requirement did not expand eligibility in the remaining 10 states (including the District of Columbia), which either had no asset limit for MSP eligibility or had already implemented MSP asset limits that were higher before 2010 than those MIPPA required.

[18] We used a rate ("per Medicare beneficiary") rather than the level, as in RQ1, so different groups of states would be more comparable.

[19] We were unable to report results separately for the eight states (including the District of Columbia) that were not affected by MIPPA asset limit changes, or for two other states (Connecticut and Minnesota) excluded from these groupings due to Census FSRDC rules limiting the reporting of statistics based on small sample sizes.

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IV. Results

A. RQ1a. Change in MSP participation rate over time

We found the MSP participation rate increased slowly and steadily for both age groups across all MSP groups (Figure IV.1).[20] The overall MSP participation rate increased from about 60 percent in January 2006 to 72 percent in December 2012. The participation rate dropped slightly in 2013 because of an increase in the population simulated to be eligible for all MSPs; this appears to be due to a change in the SIPP sample composition (new cohort), as 2013 was the first year that reflected a switch from the 2008 to 2014 SIPP panel.[21] Appendix C includes all estimates for eligibility, enrollment, and participation rates.

Figure IV.1. Eligibility, enrollment, and participation rate for all MSP groups across all ages, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

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[20] Appendix C, Figure C.1 includes estimates for 2006 to 2016. The estimates for 2014 to 2016 are not included in the main analysis, but we present these years in the appendix to illustrate the Medicaid data limitations in the FSRDCs.

[21] We documented that the 2014 SIPP panel includes relatively more people from the District of Columbia and states where MSP eligibility thresholds are higher, which explains some of the increase in eligibility. In addition, it has been documented that poverty rates are higher at the start of each SIPP panel, and then return to a long run average. This could also partially explain the observed increase in eligibility in 2013 (Czajka et al. 2008) but not the decline that year. Differences in reported income, assets, and other variables in 2013 (the first year of the 2014 SIPP panel) might be due to other changes to the survey design that occurred at the start of the 2014 SIPP panel.

When we examined MSP participation rates separately for people ages 18 to 64 and people 65 and older, we found increases in the overall MSP participation rate were driven primarily by increased enrollment among people aged 65 and older relative to people ages 18 to 64 (Figures IV.2 and IV.3). Because those ages 18 to 64 already had relatively high participation rates, the increase in participation rates between 2006 and 2013 was more modest among this age group. For those ages 18 to 64, participation rates increased from about 82 to 89 percent between 2006 and 2012.[22] For those ages 65 and older, participation rates increased from about 46 to 62 percent between 2006 and 2012. For each of these age groups, participation rates dropped in 2013, similar to what we observed for the full sample. This is likely because of the change in the composition of the SIPP sample in 2013 and the documented phenomenon that poverty rates are higher in the first few waves of a new panel that we described above.

Figure IV.2. Eligibility, enrollment, and participation rate for all MSP groups among people ages 18 to 64, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

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[22] The participation rate for people 18 to 64 years old was 96.5 percent in January 2006 before decreasing to 82.2 percent in May 2006. It is likely that this is due to random chance, such as a small number of people with large survey weights changing enrollment or eligibility status, or turning 65 years old.

Figure IV.3. Eligibility, enrollment, and participation rate for all MSP groups among people ages 65 and older, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Breaking out MSP eligibility, enrollment, and participation rates by the QMB, SLMB, and QI programs, we found that although the participation rates for all MSPs increased between 2006 and 2012, the increases in overall MSP participation rates were driven largely by SLMB and QI enrollees, relative to QMB enrollees (Figures IV.4,IV.5, and IV.6; Appendix C, Tables C.4, C.5, and C.6).[23] Participation rates in the SLMB and QI programs were relatively lower than the rate in the QMB program at the start of our analysis period, so the increases were more substantial among the SLMB and QI programs over time. Participation rates in the SLMB program increased from about 31 to 48 percent, and participation rates in the QI program increased from about 13 to 26 percent between 2006 and 2012. The participation rates in the QMB program increased from 90 to 94 percent over this period.

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[23] As noted for the full sample, there was a change in the composition of the SIPP sample in 2013 and the documented phenomenon that poverty rates are higher in the first few waves of a new panel that we described, so estimates in 2013 for each program differed from trends from 2006 to 2012.

Figure IV.4. Eligibility, enrollment, and participation rate for QMB across all ages, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate. Some data points are suppressed due to small underlying sample sizes. Estimates are specific to the QMB program.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; QMB = Qualified Medicare Beneficiary; SIPP = Survey of Income and Program Participation.

Figure IV.5. Eligibility, enrollment, and participation rate for SLMB across all ages, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate. Some data points are suppressed due to small underlying sample sizes. Estimates are specific to the SLMB program.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; SLMB = Specified Low-Income Medicare Beneficiary.

Figure IV.6. Eligibility, enrollment, and participation rate for QI across all ages, 2006 to 2013

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate. Some data points are suppressed due to small underlying sample sizes. Estimates are specific to the QI program.
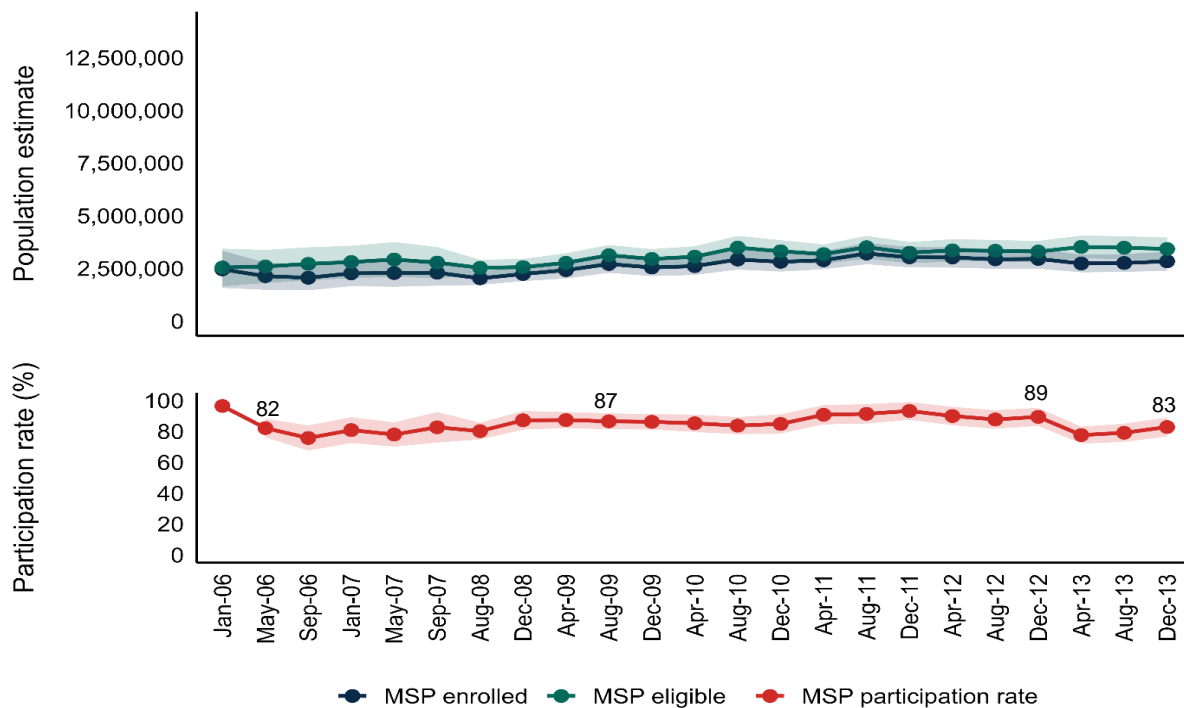
EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; QI = Qualifying Individual.

B.   RQ1b. Characteristics of MSP enrollees and the MSP-eligible-but-not-enrolled population

In our descriptive comparisons, we found that in December 2013, MSP enrollees, relative to the MSP eligible-but-not-enrolled population, were more likely to be 18 to 64 years old, not married, male, a member of a racial group other than White, and a person with Latinx ethnicity. MSP enrollees (relative to those who were MSP-eligible but not enrolled) were also more likely to not have completed high school; to receive SSI or SNAP benefits; to have no self-reported core disabilities; to self-report their health status as very good, good, or fair; to not have private insurance; to use at least one prescription drug; and to be living in a state that uses the standard federal asset limits for MSP eligibility. MSP enrollees also spent more days in the hospital, had more visits to a doctor's office, and had fewer dental visits in the past year than people who were eligible for MSPs but not enrolled (Table IV.1).

Table IV.1. Mean characteristics for MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, December 2013

Variable	Mean, eligible and enrolled	Mean, eligible but not enrolled	Difference	p-value
Age (%)				
18 to 64	42.33	24.58	-17.76	< 0.01
65 and older	57.67	75.42	-17.76	0
Marital status (%)				
Not married	80.89	67.53	13.36	0
Married	19.11	32.47	13.36	0
Gender (%)				
Male	41.31	40.95	-0.35	0.85
Female	58.69	59.05	-0.35	0.85
Race/ethnicity (%)				
White, non-Latinx	48.46	61.36	-12.9	0
Black, non-Latinx	22.63	16.74	5.89	0
Other, non-Latinx	10.21	5.30	4.91	0
Latinx	18.71	16.60	2.11	0
Language spoken (%)				
English	79.68	84.44	-4.76	0.02
Language other than English	20.32	15.56	-4.76	0.02
Educational attainment (%)				
Less than high school	43.75	30.11	13.64	< 0.01
High school graduate	48.25	58.65	-10.41	< 0.01
College graduate	8.00	11.24	-3.24	< 0.01
Government program participation (%)				
No other program participation	31.20	75.82	44.62	< 0.01
SSI coverage	34.28	13.66	-20.62	< 0.01
SNAP coverage	58.32	14.99	-43.33	< 0.01
TANF coverage	D	D	D	D
VA benefits	D	D	D	D
Any self-reported core disability[a] (%)				
No self-reported core disability	74.62	57.37	-17.25	< 0.01
At least one self-reported core disability	25.38	42.63	-17.25	< 0.01
Self-reported health status (%)				
Excellent	3.91	7.73	-3.82	< 0.01
Very good or good	38.99	28.09	10.90	< 0.01
Fair	27.04	16.80	10.24	< 0.01
Poor	30.06	47.38	-17.32	< 0.01
Private insurance coverage[b] (%)				
No private insurance coverage	92.03	73.18	18.85	< 0.01

Variable	Mean, eligible and enrolled	Mean, eligible but not enrolled	Difference	p-value
Private insurance coverage	7.969	26.82	18.85	< 0.01
Inpatient and outpatient medical care				
Number of days hospitalized, annual	3.42	2.51	-0.91	0.12
Number of doctor's visits per year, annual	10.82	7.12	-3.71	< 0.01
Number of dental visits, annual	0.97	1.21	0.24	0.02
Prescription drugs (%)				
No prescription drug use	9.43	15.40	-5.97	< 0.01
Any prescription drug use	90.57	84.60	-5.97	< 0.01
State MSP eligibility criteria (%)				
Asset limits at federal limits	66.72	55.38	11.34	< 0.01
Asset limits above federal limits	33.28	44.62	11.34	< 0.01

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.
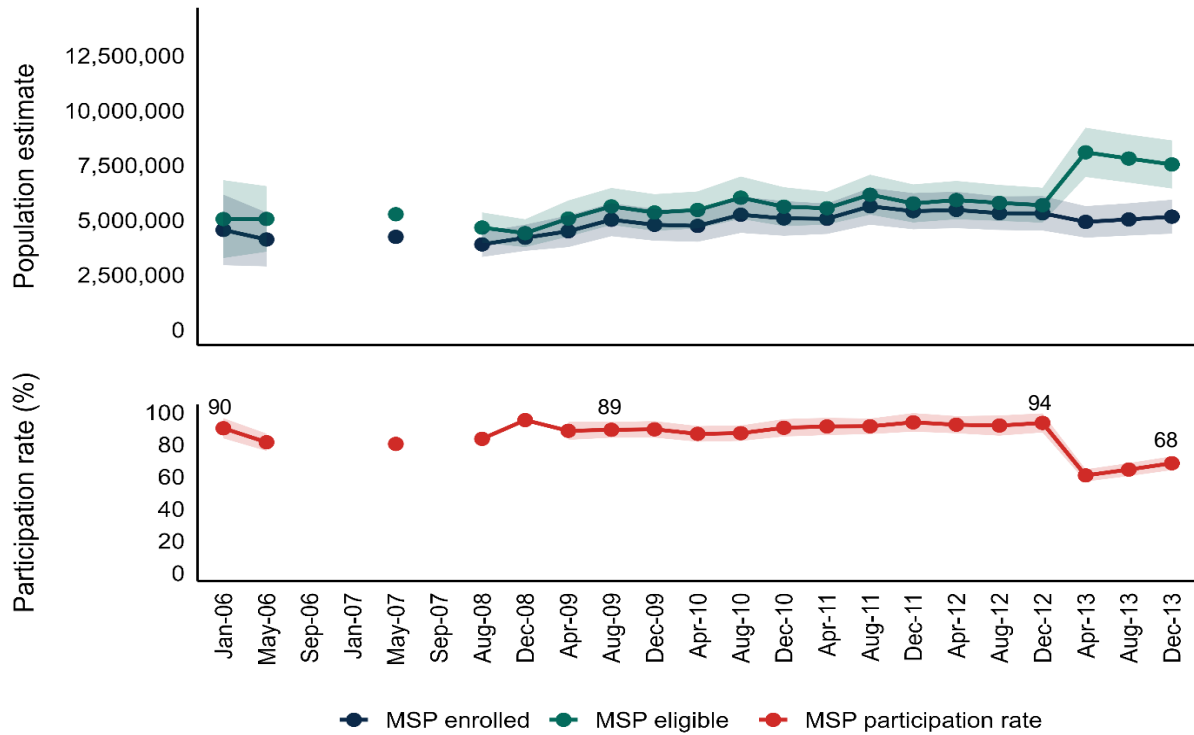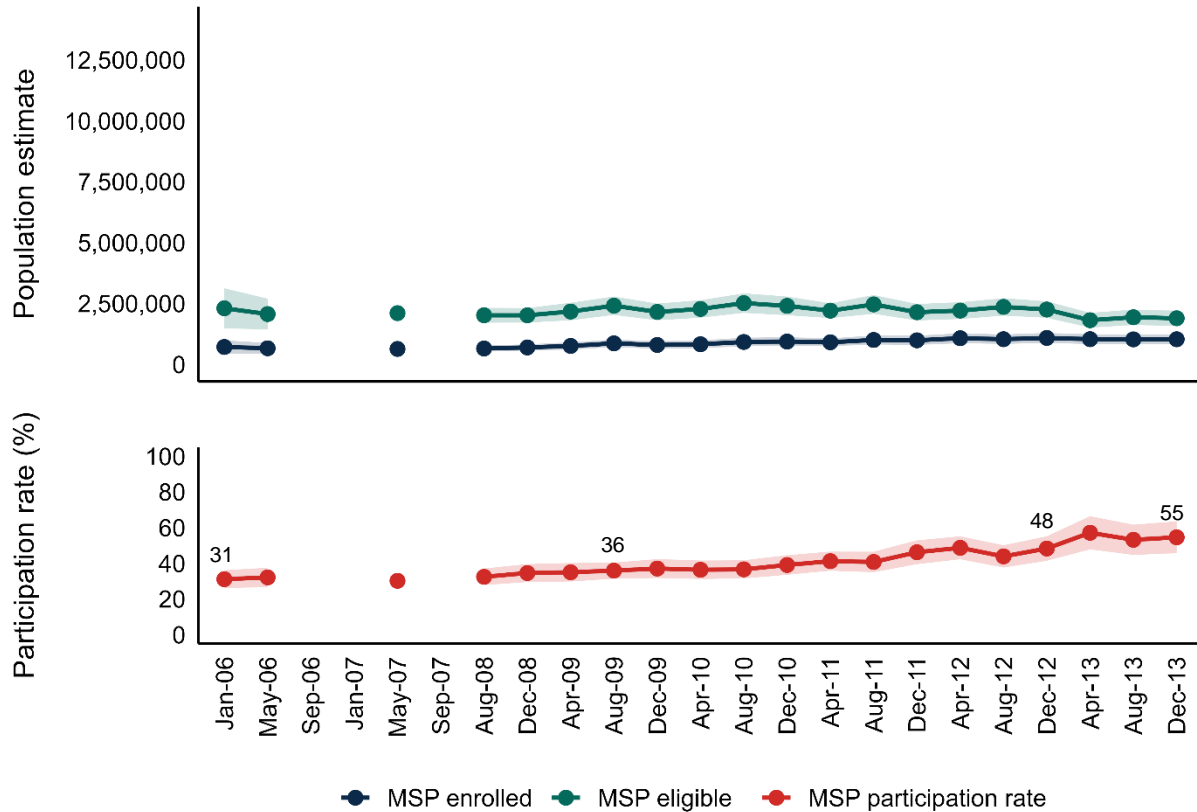
Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. "D" signifies that a statistic was suppressed due to a small sample size. There were no missing values for any variables included in this table.

[a]Self-reported core disability indicates that an individual self-reports at least one of six core disability measures: hearing, seeing, cognitive, ambulatory, self-care, or independent living.

[b]Private insurance coverage may include (but is not limited to) Medicare Advantage or Medigap coverage.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; MSP = Medicare Savings Program; SSI = Supplemental Security Income; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families; VA = Veterans' Affairs.

Controlling for all other characteristics, we found many characteristics did not have a significant relationship with MSP enrollment (Figure IV.6). However, we found those who enrolled in SSI or SNAP benefits were more likely to be enrolled in an MSP. Specifically, SSI receipt was associated with an 8.7 percentage point increase in the likelihood of MSP enrollment (95 percent confidence interval [1.4, 15.9]) and SNAP receipt was associated with a 38.6 percentage point increase in the likelihood of MSP enrollment (95 percent confidence interval [32.4, 44.9]). We also found those who were age 65 or older (-8.5 percentage points, 95 percent confidence interval [-14.1, -2.9]), married (-11.6 percentage points, 95 percent confidence interval [-19.6, -3.7])) and a high school graduate[24] (-8.9 percentage points, 95 percent confidence interval [-14.3, -3.6]), were less likely to be enrolled in an MSP.

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[24] Reference group is people without a high school diploma.

Figure IV.7. Association of individual characteristics and MSP enrollment, December 2013

Marginal association, percentage points
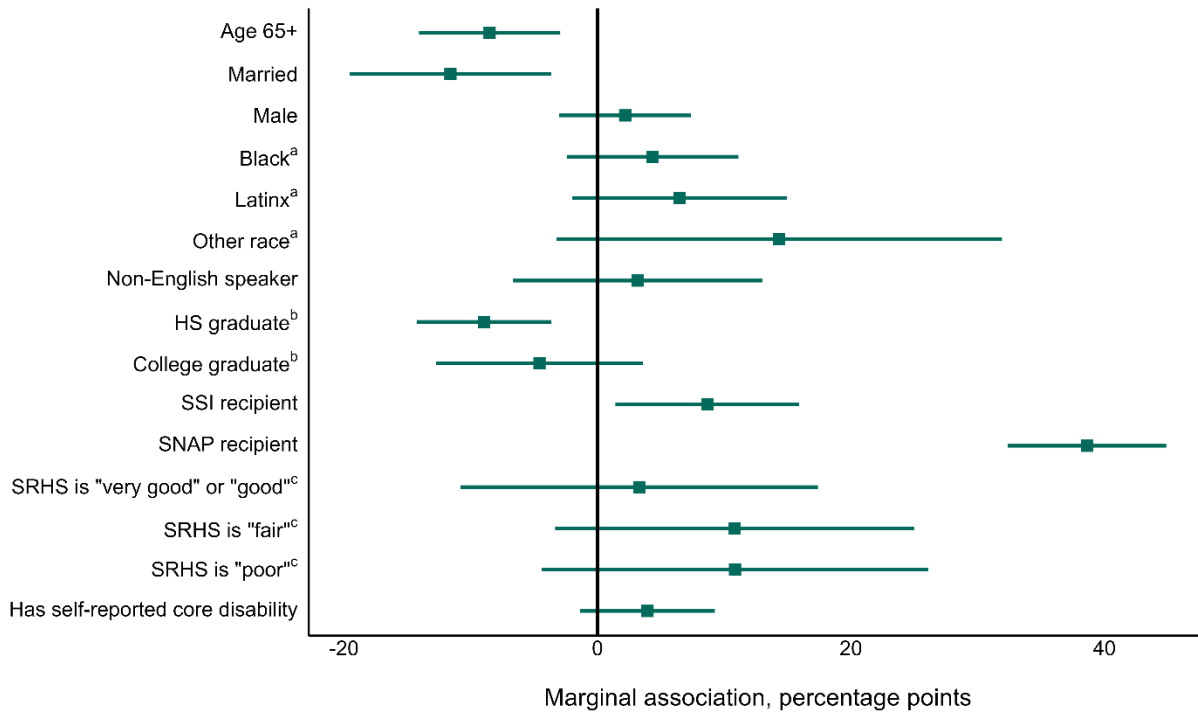
Source: SIPP data from 2014 panel linked to Medicare EDB and MSIS data for 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. We constructed these estimates using multivariable regression analysis. Self-reported core disability indicates that an individual self-reports at least one of six core disability measures: hearing, seeing, cognitive, ambulatory, self-care, or independent living.

[a]Reference group is White and non-Latinx.

[b]Reference group is without a high school diploma.

[c]Reference group has "excellent" self-reported health status (top category).

EDB = Enrollment Database; HS = high school; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; SNAP = Supplemental Nutrition Assistance Program; SRHS = self-reported health status; SSI = Supplemental Security Income.

Most of the characteristics we examined had a similar association with MSP enrollment over time, but we found the association between SNAP receipt and MSP enrollment grew (Figure IV.8). The proportion of MSP enrollees receiving SNAP benefits increased from 41 percent in 2006 to 58 percent in 2013, and the proportion of people who were eligible for MSPs but not enrolled who received SNAP benefits increased from about 12 percent in 2006 to 15 percent in 2013. The marginal association of SNAP receipt on MSP enrollment, which is the regression adjusted difference between these two rates, increased from about 23.6 percentage points in 2006 (95 percent confidence interval [18.4, 28.9]) to 38.6 percentage points in 2013 (95 percent confidence interval [32.4, 44.9]). In other words, SNAP receipt was associated with a 23.6 percentage point increase in the likelihood of MSP enrollment among those who were eligible in 2006, and a 38.6 percentage point increase in the likelihood of MSP enrollment in 2013. Appendix C presents additional results for other characteristics.

Figure IV.8. Marginal effect of SNAP receipt on MSP enrollment, 2006 to 2013
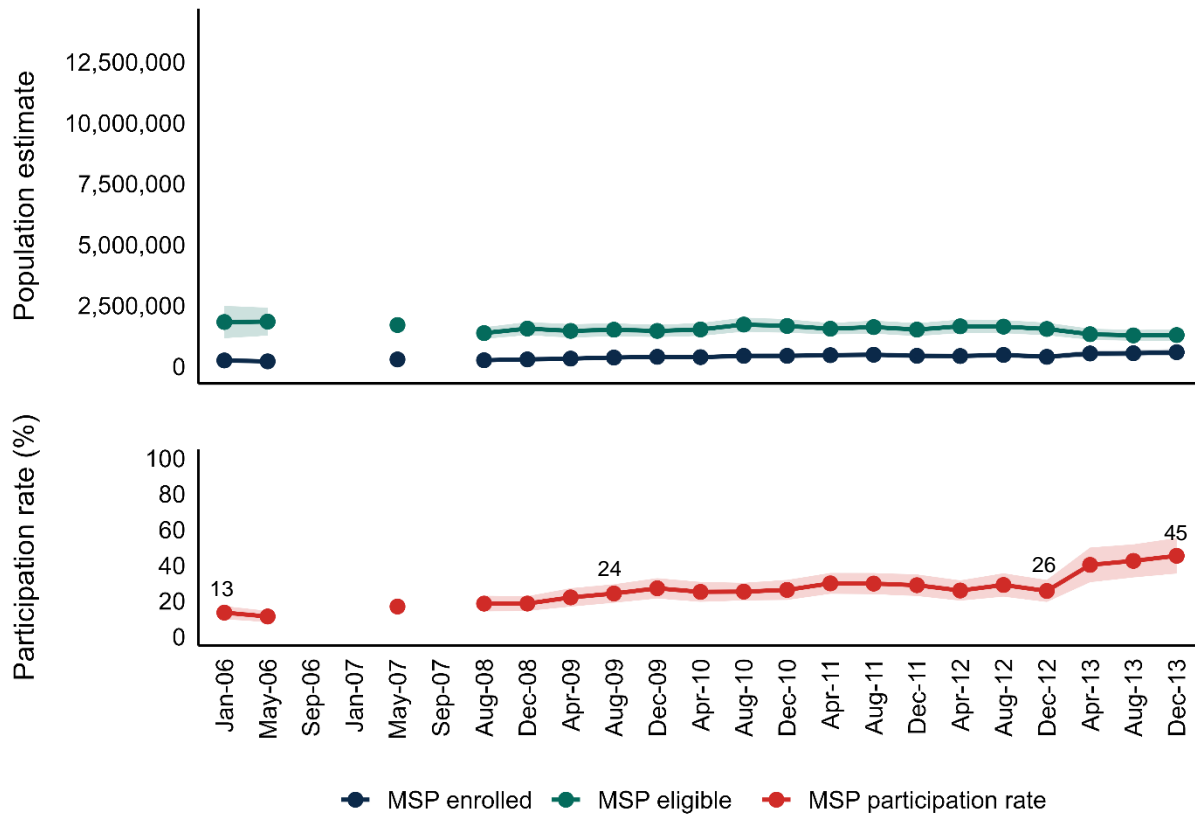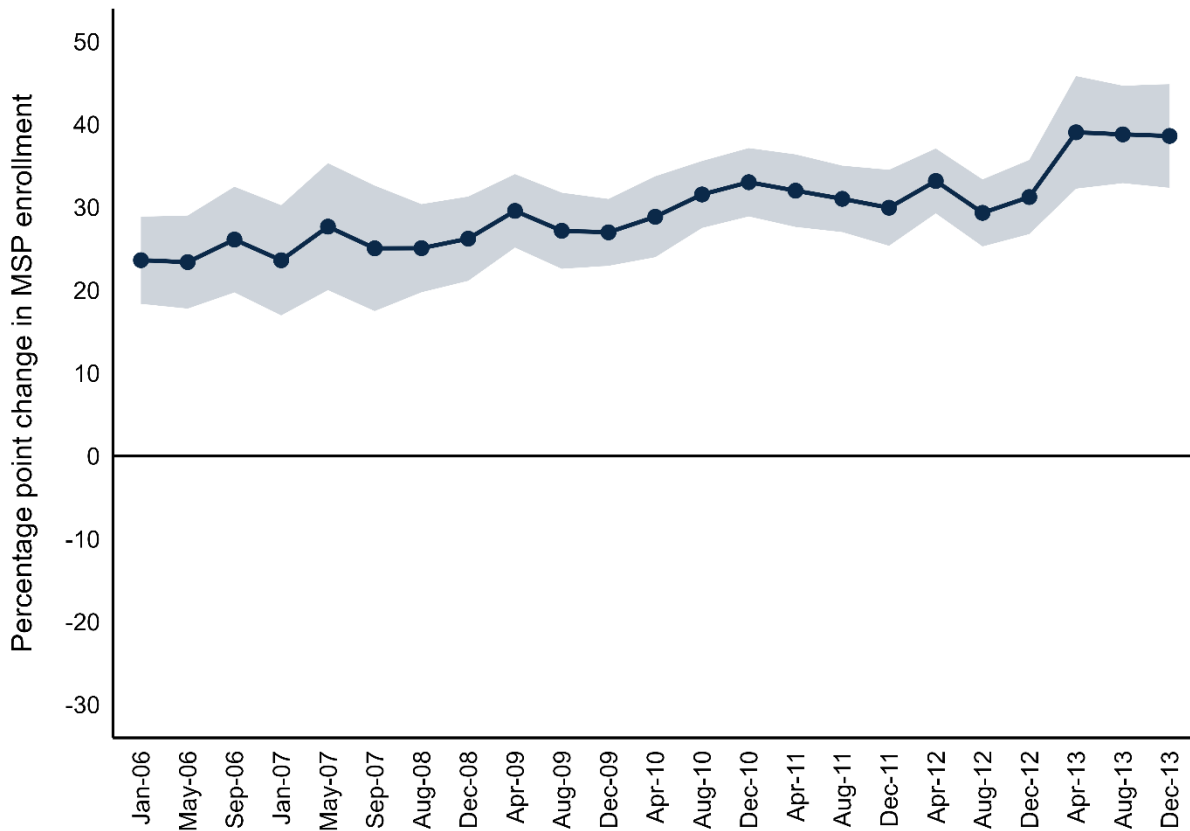

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; SNAP = Supplemental Nutrition Assistance Program.

C. RQ2. Effect of MIPPA

When we plotted eligibility, enrollment, or participation in MSPs per Medicare beneficiary over time to assess whether any of these rates changed after the introduction of MIPPA in 2010, we found no obvious visual changes in the level or slope for these estimates (Figure IV.9).

Figure IV.9. Eligibility and enrollment per Medicare beneficiary and participation rate across all states
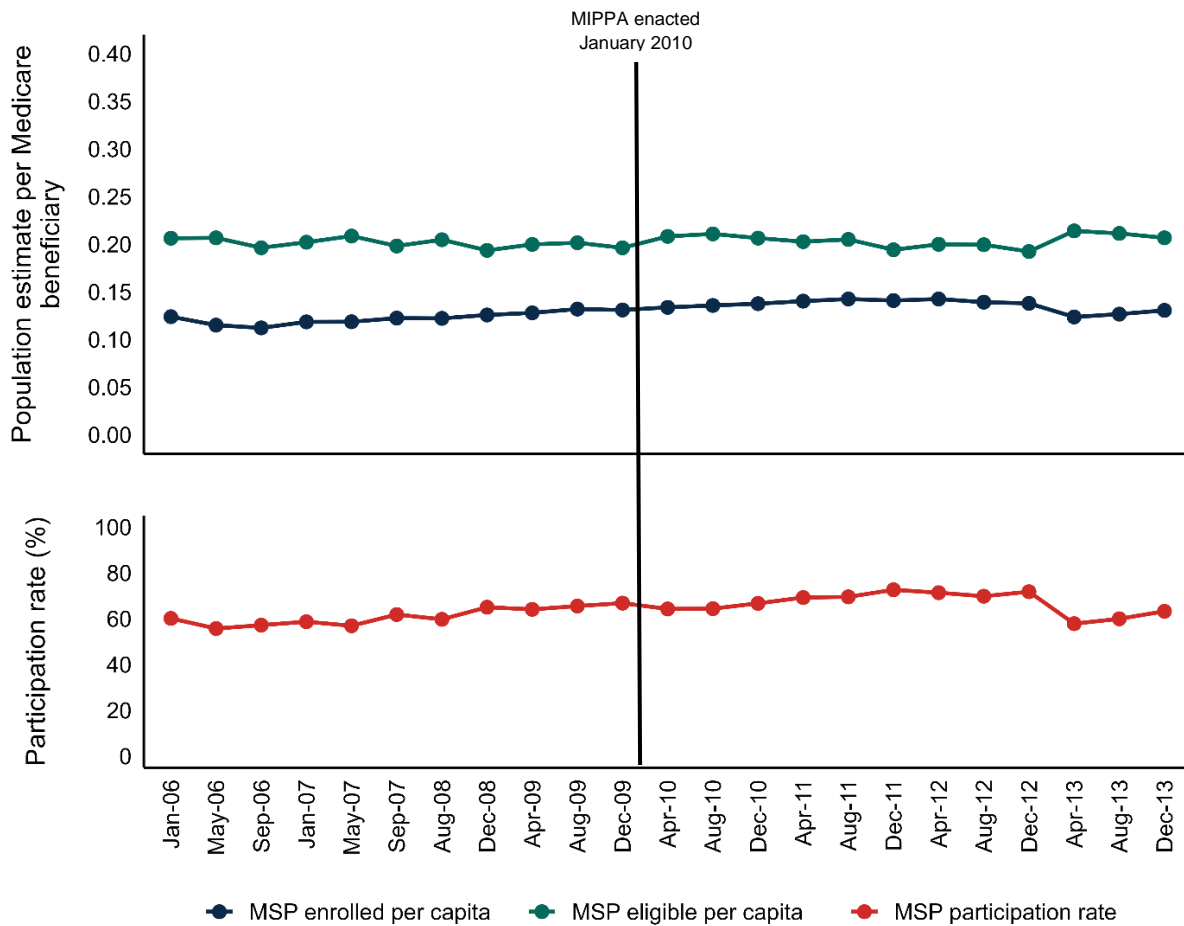
Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Our model estimates suggested small increases in MSP enrollment and eligibility per capita levels, a shift from positive to negative time trend for enrollment, and no change in the participation rate level or trend (Table IV.2). The two estimated effects work in opposite directions, and therefore cancel each other out. For example, absent MIPPA, the time trend component of the model would predict an additional 17 enrollments per 1,000 Medicare beneficiaries in December 2013. However, because of MIPPA, the model predicts an additional 26 enrollments per 1,000 Medicare beneficiaries. Over time, the model's predictions for increase in enrollment due to MIPPA would shrink until they reverse at slightly less than six years (beyond the scope of the data we include in this analysis due to data limitations), at which point the model would predict that MIPPA reduced enrollment. Because there was no strong visual evidence of any change, our models might be overfitting statistical variation, or noise, in the data. We also found the patterns for the model estimates did not differ for states affected by MIPPA asset requirement changes (Appendix C, Table C.9).

Table IV.2. Single interrupted time series estimates for effect of 2010 implementation of MIPPA on MSP enrollment, eligibility, and participation rates per capita, all states

Variable	Marginal effect	p-value	Percent of baseline mean	95 percent confidence interval
Enrollment per capita				
MIPPA legislation enacted (level change)	0.025	<0.01	21	[0.012, 0.039]
MIPPA x calendar time (slope change)	-0.00036	<0.01	-95	[-0.00058, -0.00014]
Calendar time (baseline slope)	0.00038	0.29	n.a.	[-0.00039, 0.0011]
Eligibility per capita				
MIPPA legislation enacted (level change)	0.042	0.02	19	[0.0072, 0.077]
MIPPA x calendar time (slope change)	-0.00042	0.15	42	[-0.0010, 0.00018]
Calendar time (baseline slope)	-0.001	0.13	n.a.	[-0.0024, 0.00037]
Participation rate				
MIPPA legislation enacted (level change)	-0.25	0.97	-0.4	[-16.5, 16.0]
MIPPA x calendar time (slope change)	-0.053	0.68	-10	[-0.33, 0.23]
Calendar time (baseline slope)	0.52	0.13	n.a.	[-0.16, 1.2]

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Covariates include fractions of the population who are 65 and older, married, male, members of the Black racial group (non-Latinx ethnicity), members of "other" racial groups (non-Latinx ethnicity), or of Latinx ethnicity (any racial group); who speak a language other than English; who have a high school diploma but no college degree; and who have a college degree.

EDB = Enrollment Database; MIPPA = Medicare Improvements for Patients and Providers Act of 2008; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; n.a. = not applicable; SIPP = Survey of Income and Program Participation.

D.   RQ3. OOP spending of MSP enrollees and the MSP-eligible-but-not-enrolled population

After controlling for observable characteristics using a cross-sectional regression model, we found MSP enrollees reported having 24 percent lower total medical OOP spending ($p = 0.08$) than people who were MSP-eligible but not enrolled (Table IV.3). Total OOP spending includes the three categories in the SIPP: (1) non-over-the-counter, (2) over-the-counter, and (3) premium spending. When we divided OOP spending into its component parts, we found MSP enrollment was associated with 33 percent lower non-over-the-counter medical spending ($p = 0.09$). Although we also found lower over-the-counter medical and premium spending among MSP enrollees, neither of these differences was statistically significant at the 10 percent level. After controlling for observable characteristics, we did not find any statistically significant differences between MSP enrollees and MSP-eligible-but-not-enrolled population for the financial well-being measures, as measured by the fraction who were unable to pay rent in the last year,

unable to pay utilities in the last year, or skipped meals in the last year. In the regression models, the regression-adjusted differences were quite different than the unadjusted differences (see unadjusted differences in Appendix C, Table C.10), highlighting that the MSP enrollees are demographically different from those who were eligible but did not enroll, as we discuss in the section describing results for RQ1b. For the financial well-being measures, the regression adjusted differences changed signs for two of three outcomes.

Table IV.3. Association of MSP enrollment with OOP spending and financial well-being, controlling for other observable factors

Outcome	Mean, enrolled	Mean, eligible but not enrolled	Marginal association	p-value	Percentage of eligible but unenrolled mean	95 percent CI
Out-of-pocket spending ($)						
Total medical	798	1,975	-467	0.08	-24	[-997, 64]
Non-over-the-counter medical	285	705	-232	0.09	-33	[-496, 33]
Over-the-counter medical	143	353	-50	0.13	-14	[-115, 15]
Premiums	371	917	-135	0.16	-15	[-320, 51]
Financial well-being (%)						
Unable to pay rent in the last year	8.7	7.7	-3.4	0.15	-44	[-7.9, 1.2]
Unable to pay utilities in the last year	17.3	10.5	-3.14	0.46	-30	[-11.5, 5.2]
Skipped meals in the last year	25.8	13.0	0.7	0.83	5	[-5.4, 6.7]

Source: SIPP data from 2014 panel linked to Medicare EDB and MSIS data for 2013.

Note: We constructed these estimates using the December 2013 data from each source. Population estimates and sample counts were rounded according to Census Research Data Center disclosure standards. Covariates include indicators for being 65 and older, married, male, a member of the Black racial group (non-Latinx ethnicity), a member of "other" racial groups (non-Latinx ethnicity), or of Latinx ethnicity (any race); speaking a language other than English; having a high school diploma but no college degree; having a college degree; receiving SSI benefits; receiving SNAP benefits; and self-reported health status.

CI = confidence interval; EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; SIPP = Survey of Income and Program Participation; SNAP = Supplemental Nutrition Assistance Program; SSI = Supplemental Security Income.

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V. Discussion

A. Summary of key findings and policy implications

The overall MSP participation rate increased slowly but steadily from 2006 to 2012, from about 60 percent in January 2006 to 72 percent in December 2012.[25,26] Although we estimated a small decline in participation rates in 2013, it appears to be due to a different sample composition in 2013 and not necessarily reflective of a decrease in participation rates overall. Increases from 2006 and 2012 were primarily driven by increased enrollment among people ages 65 and older (relative to people ages 18 to 64) and increased enrollment in the SLMB and QI programs (relative to QMB).

> **MSP participation rates increased steadily from 60 percent in 2006 to 72 percent in 2012**

It does not appear MIPPA changes implemented in 2010 had a significant impact on these increases, because participation rates were increasing before MIPPA and continued on a similar trajectory after MIPPA implementation. These findings appear consistent with observations over the past decade about state practices with regard to MSP eligibility and enrollment. Over time, policymakers and advocates have realized that additional federal and state policy steps are needed to achieve the changes to MSP eligibility and enrollment processes intended under MIPPA. For example, MIPPA aligned MSP asset limits with those used for the Medicare Part D LIS program and required SSA to send LIS application (or "leads") data to states to support the initiation of MSP applications. However, as of 2023, few states automatically enroll people into MSPs based on LIS leads data alone, because of discrepancies in LIS and MSP income and asset-counting methodologies. Therefore, other steps are needed to make these LIS data more usable for states or to otherwise streamline MSP enrollment.

> **MIPPA legislation was not associated with any changes in MSP participation**

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[25] Our participation rates differ from those of Caswell and Waidmann (2017) because we have different inclusion criteria for MSP enrollees (the numerator of the participation rate). We defined our numerator to include all people who were enrolled in an MSP regardless of simulated eligibility, while their methods count only those who were simulated eligible. We recognize simulated eligibility likely results in errors in both directions—simulating some as "eligible" who were not and simulating some as "not eligible" who were. And by excluding those who are not simulated eligible, we could undercount the overall participation rate. We have also limited the simulated eligible population among those age 18 to 64 to those who were enrolled in Medicare Part A, which might also have contributed to differing participation rates in our study and theirs.

[26] A recent study examining MSP participation rates for the community-dwelling Medicare population age 65 and older using data from the Health and Retirement Study and Medicare Current Beneficiary Survey estimated that participation rates increased from 55 percent in 2008 to 63 percent in 2014 (Popham et al. 2020). These findings are roughly consistent with our estimates of MSP participation rates for this age group.

Although our estimates suggest higher MSP participation rates than previous analyses covering earlier time periods (Caswell and Waidmann 2017), many barriers to MSP enrollment still exist, and there are opportunities for improvement. For example, MSP application and recertification processes that require people to document income and assets have been a frequently cited barrier in previous studies focused on understanding peoples' perspectives on MSP enrollment.[27] Stigma about public benefits programs might also prevent some people from seeking help from state Medicaid agencies for Medicare coverage (National Council on Aging 2016). Therefore, exploring messages and outreach efforts to overcome the stigma around public benefits programs is important. CMS and states should consider continuing to look for strategies that reduce the burdens that MSP-eligible people face when applying for and maintaining MSP benefits and to reach people who are eligible for but not yet enrolled in MSPs. At the same time, additional research is needed to identify effective outreach messages, particularly to the demographic groups least likely to be enrolled, such as those not eligible for other public benefits programs.

The association between SNAP enrollment and MSP enrollment increased from 2006 to 2013

When we compared the characteristics of MSP enrollees and those who were eligible but not enrolled, the most notable finding was the strong, positive association between receipt of other government benefits and MSP enrollment—specifically, between SNAP receipt and MSP enrollment. Also notable was the association between SSI receipt and MSP enrollment. In addition, we found the strength of the association between SNAP receipt and MSP enrollment grew over time. Previous analyses (Caswell and Waidmann 2017) have found similar associations.

These associations likely indicate that people who are more connected to other public benefits and have experience applying for other programs might also be more likely to enroll in MSPs. One reason could be that SNAP enrollment makes it easier for states to identify these people and assess their eligibility for Medicaid benefits, including MSPs. Another reason could be the increased use of "no wrong door" approaches to public benefits applications, which might mean people who learn about one benefit are more likely to learn about others.[28] For example, benefits counselors from Area Agencies on Aging, Centers for Independent Living, and other organizations often use comprehensive approaches and screening tools, such as the National Council on Aging's Benefits CheckUp tool,[29] to help people identify benefits they might qualify for.

Findings about the relationship between SNAP and SSI and MSP enrollment are promising, because they point to increased coordination across agencies or public benefits programs. However, they also highlight

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[27] For example, in focus groups and a survey conducted in 2001 to 2002, 15 to 20 percent of eligible non-enrollees said the application was a barrier to MSP enrollment and recertification was a main cause of benefit loss (Haber et al. 2003). Haber and colleagues also found MSP-eligible beneficiaries who lived in a state that used self-declaration of assets on MSP applications were more likely to enroll in MSPs. Findings from Haber et al. (2003) regarding self-declaration of assets are in line with findings from Kronebusch and Elbel (2004), who discovered that use of presumptive eligibility and self-declaration of income in Medicaid and CHIP applications significantly increased the probability of children's enrollment in those programs.

[28] For more information on "no wrong door" approaches, see http://www.advancingstates.org/sites/nasuad/files/NWD%20Systems%20-%20Guide%20for%20Community%20Organizations.pdf.

[29] The tool is available at https://benefitscheckup.org/.

a need to reach people who lack experience with other public benefits programs but who nonetheless might be eligible for MSP benefits. This population could be substantial, as MSP financial eligibility thresholds are often higher than those used for other public benefits. Also, although experience with other public benefits programs might explain some of the patterns we observe, at least part of the observed association could be caused by data limitations related to self-reported income and assets in the SIPP. For example, someone who was simulated eligible for an MSP and reported receiving SNAP benefits was probably more likely to be truly eligible, based on income and assets, than someone who was simulated as MSP-eligible but did not report receiving SNAP benefits. In other words, receiving SNAP benefits is a signal that low self-reported income and asset information is accurate. The difference in actual eligibility (versus simulated eligibility) between the two groups could at least partially explain differences in estimated participation rates.

We found evidence MSPs are associated with lower self-reported OOP medical spending, but no evidence MSPs are associated with better financial well-being after controlling for observable differences. Weaker and non-statistically significant results in these areas might stem from data and study limitations, especially because MSP enrollment might be correlated with other unobservable factors, such as financial need because of a lack of external supports or high medical expenses (selection into MSP enrollment). In other words, people with substantial medical needs might be more likely to seek out assistance and MSP support, and we might not be fully capturing these underlying needs in our analyses, thereby obscuring the relationship between OOP spending, financial well-being, and MSP enrollment. Although MSPs might help, they might not fully make up for these additional needs. Other study limitations might also be driving some of these results. For example, measurement error due to self-reported OOP spending and the fact that the QMB program covers Medicare premiums <u>and</u> cost sharing, while SLMB and QI programs only cover Medicare Part B premiums, could contribute to increased variance in our estimates. This variance would limit our ability to detect statistically significant differences when all MSPs are combined. Because of these data and study limitations, further examination of OOP spending and financial well-being among MSP enrollees is needed to understand the potential relationship between MSP enrollment and these outcomes.

> **MSP enrollment associated with lower self-reported OOP medical spending**

B. Limitations

The following limitations should be considered when interpreting the results from our analyses. First, we are undercounting MSP eligibility and enrollment, because the SIPP does not include people in institutional residences. Second, we expect a certain degree of mismeasurement, because we had to rely on self-reported income and assets data to determine respondents' financial eligibility for MSPs, and for comparisons of OOP spending. Third, we are able to report participation rate findings only through 2013. Although we initially planned to include results through at least 2016, we encountered problems with Transformed Medicaid Statistical Information System (T-MSIS) that resulted in implausible findings on MSP enrollment. Ultimately, we had to limit our results to those from 2006 to 2013. Fourth, we were unable to examine additional research questions of interest, such as whether there are meaningful differences between MSP enrollees in Medicare Advantage plans versus traditional Medicare fee-for-service, due to limitations in the data available in the FSRDCs.

Our study provides important information on trends in MSP eligibility and enrollment that have not been previously studied. However, there remains a critical need to address data limitations, such as those we encountered for the T-MSIS data, to fill gaps in knowledge on people who are dually eligible for Medicare and Medicaid, in general, and those participating in MSPs, specifically. Other researchers have documented the importance of improving data to advance research on people dually eligible for Medicare and Medicaid (Brown-Podgorski and Roberts 2022), and our study provides further confirmation of this critical need.

Some of the data challenges are areas where continuing efforts that are already underway should result in important improvements that will allow more robust research. For instance, CMS's current work with states to improve their T-MSIS data submissions and state efforts to validate enrollment information and improve reporting of dual status codes should greatly increase the usability of the T-MSIS data and allow for more advanced and timely research on Medicaid-related topics among dually eligible individuals. In addition, continued collaboration across agencies, such as between CMS and the Census Bureau, to link full datasets that contain the breadth of underlying information will allow for more nuanced examination of important topic areas that are unable to be addressed with limited datasets.

C. Opportunities for future research

Additional research on MSPs is needed to explore a variety of supplementary questions, some of which will require creative approaches and new data to address (Table V.1).

Table V.1. Potential areas for future research on MSPs

Topic area	Research study focus
Strategies to improve MSP enrollment	Test the effectiveness of outreach techniques for MSPs, especially among those not already connected to public benefits.
	Analyze the effect of federal and state policy steps aimed at streamlining enrollment for MSPs.
State-specific studies to learn from policy variation	Examine how policy variations across states and over time affect MSP enrollment, access to care, and OOP spending.
	Explore MSP enrollment among states that do not require documentation of assets relative to states that require documentation.
	Investigate MSP participation rates by income level, focusing on states such as Connecticut and Maine, and the District of Columbia, which have high MSP eligibility thresholds.
Access challenges for QMB program enrollees	Identify ways to improve access to care among people already enrolled in QMB program, particularly in "lesser-of" payment policy states.[a]
	Expand on past research[b] that has identified access challenges among QMBs to determine the extent to which the access to care challenges identified among QMBs in fee-for-service Medicare exist among QMBs enrolled in Medicare Advantage plans.[c]

[a] States with a lesser-of policy would compare the requested Medicare cost sharing with the difference between the state's Medicaid rate and the Medicare payment amount, and pay the lesser amount. Lesser-of policies might create barriers for people trying to access certain services.

[b] CMS 2015 and Hayford et al. 2023.

[c] Now that nearly half of Medicare beneficiaries are enrolled in Medicare Advantage plans (Freed et al. 2022), it has become increasingly important that research regarding health outcomes and access to care within Medicare beneficiary populations, including dually eligible populations, examine the experiences of Medicare Advantage enrollees, alongside the experiences of beneficiaries in the traditional fee-for-service Medicare program.

CMS = Centers for Medicare & Medicaid; MSP = Medicare Savings Program; OOP = out-of-pocket; QMB = Qualified Medicare Beneficiary.

Because of the important financial protections that MSPs can offer and the substantial investments that federal and state policymakers might need to make to address MSP enrollment barriers, ongoing research in this area is critical to promoting effective use of resources and further improvements in MSP participation. Timely and complete data is a primary barrier to quantitatively studying current MSP enrollment, eligibility, and participation trends. Therefore, survey and administrative data would need to be improved to continue to fill gaps in knowledge on MSPs.

Despite its limitations, our study provides important information on trends in MSP eligibility and enrollment. It also addresses gaps in prior research, including by examining MSP enrollment and participation rates over a substantial period and MIPPA's potential effect on MSP participation. Our findings also show promising trends in MSP participation rates and highlights areas where policymakers and advocates can continue to focus on improvements, such as in outreach to people who are not currently connected to other public benefits programs.

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Appendix A
Additional information on data sources

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A.   Survey of Income and Program Participation (SIPP)

To understand the selected observation months for this study, it is important to understand how SIPP waves and reference periods relate, within each panel and across panels. The 2004 panel was administered in 12 waves, covering the period from October 2003 through December 2007; the 2008 panel was administered in 16 waves, covering the period from May 2008 through November 2013; and the 2014 panel was administered in 4 waves, covering the period from January 2013 through December 2016.

For the 2004 and 2008 panels, each wave was administered in 4 rotation groups, and each rotation group covered a 4-month reference period. Each reference period included the four months prior to the month in which people in the rotation group were interviewed. For example, in the 2004 panel, people in the wave 6 rotation group 1 were interviewed in October 2005, covering the period from June 2005 through September 2005; and people in the wave 6 rotation group 4 were interviewed in January 2006, covering the period from September 2005 through December 2005. Figure A.1 shows the reference periods covered by each rotation group in wave 12 of the 2004 panel.

Figure A.1. 2004 panel, wave 12 reference periods

Panel	Wave	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
2004	12							
	(October 2007 - January 2008)							

Because of the rotation group and wave structure, it would be challenging to accurately estimate MSP eligibility using person-month level data for the 2004 and 2008 SIPP. Due to attrition across waves, and differences in how the sample month was collected for each rotation group within a wave, we would need to account for differences in sample weights between rotation groups for each month. However, because each wave includes one reference month that overlaps all rotation groups, a more straightforward and consistent approach is to use that overlapping reference month as the observation period for that wave. This approach provides three observation months per year for the 2004 and 2008 panels. The time periods are not entirely consistent across the 2004 and 2008 panels, however, due to a gap between the end of the 2004 panel and the start of the 2008 panel, and a shift of one month for the reference periods.

Figure A.2 shows the observation months spanning the end of the 2004 panel and start of the 2008 panel. In general, the observation months we used for the 2004 panel include January, May, and September, and the observation months we used for the 2008 panel include April, August, and December. Note that no data were collected in any rotation group for the months of January through April 2008 and that there is no month with data collected from four rotation groups between September 2007 and August 2008.

Figure A.2. 2004 panel, wave 12 and 2008 panel, wave 1 observation months
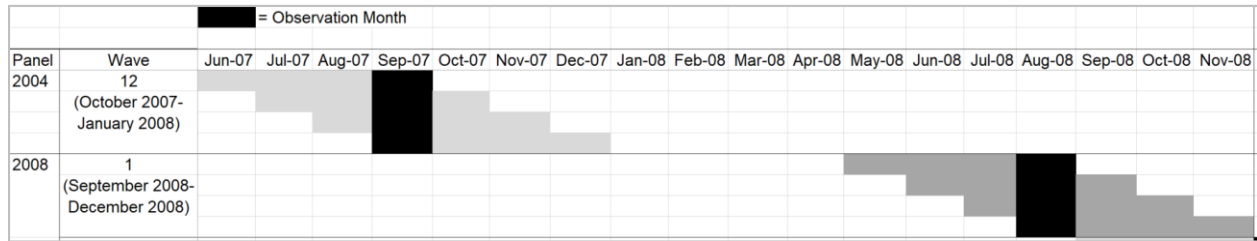
The 2014 panel uses 12-month reference periods for each wave of the survey, which correspond to the prior calendar year. Because the reference periods do not rotate within each wave, we did not have to account for this rotation in our study design. To maintain consistency with the previous panel and to obtain a constituent time series for the majority of the study period, we used the same observation months for the 2014 panel as used for the 2008 panel (April, August, and December).

Asset data are collected in select topical modules in the 2004 and 2008 panels and only as of December 31 of each year in the 2014 panel, resulting in some gaps in the data. There are further complexities due to changes in the SIPP's budget over time that resulted in deviations from the planned waves that collected asset information.[30] To produce estimates for the 23 months over the period 2006 to 2013, we tailored the approach to account for these changes. Appendix Table A.1 shows the full list of observation months we used to identify the sample of SIPP respondents who are eligible for MSPs and also identifies the panel, wave, and reference month when the asset information was collected for each month in the study.

Table A.1. Observation months for identifying MSP-eligible people in the SIPP

Panel	Interview waves	Observation months	Asset wave	Asset reference months[a]	Medical wave	Medical reference months[a]	Adult Well-being wave	Adult Well-being reference months[a]
2004	7, 8, 9	2006: January, May, September	6	September–December 2005	6	September–December 2005	5	May–August 2005
	10, 11, 12	2007: January, May, September	6	September–December 2005	6	September–December 2005	5	May–August 2005
2008	1, 2	2008: August, December	4	August–November 2009	4	August–November 2009	6	April–July 2010
	3, 4, 5	2009: April, August, December	4	August–November 2009	4	August–November 2009	6	April–July 2010

[30] In addition, because the assets were collected in a different wave than the income data for most of the observation months, some of the sample members with income data for a given month did not have asset data. (They will have responded to the wave that collected their income data but not the wave that collected the asset data.) When data was missing, we excluded that person from the analysis, and reweighted the remaining observations.

Panel	Interview waves	Observation months	Asset wave	Asset reference months[a]	Medical wave	Medical reference months[a]	Adult Well-being wave	Adult Well-being reference months[a]
	6, 7, 8	2010: April, August, December	7	August–November 2010	7	August–November 2010	6	April–July 2010
	9, 10, 11	2011: April, August, December	10	August–November 2011	10	August–November 2011	9	April–July 2011
	12, 13, 14	2012: April, August, December	10	August–November 2011	10	August–November 2011	9	April–July 2011
2014	1	2013: April, August, December	1	December 2013	1	December 2013	1	December 2013

[a] For the 2004 and 2008 panels, asset, medical expenses/use of medical care, and adult well-being information is only collected for the end of each reference period in each wave identified, so the reference month for data collection varies by rotation group in each wave for the 2004 and 2008 panels. For the 2014 panel, all data are collected at the end of the 12-month reference period.

MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

B. Medicare Enrollment Database (EDB)

We used data from the Medicare EDB to determine Medicare Part A eligibility for people under age 65 (all people 65 or older were presumed Medicare Part A eligible). Specifically, we used the BENE_PTA_ENTLMT_STRT_DT and BENE_PTA_ENTLMT_TRMNTN_DT variables to determine whether a person was eligible for Part A at any time in a given month.

C. Medicaid Statistical Information System (MSIS)

We used the variable DUAL_ELGBL_CD in the MSIS data to determine MSP enrollment. We coded a person as QMB-enrolled in a given month if DUAL_ELGBL_CD = "01" or "02," SLMB-enrolled in a given month if DUAL_ELGBL_CD = "03" or "04," and QI-enrolled in a given month if DUAL_ELGBL_CD = "06."

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Appendix B
Additional information on methods

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A. Eligibility simulation

Table B.1 identifies the federal income and asset thresholds for each year and each MSP from 2006 through 2016, as well as state limits when states used more generous limits than the federal baseline thresholds.[31]

We used SIPP data to determine state of residence, marital status, household income, and household assets in the following manner:

- First, we identified state of residence, which determined the income and asset limits for eligibility in each MSP.

- Second, we determined whether each respondent qualified as an individual or a couple. We classified those who reported being married with spouse present as members of a couple and treated all others as individuals.

- Third, we determined the level of qualifying income for each individual or couple at each of the 23 months using monthly income variables. To determine income eligibility for unmarried people, we used the person-level total and earned income variables for each observation month, which were collected in each wave for the 2004, 2008, and 2014 panels. For married people, we used a spousal identifier variable to link to the spouse's record to enable adding up the couple's total income and earned income. From the total individual or joint income, we subtracted the first $65 of earned income, 50 percent of the remaining earned income, and $20 from the remaining total income (including both earned and unearned income).

- Finally, for assets, we counted all assets reported by the individual or couple, excluding primary residence and one automobile, and compared them to the state-specific asset eligibility limits for the relevant time period. To calculate countable assets for an unmarried person, we added together the values of individual person-level assets (for example, bank and retirement accounts), excluding the primary residence and vehicle.[32] We used the same approach for married couples, summing the values of each spouse's person-level assets. This approach is similar to the calculation of joint income, although the SIPP determines a person's share of jointly held assets by collecting the data from one spouse and dividing the value equally between spouses. For non-asset variables that are reported monthly, we aligned the survey reporting month with the simulated eligibility month. For assets, we attempted to align the survey reports as closely as possible with the eligibility month.

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[31] We initially planned to include data from 2014, 2015, and 2016, but did not do so because of Transformed Medicaid Statistical Information System (T-MSIS) data limitations in the FSRDCs during this period.

[32] The values of individual assets were summed for all time periods because the 2004 and 2008 panel data do not include a variable for the total value of person-level assets, and although the 2014 panel data do include such a variable, it was preferable to keep the approach consistent across panels. We excluded the primary residence and vehicle values from the asset calculation because those are not considered countable assets for MSP eligibility. This approach may result in a slight underestimation of the MSP-eligible population, as other exclusions (for example, burial trusts or the cash-transfer value of life insurance) may also apply. However, these exclusions vary by state and are unlikely to have a substantial impact on eligibility for this population.

Table B.1. Federal and state[a] income and asset limits for MSPs, 2006-2016

MSP	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Income Limits (% FPL) [b,c]											
Federal											
QMB	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
SLMB	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
QI	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%	135%
State-specific											
Connecticut[d]											
QMB	100%	100%	100%	197%	197%	214%	213%	211%	211%	211%	211%
SLMB	120%	120%	120%	217%	217%	234%	233%	231%	231%	231%	231%
QI	135%	135%	135%	232%	232%	249%	248%	246%	246%	246%	246%
Washington, DC[e]											
QMB	Federal	300%	300%	300%	300%	300%	300%	300%	300%	300%	300%
SLMB	Federal	-	-	-	-	-	-	-	-	-	-
QI	Federal	-	-	-	-	-	-	-	-	-	-
Indiana[f]											
QMB	Federal	Federal	Federal	Federal	Federal	Federal	Federal	Federal	150%	150%	150%
SLMB	Federal	Federal	Federal	Federal	Federal	Federal	Federal	Federal	170%	170%	170%
QI	Federal	Federal	Federal	Federal	Federal	Federal	Federal	Federal	185%	185%	185%
Maine[g]											
QMB	150%	150%	150%	150%	150%	150%	150%	140%	140%	140%	140%
SLMB	170%	170%	170%	170%	170%	170%	170%	160%	160%	160%	160%
QI	185%	185%	185%	185%	185%	185%	185%	175%	175%	175%	175%
Asset Limits											
Federal – QMB/SLMB/QI[h]											
Individual (Couple)	$4,000 ($6,000)	$4,000 ($6,000)	$4,000 ($6,000)	$4,000 ($6,000)	$6,600 ($9,910)	$6,680 ($10,020)	$6,940 ($10,410)	$7,080 ($10,620)	$7,160 ($10,750)	$7,280 ($10,930)	$7,280 ($10,930)
State-specific[i]											

MSP	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Alabama[j]	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit
Arizona[j]	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit
Connecticut[d]	No limit – QI only	No limit – QI only	No limit – QI only	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit
Delaware[j]	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit
Washington, DC[e]	Federal	Federal	Federal	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit
Maine[g]	$8,000 ($12,000)	No limit	No limit	No limit	No limit	No limit	No limit	$50,000 ($75,000)	$50,000 ($75,000)	$50,000 ($75,000)	$50,000 ($75,000)
Minnesota[k]	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)	$10,000 ($18,000)
Mississippi[j]	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit
New York[l]	No limit – QI only	No limit – QI only	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit
Oregon[m]	Federal	Federal	Federal	Federal	Federal	Federal	Federal	Federal	Federal	Federal	No limit[f]
Vermont[j]	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit

Sources: Federal asset limits were identified using the following sources: MedPAC (2008); AARP Public Policy Institute (2010); Pennsylvania Health Law Project (2010); Pennsylvania Health Law Project (2012); Families USA (2013); Center for Medicare Advocacy (2014); Medicare Rights Center (2015); SSA (2016).

[a]State limits included only where they differ from federal baseline limits.

[b]Income eligibility categories for each MSP are mutually exclusive, with the upper limit for one program representing the lower threshold for the following program. For example, the following ranges represent federal income eligibility criteria across the study period: QMB – up to 100% FPL; SLMB – between 100 and 120% FPL; and QI – between 120 and 135% FPL.

[c]In 2016, the FPL was $990 per month for all states except Alaska and Hawaii; it was $1,237 for Alaska and $1,240 for Hawaii.

[d]Connecticut increased its income limit and eliminated the asset limit as of October 2009 (Caswell and Waidmann [2017]). The state submitted SPAs to revise income limits in 2011, 2012, and 2013 (SPAs CT-11-014, CT-12-17, and CT-13-018, available at https://www.medicaid.gov/state-resource-center/medicaid-state-plan-amendments/index.html).

[e]DC does not have SLMB or QI programs and considers all beneficiaries up to 300% FPL to be eligible for QMB benefits. DC increased the income limit for QMB to 300% FPL in February 2007 (Supplement 8a to Attachment 2.6-A, V, available at: https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/publication/attachments/DHCFStatePlanAttach2-6aSup8a.pdf), and as of May 2008 had applied to eliminate the asset limit (Summer et al. [2008]). Later sources confirm that DC did not make additional changes to income and asset limits in later periods. (See, for example, O'Malley Watts et al. [2016]).

[f]Indiana increased its income limits as of June 2014, as explained on the state's "2014 Disability Eligibility Changes FAQ" webpage, available at https://www.in.gov/fssa/ddrs/4861.htm.

gMaine's income limits were above the federal limits as of 2006 (MedPAC [2008]), but were reduced in 2013 (https://www.maineelderlaw.com/blog/mainecare-cuts-to-medicare-savings-program-and-low-cost-drugs-for-the-elderly-and-disabled/; https://www.mejp.org/content/mainecare-whos-covered-2014). Maine had asset limits above the federal limit in 2006, eliminated asset limits in 2007, and reintroduced asset limits of $50,000/individual and $75,000/couple in the 2013-2015 biennial budget, effective July 1, 2013 (http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=HP1079&item=44&snum=126). Several resources identify asset limits of $58,000/individual and $87,000/couple for the years since 2015 (see, for example, O'Malley Watts et al. [2016]; https://mainecahc.org/wp-content/uploads/Medicare-Savings-Program.pdf). However, other sources, including the 2019 MaineCare Eligibility Manual (https://www.maine.gov/sos/cec/rules/10/ch332.htm), indicate that the asset limits remain at $50,000/individual and $75,000/couple after the period of interest, and that the higher limits reflect certain exclusions https://www.mejp.org/sites/default/files/MaineCare-Eligibility-Guide-June2018.pdf). To remain consistent with the eligibility manual, this table uses the $50,000/$75,000 limits.

hThe federal asset limit is the same across the QMB, SLMB, and QI MSPs. The state-specific asset limit is the same across programs, unless otherwise specified.

iAsset limits for married couples are indicated in parentheses.

jAlabama, Arizona, Delaware, Mississippi, and Vermont had no asset limit throughout the study period. (See, for example, Nemore et al. [2006]; Caswell and Waidmann [2017]; Medicare Rights Center [2015]).

kMinnesota's asset limits were identified as $10,000 (individual) and $18,000 (couple) prior to the study period (Tiedemann et al. [2005]), during the study period (Caswell and Waidmann [2017]; O'Malley Watts et al. [2016]), and in 2019 (National Council on Aging [2019]). We therefore assume that the state's asset limits remain constant at those levels from 2006 through 2016.

lPrior to 2008, if MSP-eligible beneficiaries in New York met QMB or SLMB income criteria but had resources over the asset limit, they were enrolled in QI. (New York General Information System (GIS) 08 MA/016, available at https://www.health.ny.gov/health_care/medicaid/publications/docs/gis/08ma016.pdf.)

mOregon eliminated the asset limit as of January 1, 2016, as explained in an MSP webinar handout produced by the state, available at https://healthcare.oregon.gov/shiba/Documents/msp-webinar-handout.pdf.

DC = District of Columbia; FPL = federal poverty level; MedPAC = Medicare Payment Advisory Commission; MSP = Medicare Savings Program; QI = Qualifying Individual; QMB = Qualified Medicare Beneficiary; SLMB = Specified Low-Income Medicare Beneficiary; SPA = state plan amendment; SSA = Social Security Administration.

B.   Census FSRDC estimate rounding suppression rules

We conducted our analyses at Census FSRDC locations. We applied all required rules to round estimates and sample counts according to the Census's requirements. We also suppressed output if any underlying samples were smaller that the appropriate cutoff (less than three observations for national data, and less than ten observations for a specific state). All suppressions are noted.

C.   Approach for RQ1a: Change in MSP participation rate over time

In addition to estimating the MSP-eligible population, the MSP-enrolled population, and the MSP participation rate for the QMB, SLMB, and QI programs, separately and combined, by age group (18 to 64 versus 65 and older), for each of the 23 observation months from January 2006 to December 2013, we also calculated standard errors for all estimates. To assist users in calculating standard errors, the Census Bureau produces replicate weights for each SIPP wave. Replicate weights are a series of weights that mimic the assigned sample weights but are constructed with systematic variation. Users repeat their estimates with each of the replicate weights and use the multiple estimates to calculate standard errors through the statistical method of balanced repeated replication. Of the methods of standard error estimation available for SIPP, replicate weights provide the most accurate way of accounting for the survey's complex sample design.

D.   Approach for RQ1b: Characteristics of MSP enrollees and the MSP-eligible-but-not-enrolled population

We produced descriptive statistics for all the variables included, for each observation month, for the entire MSP program and by program (QMB, SLMB, and QI). We used t-test and chi-squared tests to detect any significant differences in mean characteristics for MSP-eligible-and-enrolled and MSP-eligible-but-not-enrolled populations, accounting for the SIPP's complex survey design.

Next, we used multivariable logistic regression models to estimate, for each year of data 2006 to 2013, the probability that an eligible beneficiary was enrolled in any MSP (QMB, SLMB, or QI) to identify the characteristics associated with MSP enrollment in each year. Each year-specific logistic regression model took the following form:

$$y_{it} = \alpha + \beta X_{it} + \delta_t + \gamma_{it} + \varepsilon_{it} \qquad (1)$$

In Equation 1, i indexes the individual and t indexes the observation month. y_{it} is equal to 1 if individual i is enrolled in any MSP during month t; otherwise, it is equal to 0. X_{it} is a vector of characteristics for individual i during month t, including demographics, participation in other government programs, and self-reported health status. The covariates in this model specifically exclude those that are likely to be impacted directly by MSP enrollment, including medical care use and OOP spending (addressed in Research Question 4). α is an intercept term, δ_t is an indicator for the observation month, γ_{it} is an indicator for the state of residence, and ε_{it} is an error term. We used clustered standard errors, clustered at the household level, and longitudinal replicate weights to account for the correlation between observation for individuals living in the same household. We report average marginal effects of the covariates to help with interpretation.

E. Approach for RQ2: Effect of MIPPA

We used the same sample of MSP-enrolled and MSP-eligible people and the same definition for the participation rate as defined in Research Question 1, collapsed to the month level. We used a total of 23 observations for this analysis, with 11 observation months falling before and 12 observation months falling after MIPPA. The interrupted time series models used a linear regression and took the following form:

$$Y_t = \beta_0 + \beta_1 T_t + \beta_2 MIPPA_t + \beta_3 T_t * MIPPA_t + \beta_4 X_t + \varepsilon_t \qquad (2)$$

In Equation 2, Y_t is the participation rate at time t. T_t is a continuous variable capturing the number of calendar months since January 2006, ranging from 1 to 96, indicating the time period at time t relative to the start of the observation period. $MIPPA_t$ is a dummy variable that will be set to 0 for the time periods before January 1, 2010 and set to 1 for the time periods after January 1, 2010. $T * MIPPA_t$ is an interaction between time and the indicator for MIPPA. X_t represents a vector of time-varying confounders, including the population's mean demographics and education. β_0 is the baseline level of the outcome variable. β_1 indicates the trend in the outcome variable before MIPPA implementation on January 1, 2010, and β_2 indicates the level shift immediately after MIPPA implementation. β_3 estimates the change in the outcome variable trend after MIPPA relative to the trend before MIPPA. ε_t is random variation at time t that is not explained by the model.

F. Approach for RQ3: OOP spending of MSP enrollees and the MSP-eligible-but-not-enrolled population

We used regression analysis to estimate the association between MSP enrollment (at any point in the year) and OOP expenditures and premiums among the combined population eligible for any of the three MSPs. Because OOP spending reflects not only insurance coverage but also medical need and the ability to pay for products and services, we used a multivariable regression approach to account for other observable differences between the MSP enrollees who were eligible and the MSP-eligible-but-not-enrolled population. We estimated a regression model predicting OOP spending.

$$y_i = \alpha + \beta X_i + \gamma_i + \varepsilon_i \qquad (3)$$

In Equation 3, i indexes the individual (we only studied these outcomes for a single time point, December 2013, due to data limitations). We estimated the association of MSP enrollment on total OOP spending (premium, over-the-counter OOP, and non-over-the-counter OOP) as well as each of the three components separately. We used negative binomial regressions for spending outcomes. y_{it} is self-reported premium, over-the-counter OOP, or non-over-the-counter OOP spending for individual i who is eligible an MSP. X_i is a vector of characteristics for individual i during observation year t, including demographics, participation in other government programs, and self-reported health status. The covariates in this model specifically exclude those that are likely to be impacted directly by MSP enrollment, including medical care use. α is an intercept term, γ_i is an indicator for the state of residence, and ε_i is an

error term. We used standard errors, clustered at the household level, to account for the correlation between individuals living in the same household.

To further explore the association of MSP enrollment with financial stress, we assessed three additional outcome variables reported in the SIPP: being unable to pay rent or mortgage, being unable to pay utility bills, and ever reducing the size of meals or skipping meals because there was not enough money to pay for food. We hypothesized that, conditional on other beneficiary characteristics, MSP enrollment should reduce the financial burden of medical bills and improve a beneficiary's ability to cover other necessary non-medical expenses. We used a logistic regression model and report average marginal effects, similar to the approach for the regressions in Research Question 2, but otherwise use the same covariates and sample described above for the OOP spending analysis.

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Appendix C
Supplemental results

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A. Supplemental results for RQ1a: Change in MSP participation rate over time

Table C.1. Eligibility, enrollment, and participation rate for all MSP groups across all ages, 2006 to 2013

Time period	Population estimate eligible	Standard error	Population estimate enrolled	Standard error	Population participation rate	Standard error	Sample eligible	Sample enrolled
Jan 06	9,178,000	1,635,000	5,516,000	992,600	60.10	1.500	3,100	1,900
May 06	8,963,000	1,350,000	4,990,000	757,100	55.67	1.387	3,000	1,700
Sep 06	8,424,000	1,165,000	4,815,000	674,400	57.15	2.036	1,400	850
Jan 07	8,658,000	1,127,000	5,077,000	668,300	58.64	2.348	1,400	850
May 07	9,076,000	1,233,000	5,161,000	719,100	56.87	2.177	1,400	850
Sep 07	8,537,000	1,066,000	5,275,000	688,500	61.78	2.443	1,300	850
Aug 08	8,047,000	574,800	4,803,000	354,500	59.68	1.527	3,000	2,100
Dec 08	7,977,000	552,100	5,183,000	370,300	64.97	1.656	2,800	2,000
Apr 09	8,703,000	695,200	5,573,000	448,000	64.04	1.569	3,000	2,000
Aug 09	9,543,000	705,000	6,249,000	466,800	65.48	1.376	3,100	2,000
Dec 09	8,962,000	674,200	5,982,000	455,000	66.75	1.49	2,900	2,100
Apr 10	9,260,000	696,900	5,947,000	455,000	64.22	1.504	3,000	2,100
Aug 10	10,260,000	793,500	6,602,000	521,700	64.35	1.365	3,200	2,100
Dec 10	9,680,000	734,000	6,453,000	504,000	66.66	1.562	3,000	2,100
Apr 11	9,299,000	604,900	6,435,000	436,300	69.20	1.509	2,900	2,100
Aug 11	10,240,000	745,600	7,116,000	529,300	69.49	1.522	3,000	2,100
Dec 11	9,419,000	696,300	6,835,000	520,300	72.57	1.603	2,800	2,100
Apr 12	9,772,000	705,200	6,968,000	527,800	71.30	1.619	2,800	2,100
Aug 12	9,782,000	675,600	6,826,000	488,400	69.77	1.737	2,800	2,100
Dec 12	9,474,000	652,000	6,795,000	499,400	71.73	1.676	2,700	2,100
Apr 13	11,230,000	774,600	6,491,000	468,800	57.79	1.435	2,800	1,800
Aug 13	11,020,000	773,900	6,603,000	477,800	59.92	1.548	2,800	1,800
Dec 13	10,720,000	777,400	6,776,000	503,700	63.19	1.600	2,700	1,900

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Sample counts are rounded according to Census Bureau requirements. Eligible population includes those who are enrolled and not enrolled.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Table C.2. Eligibility, enrollment, and participation rate for all MSP groups among people ages 18 to 64, 2006 to 2013

Time period	Population estimate eligible	Standard error	Population estimate enrolled	Standard error	Population participation rate	Standard error	Sample eligible	Sample enrolled
Jan 06	2,546,000	457,700	2,458,000	448,800	96.53	3.768	850	850
May 06	2,597,000	398,500	2,136,000	330,500	82.21	3.097	850	750
Sep 06	2,719,000	402,000	2,060,000	303,300	75.78	4.146	400	350
Jan 07	2,807,000	391,100	2,271,000	310,600	80.89	4.277	400	350
May 07	2,926,000	423,000	2,284,000	332,100	78.05	4.007	400	350
Sep 07	2,781,000	374,600	2,300,000	314,400	82.72	5.038	400	350
Aug 08	2,532,000	195,200	2,033,000	160,100	80.27	2.796	950	900
Dec 08	2,566,000	196,700	2,239,000	172,000	87.25	3.056	850	850
Apr 09	2,770,000	231,600	2,421,000	202,800	87.41	2.675	900	850
Aug 09	3,131,000	247,100	2,712,000	213,500	86.62	2.634	1,000	850
Dec 09	2,954,000	238,000	2,548,000	208,600	86.25	2.528	900	850
Apr 10	3,061,000	250,600	2,612,000	213,900	85.33	2.869	900	850
Aug 10	3,491,000	283,700	2,926,000	243,300	83.79	2.844	1,000	850
Dec 10	3,318,000	267,600	2,817,000	236,700	84.91	3.158	950	900
Apr 11	3,183,000	233,100	2,891,000	216,700	90.83	3.174	900	900
Aug 11	3,510,000	275,600	3,209,000	257,600	91.45	3.206	950	900
Dec 11	3,250,000	257,200	3,032,000	246,100	93.31	2.936	850	850
Apr 12	3,359,000	270,000	3,025,000	245,500	90.03	3.042	900	850
Aug 12	3,342,000	259,200	2,935,000	228,700	87.80	3.055	850	850
Dec 12	3,304,000	255,900	2,956,000	236,800	89.48	2.990	850	850
Apr 13	3,524,000	275,800	2,737,000	213,900	77.68	2.791	900	750
Aug 13	3,487,000	276,400	2,761,000	217,100	79.17	3.012	900	750
Dec 13	3,427,000	277,600	2,841,000	228,200	82.88	3.120	900	800

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Sample counts are rounded according to Census Bureau requirements. Eligible population includes those who are enrolled and not enrolled.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Table C.3. Eligibility, enrollment, and participation rate for all MSP groups among people ages 65 and older, 2006 to 2013

Time period	Population estimate eligible	Standard error	Population estimate enrolled	Standard error	Population participation rate	Standard error	Sample eligible	Sample enrolled
Jan 06	6,632,000	1,188,000	3,058,000	554,300	46.11	1.553	2,200	1,000
May 06	6,366,000	964,600	2,855,000	439,400	44.84	1.476	2,200	1,000
Sep 06	5,706,000	788,600	2,755,000	396,500	48.28	2.377	950	500
Jan 07	5,850,000	761,400	2,806,000	385,900	47.96	2.537	1,000	500
May 07	6,150,000	835,800	2,877,000	416,700	46.78	2.520	1,000	500
Sep 07	5,757,000	727,000	2,974,000	410,600	51.67	2.701	950	500
Aug 08	5,515,000	404,500	2,770,000	215,900	50.23	1.665	2,000	1,200
Dec 08	5,411,000	380,300	2,944,000	225,700	54.41	1.853	1,900	1,200
Apr 09	5,933,000	485,200	3,152,000	267,900	53.13	1.803	2,100	1,200
Aug 09	6,412,000	482,500	3,537,000	283,400	55.16	1.712	2,200	1,200
Dec 09	6,008,000	461,100	3,434,000	275,400	57.16	1.776	2,000	1,200
Apr 10	6,200,000	472,200	3,336,000	267,800	53.80	1.666	2,100	1,200
Aug 10	6,769,000	533,700	3,677,000	305,900	54.32	1.629	2,200	1,200
Dec 10	6,362,000	495,200	3,635,000	297,300	57.14	1.823	2,100	1,200
Apr 11	6,116,000	404,100	3,544,000	250,400	57.94	1.686	2,000	1,200
Aug 11	6,731,000	499,500	3,906,000	301,500	58.04	1.745	2,100	1,200
Dec 11	6,170,000	464,800	3,803,000	298,500	61.64	1.862	1,900	1,200
Apr 12	6,413,000	466,600	3,943,000	312,700	61.49	1.903	2,000	1,200
Aug 12	6,440,000	450,600	3,891,000	294,600	60.42	2.064	1,900	1,200
Dec 12	6,170,000	430,500	3,839,000	295,900	62.22	2.114	1,900	1,200
Apr 13	7,709,000	540,300	3,754,000	288,000	48.70	1.699	1,900	1,000
Aug 13	7,532,000	536,100	3,842,000	292,400	51.01	1.714	1,800	1,000
Dec 13	7,296,000	536,100	3,935,000	304,700	53.94	1.773	1,800	1,100

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Sample counts are rounded according to Census Bureau requirements. Eligible population includes those who are enrolled and not enrolled.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Table C.4. Eligibility, enrollment, and participation rate for QMB across all ages, 2006 to 2013

Time period	Population estimate eligible	Standard error	Population estimate enrolled	Standard error	Population participation rate	Standard error	Sample eligible	Sample enrolled
Jan 06	5,049,000	904,900	4,553,000	820,800	90.18	3.200	1,700	1,500
May 06	5,055,000	763,200	4,118,000	626,400	81.47	2.76	1,700	1,400
Sep 06	D	D	D	D	D	D	D	D
Jan 07	D	D	D	D	D	D	D	D
May 07	5,270,000	711,500	4,238,000	599,000	80.42	3.704	800	700
Sep 07	D	D	D	D	D	D	D	D
Aug 08	4,661,000	351,900	3,895,000	292,600	83.57	2.526	1,700	1,700
Dec 08	4,406,000	323,300	4,197,000	304,900	95.27	3.017	1,500	1,700
Apr 09	5,072,000	419,600	4,493,000	367,700	88.58	2.856	1,700	1,600
Aug 09	5,626,000	429,800	5,019,000	382,600	89.22	2.504	1,800	1,600
Dec 09	5,349,000	426,200	4,788,000	369,500	89.51	2.620	1,700	1,600
Apr 10	5,465,000	429,800	4,738,000	369,600	86.69	2.481	1,700	1,700
Aug 10	6,024,000	493,000	5,247,000	422,600	87.11	2.442	1,900	1,600
Dec 10	5,614,000	452,600	5,079,000	403,500	90.46	2.760	1,800	1,700
Apr 11	5,545,000	381,700	5,063,000	353,400	91.31	2.742	1,700	1,700
Aug 11	6,161,000	464,500	5,631,000	427,400	91.40	2.462	1,800	1,700
Dec 11	5,763,000	442,200	5,409,000	420,300	93.86	2.936	1,700	1,700
Apr 12	5,915,000	445,600	5,466,000	422,600	92.40	2.735	1,700	1,600
Aug 12	5,787,000	418,300	5,316,000	391,300	91.86	3.199	1,600	1,600
Dec 12	5,682,000	405,800	5,313,000	400,700	93.50	3.030	1,600	1,600
Apr 13	8,093,000	573,100	4,922,000	366,800	60.81	1.936	1,900	1,300
Aug 13	7,810,000	558,700	5,032,000	374,900	64.44	2.059	1,800	1,400
Dec 13	7,541,000	558,800	5,158,000	394,700	68.40	2.187	1,800	1,400

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Sample counts are rounded according to Census Bureau requirements. Eligible population includes those who are enrolled and not enrolled. Cells marked "D" are suppressed due to small sample size.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; QMB = Qualified Medicare Beneficiary; SIPP = Survey of Income and Program Participation.

Table C.5. Eligibility, enrollment, and participation rate for SLMB across all ages, 2006 to 2013

Time period	Population estimate eligible	Standard error	Population estimate enrolled	Standard error	Population participation rate	Standard error	Sample eligible	Sample enrolled
Jan 06	2,305,000	418,000	717,000	138,500	31.10	2.568	800	250
May 06	2,068,000	322,600	663,800	112,100	32.10	2.753	700	250
Sep 06	D	D	D	D	D	D	D	D
Jan 07	D	D	D	D	D	D	D	D
May 07	2,106,000	330,600	635,500	110,700	30.18	3.475	350	100
Sep 07	D	D	D	D	D	D	D	D
Aug 08	2,018,000	155,200	654,200	61,290	32.42	2.358	750	300
Dec 08	2,017,000	152,800	697,100	65,630	34.55	2.571	700	250
Apr 09	2,172,000	182,900	759,500	75,880	34.97	2.647	750	250
Aug 09	2,411,000	192,500	865,600	78,530	35.90	2.297	800	300
Dec 09	2,156,000	173,800	799,200	79,210	37.07	2.692	700	300
Apr 10	2,278,000	182,600	828,700	81,030	36.38	2.647	750	300
Aug 10	2,518,000	203,500	922,000	89,050	36.61	2.587	800	300
Dec 10	2,404,000	195,000	938,800	93,070	39.05	2.802	750	300
Apr 11	2,207,000	154,900	909,200	81,120	41.20	2.733	700	300
Aug 11	2,464,000	196,300	1,004,000	95,520	40.75	2.933	700	300
Dec 11	2,144,000	172,500	990,700	97,220	46.20	3.404	650	300
Apr 12	2,210,000	174,900	1,076,000	104,800	48.69	3.274	650	350
Aug 12	2,362,000	181,800	1,036,000	99,310	43.87	3.180	700	350
Dec 12	2,254,000	172,100	1,088,000	105,000	48.30	3.492	650	350
Apr 13	1,816,000	154,300	1,037,000	102,400	57.12	4.741	500	300
Aug 13	1,936,000	160,900	1,029,000	100,600	53.18	4.319	550	300
Dec 13	1,895,000	159,500	1,034,000	103,800	54.58	4.545	550	300

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Sample counts are rounded according to Census Bureau requirements. Eligible population includes those who are enrolled and not enrolled. Cells marked "D" are suppressed due to small sample size.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; SLMB = Specified Low-Income Medicare Beneficiary.

**Table C.6. Eligibility, enrollment, and participation rate for QI across all ages, 2006 to 2013**

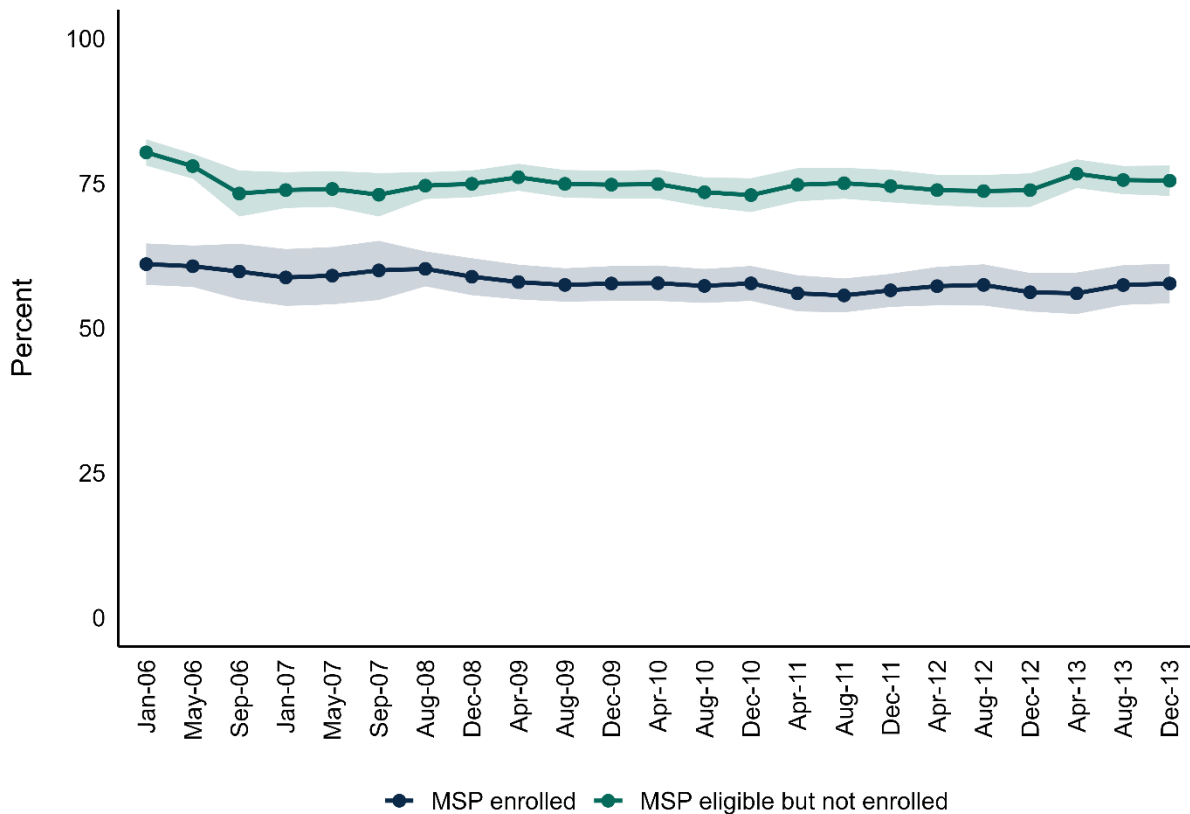| Time period	Population estimate eligible	Standard error	Population estimate enrolled	Standard error	Population participation rate	Standard error	Sample eligible	Sample enrolled
Jan 06	1,823,000	338,300	245,300	52,440	13.46	1.874	600	90
May 06	1,840,000	292,500	207,900	40,630	11.30	1.594	600	80
Sep 06	D	D	D	D	D	D	D	D
Jan 07	D	D	D	D	D	D	D	D
May 07	1,700,000	248,000	287,000	57,840	16.88	2.994	300	50
Sep 07	D	D	D	D	D	D	D	D
Aug 08	1,369,000	122,000	253,500	32,260	18.52	2.243	500	100
Dec 08	1,554,000	135,900	288,200	34,820	18.55	2.106	550	100
Apr 09	1,458,000	142,300	320,800	41,930	22	2.628	500	100
Aug 09	1,507,000	132,800	364,400	44,760	24.18	2.641	500	100
Dec 09	1,458,000	129,000	395,100	45,310	27.11	2.900	500	150
Apr 10	1,517,000	134,100	380,700	46,760	25.09	2.843	500	150
Aug 10	1,718,000	147,700	433,600	51,100	25.24	2.520	550	150
Dec 10	1,661,000	141,600	435,300	53,130	26.20	2.860	500	150
Apr 11	1,547,000	119,300	462,000	49,340	29.86	2.979	500	150
Aug 11	1,615,000	136,100	480,300	53,400	29.74	3.031	500	150
Dec 11	1,512,000	134,700	436,100	50,380	28.84	3.081	450	150
Apr 12	1,647,000	141,500	426,300	49,370	25.87	2.889	450	150
Aug 12	1,634,000	137,800	473,400	55,130	28.97	3.334	450	150
Dec 12	1,538,000	131,200	394,000	47,630	25.62	3.144	450	100
Apr 13	1,323,000	116,300	532,600	67,480	40.24	4.954	400	150
Aug 13	1,274,000	112,800	541,200	63,620	42.48	4.726	400	150
Dec 13	1,288,000	117,200	583,700	68,510	45.33	5.078	400	150

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Sample counts are rounded according to Census Bureau requirements. Eligible population includes those who are enrolled and not enrolled. Cells marked "D" are suppressed due to small sample size.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; QI = Qualifying Individual; SIPP = Survey of Income and Program Participation.

Figure C.1. Eligibility, enrollment, and participation rate for all MSP groups across all ages, 2006 to 2016
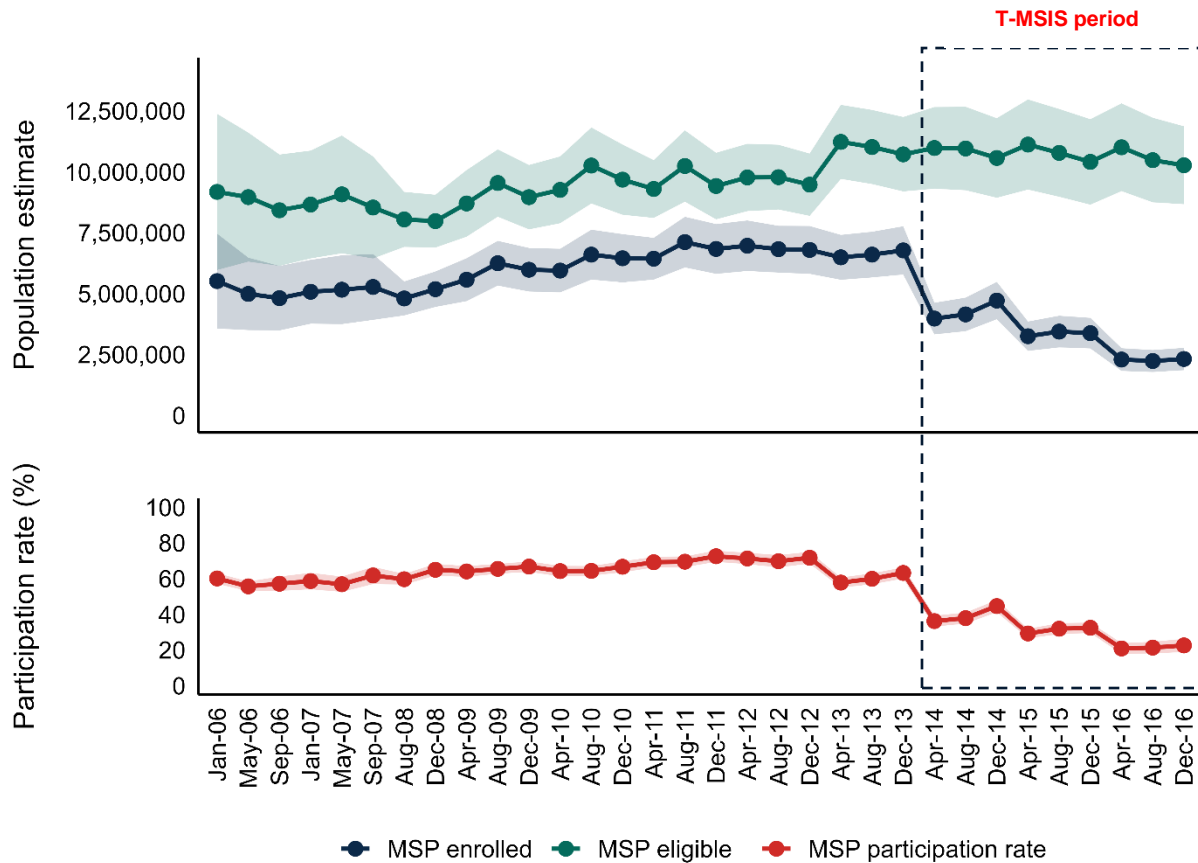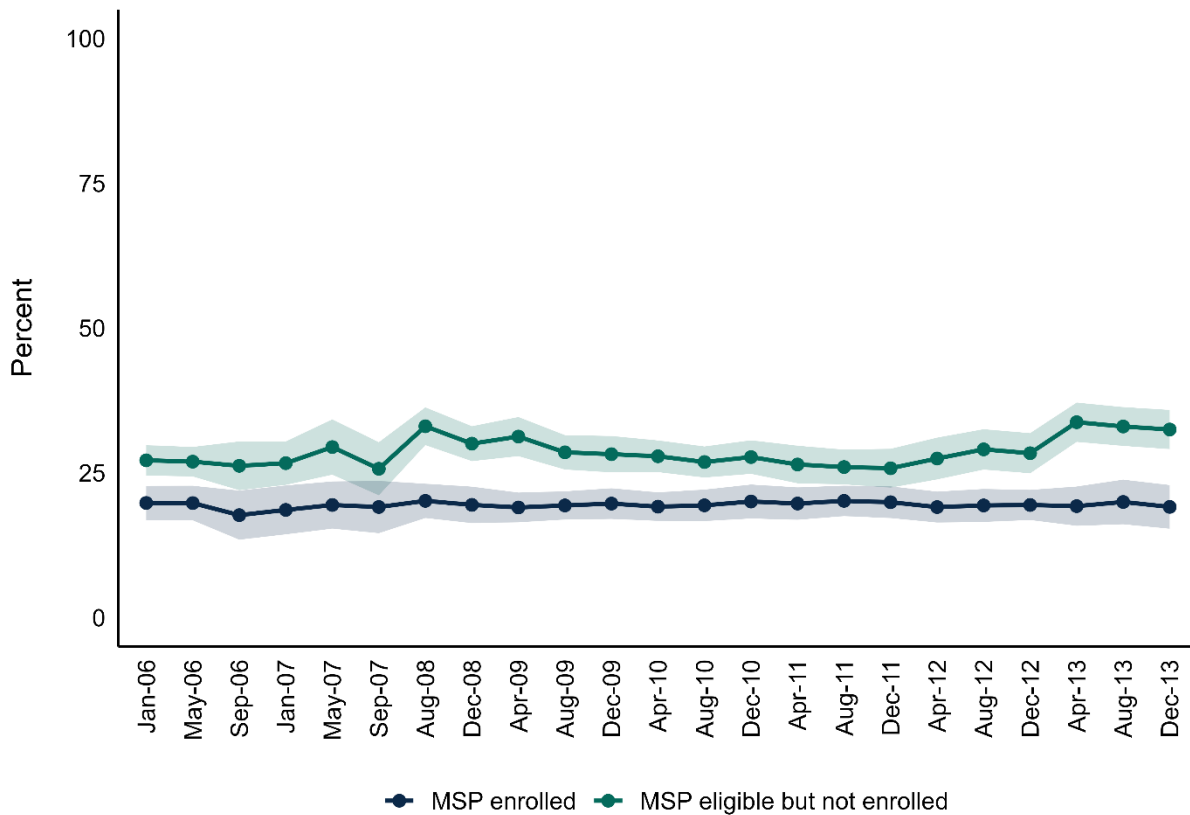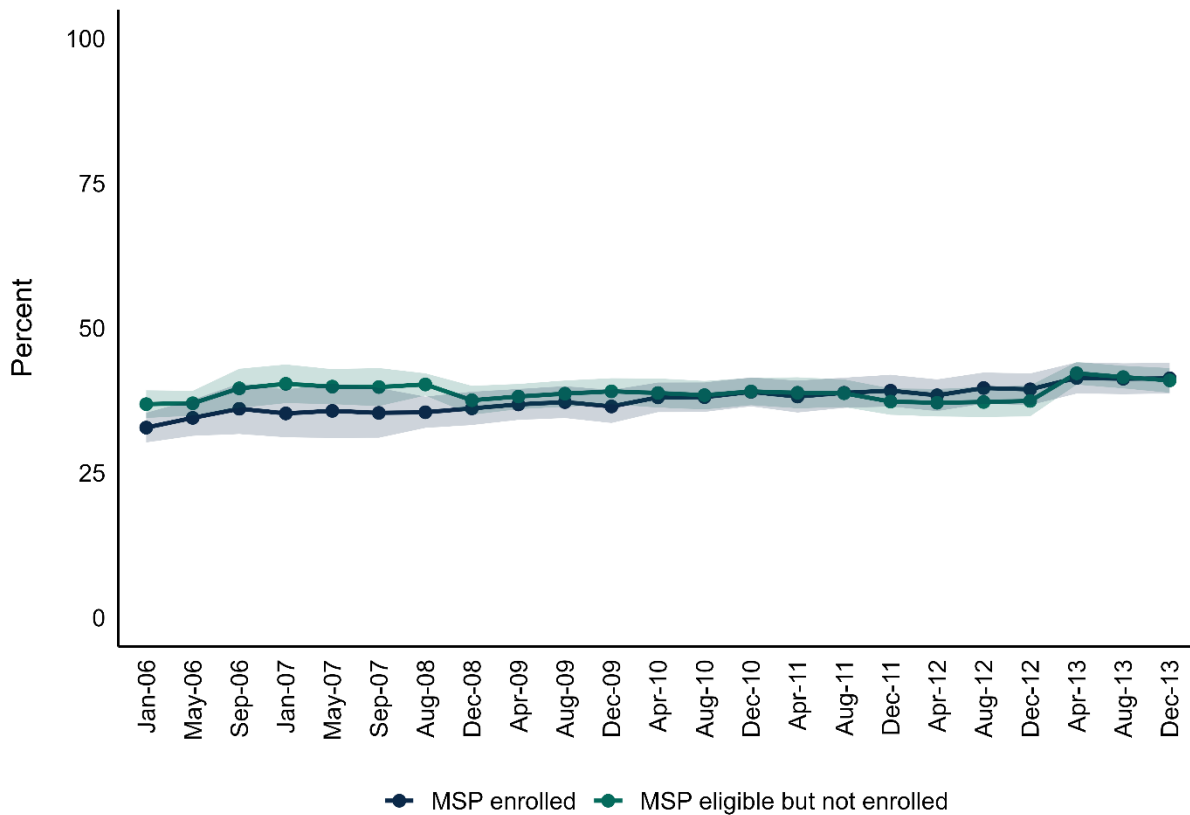

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2016.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Eligible population includes those who are enrolled and not enrolled. The shading around each point represents the 95 percent confidence interval for the population estimate. This figure includes years 2014-2016, which are not included in the main analysis, to illustrate Medicaid data challenges that existed in the Census Federal Statistical Research Data Centers. Due to issues with the raw T-MSIS extracts that were available at the time of our analysis and the problems linking the T-MSIS data to the SIPP, these data showed MSP enrollment patterns that dropped over time, which was not consistent with what is known about MSP enrollment over this period based on publicly available benchmark data from the Medicare enrollment files. Because these were implausible estimates for 2014-2016, we dropped these years from the analysis.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; T-MSIS = Transformed Medicaid Statistical Information System.

B.   Supplemental results for RQ1b: Characteristics of MSP enrollees and the MSP-
     eligible-but-not-enrolled population

Figure C.2. Percent 65 years of age or older by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
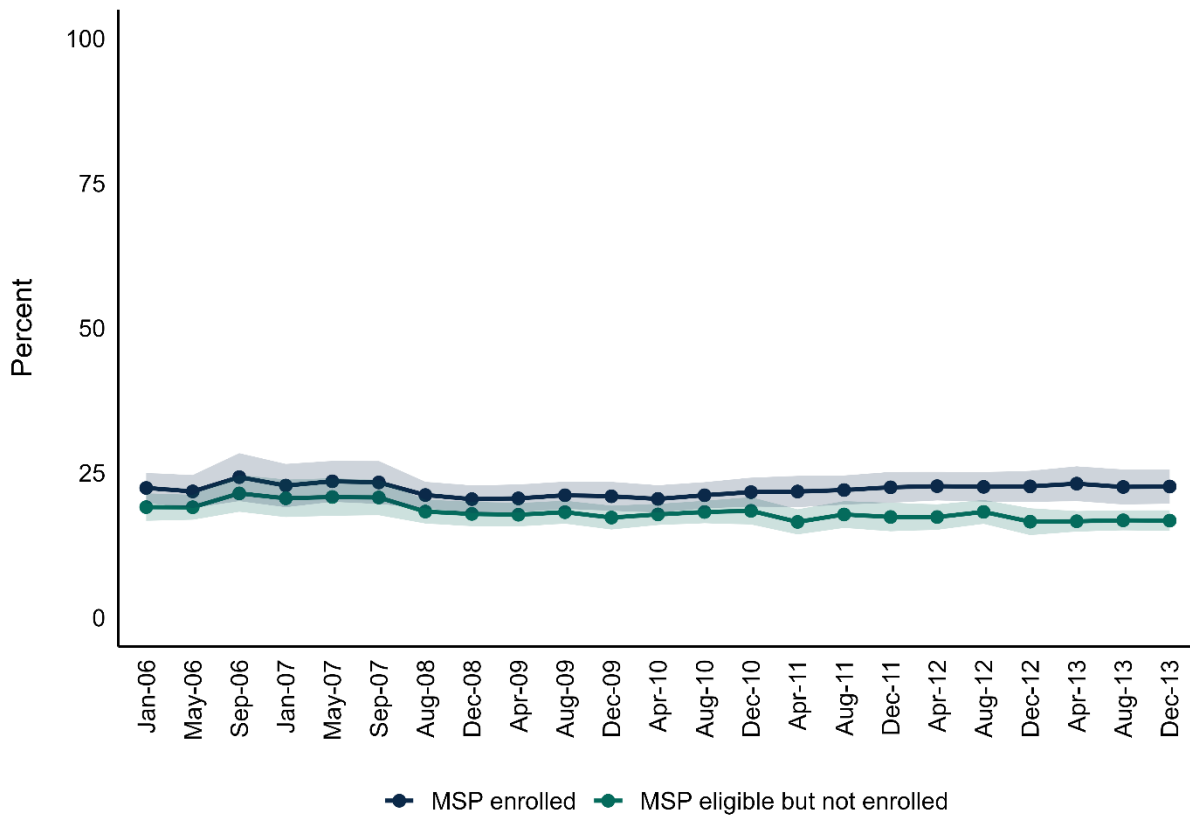

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates
          from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who
          are simulated eligible. The shading around each point represents the 95 percent confidence interval for the
          population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program;
SIPP = Survey of Income and Program Participation.

Figure C.3. Percent married by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
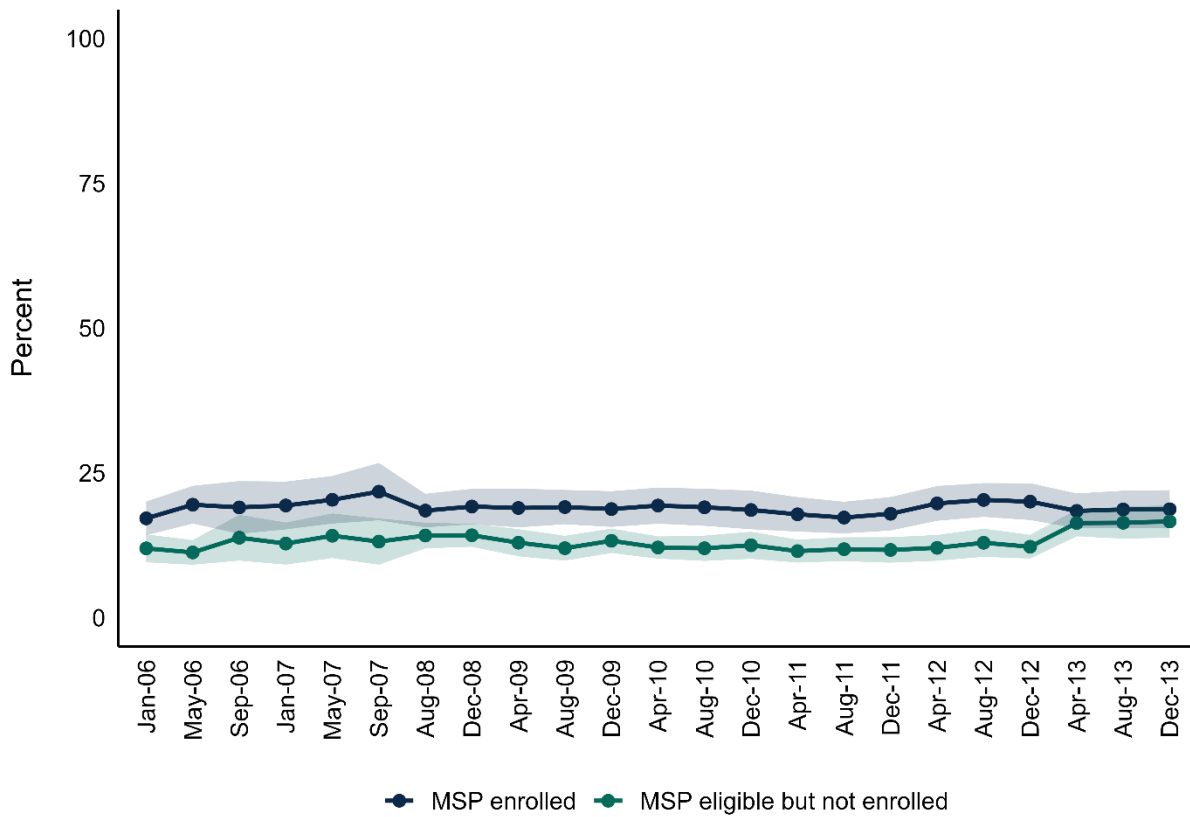

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.4. Percent male by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
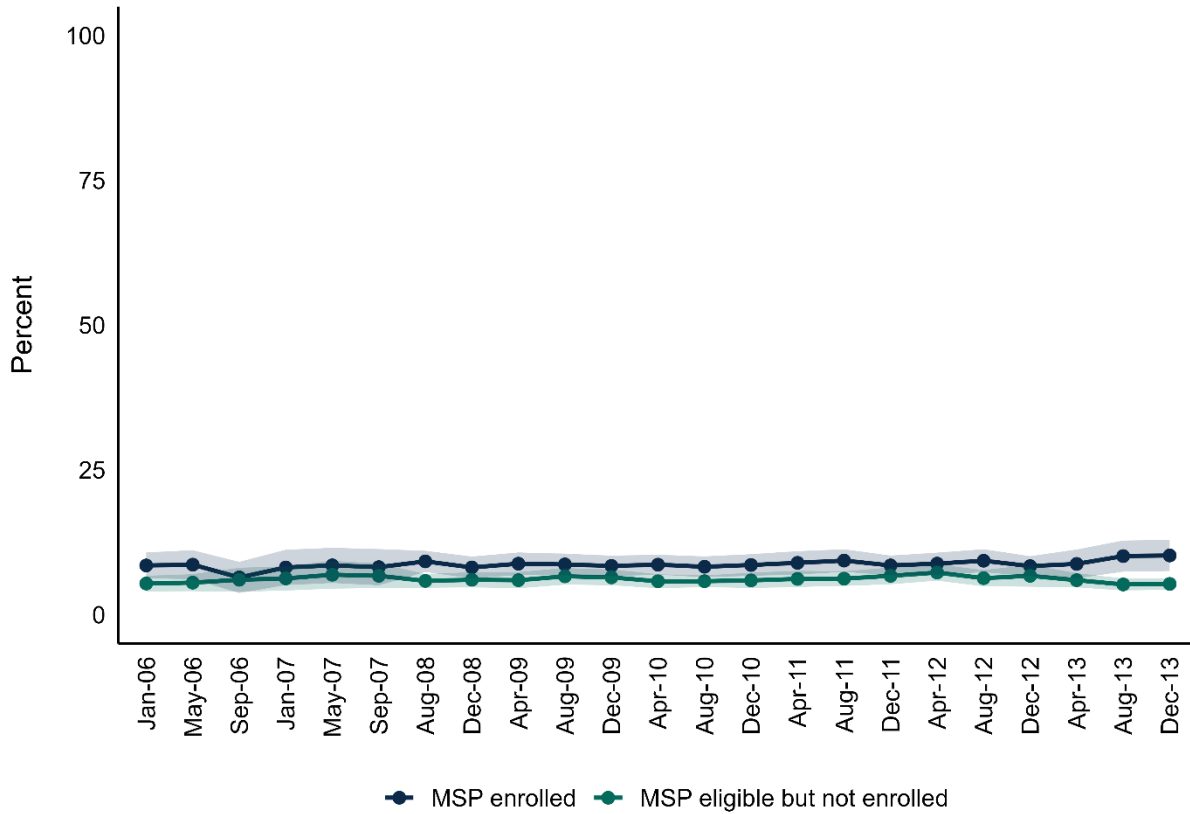

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.5. Percent identifying as Black race and non-Latinx ethnicity by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.6. Percent identifying as any race and Latinx ethnicity by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
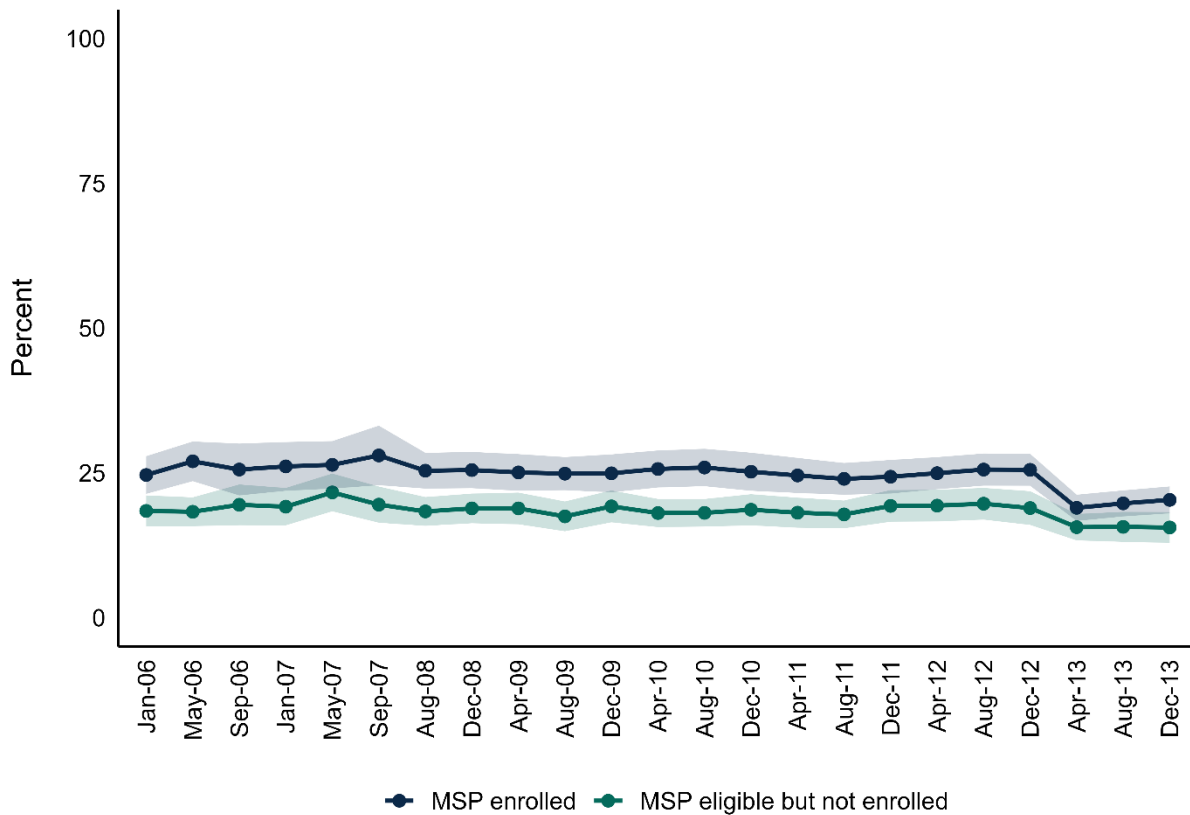

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.7. Percent identifying as a member of a racial group included in the "other" race group and non-Latinx ethnicity by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
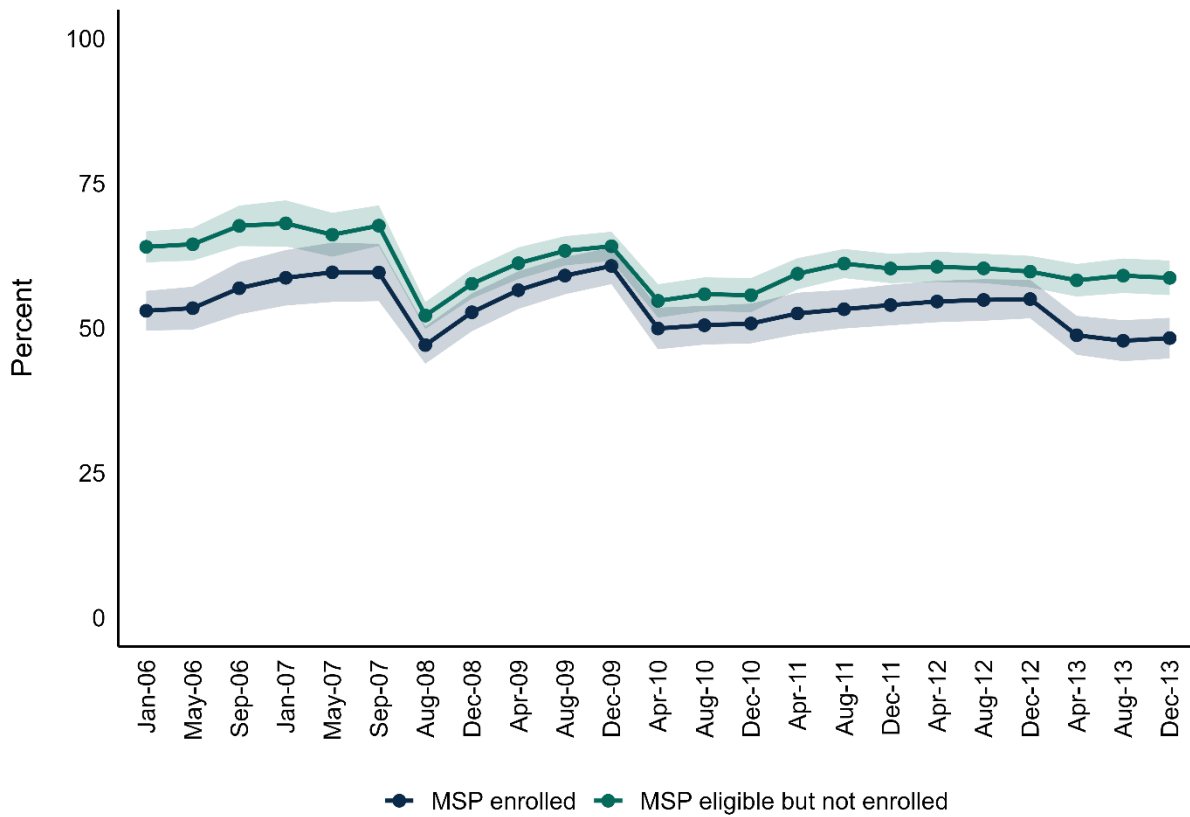

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate. For this study, "other" race includes all races that are not White or Black.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.8. Percent who speak a language other than English at home by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
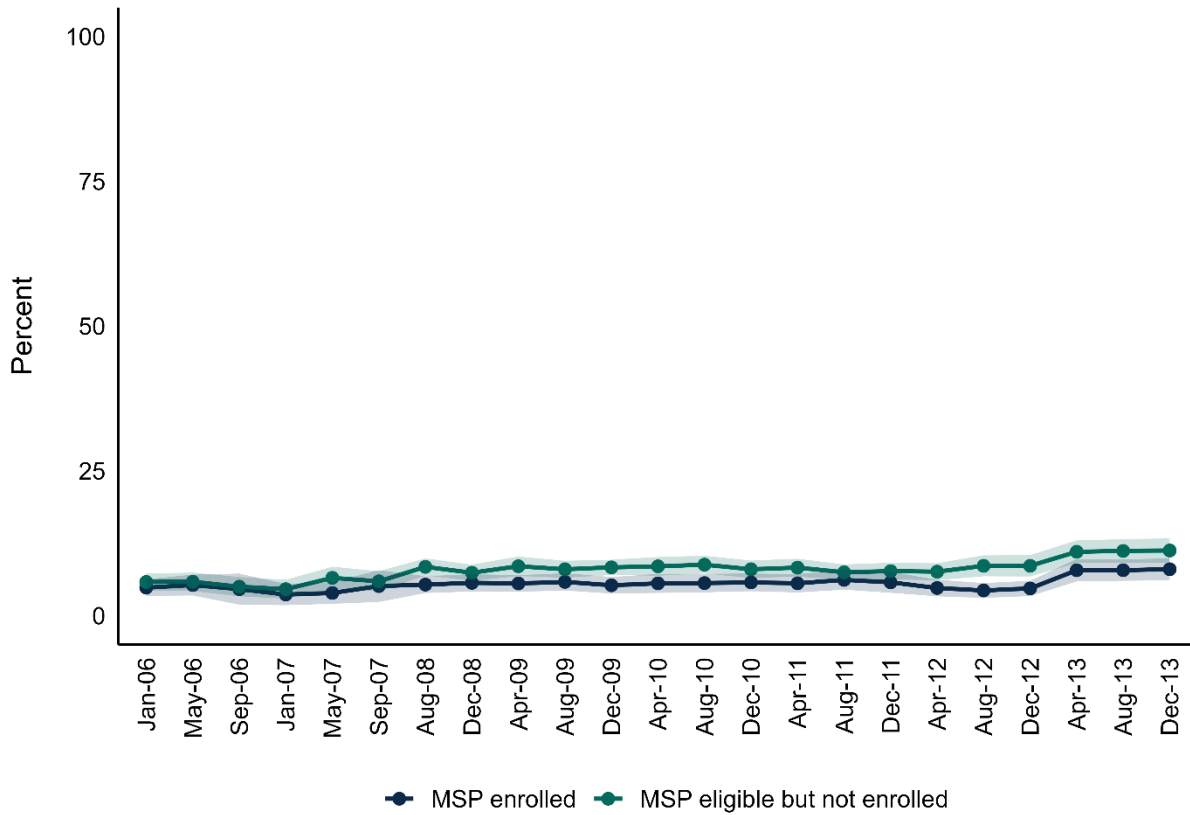

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.9. Percent with a high school diploma but no college degree by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
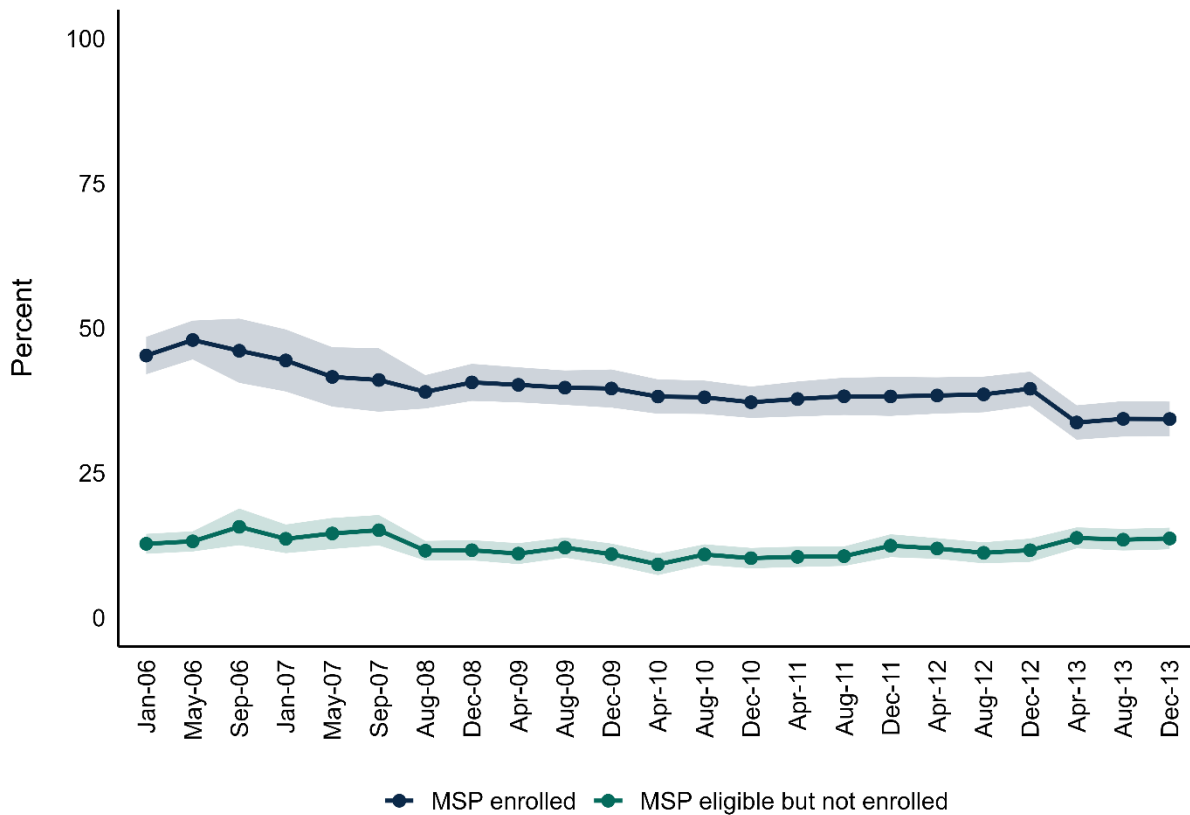

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.10. Percent with a college degree by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
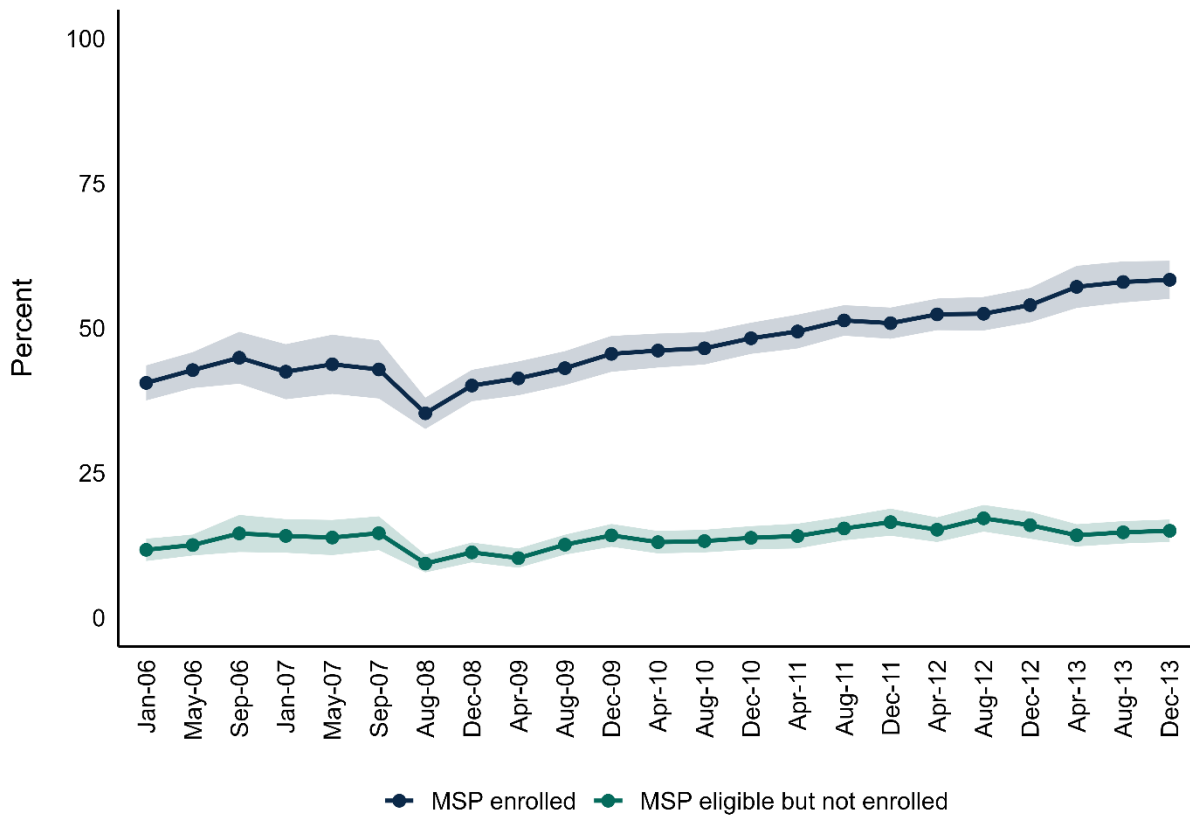

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.11. Percent receiving SSI by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
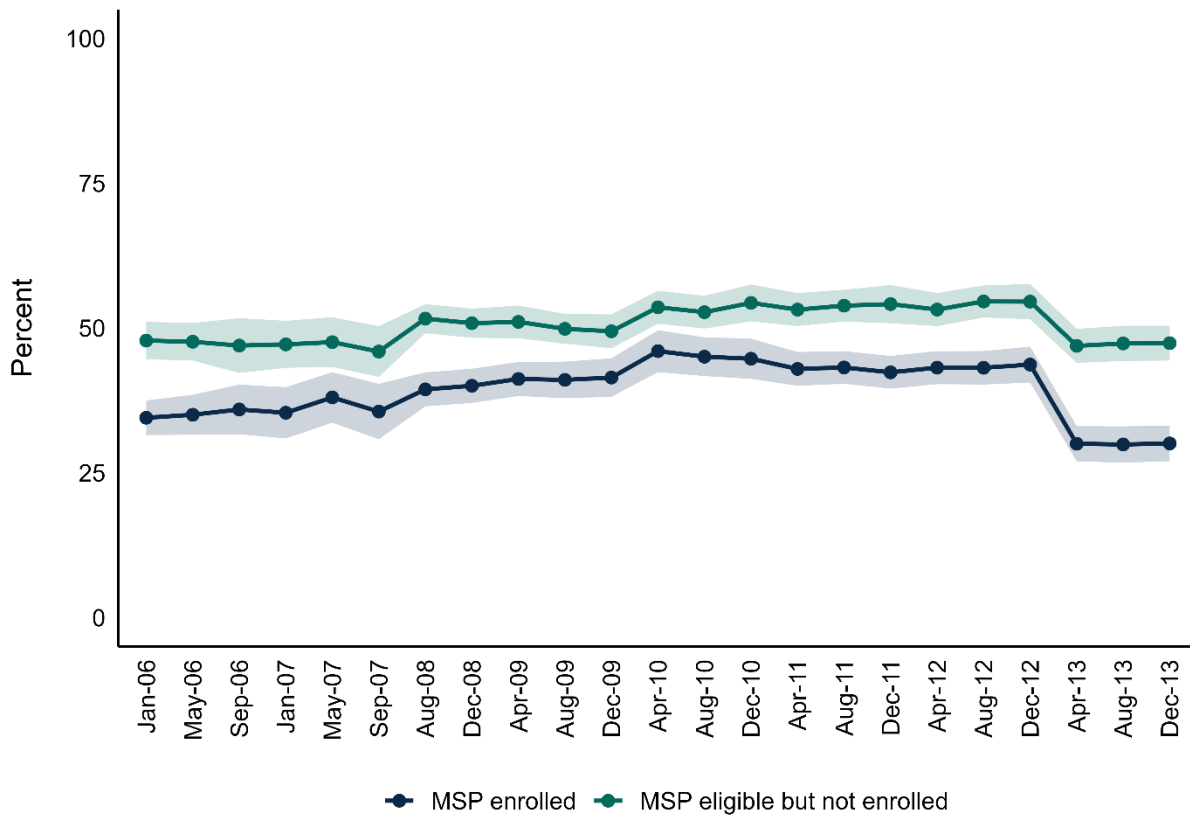

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; SSI = Supplemental Security Income.

Figure C.12. Percent receiving SNAP benefits by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
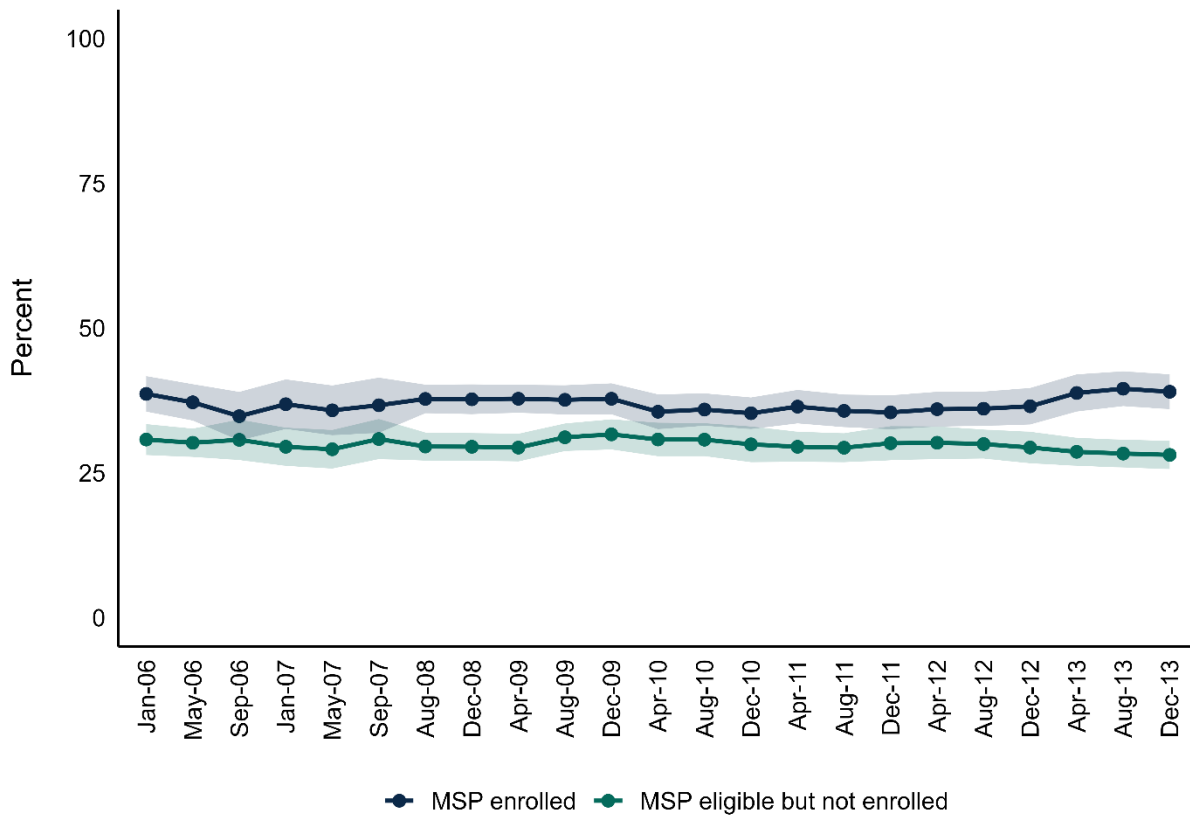

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; SNAP = Supplemental Nutrition Assistance Program.

Figure C.13. Percent with "very good" or "good" self-reported health status by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.14. Percent with "fair" self-reported health status by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
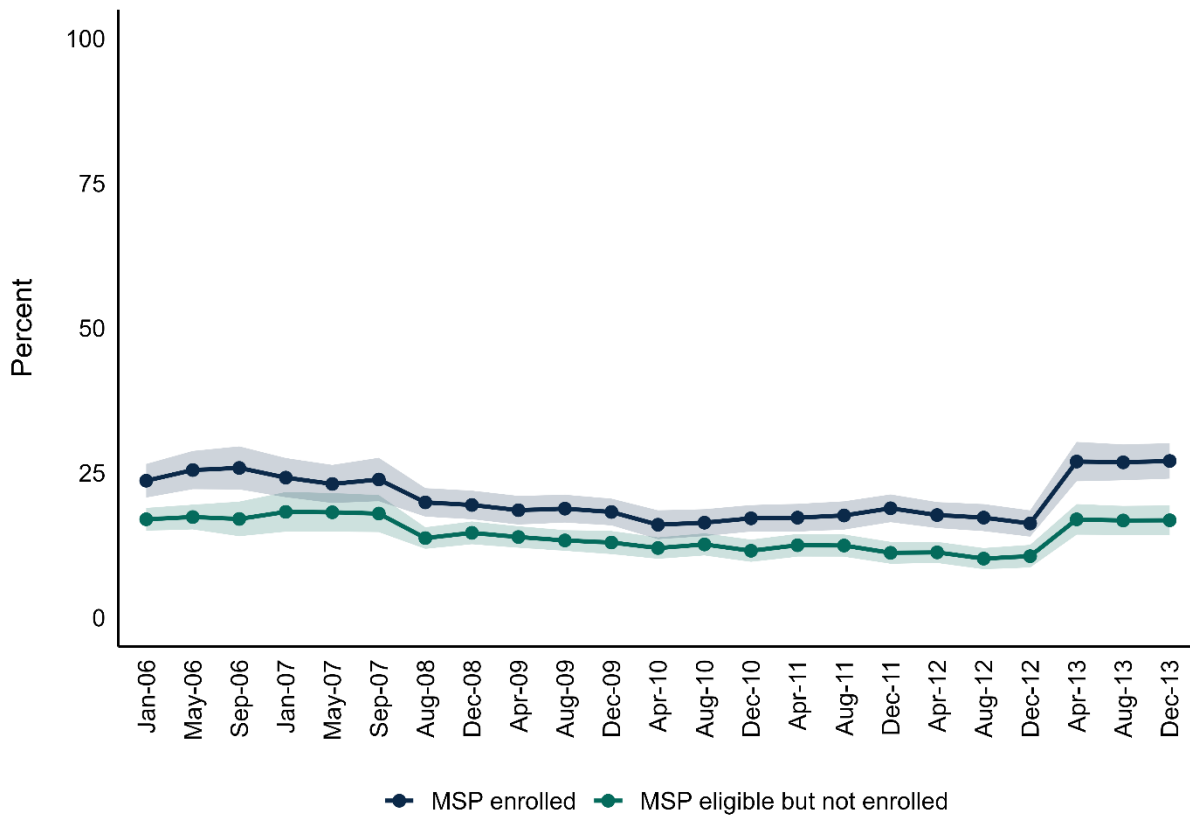

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.15. Percent with "poor" self-reported health status by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
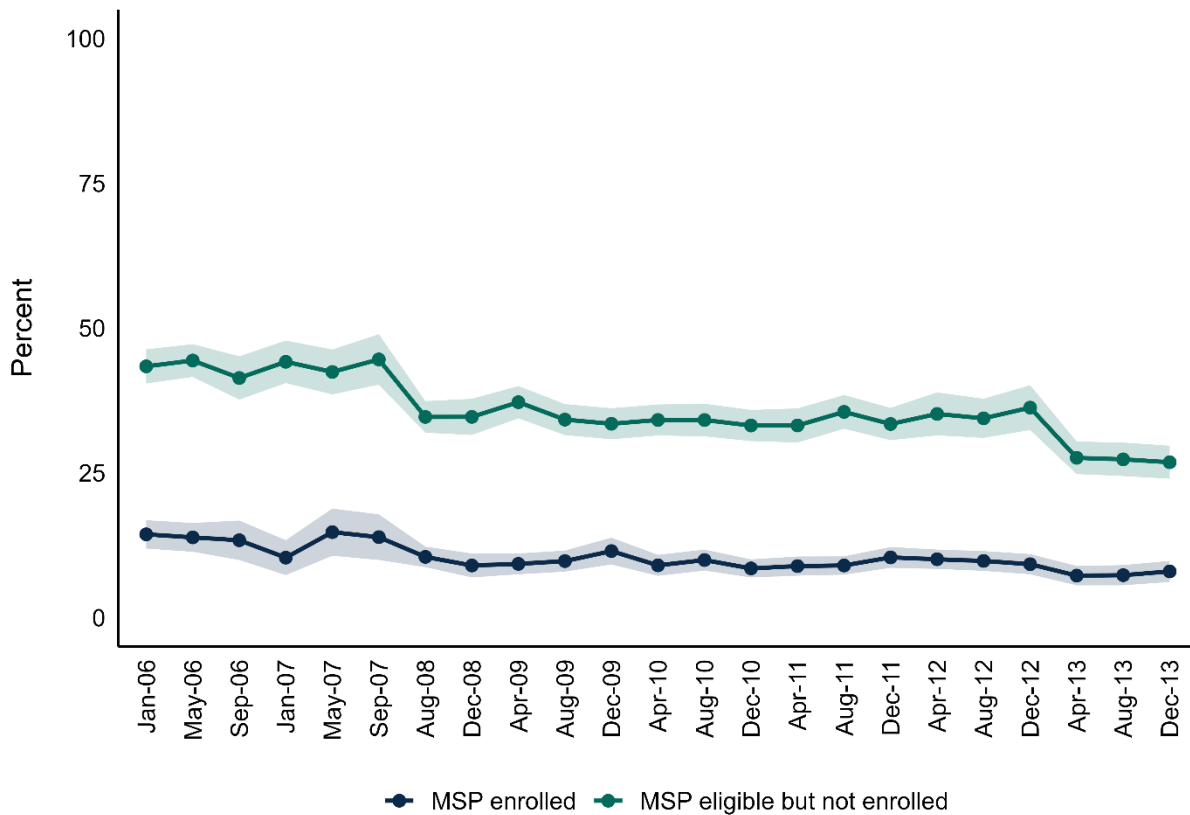

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.16. Percent with any private insurance by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
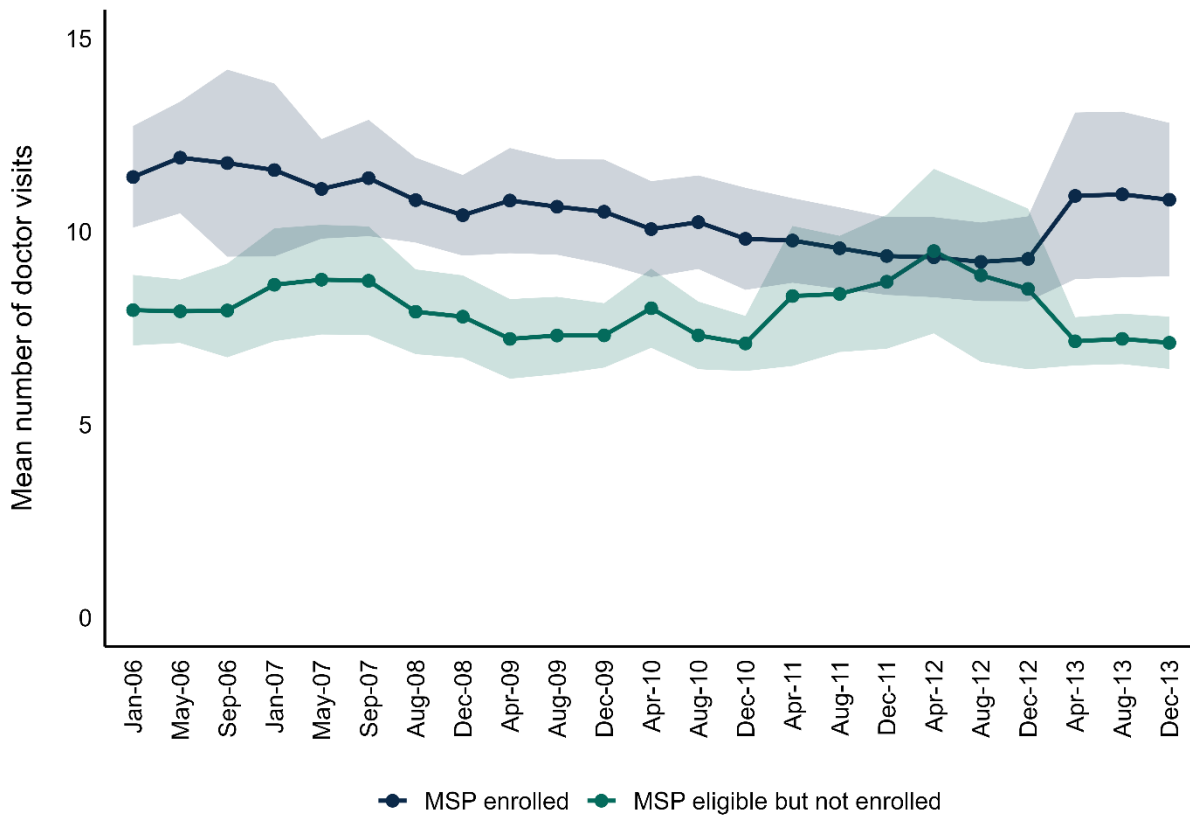

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate. Private insurance coverage may include (but is not limited to) Medicare Advantage and/or Medigap coverage.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.17. Mean number of doctor visits in the previous year by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
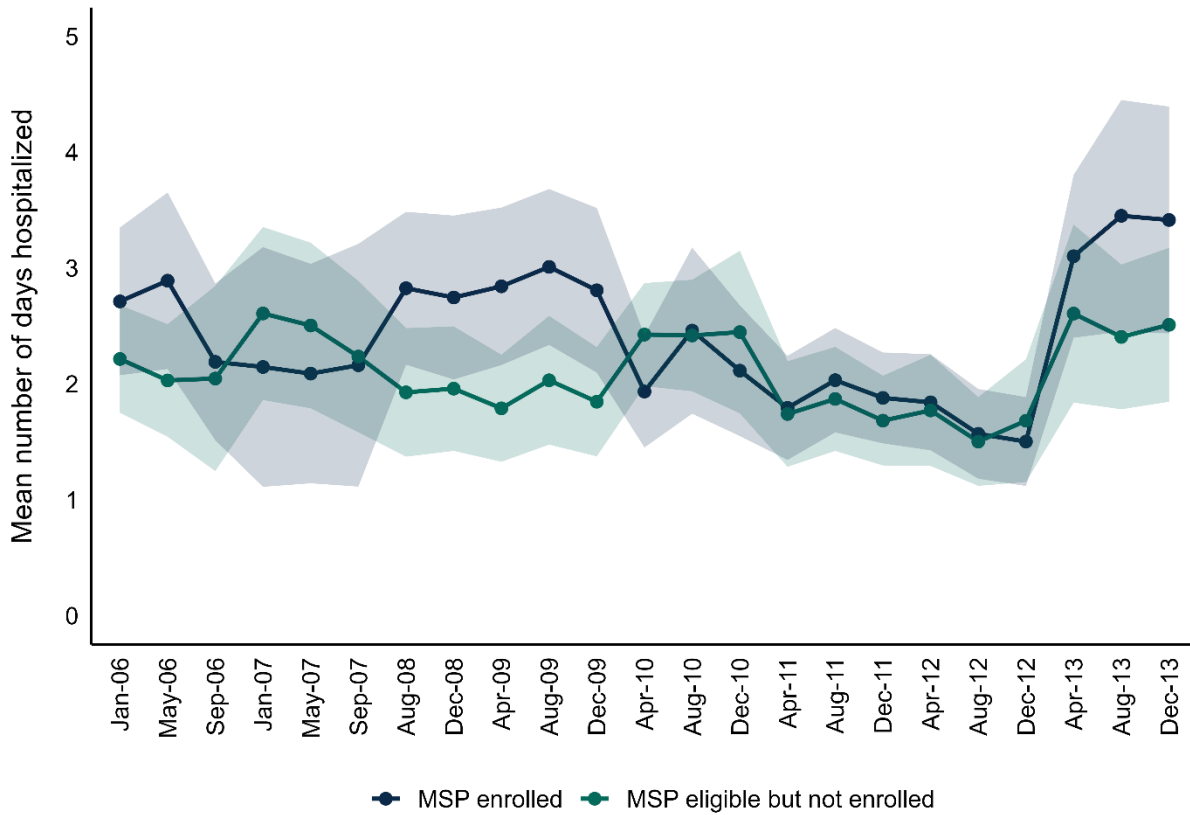

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.18. Mean number of days hospitalized in the previous year by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
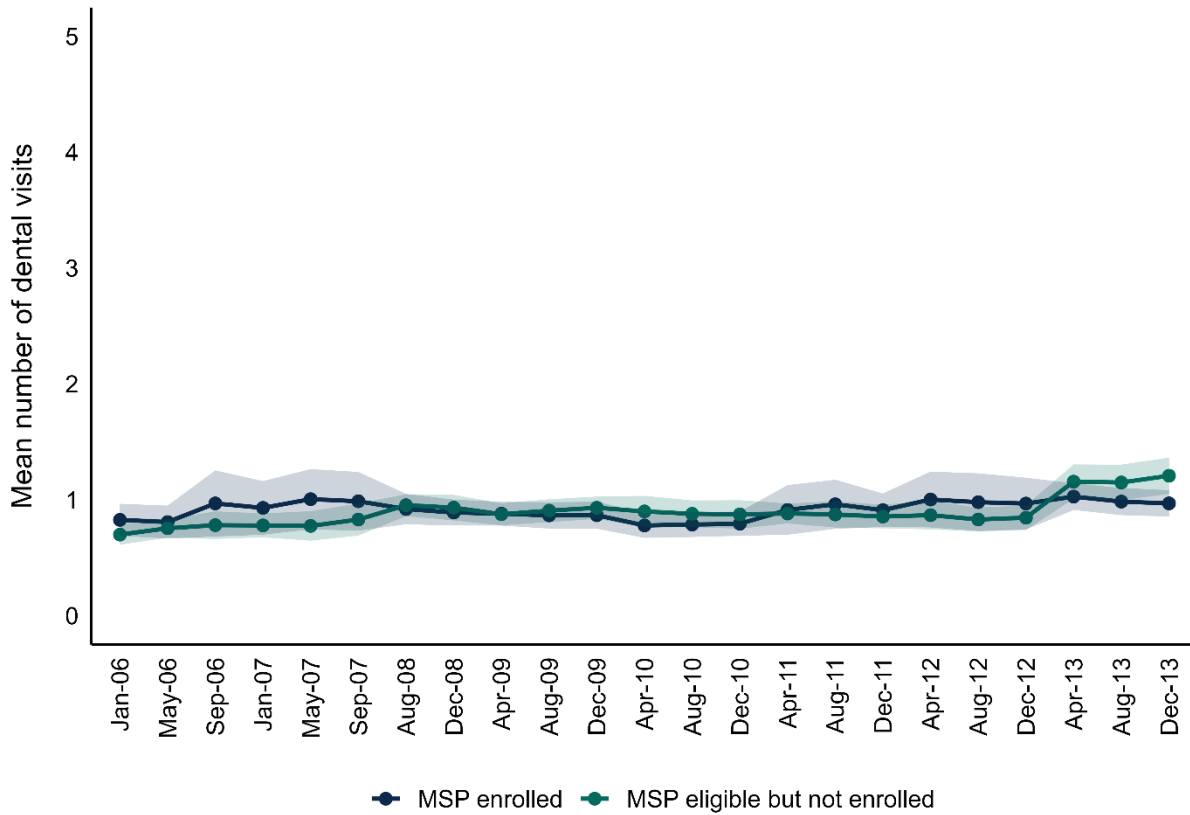

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.19. Mean number of dental visits in the previous year by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
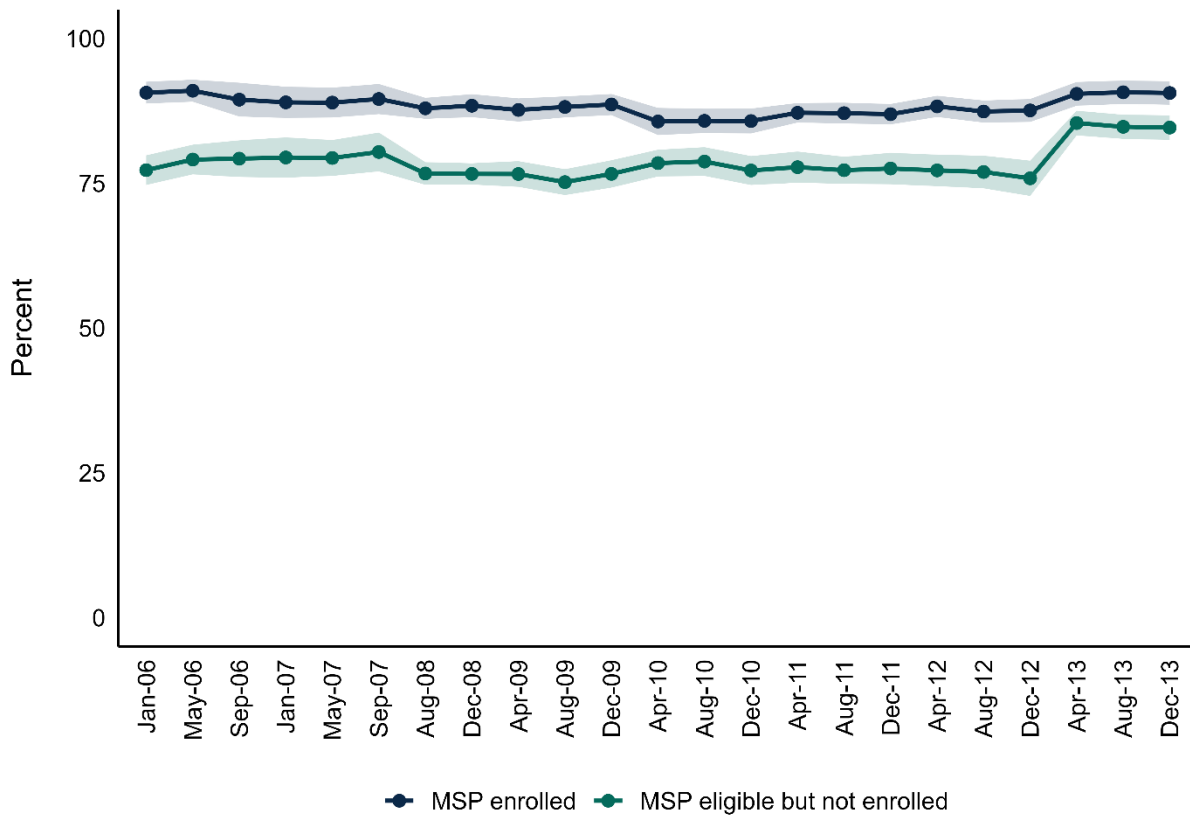

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.20. Percent with any prescription drug use by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013
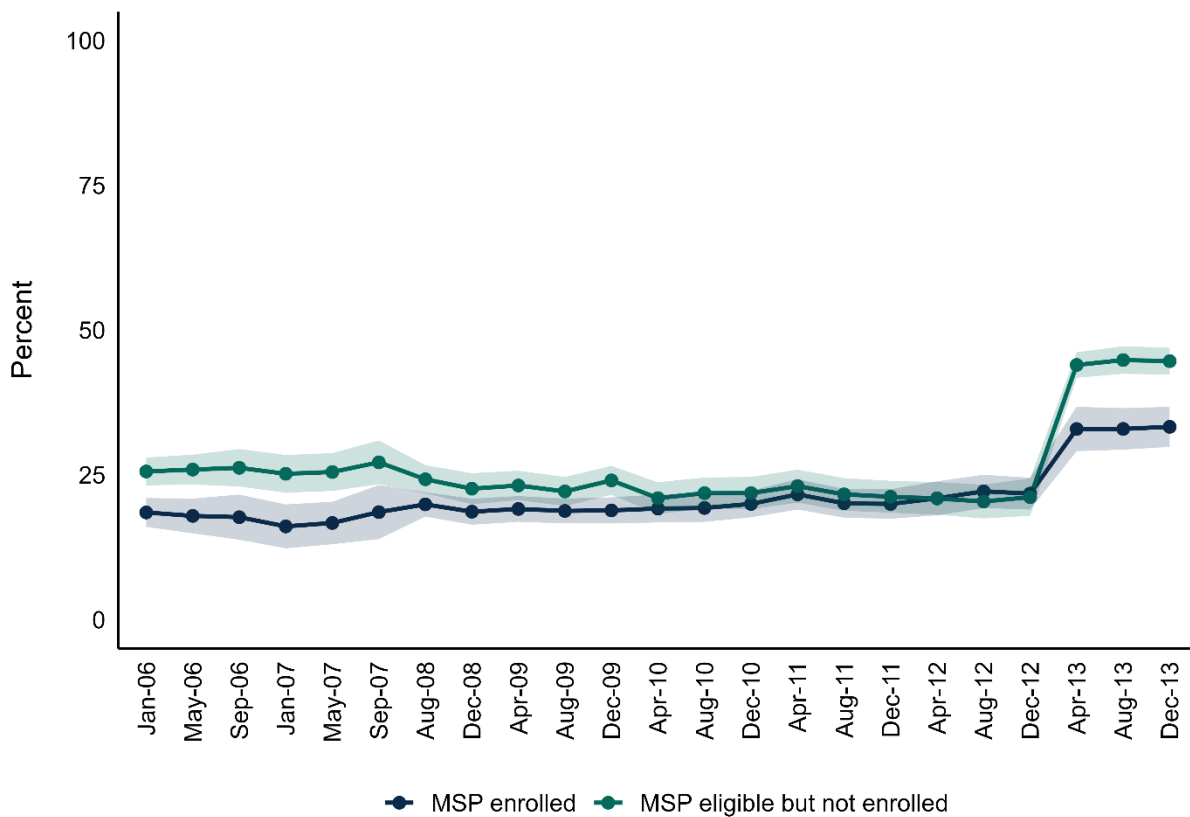

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.21. Percent living in a state that had asset limits above those impose by MIPPA, prior to 2010, by MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Enrolled population is restricted to those who are simulated eligible. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MIPPA = Medicare Improvements for Patients and Providers Act of 2008; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Table C.7. Mean characteristics of MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, January 2006

Variable	Mean, eligible and enrolled	Mean, not enrolled	Difference	p-value
Age (%)				
18 to 64	38.98	19.69	-19.28	< 0.01
65 and older	61.02	80.31	-19.28	< 0.01
Marital status (%)				
Not married	80.21	72.85	7.36	< 0.01
Married	19.79	27.15	7.36	< 0.01
Gender (%)				
Male	32.80	36.85	4.06	0.03
Female	67.20	63.15	4.06	0.03
Race/ethnicity (%)				
White, non-Latinx	52.01	63.62	-11.6	< 0.01
Black, non-Latinx	22.38	19.07	3.31	< 0.01
Other, non-Latinx	8.48	5.36	3.12	< 0.01
Latinx	17.13	11.95	5.18	< 0.01
Language spoken				
English	75.38	81.58	-6.20	< 0.01
Language other than English	24.62	18.42	-6.20	< 0.01
Educational attainment (%)				
Less than high school	42.24	30.37	11.87	< 0.01
High school graduate	52.93	63.82	-10.89	< 0.01
College graduate	4.83	5.80	-0.98	< 0.01
Government program participation (%)				
No other program participation	36.29	79.08	42.79	< 0.01
SSI coverage	45.24	12.74	-32.51	< 0.01
SNAP coverage	40.52	11.70	-28.82	< 0.01
TANF coverage	1.01	0.37	-0.65	0.02
VA benefits	0	0	0	n/a
missing	0.85	1.84	0.99	0.03
Self-reported health status (%)				
Excellent	3.25	4.47	-1.22	< 0.01
Very good or good	38.62	30.74	7.89	< 0.01
Fair	23.63	16.97	6.66	< 0.01
Poor	34.5	47.82	-13.32	< 0.01
Private insurance coveragea (%)				
No private insurance coverage	85.63	56.63	29	< 0.01
Private insurance coverage	14.37	43.37	29	< 0.01
Inpatient and outpatient medical care				

Variable	Mean, eligible and enrolled	Mean, not enrolled	Difference	p-value
Number of days hospitalized, annual	2.71	2.22	-0.50	0.21
Number of doctor's visits per year, annual	11.41	7.96	-3.45	< 0.01
Number of dental visits, annual	0.83	0.70	-0.13	< 0.01
Prescription drugs (%)				
No prescription drug use	9.38	22.75	-13.37	< 0.01
Any prescription drug use	90.62	77.25	-13.37	< 0.01
State MSP eligibility criteria (%)				
Asset limits at federal limits	81.50	74.43	7.07	< 0.01
Asset limits above federal limits	18.50	25.57	7.07	< 0.01

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. "D" signifies that a statistic was suppressed due to a small sample size. "n/a" signifies that the difference between two means was exactly zero, and that no p-value was calculated. When there is no row to indicate missing, there were no missing values. Self-reported core disability information not available in the 2004 SIPP.

[a]Private insurance coverage may include (but is not limited to) Medicare Advantage and/or Medigap coverage.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; MSP = Medicare Savings Program; SSI = Supplemental Security Income; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families; VA = Veterans' Affairs.

Table C.8. Mean characteristics of MSP-eligible-and-enrolled versus MSP-eligible-but-not-enrolled populations, August 2008

Variable	Mean, eligible and enrolled	Mean, not enrolled	Difference	p-value
Age (%)				
18 to 64	39.79	25.43	-14.36	< 0.01
65 and older	60.21	74.57	-14.36	< 0.01
Marital status (%)				
Not married	79.85	66.97	12.88	< 0.01
Married	20.15	33.03	12.88	< 0.01
Gender (%)				
Male	35.45	40.25	4.80	< 0.01
Female	64.55	59.75	4.80	< 0.01
Race/ethnicity (%)				
White, non-Latinx	51.19	61.71	-10.53	< 0.01
Black, non-Latinx	21.16	18.30	2.86	< 0.01
Other, non-Latinx	9.18	5.82	3.37	< 0.01
Latinx	18.47	14.17	4.30	< 0.01
Language spoken				
English	74.64	81.67	-7.04	< 0.01
Language other than English	25.36	18.33	-7.04	< 0.01
Educational attainment (%)				
Less than high school	47.60	39.67	7.93	< 0.01
High school graduate	47.05	51.92	-4.88	< 0.01
College graduate	5.35	8.41	-3.06	< 0.01
Government program participation (%)				
No other program participation	44.30	82.26	37.96	< 0.01
SSI coverage	38.97	11.55	-27.42	< 0.01
SNAP coverage	35.27	9.33	-25.94	< 0.01
TANF coverage	1.07	0.47	-0.61	0.08
VA benefits	0	0	0	n/a
missing	0.32	1.27	0.95	< 0.01
Self-reported health status (%)				
Excellent	2.96	5.13	-2.17	< 0.01
Very good or good	37.75	29.54	8.22	< 0.01
Fair	19.89	13.73	6.16	< 0.01
Poor	39.40	51.61	-12.21	< 0.01
Private insurance coveragea (%)				
No private insurance coverage	89.52	65.36	24.16	< 0.01
Private insurance coverage	10.48	34.64	24.16	< 0.01
Inpatient and outpatient medical care				

| Variable	Mean, eligible and enrolled	Mean, not enrolled	Difference	p-value
Number of days hospitalized, annual	2.83	1.93	-0.90	< 0.01
Number of doctor's visits per year, annual	10.81	7.92	-2.89	< 0.01
Number of dental visits, annual	0.92	0.95	0.03	0.69
Prescription drugs (%)				
No prescription drug use	12.08	23.33	-11.24	< 0.01
Any prescription drug use	87.92	76.67	-11.24	< 0.01
State MSP eligibility criteria (%)				
Asset limits at federal limits	80.11	75.78	4.34	0.01
Asset limits above federal limits	19.89	24.22	4.34	0.01

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. "D" signifies that a statistic was suppressed due to a small sample size. "n/a" signifies that the difference between two means was exactly zero, and that no p-value was calculated. Self-reported core disability information not available in the 2008 SIPP.

[a]Private insurance coverage may include (but is not limited to) Medicare Advantage and/or Medigap coverage.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; MSP = Medicare Savings Program; SSI = Supplemental Security Income; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families; VA = Veterans' Affairs.

Figure C.22. Marginal association of being 65 years of age or older with MSP enrollment, 2006 to 2013
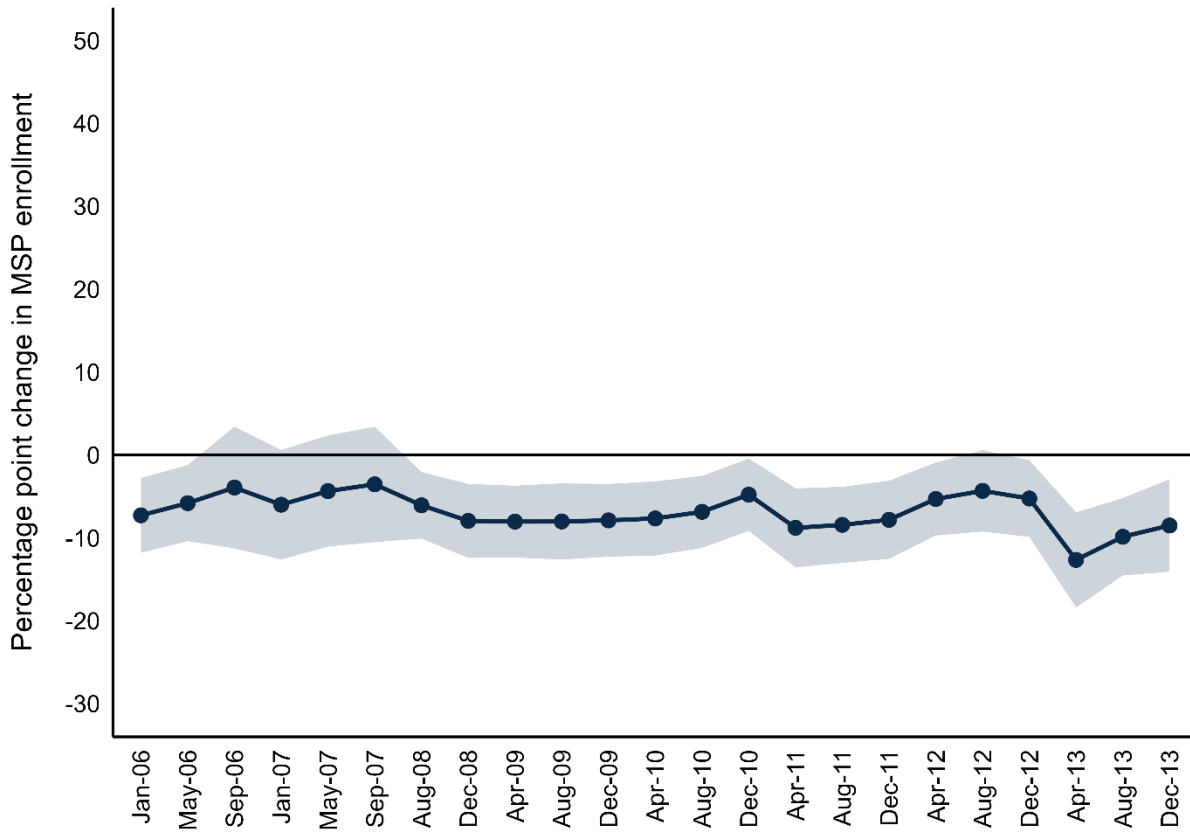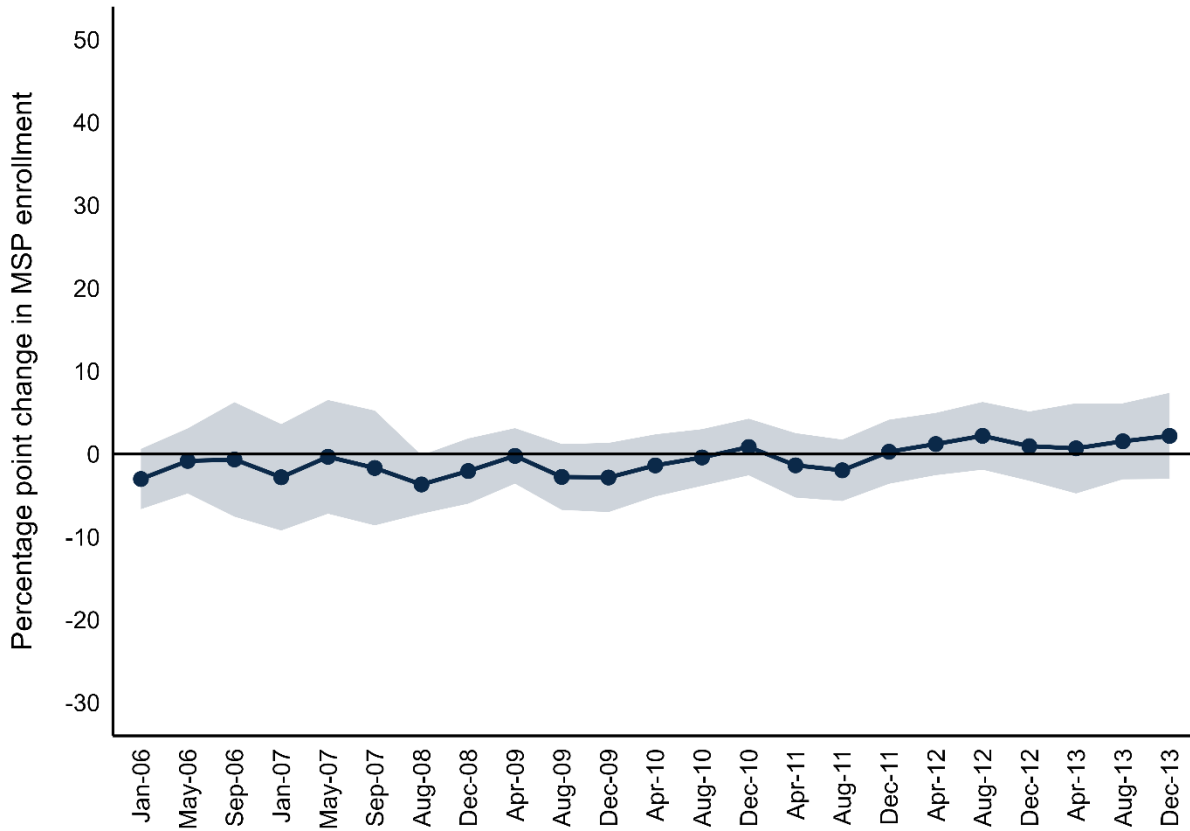

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.23. Marginal association of being married with MSP enrollment, 2006 to 2013
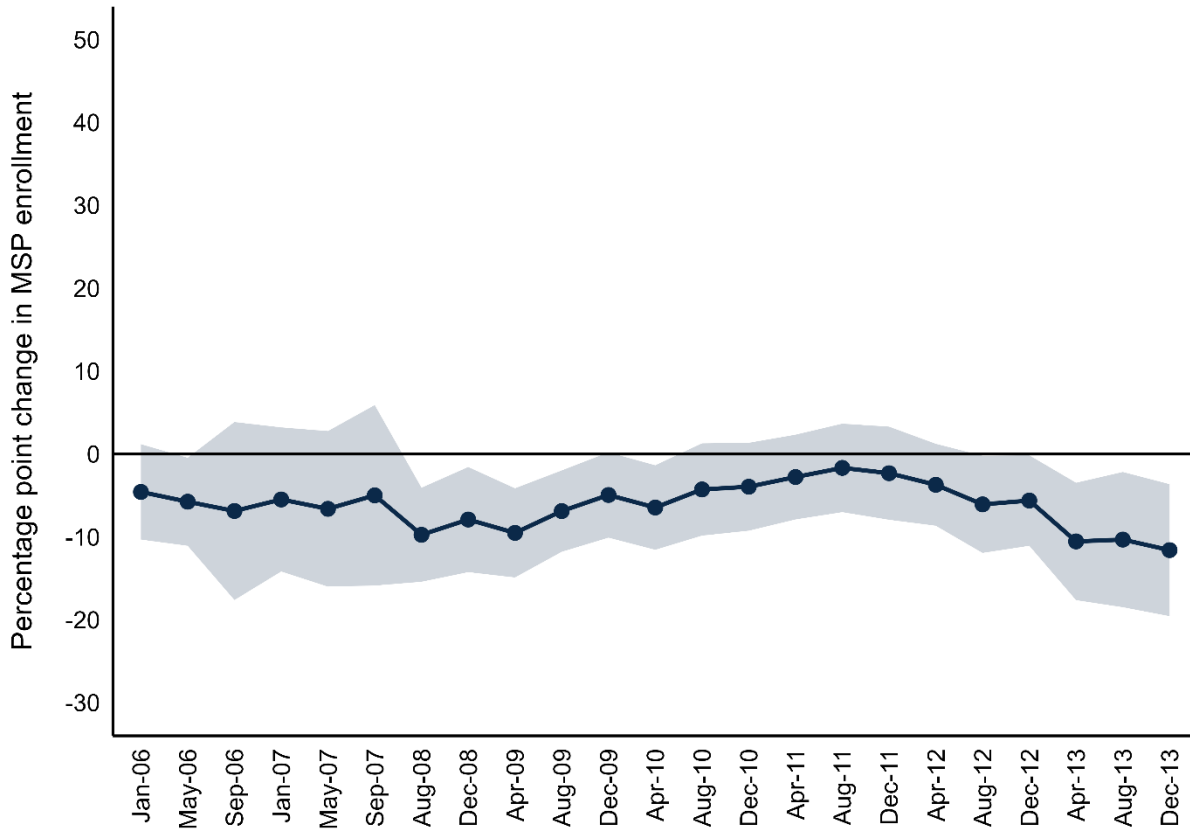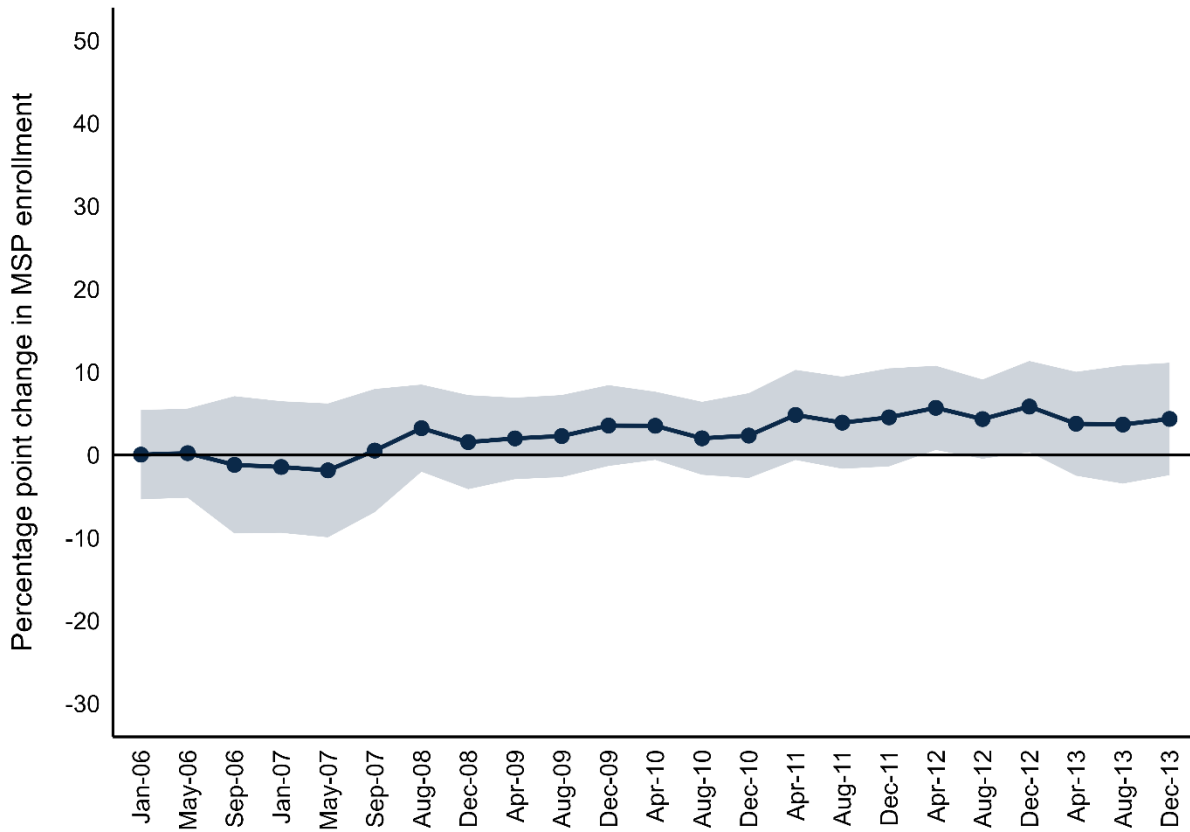

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.24. Marginal association of being male with MSP enrollment, 2006 to 2013
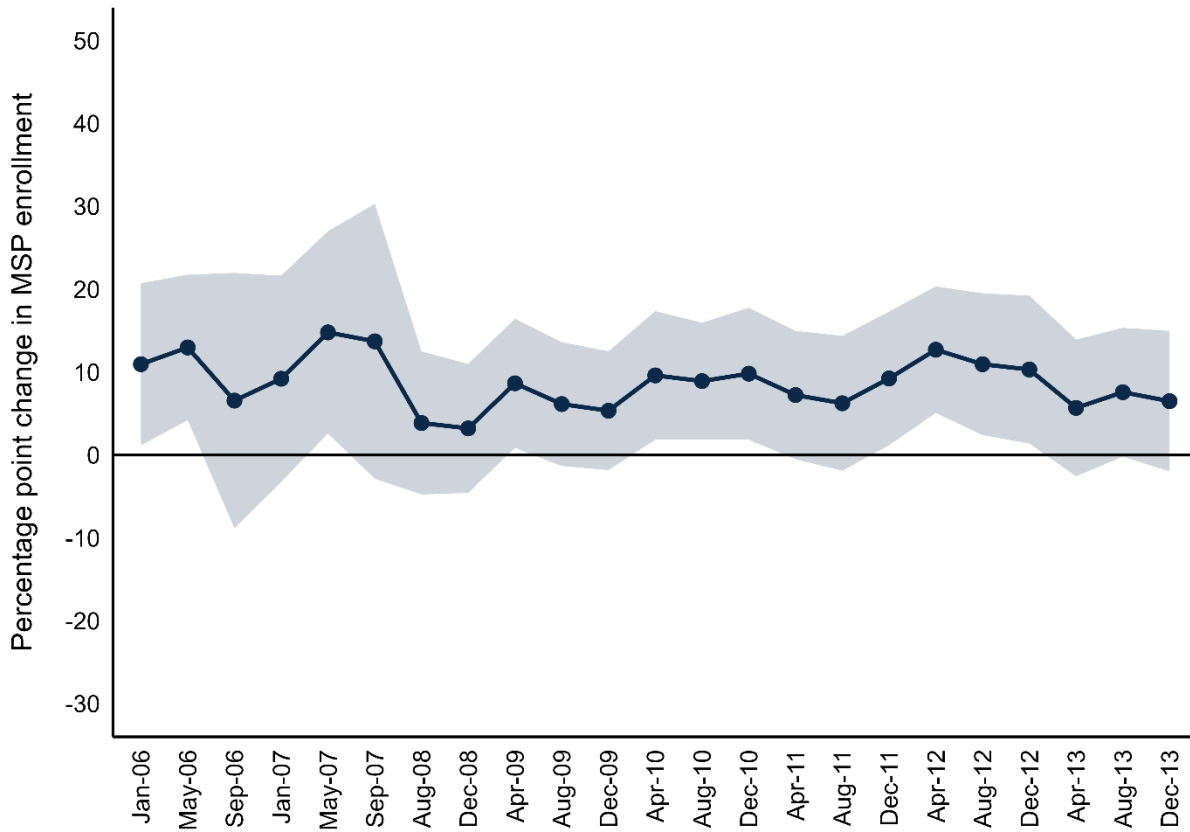

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.25. Marginal association of identifying as Black race and non-Latinx ethnicity with MSP enrollment, 2006 to 2013
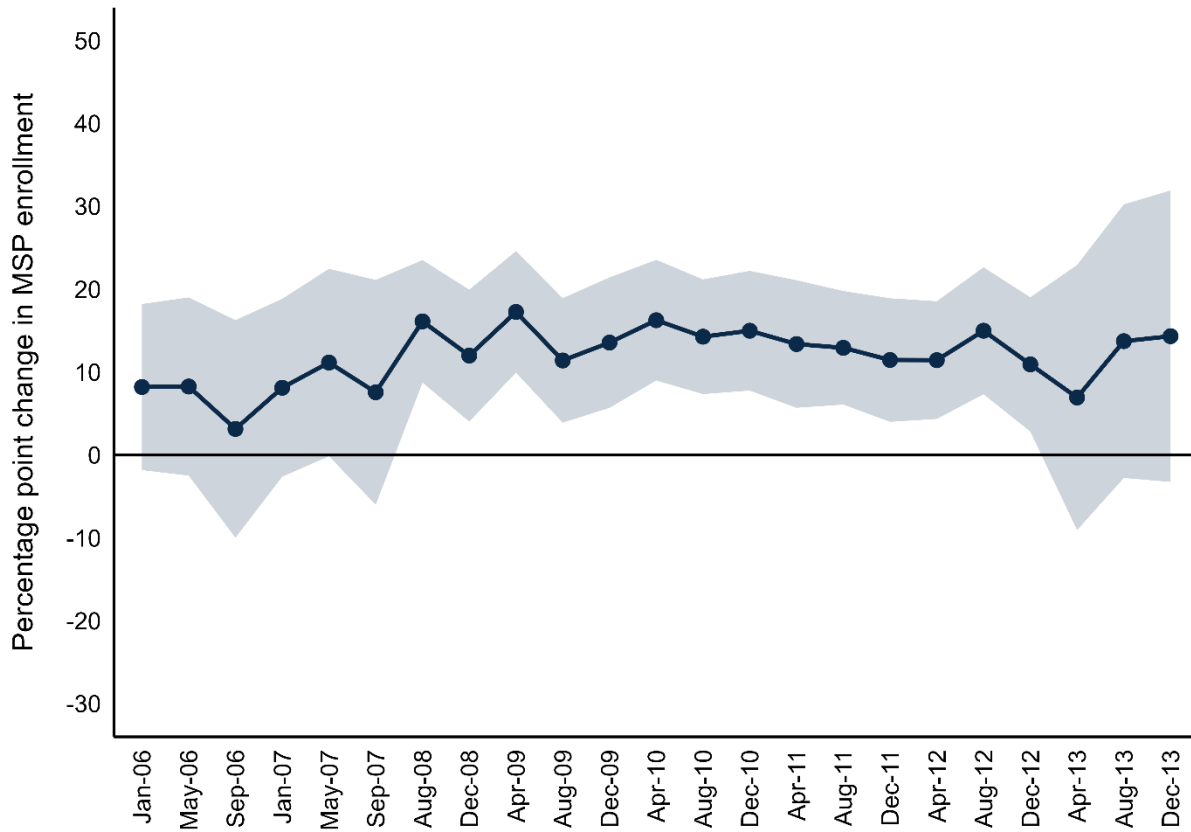

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.26. Marginal association of identifying as any race and Latinx ethnicity with MSP enrollment, 2006 to 2013
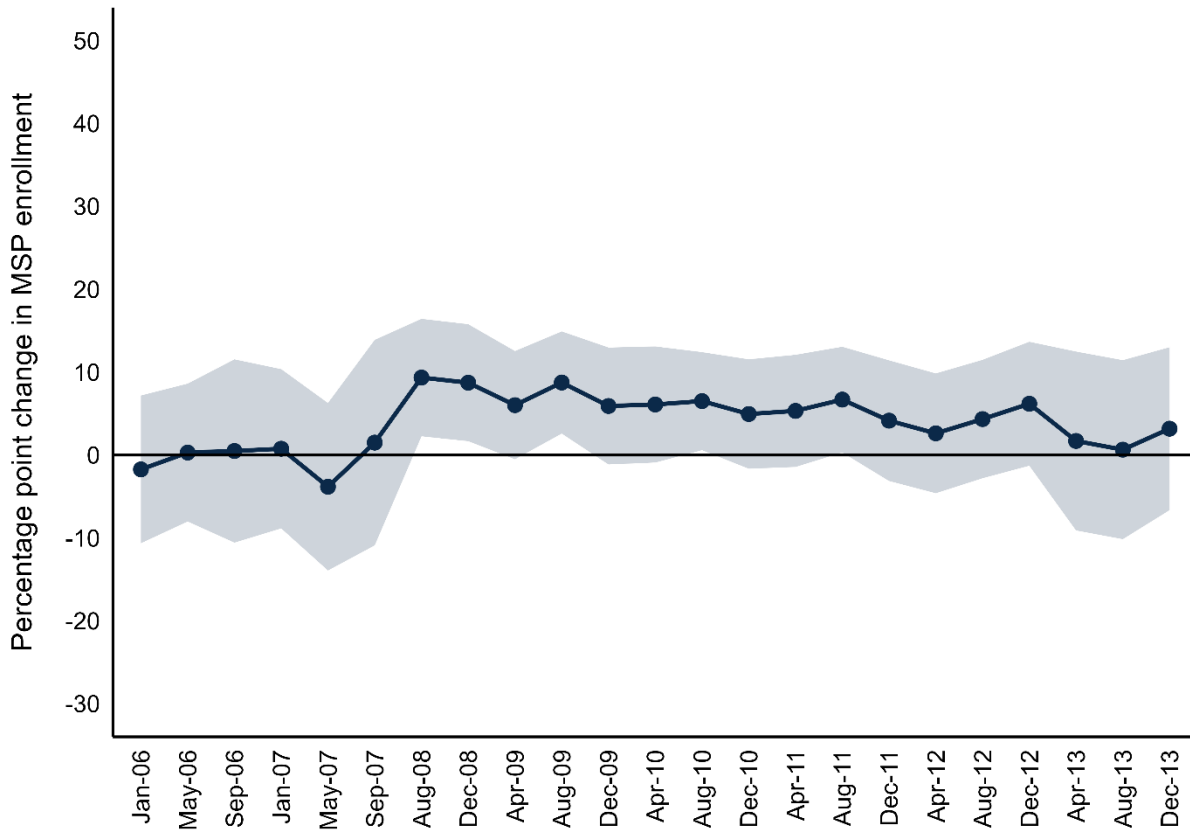

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.27. Marginal association of identifying as a member of a racial group included in the "other" race group and non-Latinx ethnicity with MSP enrollment, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate. For this study, "other" race includes all races that are not White or Black.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.28. Marginal association of speaking a language other than English at home with MSP enrollment, 2006 to 2013
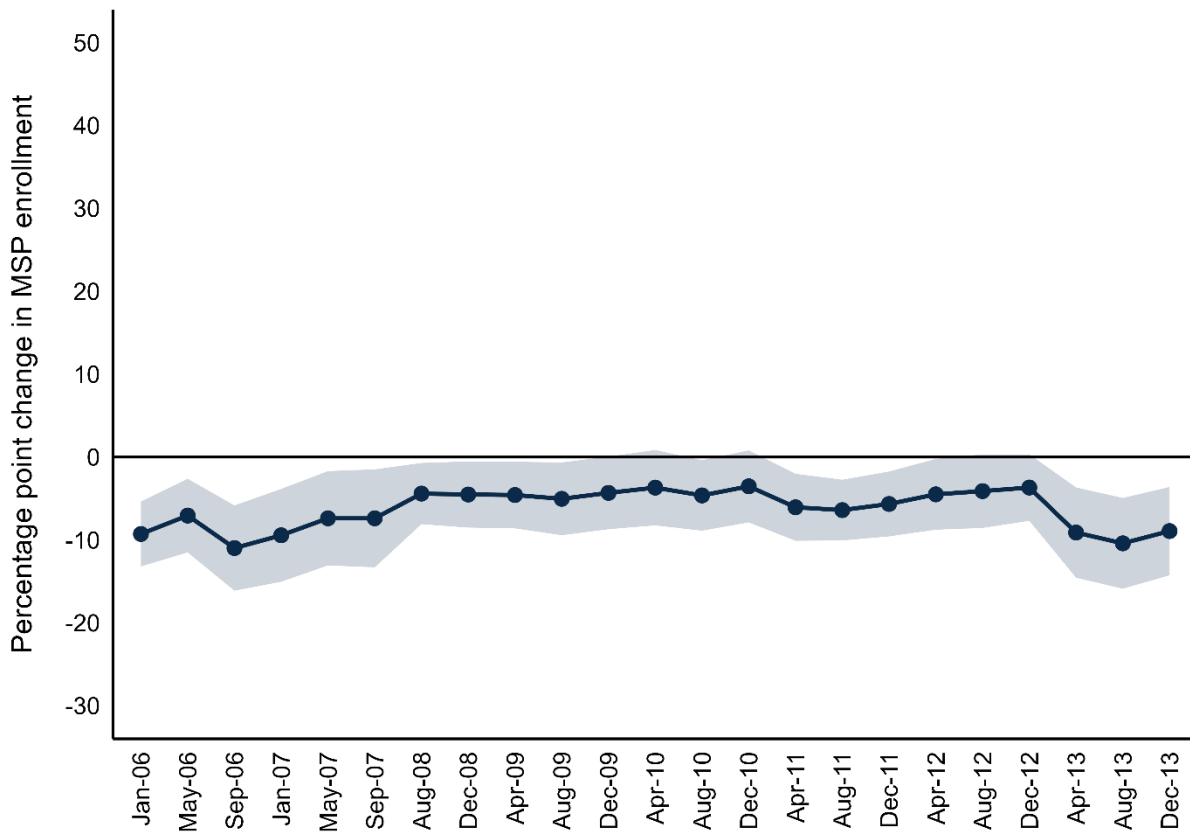

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.29. Marginal association of having a high school diploma but no college degree with MSP enrollment, 2006 to 2013
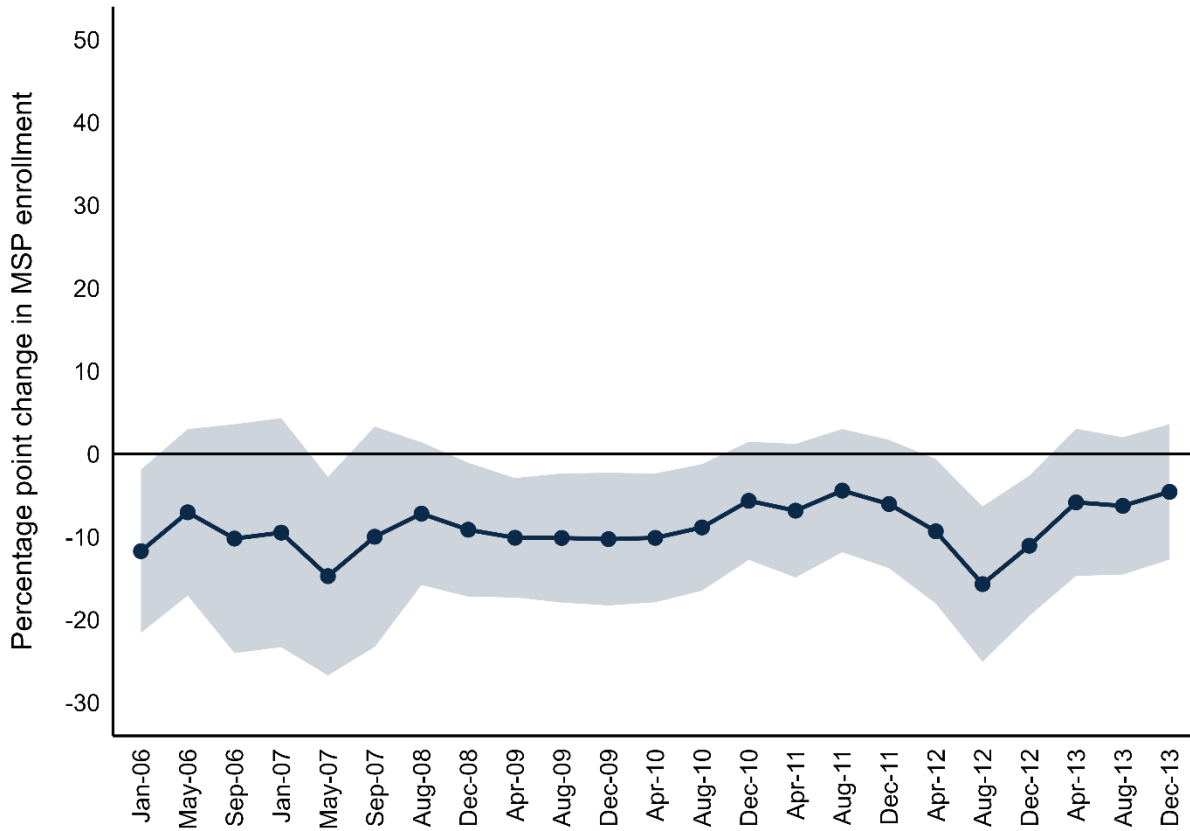

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.30. Marginal association of having college degree with MSP enrollment, 2006 to 2013
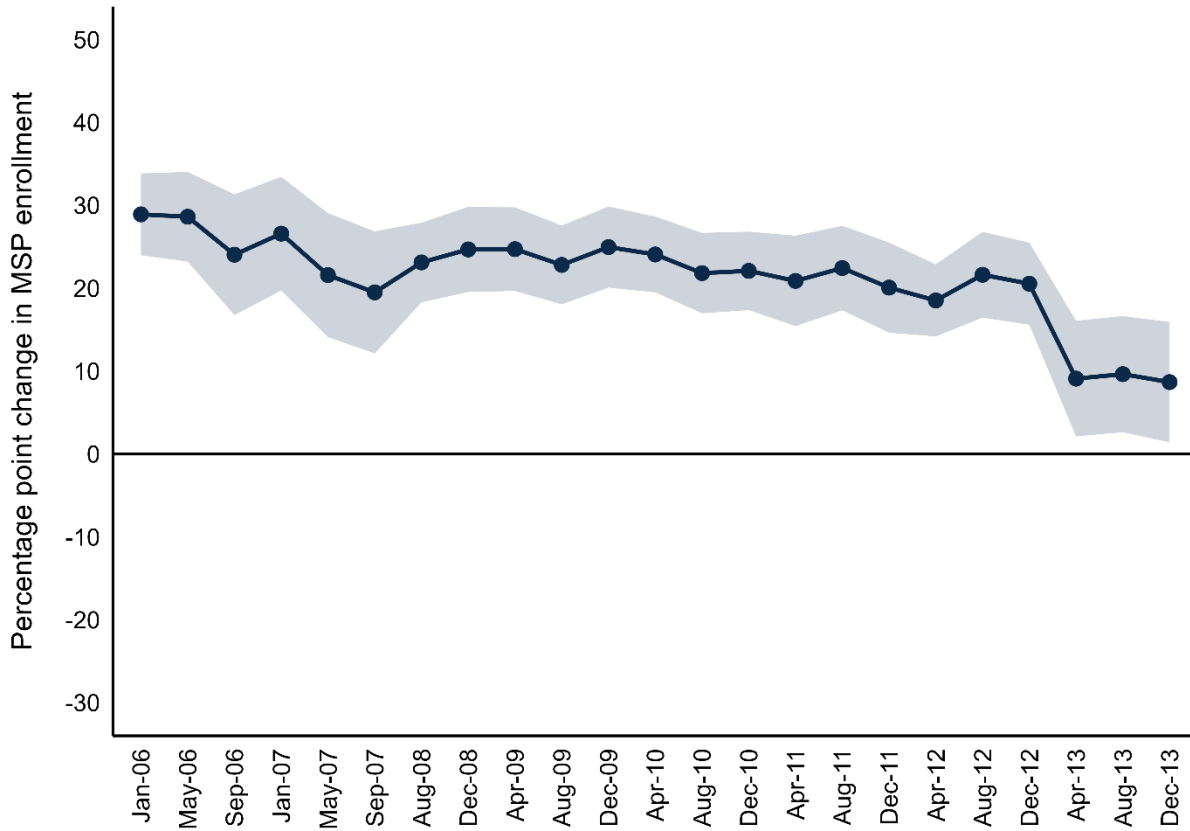

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.31. Marginal association of receiving SSI with MSP enrollment, 2006 to 2013
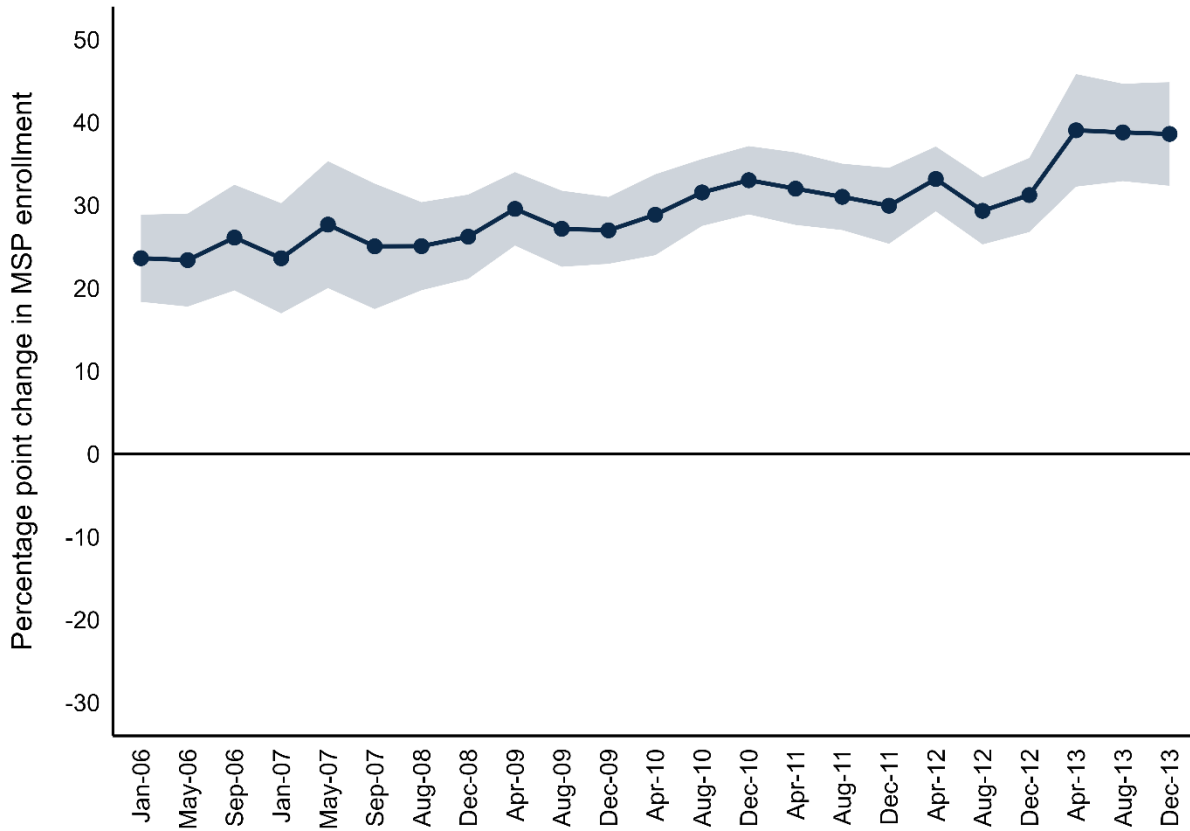

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; SSI = Supplemental Security Income.

Figure C.32. Marginal association of receiving SNAP benefits with MSP enrollment, 2006 to 2013
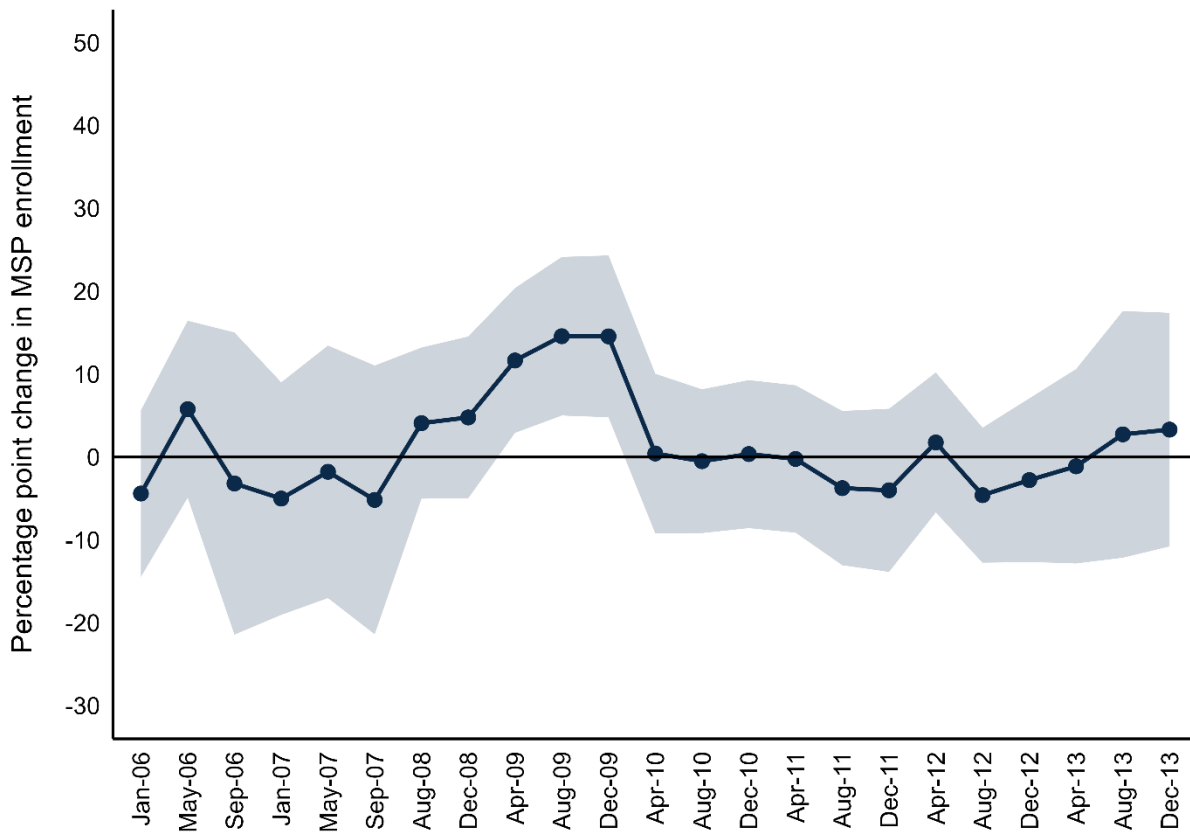

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation; SNAP = Supplemental Nutrition Assistance Program.

Figure C.33. Marginal association of having "very good" or "good" self-reported health status with MSP enrollment, 2006 to 2013

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.34. Marginal association of having "fair" self-reported health status with MSP enrollment, 2006 to 2013
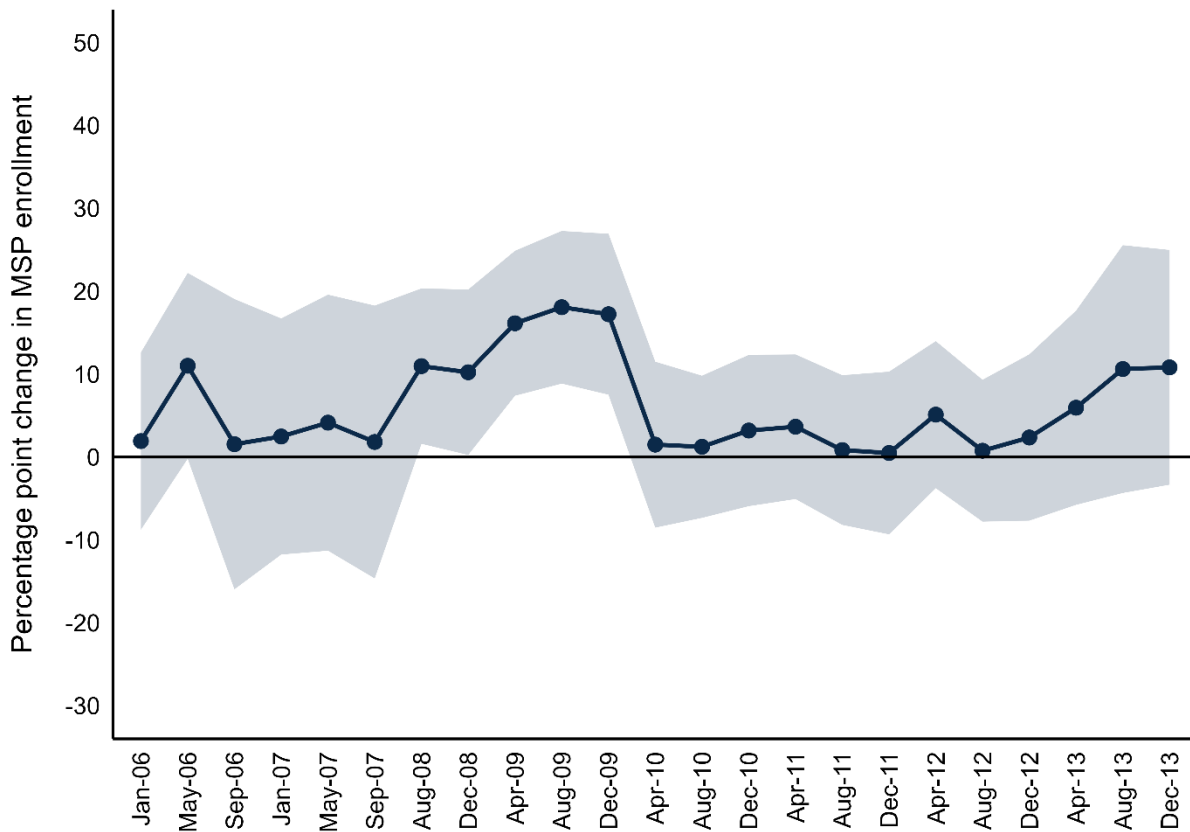

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

Figure C.35. Marginal association of having "poor" self-reported health status with MSP enrollment, 2006 to 2013
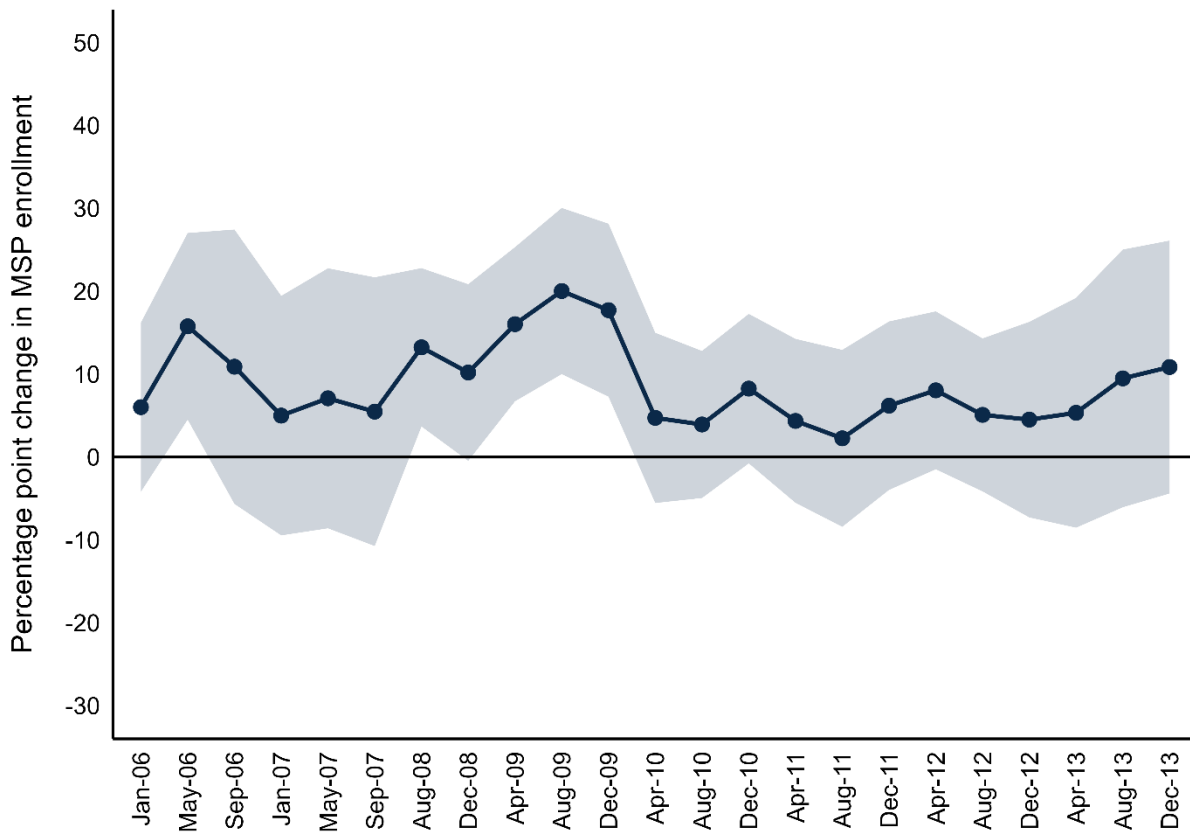

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. The shading around each point represents the 95 percent confidence interval for the population estimate.

EDB = Enrollment Database; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

C.   Supplemental results for RQ2: Effect of MIPPA

Table C.9. Single interrupted time series estimates for impact of 2010 implementation of MIPPA on MSP eligibility, enrollment, and participation rates per capita, states previously below MIPPA asset levels

Variable	Marginal effect	p-value	Percent of baseline mean	95 percent confidence interval
Eligibility per capita				
MIPPA legislation enacted (level change)	0.041	0.04	18	[0.0034, 0.079]
MIPPA x calendar time (slope change)	-0.00046	0.07	47	[-0.00096, 0.000048]
Calendar time (baseline slope)	-0.00097	0.05	n/a	[-0.0020, 0.000018]
Enrollment per capita				
MIPPA legislation enacted (level change)	0.035	<0.01	29	[0.013, 0.057]
MIPPA x calendar time (slope change)	-0.00066	<0.01	-138	[-0.00096, -0.00037]
Calendar time (baseline slope)	0.00048	0.27	n/a	[-0.00044, 0.0014]
Participation rate				
MIPPA legislation enacted (level change)	4.89	0.61	9	[-16.20, 25.90]
MIPPA x calendar time (slope change)	-0.20	0.11	-31	[-0.45, 0.053]
Calendar time (baseline slope)	0.64	0.06	n/a	[-0.042, 1.3]

Source: SIPP data from 2004, 2008, and 2014 panels linked to Medicare EDB and MSIS data for 2006 to 2013.

Note: Data were accessed and linked in the Census Federal Statistical Research Data Centers. Survey estimates from SIPP were weighted to produce population estimates. Covariates include fractions of the population who are 65 and older, married, male, members of the Black racial group (non-Latinx ethnicity), members of "other" racial groups (non-Latinx ethnicity), or of Latinx ethnicity (any racial group); who speak a language other than English; who have a high school diploma but no college degree; and who have a college degree. "n/a" signifies that the variable is a baseline and no comparison to a baseline is relevant.

EDB = Enrollment Database; MIPPA = Medicare Improvements for Patients and Providers Act of 2008; MSIS = Medicaid Statistical Information System; MSP = Medicare Savings Program; SIPP = Survey of Income and Program Participation.

D. Supplemental results for RQ3: OOP spending of MSP enrollees and the MSP-eligible-but-not-enrolled population

Table C.10. Unadjusted average OOP spending and financial well-being

Outcome	Mean, eligible and enrolled	Mean, eligible but not enrolled	Unadjusted difference	p-value
Out-of-pocket spending ($) (n = 2700)				
Total medical	798	1,975	1,177	<0.01
Non-over-the-counter medical	285	705	420	<0.01
Over-the-counter medical	143	353	210	<0.01
Premiums	371	917	546	<0.01
Financial well-being (%) (n = 1900)				
Unable to pay rent in the last year	8.7	7.7	-1	0.51
Unable to pay utilities in the last year	17.3	10.5	-6.8	<0.01
Skipped meals in the last year	25.8	13.0	-12.7	<0.01

Source: SIPP data from 2014 panel linked to Medicare EDB and MSIS data for 2013.

Note: We constructed these estimates using the December 2013 data from each source. Population estimates and sample counts were rounded according to Census Research Data Center disclosure standards.

MSP = Medicare Savings Program; OOP = out-of-pocket.