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MEDICAID 1115 DEMONSTRATIONS

Medicaid Section 1115 Demonstrations Evaluation Design Plan

Premium Assistance, Monthly Payments, and Beneficiary Engagement

Design Supplement: Summative Evaluation

January 2020

Kara Contreary

Katharine Bradley

Matthew Niedzwiecki

Maggie Colby

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This document updates an earlier supplement to the Medicaid 1115 Demonstration Evaluation Design Plan prepared by Mathematica Policy Research and submitted to CMS in July 2017.[1] In this updated supplement, we describe our approach to the summative evaluation of section 1115 demonstrations that expanded Medicaid coverage up to 133 percent of the federal poverty level (FPL) and feature premium assistance, premiums, and/or beneficiary engagement programs that encourage specific health behaviors.[2] The updated approach reflects newly available data that improve our ability to carry out the evaluation plan as initially envisioned. In particular, Mathematica will have access to administrative data from the Transformed Medicaid Statistical Information System (T-MSIS), expanding the set of demonstration and comparison states we can include and the length of the study period. We will also obtain additional data from both Indiana and Arkansas, enabling us to include those states in more analyses than in the interim evaluation report that we delivered to CMS in February 2018.

In Tables A.1 to A.3 in the appendix, we present the revised set of research questions and planned analyses that we will include in the summative evaluation.[3]

A. Background information on the summative evaluation

Our research questions are organized into three domains. Domain 1 explores the advantages and challenges of expanding Medicaid by supporting enrollment in qualified health plans (QHPs) offered via the Federally Facilitated Marketplace (premium assistance). Domain 2 explores the effect of premiums and other mandatory financial contributions on take-up and continuity of coverage for beneficiaries in states that are authorized to require such contributions for beneficiaries with incomes below 133 percent of the FPL.[4] Domain 3 explores the mechanisms and effectiveness of beneficiary engagement programs. Several states have implemented more than one approach within the same demonstration (Table 1).

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[1] The original Medicaid 1115 Demonstration Evaluation Design Plan from May 2015 is available at https://www.medicaid.gov/medicaid-chip-program-information/by-topics/waivers/1115/downloads/evaluation-design.pdf. The July 2017 design supplement described our approach to the interim outcomes evaluation of premium assistance, monthly payments, and beneficiary engagement demonstrations, and is available at https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/eval-plan-beneficiary-engagement-programs.pdf.

[2] Eligibility is expanded up to 133 percent of the FPL, with a 5 percent income disregard under modified adjusted gross income calculation rules, resulting in an effective threshold of 138 percent of the FPL. The Affordable Care Act established a 5 percent income disregard that increases the effective income limit from 133 to 138 percent of the federal poverty level.

[3] The July 2017 design supplement featured a set of research questions and analytic approaches that we deferred to the summative evaluation. This updated design supplement incorporates several deferred analyses. We are unable to include a small number of these because of continued data limitations, including analyses that required data on: physician networks within QHPs, individual transitions between Medicaid and QHP coverage, and demonstration administrative costs.

[4] Title XIX of the Social Security Act normally prohibits states from requiring monthly payments from Medicaid beneficiaries with family incomes under 150 percent of the FPL with certain exceptions, such as working people with disabilities who are eligible under the Ticket to Work and Work Incentives Improvement Act. Section 1115 authority is therefore relevant when monthly payments are collected from adults who are not disabled with incomes under 150 percent of the FPL, but alternative Medicaid expansion demonstrations include only adults with incomes up to 133 percent of the FPL.

Table 1. Demonstrations with premium assistance, monthly payments, and/or beneficiary engagement programs as of August 2018

State	Demonstration start date	Domain 1: Mandatory Medicaid-supported QHP enrollment (premium assistance)	Domain 2: Premiums or other monthly contributions (monthly payments)	Domain 3: Beneficiary engagement programs to encourage health behaviors
Arkansas	Jan. 2014	X	X (started Jan. 2015, paused Apr. 2016, resumed Jan. 2017)	
Indiana	Feb. 2015		X	X
Iowa	Jan. 2014	Ended Dec. 2015	X	X
Michigan	Apr. 2014		X	X
Montana	Jan. 2016		X	
New Hampshire	Jan. 2016	X		

QHP = qualified health plan.

In the summative evaluation, we expect to address all the research questions presented in our interim evaluation report for the three domains and two additional questions that we can address with newly available data. In Appendix Tables A.1 to A.3 (at the end of this document), we present a refined analytical approach for each research question that reflects our updated understanding of data availability, implementation timing, and appropriate outcome measures and comparison states. In all three domains, we will use a mix of rigorous regression-based approaches, descriptive quantitative analyses, and qualitative syntheses of state evaluation findings and key informant interviews conducted for the rapid-cycle reports we produced in 2015 and 2016. Findings from the summative evaluation will focus on demonstration operations from 2014 through 2017.

In the remainder of this design supplement, we first discuss the domain-specific research questions (section B). We then review data sources (section C), the demonstration and comparison states (section D), and likely challenges to implementing plans for the summative evaluation (section E).

B. Research questions addressed in the summative evaluation

Domain 1: Medicaid-supported enrollment in QHPs. Research questions in Domain 1 (Table A.1) explore the advantages and challenges of expanding Medicaid by supporting enrollment in QHPs offered via the Federally Facilitated Marketplace compared with expanding Medicaid coverage directly. Use of Medicaid funds to support enrollment in non-Medicaid health plans is known as premium assistance. Arkansas, Iowa, and New Hampshire implemented premium assistance programs at some point from 2014 through 2016 and will be included in the final evaluation.

Domain 1 questions ask how premium assistance compares with a direct Medicaid expansion in terms of (1) access to medical care and health outcomes, (2) total Medicaid spending, and (3) take-up rates for likely eligible adult populations. Each overarching topic

includes several subordinate research questions. For example, to investigate how access and health outcomes compare between states that pursued Medicaid expansion via QHPs and those that expanded Medicaid directly, we will explore how promptly beneficiaries began to receive health care and wrap-around services[5] (Research Question 1a); whether survey data reveal differential unmet needs for medical care (Research Question 1c); and whether there are patterns in health plan issuer participation that might have implications for continuity of coverage across Medicaid and Marketplace plans (Research Question 1d).

For the summative evaluation, we will address all research questions that were included in the interim report except for Research Question 1b, which concerns patterns of provider participation and which we will exclude because of data limitations. We expect to include the three demonstration states (Arkansas, Iowa, and New Hampshire) in our evaluation, although which states are included will vary by analysis (Table A.1).[6] In the interim evaluation, our assessment of utilization among Arkansas QHP enrollees was limited to descriptive analyses. For the summative evaluation, we have obtained all payer claims database (APCD) data for Arkansas which enables us to conduct regression-based analysis of service use for the state. After verifying the quality of new data from T-MSIS, we also expect to include more comparison states than we were able to in the interim evaluation.

Domain 2: Premiums or other monthly contributions. Research questions in Domain 2 (Table A.2) explore the effect of premiums and other monthly financial contributions on take-up and continuity of coverage for beneficiaries in states authorized to require such payments of beneficiaries with incomes below 133 percent of the FPL. We refer to such payments as monthly payments, reflecting the fact that some states consider them to be account contributions rather than premiums. Five states—Arkansas, Indiana, Iowa, Michigan, and Montana—implemented demonstrations that collected monthly payments from beneficiaries at some point from 2014 through 2017. We will include all five states in the summative evaluation.

The research questions for Domain 2 focus on understanding the extent to which monthly payments are associated with enrollment decisions. The principal concern with monthly payments is that they might discourage people with limited incomes from enrolling in Medicaid or from staying enrolled. Conversely, it is possible that the requirement to make monthly payments acts as a signal that Medicaid coverage is valuable, which could encourage take-up or continued enrollment for some people. Domain 2 questions focus on enrollment because monthly payments should not affect the perceived price or accessibility of specific health care services for enrolled beneficiaries unless a state's demonstration protocol explicitly links monthly payments to completion of particular incentivized behaviors or to eligibility for enhanced benefits.

[5] Wrap-around services include Early and Periodic Screening, Diagnostic, and Treatment services for those younger than age 21, family planning services, non-emergency medical transportation, adult dental care, and adult vision care.

[6] We have obtained access to data from New Hampshire's all-payer claims database for 2016 and 2017, which enables us to include all three demonstration states in utilization analyses. In the interim evaluation, we were not able to include New Hampshire in analyses of utilization because the demonstration began in 2016 and not enough time had elapsed when we conducted analyses.

For the summative evaluation, we have added a question regarding re-enrollment after non-eligibility periods (Table A.2). This added question (Research Question 2c) is, "What is the effect of payment enforceability rules such as non-eligibility (or 'lock-out') periods before re-enrollment?" Indiana's demonstration is the only one that includes a non-eligibility period as a consequence of noncompliance with monthly payments. We lacked administrative data from Indiana and were unable to include this question in the interim report. For the summative evaluation, we will receive administrative data from Indiana that will enable us to address this question and include Indiana in several other Domain 2 analyses for the first time. Because we are not obtaining updated administrative data directly from Iowa or Montana (the two other states that disenroll beneficiaries for nonpayment) for the summative evaluation, Indiana will be the only demonstration state for which we observe the reason for disenrollment. For this reason, the descriptive analysis of the proportion disenrolled mid-year for nonpayment (Research Question 2a) will include Indiana only.

We also added two research questions regarding enrollment continuity to take advantage of the fact that we have four years of post-expansion administrative data for several states. Research Question 2d is, "Is there a relationship between monthly payment requirements and long-term enrollment continuity?" To address this question, we will calculate the probability of remaining continuously enrolled for periods longer than a full year—at 18, 24, 36, and 48 months—for the first enrollment span in each state's Medicaid expansion. Research 2e is, "Is there a relationship between monthly payment requirements and the length of time beneficiaries stay enrolled?" We will conduct a survival analysis using an accelerated failure time model to assess the effect of monthly payments on enrollment duration, or how long beneficiaries stay enrolled in each span before disenrolling.

Finally, data on beneficiary income is necessary to estimate premium amounts; however, we assessed the income variable in newly available T-MSIS data as having poor reliability. For this reason, we were unable to repeat several analyses included in the interim report that used data obtained directly from states. These include descriptive analyses of take-up rates by income level (under Research Question 1d) and enrollment retention and renewal rates by income level (under Research Questions 2a and 2b). However, we will repeat the regression-based analysis of take-up using Integrated Public Use Microdata Sample (IPUMS) data generated from the American Community Survey under Research Question 1d and the analyses of enrollment retention and renewal rates that do not account for income level under Research Questions 2a and 2b.

Domain 3: Beneficiary engagement programs to encourage health behaviors. Research questions in Domain 3 (Table A.3) explore the mechanisms and effectiveness of beneficiary engagement programs designed to encourage specific health behaviors. We will include in the summative evaluation all three states that implemented a demonstration involving health behaviors: Indiana, Iowa, and Michigan. In the interim report, we were not able to include Indiana in analyses relying on administrative data.

Approved demonstrations with beneficiary engagement features use financial incentives to encourage appropriate use of health care services among Medicaid enrollees. We will explore the variation in and effectiveness of states' beneficiary education strategies, which are especially important in demonstrations with complex incentive structures. We will also evaluate whether incentives are likely to affect beneficiary behavior in desired ways. Under both of these

overarching topics, we will explore several subordinate research questions. For example, in investigating which incentives influence behavior as desired, we will explore whether incentives are associated with gains in preventive care and management of chronic conditions (Research Question 3a).

For the summative evaluation, we will address all of the Domain 3 research questions included in the interim report (Table A.3). In addition, we will include a research question concerning volume of care (Research Question 3c): "How do behavior incentives affect volume of and access to care?" Indiana's demonstration offers beneficiaries the strongest incentives for managing overall expenditures. Because we will have administrative data for Indiana for the summative evaluation, we will be able to conduct descriptive analyses comparing the volume of different types of care received in Indiana with the volume of care received in other states. A potential concern with incentivizing beneficiaries to manage overall expenditures is that they will reduce utilization of all types of health care, both efficient and inefficient. By examining whether and how the volume of care received in different categories of care differs between Indiana and states without incentives to manage expenditures, we can assess beneficiaries' responses to such incentives.

We will also include an additional outcome measure in addressing Research Question 2 ("To what extent are Medicaid enrollees responsive to explicit behavior incentives?"). We will receive data on Personal Wellness and Responsibility (POWER) Account operations directly from Indiana and will examine the frequency with which beneficiaries receive rollovers or doubled rollovers. This analysis will provide descriptive detail on how POWER Accounts operate in practice.

C. Data sources for the summative evaluation

Medicaid administrative data. We will use data derived from Medicaid enrollment files and claims paid to providers, as reported through several Medicaid administrative data sources. Many states transitioned from the Medicaid Statistical Information System (MSIS) to a new reporting format, T-MSIS, during our study period, which spans 2012 through 2017. For periods before a state's transition, we will use Medicaid Analytic eXtract (MAX) data, or the early version of MAX known as Alpha-MAX. For periods after a state's transition, we will use T-MSIS Analytic Files (TAF). MAX and Alpha-MAX are both research versions of state MSIS submissions; TAF is a research version of state T-MSIS submissions.[7]

TAF data are very new, and data quality and reliability are uneven across states and years. Several states did not meet our standard for deviations in enrollment counts of no more than ten percent from counts of adult expansion beneficiaries reported in the Medicaid Budget and Expenditure System or had other substantial data quality issues. Our data quality assessment will prevent us from including federal administrative data for several planned comparison states, Arkansas, and Indiana (in 2017 only).

[7] CMS develops MAX data as a more research-friendly version of MSIS files and TAF as a more research-friendly version of T-MSIS files.

We will also use data obtained directly from four states. For all analyses of administrative data for Arkansas, we will rely entirely on the state's APCD. Because the APCD data include information on both QHP and fee-for-service Medicaid enrollees, this change will enable us to include Arkansas in regression analyses of utilization, whereas in the interim report we could conduct only descriptive analyses of Arkansas's demonstration experience under Domain 1. Because Arkansas's APCD data do not contain information on premiums paid to QHPs, however, we will not be able to include Arkansas in Domain 1 expenditures analyses. We will also use Arkansas's APCD data for enrollment analyses under both Domain 1 and Domain 2.

We will also use APCD data from New Hampshire because the TAF do not contain QHP encounter records for New Hampshire's premium assistance program. We will merge APCD and TAF data for New Hampshire to construct analytic files. We will also receive enrollment and POWER account data from Indiana, enabling us to add Indiana to Domain 2 analyses of the relationship between monthly payments and enrollment and Domain 3 analyses of beneficiary incentives. In addition, we will rely on data already obtained directly from Iowa for the interim report for 2014 and 2015 because the state's data contains a set of variables reflecting enrollment in QHPs, as well as QHP encounter records. Table 2 presents sources of administrative data by state and year.

IPUMS. IPUMS data, prepared by the Minnesota Population Center at the University of Minnesota (Ruggles et al. 2019), are a research-ready version of the American Community Survey that can be used to estimate the expansion population eligible for Medicaid in each state and to model changes in the probability that the likely eligible population reports having Medicaid coverage. Whereas the interim report used IPUMS data only through 2015, we will include data through 2017 in the summative evaluation. Definitions and analytic approaches using IPUMS data will be unchanged from the interim report.

Behavioral risk factor surveillance system (BRFSS). We will use BRFSS data from 2012 to 2017 to examine population-level changes in unmet need for care as well as for preventive and chronic care behaviors among nonelderly low-income adults, regardless of insurance status. We had envisioned using CAHPS (Consumer Assessment of Healthcare Providers and Systems) data, obtained from the National Medicaid Adult CAHPS survey, to explore issues around access to and affordability of care, but the survey has been fielded only once—in 2014—making it insufficient to support an evaluation of changes over time. We will instead continue to analyze BRFSS survey responses regarding unmet medical need, foregone care because of cost, and establishment of a relationship with a personal physician. In addition, we will add New Hampshire as a demonstration state for Domain 1 analyses of BRFSS data (Research Question 1c; Table A.1) because we will have data from 2016 and 2017, after New Hampshire's demonstration was implemented.

State evaluation and monitoring reports. We will update our reviews of state evaluation and monitoring reports to incorporate those available on Medicaid.gov as of July 2019 to help answer research questions that address (1) states' efforts to educate beneficiaries about the demonstrations and (2) findings from state-led surveys that could shed light on beneficiaries' understanding of the demonstrations' incentives.

Table 2. Source of Medicaid administrative data

State	2012	2013	2014	2015	2016	2017
Demonstration states						
Arkansas	MAX	MAX	APCD data	APCD data	APCD data	APCD data
Indiana	MAX	MAX	Alpha-MAX (Jan-Sep) TAF (Oct-Dec)	TAF State files	TAF State files	State files
Iowa	MAX	MAX	State files	State files	TAF	TAF
Michigan	MAX	MAX	MAX	Alpha-MAX (Jan-Sep) TAF (Oct-Dec)	TAF	TAF
Montana	MAX	Alpha-MAX	TAF	TAF	TAF	TAF
New Hampshire	MAX	Alpha-MAX	TAF	TAF	TAF APCD data	TAF APCD data
Comparison states						
Kentucky	MAX	Alpha-MAX	Alpha-MAX (Jan-Jun) TAF (Jul-Dec)	TAF	TAF	TAF
New Mexico	MAX	Alpha-MAX	TAF	TAF	TAF	TAF
Ohio	MAX	MAX	Alpha-MAX (Jan-Sep) TAF (Oct-Dec)	TAF	TAF	TAF
Pennsylvania	MAX	MAX	MAX	Alpha-MAX (Jan-Sep) TAF (Oct-Dec)	TAF	TAF
West Virginia	MAX	MAX	MAX	Alpha-MAX (Jan-Sep) TAF (Oct-Dec)	TAF	TAF

Notes: MAX data are produced with seven quarters of data. Where more than one data source appears for a given state-year, we plan to combine data sources to cover the full calendar year and/or to cover the full expansion population.

MAX = Medicaid Analytic eXtract; TAF = T-MSIS Analytic Files.

D. States included in the summative evaluation

Demonstration states. We will include the following six demonstration states in the summative evaluation—Arkansas, Indiana, Iowa, Michigan, Montana, and New Hampshire. Each state will appear only in analyses of policy types they enacted. This is a change from the interim evaluation, where we sometimes included demonstration states as comparison states due to data limitations. MAX and Alpha-MAX data were available only for a small number of comparison states over the study period, and using demonstration states as comparison states served to increase statistical power. T-MSIS data availability for the summative evaluation means we can include a larger number of comparison states that expanded coverage without a waiver, and we will no longer use demonstration states as comparison states. For example, we will no longer use Michigan as a comparison state for analyses in Domain 1 even though Michigan did not enroll beneficiaries in QHPs, because Michigan is a demonstration state in Domain 2 and 3 analyses.[8]

Comparison states. We will compare outcomes in the demonstration states with nine non-demonstration comparison states: Kentucky, Nevada, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Washington, and West Virginia. These states are similar to the demonstration states in two important respects: each expanded Medicaid to include nonelderly adults with incomes up to 133 percent of the FPL in 2014 or 2015 and each had historically low income eligibility thresholds for adults before the expansions.[9] We will include the full set of states in analyses using national survey data. For analyses relying on administrative data, we will include the following states, each of which met our standards for data quality: Kentucky, New Mexico, Ohio, Pennsylvania, and West Virginia. Table 3 summarizes the set of comparison states by data source.

[8] We included demonstration states as comparison states for analyses in other domains to increase statistical power in the interim report. Not doing so would have made it impossible to know whether observed differences between states with and without demonstrations were statistically significant. However, this involved a tradeoff in that the risk of bias increases with the inclusion of comparison states with policies different from traditional Medicaid. Now that our concerns about power are reduced by the availability of TAF data for multiple comparison states, we no longer feel it is necessary to risk slightly biasing the results.

[9] Several of these comparison states implemented limited expansions of adult coverage through section 1115 authority before 2014. These early programs limited the number of enrollees (New Mexico, Oregon, Washington), the benefit plan (New Mexico), or the targeted geographic area (Ohio). These states are appropriate comparators because they implemented full Medicaid expansions under the Affordable Care Act in 2014 and experienced large increases in the number of enrolled nondisabled adults at the same time as the states that implemented alternative Medicaid expansions. For example, there was a 65 percent increase in Medicaid enrollment among adults in Oregon from 2013 to 2014, net of transfers from state-funded programs. Similarly, there was a 46 percent increase in Medicaid enrollment among adults from 2013 to 2014, net of transfers from state-funded programs. These percentage changes in enrollment were among the top one-third of states that expanded Medicaid in 2014. (Figures are based on Mathematica's analysis of Medicaid and CHIP Performance Indicator data and on state reports of enrollment in state-funded programs that predated the 2014 Medicaid expansions.) Two demonstration states, Michigan and Indiana, also operated limited programs for adults through section 1115 authority before their current demonstrations.

Table 3. Comparison states by major analysis type

State	Medicaid expansion date	Included in enrollment analyses based on administrative data	Included in utilization analyses based on administrative data	Included in analyses based on national survey data
Kentucky	January 2014	X	X	X
Nevada	January 2014			X
New Mexico	January 2014	X	X	X
North Dakota	January 2014			X
Ohio	January 2014	X	X	X
Oregon	January 2014			X
Pennsylvania	January 2015	X	X	X
Washington	January 2014			X
West Virginia	January 2014	X		X

E. Key challenges

The interim evaluation involved three significant challenges—(1) unobservable sub-state variation in program implementation, (2) intertwining aspects of program features in different domains, and (3) data adequacy—all of which remain challenges for the summative evaluation. The first two challenges are unchanged. The third challenge has changed, reflecting differences in data availability.

The first challenge lies in sub-state variation in program implementation, which could affect the outcomes of interest. For example, we know through key informant interviews that health plans have layered their own incentives and rewards on top of those that are part of the official demonstration design. These health plan programs, which tend to offer short-term rewards, might drive or amplify some observed outcomes. The data are not available to enable the evaluation to control for which beneficiaries were offered which additional incentives.

A second challenge is the intertwining aspects of program features in different domains, which will make it challenging to disentangle the effects of each feature with certainty. For example, several states incentivize health behaviors by waiving (Iowa) or reducing (Michigan) monthly payments for beneficiaries who engage in such behaviors. In other words, the pool of beneficiaries liable for maximum monthly payments will be limited to those who have not completed recommended health behaviors, introducing some selection bias in examining enrollment continuity within the group. Those who are unwilling to complete a health risk assessment and physician visit might value health care less and therefore might be more likely to disenroll regardless of the payment requirement.

The third challenge, concerning data adequacy, has evolved since the interim evaluation. T-MSIS data enable us to include data for additional states and years. As a result, the scope of the evaluation and the statistical power of our analyses increased. However, TAF data are very new, and data quality and reliability are uneven across states. As a result, we are unable to include all planned comparison states in analyses of administrative data. We are also unable to

include income, an important control variable, or a race/ethnicity variable for some states. However, we are able to include all planned outcome measures listed in the design tables in the appendix.

F. References

Colby, Maggie, Katharine Bradley, Kara Contreary, and Brenda Natzke. "Premium Assistance, Monthly Payments, and Beneficiary Engagement Design Supplement: Interim Outcomes Evaluation." Final report to the Centers for Medicare & Medicaid Services. Cambridge, MA: Mathematica Policy Research, July 2017. Available at https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/eval-plan-beneficiary-engagement-programs.pdf.

Irvin, Carol V., Debra Lipson, Carey Appold, Maggie Colby, Katharine Bradley, Jessica Heeringa, Jenna Libersky, Vivian Byrd, and Julia Baller. "Medicaid 1115 Demonstration Evaluation Design Plan." Final report to the Centers for Medicare & Medicaid Services. Cambridge, MA: Mathematica Policy Research, May 2015. Available at https://www.medicaid.gov/medicaid-chip-program-information/by-topics/waivers/1115/downloads/evaluation-design.pdf.

Ruggles, Steven, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. IPUMS USA: Version 9.0 [dataset]. Minneapolis, MN: IPUMS, 2019. https://doi.org/10.18128/D010.V9.0.

APPENDIX A

RESEARCH QUESTIONS AND ANALYTICAL APPROACHES BY DOMAIN

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Table A.1. Domain 1 research questions and approaches for the summative evaluation: Medicaid-supported enrollment in qualified health plans

Analytical approach	Outcome measures	Data sources	Demonstration states	Comparison states
1. How do states supporting QHP enrollment for newly eligible beneficiaries compare with other Medicaid expansion states in terms of access and health outcomes?				
1a. Can beneficiaries enrolled in QHPs access care at similar or better rates compared with beneficiaries enrolled in direct Medicaid expansions?				
Descriptive statistics, difference-in-differences model, and cross-sectional model Descriptive analysis of whether there is differential receipt of care by demographic characteristics Descriptive analysis of utilization by QHP beneficiaries	Percentage receiving: Any physician visit within two and six months of enrollment A prescription within two and six months of enrollment Wraparound services that are standard benefits in Medicaid expansion states Average PMPM use of: Physician services Prescriptions Wraparound services	MAX/Alpha-MAX/TAF Administrative data from demonstration states and APCDs	Arkansas, Iowa, New Hampshire	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
1c. What is the unmet need for medical care?				
Descriptive statistics and difference-in-differences model Synthesis of state-reported beneficiary survey data	Percentage self-reporting: A personal doctor or health provider Unmet medical need because of cost Time since last routine doctor visit State-reported metrics from beneficiary surveys	BRFSS State evaluation reports	Arkansas, Iowa, New Hampshire	Kentucky, Nevada, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Washington, West Virginia
1d. Is there continuity of coverage when switching between Medicaid and Marketplace coverage?				
Qualitative analysis of patterns in issuer participation	Patterns of issuer participation in Marketplace and Medicaid premium assistance programs	Marketplace and Medicaid data on plan participation	Arkansas, Iowa, New Hampshire	Kentucky, Nevada, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Washington, West Virginia

TABLE A.1 (CONTINUED)

Analytical approach	Outcome measures	Data sources	Demonstration states	Comparison states
2. How do states supporting QHP enrollment compare with other Medicaid expansion states in terms of total spending?				
2a. How do premium assistance states compare with other Medicaid expansion states in terms of per beneficiary spending on direct medical services and capitation payments?				
Descriptive statistics, difference-in-differences model, and cross-sectional model	Total PMPM spending on direct medical expenditures and premium payments to QHPs	MAX/Alpha-MAX/TAF Administrative data from demonstration states and APCDs	Iowa[a], New Hampshire	Kentucky, New Mexico, Ohio, West Virginia
3. How do states supporting QHP enrollment compare with other Medicaid expansion states in terms of take-up rates?				
3a. How does the take-up rate among likely eligible individuals in premium assistance states compare with states with direct Medicaid expansions?				
Descriptive analysis of whether there is differential participation by key demographic groups	Proportion of likely eligible population enrolled in Medicaid at the time of the survey (annual) by demographic characteristics	MAX/Alpha-MAX/TAF IPUMS	Arkansas, Iowa, New Hampshire	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
3b. Are there patterns in the timing of Medicaid beneficiary enrollment in premium assistance states that could be related to the Marketplace open enrollment period, even though Medicaid beneficiaries are not subject to open enrollment periods?				
Descriptive statistics	Counts of monthly enrollment	MAX/Alpha-MAX/TAF	Arkansas, Iowa, New Hampshire	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia

Note: Question numbering is not consecutive where we dropped a research question initially planned in 2015 due to data insufficiency.

[a] Iowa is not included in the difference-in-differences model because expenditures data outside of the demonstration period were unreliable.

Alpha-MAX = Alpha Medicaid Analytic eXtract; BRFSS = Behavioral Risk Factor Surveillance System; IPUMS = Integrated Public Use Microdata Sample; MAX = Medicaid Analytic eXtract; PMPM = per member per month; QHP = qualified health plan; TAF = T-MSIS Analytic Files.

Table A.2. Domain 2 research questions and approaches for the summative evaluation: Premiums and other monthly contributions (monthly payments)

Analytical approach	Outcome measure	Data sources	Demonstration states	Comparison states
1. To what extent do requirements for monthly payments affect enrollment patterns?				
1a. Do eligible adults in states with required monthly payments enroll in Medicaid (or premium assistance programs) at the same rate as eligible adults in other states?				
Regression model of Medicaid enrollment among the likely eligible population	Reported enrollment in Medicaid at the time of survey (annual)	IPUMS	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, Nevada, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Washington, West Virginia
Descriptive analysis of take-up among likely eligible population	Proportion of likely eligible population enrolled in demonstration (annual)	State enrollment data and MAX/Alpha-MAX/TAF; IPUMS	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
1b. Do eligible adults in key demographic groups who live in states with required monthly payments enroll in Medicaid (or premium assistance programs) at the same rate that eligible adults in other states do?				
Regression model of Medicaid enrollment among key demographic groups	Reported enrollment in Medicaid at the time of survey (annual), by demographic characteristics	IPUMS	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, Nevada, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Washington, West Virginia
Descriptive analysis of differential take-up among key demographic groups	Proportion of likely eligible population enrolled in demonstration (annual), by demographic characteristics	State enrollment data and MAX/Alpha-MAX/TAF; IPUMS	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
1d. How do monthly payment amounts affect take-up of coverage?				
Regression model of enrollment among the likely eligible population, given likely monthly payment amount required	Reported enrollment in Medicaid at the time of survey (annual)	IPUMS	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, Nevada, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Washington, West Virginia
2. What effects do monthly payments appear to have on continuity of coverage?				
2a. Is there a relationship between midyear disenrollments and the timing of monthly payment policies?				
Descriptive regression analysis of payment onset and likelihood of enrollment continuity	Continued enrollment at specified policy-relevant months	State enrollment data and MAX/Alpha-MAX/TAF	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia

TABLE A.2 (CONTINUED)

Analytical approach	Outcome measure	Data sources	Demonstration states	Comparison states
Descriptive analysis of proportion disenrolled midyear	Proportion disenrolled midyear (all states) and proportion disenrolled midyear for nonpayment (Indiana only)[a]	State enrollment data and MAX/Alpha-MAX/TAF	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
2b. Is there a relationship between monthly payment requirements and renewals?				
Descriptive regression analysis of enrollment continuity at renewal	Renewed enrollment rates by whether payments are required for any beneficiaries	State enrollment data and MAX/Alpha-MAX/TAF	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
2c. What is the effect of payment enforcement rules such as non-eligibility periods before re-enrollment?				
Descriptive analysis of re-enrollment after non-eligibility period	Percentage of beneficiaries returning to program after disenrolling, by reason for disenrollment and length of enrollment gap	Administrative data from demonstration state	Indiana	N/A
2d. Is there a relationship between monthly payment requirements and long-term enrollment continuity?				
Descriptive regression analysis of enrollment continuity for periods longer than a year	Continued enrollment at 18, 24, 36, and 48 months	State enrollment data and MAX/Alpha-MAX/TAF	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
2e. Is there a relationship between monthly payment requirements and enrollment duration?				
Survival analysis of enrollment continuity using accelerated failure time regression model	Time (in months) from enrollment to disenrollment	State enrollment data and MAX/Alpha-MAX/TAF	Arkansas, Indiana, Iowa, Michigan, Montana	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia

Note: Question numbering is not consecutive where we dropped a research question initially planned in 2015 due to data insufficiency.

[a] Montana and Iowa also disenroll beneficiaries for nonpayment, but disenrollment reasons are not captured in TAF, so we will not have access to that information for Montana and Iowa.

Alpha-MAX = Alpha Medicaid Analytic eXtract; IPUMS = Integrated Public Use Microdata Sample; MAX = Medicaid Analytic eXtract; N/A = not available; TAF = T-MSIS Analytic Files.

Table A.3. Domain 3 research questions and approaches for the summative evaluation: Beneficiary engagement programs to encourage health behaviors

Analytical approach	Outcome measure	Data sources	Demonstration states	Comparison states
1. What strategies are states using to educate beneficiaries about preferred health behaviors?				
1a. What strategies are states using to explain incentives and disincentives? Which strategies are perceived to be effective?				
Narrative and synthesis of state-reported data and rapid-cycle reports	Mode, content, timing, and other aspects of education materials	State evaluation reports, survey and focus group data, rapid-cycle reports	Indiana, Iowa, Michigan	N/A
2. To what extent are Medicaid enrollees responsive to explicit behavior incentives?				
Descriptive analysis (including regressions) of incentivized behavior completion	Receipt of wellness visit Time to completion of wellness visits	MAX/Alpha-MAX/TAF Administrative data from demonstration state	Indiana, Iowa, Michigan	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
Descriptive analysis of health risk assessment completion	Completion of health risk assessment	Administrative data from demonstration state	Iowa[a]	N/A
Descriptive analysis of health account operations	Percentage of beneficiaries with two or more spans who receive a rollover or doubled rollover	Administrative data from demonstration state	Indiana	N/A
Synthesis of state findings on health account utilization	State reported metrics on account awareness and utilization	State evaluation reports and surveys	Indiana, Michigan	N/A
3. Do behavior incentives affect overall access to and use of care?				
3a. Do behavior incentives yield gains in preventive care and chronic condition management?				
Descriptive analysis (including regressions) of preventive service receipt given financial incentive for health behavior	Receipt of specific preventive services Completion of all recommended health behaviors for age and sex Time to completion of all recommended preventive services for age and sex	MAX/Alpha-MAX/TAF Administrative data from demonstration state	Indiana, Iowa, Michigan	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia

TABLE A.3 (CONTINUED)

Analytical approach	Outcome measure	Data sources	Demonstration states	Comparison states
Descriptive analysis (including regressions) of chronic condition management given financial incentive for health behavior	Adherence to recommended chronic care regimen (Core Set of Adult Health Care Quality Measures for Medicaid-Eligible Adults)	MAX/Alpha-MAX/TAF Administrative data from demonstration state	Indiana, Iowa, Michigan	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
Descriptive analysis of preventive service receipt or chronic condition management as function of health risk assessment completion	Receipt of wellness visit Receipt of specific preventive services Completion of all recommended health behaviors for age and sex Adherence to recommended chronic care regimen (Core Set of Adult Health Care Quality Measures for Medicaid-Eligible Adults)	Administrative data from demonstration state	Iowa[a]	N/A
3b. Do behavior incentives yield reductions in disincentivized care (that is, non-emergent ED visits)?				
Descriptive analysis (including regressions) of non-emergent ED utilization given incentive for health behavior	Flag for any non-emergent ED visit Count of non-emergent ED visits	MAX/Alpha-MAX/TAF Administrative data from demonstration state	Indiana, Iowa, Michigan	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
3c. How do behavior incentives affect volume of and access to care?				
Descriptive analysis of volume of care	Volume of care by category (primary care, specialty care)	MAX/Alpha-MAX/TAF Administrative data from demonstration state	Indiana, Iowa, Michigan	Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia
4. Are population-level effects observed from Medicaid demonstration policies?				
Regression analysis of population-level effects of Medicaid expansion and incentives	Preventive service receipt Smoking cessation Physical activity A1C checked in past 12 months Diabetes-related physician visit in past 12 months	BRFSS[b]	Indiana, Iowa, Michigan	Kentucky, Nevada, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Washington, West Virginia

[a] Individual-level data on HRA completion are not available in MAX, Alpha, MAX, or TAF, so we cannot include Indiana or Michigan in this analysis.

TABLE A.3 (CONTINUED)

[b] Chronic condition management questions are generally contained in the optional BRFSS modules. All three demonstration states fielded the diabetes module; but use of the other chronic condition modules varied.

Alpha-MAX = Alpha Medicaid Analytic eXtract; BRFSS = Behavioral Risk Factor Surveillance System; ED = emergency department; HRA = Health Risk Assessment; MAX = Medicaid Analytic eXtract; N/A = not available.