



**Evaluation of Wisconsin's BadgerCare Plus Health Coverage
for
Parents & Caretaker Adults and for Childless Adults
2014 Waiver Provisions**

Interim Evaluation Report – Year 01

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iii. ABBREVIATIONS & GLOSSARY OF TERMS

CARES	Wisconsin Medicaid's Eligibility and Enrollment System
CLA	Childless Adults: Adults without dependent children who are eligible for Wisconsin's BadgerCare program
CMS	U.S. Centers for Medicaid and Medicare Services
DHS	Wisconsin Department of Health Services
Enrollment Spell	Unless otherwise noted, an enrollment spell begins with the enrollment start date and ends with an enrollment gap of more than 1 month.
FPL	Federal Poverty Level
Hazard regression modeling	Hazard models adjust for duration dependence in the outcome variable and are useful to understand the factors associated with the occurrence and timing of an event (e.g., disenrollment from Medicaid).
HIP	University of Wisconsin Health Innovation Program: Location of servers hosting BadgerCare claims and encounter data for evaluation project
HIPAA	Health Insurance Portability and Accountability Act: Federal Law governing privacy of patient and consumer health information
Kaplan Meier Survival curve	A Kaplan Meier survival curve illustrates the proportion of individuals in a population that has not yet experienced the event of interest (e.g., disenrollment) plotted against time since baseline.
Metropolitan area	A county that contains a core urban area of 50,000 or more population, as designated by the Year 2000 U.S. Census. https://www.census.gov/population/metro/
RRP	Restrictive Reenrollment Period: Period of disenrollment following non-payment of a required BadgerCare premium
TMA	Transitional Medical Assistance: also known as "Extensions." A Medicaid program that offers up to 1 year of additional Medicaid health insurance benefits for certain low-income individuals who would otherwise lose coverage due to an increase in income.
UWPHI	University of Wisconsin Population Health Institute: independent evaluators for Wisconsin's BadgerCare 2014 waiver

I. EXECUTIVE SUMMARY

The UW Population Health Institute is conducting an evaluation of the Wisconsin BadgerCare Reform Demonstration Project, as outlined by the Wisconsin Department of Health Services (DHS) and approved by the federal Centers for Medicare and Medicaid Services (CMS). The evaluation uses rigorous methods to arrive at an understanding of how the changes implemented under Wisconsin's 2014 Medicaid 1115 Waiver Demonstration affect two Medicaid populations: (1) parents and caretaker adults who are eligible for Medicaid through Transitional Medical Assistance (TMA Adults) and (2) childless adults (CLAs) with an effective income level at or below 100% of the federal poverty level (FPL).

The evaluation addresses the 17 evaluation questions defined by DHS in the "BadgerCare Reform Demonstration Draft Evaluation Design" of 10/31/2014, approved by CMS on 11/12/14. The hypotheses focus on programmatic changes authorized by the 1115 Waiver: Premium changes, three-month RRP; and Standard Plan coverage for CLAs.

The evaluation requires administrative data from the Wisconsin DHS on (a) claims and encounters, (b) diagnostic codes, (c) enrollment, and disenrollment reason codes, and (d) premium payment information. The evaluation team also conducted a survey in 2016, and will do another in 2018, of currently enrolled and disenrolled BadgerCare members. The survey assesses measures of utilization, health, and response to premiums.

Data Collection

Administrative Data: The collection of administrative data (encounter data from CARES and claims data via the Business Objectives data warehouse) have presented various challenges and setbacks. Most of these have been addressed, and CARES enrollment files are in use. The limited access to claims and encounter data in Year 1 required some re-arrangement of the workplan. We shifted our focus to evaluation questions that did not require the use of claims and encounter data.

Survey data: A survey of current and former BadgerCare members, in the field from May-September 2016, attained a response rate of 57%. The 1,305 respondents represent the following beneficiary groups: 1) parents/caretaker adults, 2) childless adults, 3) TMA beneficiaries, and 4) beneficiaries currently enrolled in an RRP.

Data Analysis

This Year 01 Interim Evaluation Report provides a descriptive overview of the waiver populations: TMA and CLA beneficiaries. Preliminary findings are reported here for TMA-related questions 8; 10-12 and for CLA-related question 17.

Note: All findings reported here are preliminary and remain subject to further exploration and analysis during the remaining three years of this evaluation period.

Transitional Medicaid Adults (TMA)

Question 8. What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?

The study population is the universe of Medicaid beneficiaries potentially eligible for TMA. For this population, we examine the relationship between the program's premium policy and enrollment outcomes, comparing outcomes across three policy periods: 1) no premium present, March 2008 – June 2012; 2) premiums required for enrollees with income at or above 133%FPL, July 2012-March 2014; and 3) premiums required after six months for enrollees with income from 100-133% FPL and required upon enrollment for enrollees with income greater than 133% FPL, April 2014 – September 2015.

Overall TMA Characteristics:

- No major differences emerge in the average characteristics of enrollees who enroll in, or take up, TMA under the three different premium policies.
- The fraction of TMA enrollees in the lowest income categories increases under Policies 2 and 3, particularly those with incomes between 100-133% FPL, and decreases in the fraction in higher income categories, particularly those with incomes 200% FPL and higher.
- Those beneficiaries who move to a higher income level (and enroll in TMA) are different from those who stay at the same income level in predictable ways: age, education level, income at initial enrollment, and household size are strongly associated with moving to TMA enrollment.
- Premium policy under TMA does not appear to be an important determinant of initial enrollment behavior.

Premium Payment:

- Premium non-payment is highest in the first month of TMA enrollment. Individuals who continue enrollment beyond the first month are likely to continue payment and enrollment.

Effect of premiums on TMA take-up and exits:

- The 2012 waiver caused a decrease in take-up of TMA, driven by those who transitioned with income 133% FPL or greater. This finding is consistent with the new introduction of premiums for those with incomes at or above 133% FPL, resulting in a decrease in program take-up.
- The 2014 waiver saw a smaller decrease in TMA take-up, driven by those with incomes between 100-133% FPL. This is consistent with the introduction of premiums for those with incomes between 100-133% FPL after 6 months resulting in a decrease in program take-up.
- Both waivers are associated with an immediate, one-time increase in exits, which is much larger for the 2012 waiver. There is no apparent change in the relative exit rate after this.
- The 133% FPL threshold is an important determinant of length of enrollment spell. The 2014 waiver decreased the average length of enrollment by 2.1 months for those above 133% FPL relative to those below 133% FPL. This represents an increase in the degree that the 133% margin mattered for length of enrollment spell, magnifying the difference between enrollees with income below and above 133% FPL relative to the 2012 waiver.

Question 10. What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?

- Individuals who started TMA with incomes between 100-133% FPL after April 2014 experienced a slightly decreased likelihood of experiencing six months of enrollment compared to similar individuals under the 2012 waiver. After the 2014 waiver, 85.9% of TMA enrollees with income from 100%-133% FPL had more than six months of enrollment compared to 92.2% before the waiver.
- Those with incomes between 100-133% FPL who entered TMA after implementation of the 2014 waiver decreased their mean length of TMA enrollment by roughly 1 month, from 10.8 months pre-2014 to 9.8 months post-2014.
- Large increases occurred in the percentage of people who experienced an RRP – from less than 2% before the 2014 waiver to 12% after the waiver. The group of individuals with income greater than 133% shows particularly large increases.
- Among those who experienced an RRP, the mean length of RRP decreased from 8.7 to 2.8 months, consistent with the change in RRP policy.

Question 11. Does the RRP impact vary by income level? and

Question 12. If there is an impact from the RRP, explore the break-out by income level.

Characteristics of individuals entering TMA under the 2012 waiver and under the 2014 waiver:

- The RRP impact may vary by income level either because higher-income individuals have a different willingness to pay premiums or because they have different private insurance options available that may be more appealing. For the purposes of this report, we only test this difference at one break point – individuals with incomes >160% FPL. This number was chosen because it represents the upper half of the group with income >133% FPL in TMA.
- The higher-income subgroup >160% show a pattern very similar to the overall pattern of those individuals >133% FPL. The mean length of RRP show a more pronounced change for individuals >160% FPL than the changes observed at the 133% breakpoint.

Childless Adults (CLA)

Question 17. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?

The analyses reported in this Interim Evaluation Report compare enrollment outcomes for newly eligible CLA beneficiaries enrolled in the Standard Plan to outcomes for the continuing CLA beneficiaries enrolled in the Standard Plan after April 2014. “Continuing CLA” beneficiaries refer to childless adults enrolled in the Core plan immediately before April 2014 and enrolled in the Standard Plan after April 2014.

Characteristics of Continuing and New Childless Adult Beneficiaries:

- The two comparison groups differ substantially: Relative to continuing CLA enrollees (N=11,159), the new CLA enrollees (N=248,217) are younger, and more likely to be non-White and male. On average, the new CLA enrollees had fewer total Medicaid and CLA enrollment months before April 2013 than the continuing CLA enrollees.
- Potential explanations exist for the non-equivalence of the study groups across these characteristics: 1) the availability of the Standard Plan may attract a different childless adult population than did the Core Plan; and/or 2) beneficiaries who remained enrolled in the Core plan five years after its introduction may differ systematically from the eligible CLA population.

Health coverage continuity for Continuing and New Childless Adult Beneficiaries:

- The large majority of enrollment spells for continuing CLA beneficiaries were “legacy” spells defined as enrollment spells that began before April 2014. Among continuing CLA beneficiaries, the average duration of these legacy spells in the post-waiver period is longer, and the likelihood of renewal is greater than new spells. This comparison is useful for considering the level of enrollment mobility for the new CLA population relative to a stable insured CLA population when they face the same coverage and enrollment flexibility.
- New CLA beneficiaries experienced less continuous health insurance coverage than continuing CLA beneficiaries, when continuity is defined by enrollment spell duration, renewal and disenrollment. It is highly plausible that underlying differences between the two study groups may explain this divergence in coverage continuity, although we cannot separate that potential explanation from the availability of Standard Plan coverage.

Survey Progress Report

The UW Survey Center conducted a mixed-mode mail and telephone survey of three subgroups:

1. Parents and Caretakers
 - Parents/Caretakers who remained on the program pre- and post-April 2014
 - Parents/Caretakers who joined post-2014
 - Parents/Caretakers with incomes >100% FPL who had transitioned off the BadgerCare program after the April 2014 policy change
2. Childless adults (CLA)
 - CLA who remained eligible from pre-2014 Core Plan coverage
 - CLA who gained eligibility post-2014
 - CLA who, with incomes >100% FPL, lost BC coverage post-April 2014
3. Transitional Medical Assistance (TMA)
 - TMA who did not recently experience a restrictive reenrollment period (RRP) in two groups: 100-133% FPL and >133% FPL
 - TMA individuals who recently experienced an RRP

The survey process was underway from May-September 2016, and attained an overall 57% response rate. Survey weights, currently being developed, will help account for differences in sampling probabilities and for differential non-response across subgroups of interest. This Year 01 Interim Evaluation Report includes an initial descriptive view of some of the survey data elements, reflecting raw, unweighted responses, which are not inferential and are not intended for conclusion. Complete analysis will be available in the forthcoming scientific report that will be delivered separately to DHS.

II. DEMONSTRATION WAIVER AND EVALUATION BACKGROUND

The UW Population Health Institute (The Institute) is conducting an evaluation of the Wisconsin BadgerCare Reform Demonstration Project, as outlined by the Wisconsin Department of Health Services (DHS) and approved by the federal Centers for Medicare and Medicaid Services (CMS). BadgerCare is Wisconsin's combined Medicaid and Children's Health Insurance Program (CHIP) for low-income families and adults without dependent children.

A. Waiver Overview and Target Populations

The 2014 Wisconsin waiver concerns two beneficiary populations, adults who are eligible for Transitional Medical Assistance, and adults without dependent children. In the following paragraphs, we describe these populations and provide an overview of waiver's provisions. The waiver provisions were effective on April 1, 2014.¹

Transitional Medical Assistance (TMA). TMA extends Medicaid coverage for current beneficiaries for up to 12 months following an increase in income beyond 100% of the federal poverty level (FPL). TMA is available to adults who initially enrolled in Medicaid under parent/caretaker eligibility and had an income of less than 100% FPL at the time of enrollment. The July 2012 DHS waiver introduced a premium requirement for TMA beneficiaries with income at or above 133% FPL. The premium amount was based on a sliding scale relative to household income with a cap of 9.5% of household income. Under the 2014 waiver, these provisions remained in place. The 2014 waiver introduced a premium requirement for TMA beneficiaries with income between 100% and 133% FPL. Unlike the higher-income TMA beneficiaries, however, this requirement only takes effect after the 6th month of TMA enrollment. The method for calculating the premium amount is the same for all TMA beneficiaries. The 2014 waiver also stipulates that TMA adults who do not make a required premium payment are dis-enrolled from BadgerCare at the end of their eligibility month and placed in a three-month Restrictive Reenrollment Period (RRP). During the 3-month RRP, these individuals are ineligible for TMA if and until they pay their outstanding premium balance. This RRP policy differs from the policy in place before the 2014 waiver. Specifically, from July 2012 to March 2014, TMA beneficiaries with income at or above 133% FPL who failed to pay a premium were subject to a 12-month RRP. During that 12-month RRP, these individuals were ineligible for TMA. There was no mechanism for a return to TMA within those 12 months.

¹ Additional detail regarding the 2014 WI Medicaid waiver and the Special Terms and Conditions may be found online at the following locations: <https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/wi/Badger-Care-Reform/wi-BadgerCare-reform-demo-project-app-11102011.pdf>; and <https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/wi/wi-BadgerCare-reform-ca.pdf>

Childless Adults (CLA). This demonstration population includes non-pregnant, non-disabled adults between 19 and 64 years of age, without dependent children. The 2014 waiver introduced a change in income eligibility and benefits for this population. Previously, the DHS offered coverage under its Core Plan to a limited number of CLAs with income up to 200% FPL. These plans required enrollment fees and provided a limited set of benefits relative to standard WI Medicaid coverage, the Standard Plan. Effective April 1, 2014, the WI DHS eliminated the Core and Basic Plans. The DHS transitioned CLAs beneficiaries with incomes at or below 100% FPL to the Standard Plan, and all new childless adult applicants with incomes that do not exceed 100% FPL are enrolled in the Standard Plan. The WI Medicaid Standard Plan has no premiums for eligible members below 100% FPL, and provides the full range of Medicaid benefits.² CLAs with income above 100% FPL are no longer eligible for Medicaid coverage.

Evaluation Populations

Table II.1, below, shows the socio-demographic descriptors of the TMA and CLA beneficiary populations as of April 2015, one year after the initiation of the waiver policies. We additionally include a description of adults enrolled under parent/caretaker eligibility although the 2014 waiver does not include provisions specific to this eligibility category. Rather, this population plays an important role in the evaluation because it represents the pool of potential TMA beneficiaries, and it serves as a secular comparison group for several analyses.

² Additional detail regarding the CLA population and a comparison of benefits under the Core, Basic, and Standard plans may be found online:

<https://www.dhs.wisconsin.gov/BadgerCareplus/standard.htm>; and
<https://www.forwardhealth.wi.gov/kw/pdf/2008-199.pdf>

Table II.1. Sociodemographic Profile of Waiver Populations, April 2015			
Variable	PARENTS/ CARETAKERS	CHILDLESS ADULTS	TMA/Extensions (excess earnings category)
	Mean	Mean	Mean
Age	34.7	39.1	34.9
Female	72.9%	42.3%	71.9%
Non-Hispanic White	61.4%	60.3%	64.3%
Black	19.1%	24.3%	15.6%
Hispanic	9.4%	6.2%	9.6%
Other/unreported	8.1%	5.9%	8.5%
Citizen	96.3%	98.1%	96.0%
First language English	95.3%	97.8%	94.8%
Less than high school	21.3%	23.9%	15.2%
High school/GED	63.9%	55.3%	67.0%
More than high school	11.2%	6.2%	13.9%
Education missing	3.6%	14.6%	4.0%
Resides in a non-metropolitan area	66.5%	66.4%	64.1%
Number of children in household	2.2	0.07	2.1
Number of adults in household	1.6	1.2	1.7
Family income %FPL	37.2%	21.5%	127.8%
Length of enrollment spell in months	36.5	12.9	37.8
Number of Enrollees, April 2015	163,548	160,402	13,952

Source: Wisconsin CARES administrative eligibility system

B. Evaluation Design Approach and Methods

The evaluation uses rigorous methods to arrive at an understanding of how the changes implemented under Wisconsin's 2014 Medicaid 1115 Waiver Demonstration affect two Medicaid populations: (1) parents and caretaker adults who are eligible for Medicaid through Transitional Medical Assistance (TMA Adults) and (2) childless adults (CLAs) with an effective income level at, or below, 100% of the federal poverty level (FPL).

The evaluation addresses the 17 evaluation questions defined by DHS in the "BadgerCare Reform Demonstration Draft Evaluation Design" of 10/31/2014, approved by CMS on 11/12/14.³ The UWPHI evaluation team built on the DHS design, submitting a Design Report in December 2016. The 2016 UWPHI design outlines our selected methodological approaches to answer each of the 17 questions and describes the data sources required.

The evaluation design documents may be found in the attachments to this report:

- Attachment A: DHS Evaluation Design as originally submitted to and approved by CMS;
- Attachment B: UW Design Report: Recommended Changes and Crosswalk; and
- Attachment C: CMS Comments and UW/DHS Responses

The evaluation questions focus on programmatic changes authorized by the 1115 Waiver as described above in Section II.A. Generally, with respect to the TMA Adults, the evaluation assesses the following:

1. The effect of premiums on enrollment, access to care, the incidence of unnecessary services, health outcomes, and spending;
2. The effect of an RRP on payment of premiums and enrollment; and
3. The association of enrollment status to utilization and costs, and as experienced by those who are continuously enrolled and those who are exposed to an RRP.

For the CLA population, the evaluation assesses the effects of providing a more comprehensive benefit plan on health care use, continuity of Medicaid coverage, health outcomes, and costs.

³ Available at <https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/wi/Badger-Care-Reform/wi-BadgerCare-demo-eval-plan-20141031.pdf>

III. WORKPLAN PROGRESS SUMMARY

This section summarizes the status of our data collection activities, and how it shapes the progression of the evaluation. The evaluation requires administrative data from the Wisconsin DHS on (a) claims and encounters, (b) enrollment and disenrollment reason codes, and (c) premium payment information. It also includes data from a survey of current and disenrolled BadgerCare members that assesses health care use, health, and response to premiums. The survey instrument from 2016 is available in Attachment E. A second survey will be fielded in 2018.

A. Administrative data from Wisconsin DHS

Enrollment, Disenrollment, RRP and Premium Payment Data

The evaluation team receives updates to BadgerCare eligibility and enrollment data, in a DHS system called CARES, every six months from the UW Institute for Research on Poverty (IRP). As of November 2016, we have obtained CARES data from January of 2006 through September of 2016.

The data, collected for programmatic purposes, present a range of challenges when deployed for research and evaluation. Our team continues to identify and resolve such challenges as they arise. Among them:

- Our evaluation team does not receive the BadgerCare case notes/text fields that explain the status of the case in detail. Lacking this detailed information, we often find that the variables from the RRP fields and premium data tables contradict the information contained in the main CARES eligibility data.
- RRP included in initial CARES data may later be overridden or changed by DHS staff or the Income Maintenance agency staff, requiring a revision of work using adjusted data.

In September of 2016, we worked with DHS staff to draw up decision rules that allow determination of whether a person was on RRP at any point. The same types of problems persist with the premium data, and we continue to work our way through these challenges.

Unemployment insurance earnings data

In addition to the CARES updates, IRP also updates our unemployment insurance earnings data yearly. Currently we have data from calendar years 2008 through 2015. We are expecting the 2016 update shortly into 2017. These data have been cleaned, de-duplicated and are available to be matched to the CARES data as needed. This allows us to assess the income and employment experience of BadgerCare members as they leave coverage, and the degree to which they may have access to other sources of insurance coverage through an employer.

Claims/Encounter Data

In order to comply with the UW-Madison's revised requirements for storing and using HIPAA protected data while enabling the evaluation team's access to WI DHS claims and encounter data, our evaluation

team established a new “home” for the WI DHS data at the UW. The UW Health Innovation Program (HIP) is the new custodian for the claims and encounter data for this evaluation. Our team’s data manager can directly access the data within Business Objects and move it to the HIP servers for use by the evaluation team’s researchers.

Development of this arrangement required considerable technical, programmatic, and legal effort over the past year from multiple parties at the Wisconsin DHS, HIP, the UW administration, and our evaluation team. We expected that Wisconsin DHS claims and encounter data to becoming available for analysis to the UW evaluation team by December 2016. It ultimately became available on March 29, 2017.

B. Survey Data

The survey is intended primarily to support understanding of the following evaluation questions:

- Q.6: Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?
- Q.9: How is access to care affected by the application of new, or increased, premium amounts?
- Q. 17. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?

The UW Survey Center, our team’s subcontracted partner on this project, conducted a mixed-mode mail and telephone survey to reach a statistically valid sample and achieve high response rates. Our survey sample was designed in order to provide valid cross-sectional estimates and, also, to increase comparability with the responses from the 2014 BadgerCare evaluation survey. The 2016 sampling frame included current beneficiaries who met our study categories and all individuals who responded to the 2014 survey.

The 2016 survey respondents fall into three subgroups:

1. Parents and Caretakers
 - Parents/Caretakers who remained on the program pre- and post-April 2014
 - Parents/Caretakers who joined post-2014
 - Parents/Caretakers <100% FPL who had transitioned off of the BadgerCare program after the April 2014 policy change
2. Childless adults (CLA)
 - CLA who remained eligible from pre-2014 Core Plan coverage
 - CLA who gained eligibility post-2014
 - CLA who, with incomes >100% FPL, lost BC coverage post-April 2014
3. Transitional Medical Assistance (TMA)
 - a. TMA who did not recently experience a restrictive reenrollment period (RRP) in two groups: 100-133% FPL and >133% FPL
 - b. TMA individuals who recently experienced an RRP

Table S1 shows the sample of survey’s target sub-groups as constructed in February 2016. The survey process was underway from May 10, 2016 - September 26, 2016. It included an initial mailing with a \$5 incentive, two follow-up letters, and then a telephone follow-up to non-respondents. The survey attained an overall 57% response rate, with rates by specific subgroups detailed in Table S1 and by race and ethnicity in Table S2.

Table S1: Survey Sample and Response Rates by Subgroup

	Parents/ Caretaker Adults (including Transitioners)	Childless Adults	TMA/ Extensions	Current RRP	Total
Total Sample N	997	600	600	400	2,597
Non-Eligible Cases	31 across 3 groups			7	38
Respondents N	591	278	317	119	1,305
Response rate	66%	55%	56%	35%	57%
Mail	443	210	246	73	972
Phone	148	68	71	46	333

Table S2: Race and Ethnicity of Survey Respondents

	Parents/ Caretakers	Childless Adults	TMA	RRP
Hispanic	5.20%	3.32%	5.54%	8.40%
White, non-Hispanic	79.20%	73.41%	74.77%	51.26%
Black, non-Hispanic	7.80%	14.13%	7.38%	28.57%
Asian, American Indian, and other non-Hispanic	3.20%	4.99%	5.23%	5.88%
Multiple races, non-Hispanic	3.00%	2.49%	4.62%	3.36%
No race reported	1.60%	1.66%	2.46%	2.52%

Table S3 provides a comparison of the survey respondents relative to all adults enrolled in BadgerCare as of April 2015 according to race and ethnicity. Our team is in the process of developing survey weights which will enable us to account for differences in sampling probabilities and for differential non-response across subgroups of interest (e.g., accounting for the fact that some individuals may be under-represented relative to their size in the underlying population). These weights are being developed using our original sampling frame and sampled respondent lists for 2014 and 2016. Weighting should increase the generalizability of our estimates.

This Interim evaluation report includes, in Attachment F, an initial descriptive view of some of the data elements. These data as presented reflect raw, unweighted responses. A forthcoming full scientific report on the survey results will elaborate on these and other data. The information displayed here in Attachment F is not inferential and not intended for conclusion.

Table S3: Survey Respondents' Race and Ethnicity Compared to Enrolled BadgerCare Members, April 2015			
	White, non-Hispanic	Black non-Hispanic	Hispanic
Parents/Caretakers			
BC Members, April 2015	61.4%	19.1%	9.4%
Survey Respondents	79.2%	7.8%	5.2%
Childless Adults (CLA)			
BC Members, April 2015	60.3%	24.3%	6.2%
Survey Respondents	73.4%	14.1%	3.3%
Transitional Medicaid (TMA)			
BC Members, April 2015	64.3%	15.6%	9.6%
Survey Respondents	74.8%	7.4%	5.5%

C. Progression of Evaluation

The project work proceeds according to the work plan submitted with the original contract Scope of Work and agreement conditional on the availability of the requisite data. As needed, the team re-orders the sequence of tasks to align with available data. For example, the evaluation team pursued the enrollment-related analytic evaluation questions in Year 1 rather than later years as originally proposed because these data were available. By contrast, significant delays occurred in obtaining access to Medicaid claims and encounter data, preventing completion of some tasks originally scheduled for Year 1.

Table III.1 restates the original evaluation questions and briefly notes the progress-to-date for each question. The work plan, in Attachment E, provides further detail about the data source, timeline, and next steps. The remainder of this section of the Interim Evaluation Report is organized according to the programmatic changes authorized by the 1115 Waiver: For Transitional Medicaid (TMA) population, the premium and RRP policy changes, and for Childless Adults (CLA), the change in benefits from the Core plan to Standard plan coverage. The report presents preliminary findings for the evaluation questions addressed during this first year of the project: For the TMA population, questions 8, 10-12 and, for Childless Adults, Question 17.

Table III.1 Evaluation Questions: Progress-to-Date	
Evaluation Question	Progress to Date
TMA: Effect of Premiums on Utilization, Cost and outcomes	
<p>1: Will the premium requirement reduce the incidence of unnecessary services?</p> <p>2: Will the premium requirement lead to improved health outcomes?</p> <p>3: Will the premium requirement slow the growth in healthcare spending?</p> <p>4: Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?</p> <p>5: Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?</p>	<p>Protocol underway to obtain claims/encounter data; Cohorts developed</p> <p>Claims/encounter data access achieved in late March, 2017</p>
TMA: Association of enrollment status to utilization and costs	
<p>6: Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?</p> <p>7: Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for beneficiaries that have disenrolled and then re-enrolled?</p>	<p>Protocol underway to obtain claims/encounter data; Cohorts developed</p> <p>Claims/encounter data access achieved in late March, 2017</p> <p>Year 01 Survey conducted.</p>
TMA: Enrollment analysis by payment of premiums	
<p>8: What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?</p>	<p>Datasets cleaned & constructed; Cohorts developed; Outcome measures selected & constructed; Initial selection of regression models; Preliminary analysis & findings</p>
<p>9: How is access to care affected by the application of new, or increased, premium amounts?</p>	<p>Protocol underway to obtain claims/encounter data; Year 1 survey conducted; Cohorts developed</p>

TMA: Effect of RRP on Premium Payment and Enrollment	
<p>10: What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?</p> <p>11: Does the RRP impact vary by income level?</p> <p>12: If there is an impact from the RRP, explore the break-out by income level.</p>	<p>Datasets cleaned & constructed; Cohorts developed; Outcome measures selected & constructed; Initial selection of regression models; Preliminary analysis; Preliminary findings</p>
CLA Adults: Effects of the Benefit Plan for Demonstration Expansion Group	
<p>13. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries result in improved health outcomes?</p>	<p>Protocol developed to obtain and access claims/encounter data; Cohort developed; Analytic variables defined</p> <p>Claims/encounter data access achieved in late March, 2017</p>
<p>14. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries achieve a reduction in the incidence of unnecessary services?</p>	
<p>15. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Outcomes/Cost) of Medicaid services?</p>	
<p>16. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Utilization/Cost) of Medicaid services?</p>	
<p>17. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?</p>	<p>Dataset cleaned & constructed; Cohorts developed; Outcome measures selected & constructed; Initial selection of regression models; Preliminary analysis; Preliminary findings;</p> <p>Year 01 Survey conducted.</p>

IV. INTERIM EVALUATION FINDINGS

The following pages provide preliminary findings to questions 8, 10-12, and 17. These findings are intended to provide an early view of the progress of the work, and are not considered definitive.

A. TRANSITIONAL MEDICAID POPULATION

This section describes TMA enrollment over time, including the probability of transitioning to TMA, by TMA status, income, premium payment status, and other demographic characteristics available through administrative eligibility data. We use an interrupted time series design and a regression discontinuity design in order to perform a causal analysis of the effect of premiums on TMA enrollment.

Question 8: Payment of Premiums and The Effect of Premiums on Enrollment

Descriptive analysis of TMA enrollment and premium payment

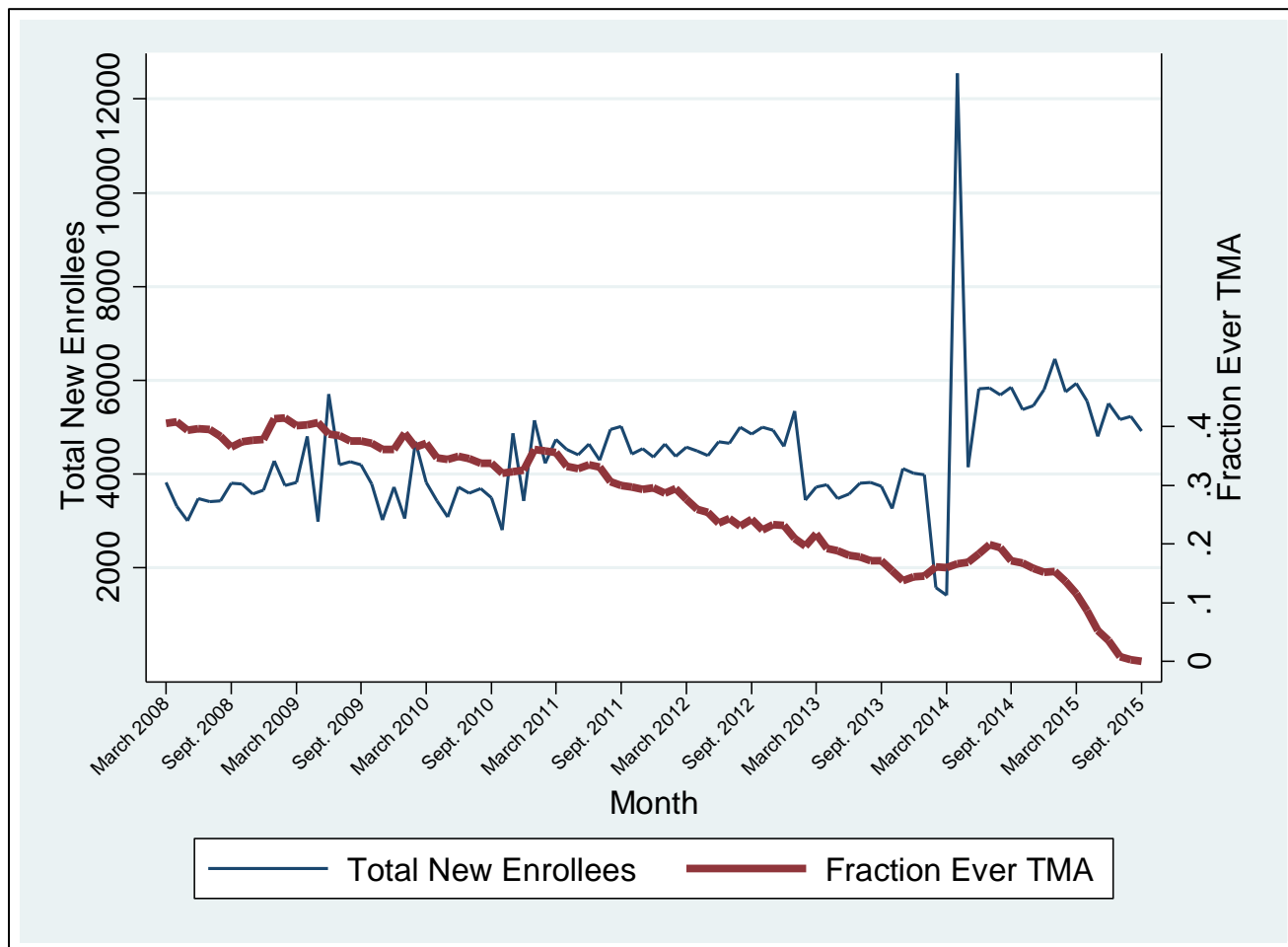
The study population is defined as the universe of enrollees who are potentially eligible to transition to TMA. We define this population as anyone with a new enrollment spell from March 2008 forward who begins their enrollment spell with a parental eligibility category and income <100% FPL. A new enrollment spell is defined when a BadgerCare enrollee who was not enrolled in the previous month is observed to be enrolled in the following month. Enrollees are observed from March 2008 to September 2015, the end of our available data.

The analysis considers three different premium policies for TMA beneficiaries:

- Policy 1 (3/1/2008-6/30/2012), no premiums
- Policy 2 (7/1/2012-3/31/2014), premiums for those 133% FPL and higher, the 2012 DHS waiver
- Policy 3 (4/1/2014-9/30/2015), premiums for all >100% FPL, with 100-133% FPL premiums beginning after 6 months, the 2014 DHS waiver

Figure Q.8.1 shows the change over time in the total number of new BadgerCare enrollees who are potentially eligible to transition to TMA, and the fraction who ever transitioned to TMA changed. The total number of new enrollees is relatively stable until early 2013, when we see a spike in the number of new enrollees who are potentially TMA-eligible in April 2014. These enrollees are exclusively adults with dependent children with incomes less than the poverty level, since we retain a consistent definition of potential TMA enrollees over time. There is no change in overall eligibility for this group, so the reason for this increase is unclear. It could be due to the MAGI changes or income redefinitions for exiting higher-income adults. Because the study time period is right-censored, we expect to see a decrease over time in the fraction of BadgerCare enrollees who transition to TMA. We see that this is generally true except for an anomalous increase in the fraction that transition to TMA coinciding with the spike in new enrollees in early 2014.

Figure Q.8.1. Number and Fraction of TMA Enrollees Over Time



Notes: For each month from March 2008 to September 2015, the figure shows the number of total new enrollees in BadgerCare who were potentially eligible to enroll in TMA. The figure also shows the fraction of these new enrollees who did enroll in TMA during the study period.

Table Q.8.1 describes the average TMA enrollee at the time of their initial enrollment in BadgerCare under the three different premium policies we observe for this population, Policy 1 (no premiums), Policy 2 (premiums for those 133% FPL and higher, the DHS 2012 waiver), and Policy 3 (premiums for all >100% FPL, with 100-133% FPL premiums beginning after 6 months, under the DHS 2014 waiver). This table is useful for considering whether enrollees may have differentially chosen to enroll in BadgerCare because of the different premium policies that applied to TMA. Overall characteristics of the populations at the time of initial enrollment are extremely similar, and it appears unlikely that premium policy under TMA was an important determinant of initial BadgerCare enrollment behavior.

Table Q.8.2 describes the average TMA enrollee at the time of their transition to TMA under the three different premium policies. This table is useful for considering whether there have been changes in the types of enrollees who take up TMA under the different policies. Note that because enrollment spells may be right-censored, we expect the average length of the enrollment spell to be much longer for

those who initially enrolled under earlier premium policy periods. Table Q.8.2 suggests that while there are some small differences in the types of enrollees who transition to TMA under these policies there are no major differences.

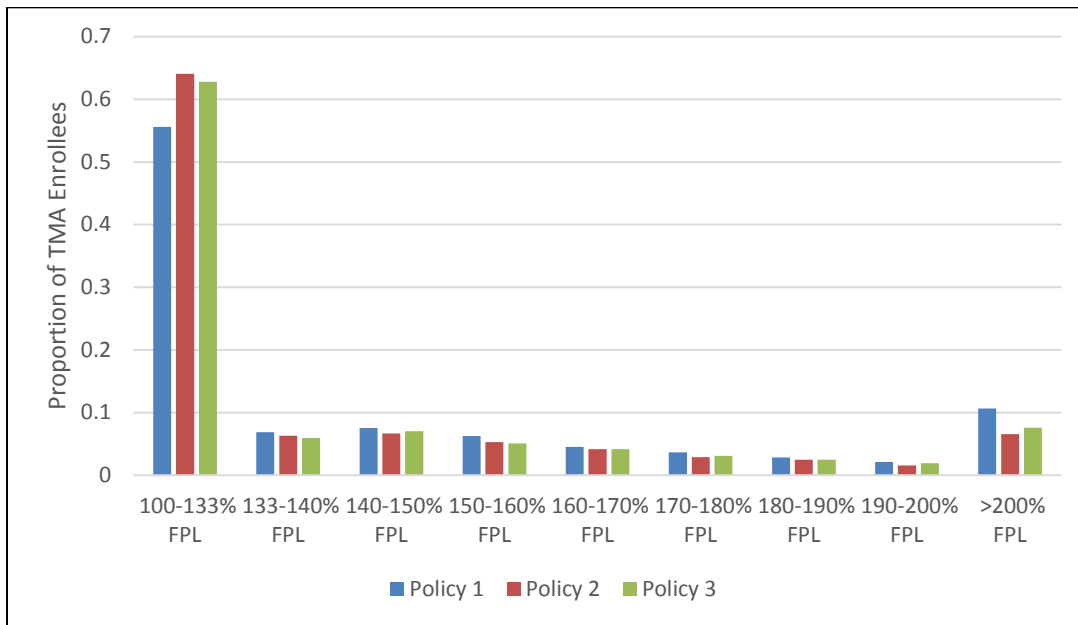
Table Q.8.1. Average TMA Enrollee Characteristics at Transition by Premium Policy at Enrollment						
	Policy 1		Policy 2		Policy 3	
	Mean	SD	Mean	SD	Mean	SD
Household Size	3.52	1.32	3.50	1.34	3.30	1.46
Percent FPL at Enrollment	46.50	36.58	45.55	35.95	46.16	38.24
% Female	62%	48%	64%	48%	64%	48%
% Citizen	95%	21%	95%	22%	95%	21%
% Tribal Member	2%	14%	2%	14%	2%	14%
% Black	14%	35%	16%	36%	16%	37%
% White	65%	48%	63%	48%	63%	48%
% Hispanic	10%	29%	11%	31%	11%	31%
% Other Race/Ethnicity	8%	27%	9%	28%	9%	28%
% Resides in Metro Area	35%	48%	38%	49%	39%	49%
Education Level	0.88	0.63	0.89	0.61	0.95	0.55
Age	31.03	8.63	31.41	8.43	33.74	8.40
Length of Enrollment Spell	33.81	21.20	18.69	10.53	8.71	5.00
Months to TMA Enrollment	14.31	13.17	11.04	7.98	6.48	3.40
Number of Individuals	84,638		23,495		26,374	
<i>Notes: The table summarizes the characteristics of TMA enrollees at the time of their initial enrollment in BadgerCare during each policy period: Policy 1 (3/1/2008-6/30/2012), no premiums; Policy 2 (7/1/2012-3/31/2014), premiums for those 133% FPL and higher; and Policy 3 (4/1/2014-9/30/2015), premiums for all >100% FPL, with 100-133% FPL premiums beginning after 6 months. The response values for Education Level are 0 (less than high school), 1 (high school), and 2 (more than high school).</i>						

Figure Q.8.2 shows the distribution of income for TMA enrollees at the time of their transition under Policy 1, Policy 2, and Policy 3. Overall, we see an increase in the fraction of TMA enrollees in the lowest income categories under Policies 2 and 3 relative to the first policy period. Additionally, there is a decrease in the fraction of TMA enrollees with higher income particularly in the highest-income category, those with incomes of 200% FPL and higher. The changes in the income distribution of TMA enrollees are larger for Policy 2 relative to Policy 1 than for Policy 3 relative to Policy 1.

Table Q.8.2. Average TMA Enrollee Characteristics at Transition by Premium Policy						
	Policy 1		Policy 2		Policy 3	
	Mean	SD	Mean	SD	Mean	SD
Household Size	3.55	1.30	3.50	1.34	3.37	1.44
Percent FPL at Enrollment	49.43	35.99	45.37	36.42	45.01	38.18
% Female	60%	49%	67%	47%	65%	48%
% Citizen	95%	21%	95%	22%	95%	23%
% Tribal Member	2%	12%	2%	16%	2%	14%
% Black	12%	32%	15%	36%	17%	38%
% White	68%	47%	63%	48%	61%	49%
% Hispanic	9%	29%	10%	30%	11%	31%
% Other Race/Ethnicity	7%	26%	9%	29%	8%	28%
% Resides in Metropolitan Area	35%	48%	35%	48%	37%	48%
Education Level	0.90	0.63	0.89	0.62	0.92	0.58
Age	31.69	8.75	30.80	8.50	32.37	8.66
Length of Enrollment Spell	35.76	20.98	30.42	17.68	21.07	16.82
Number of Individuals	55,760		23,152		23,193	
<i>Notes: The table shows the characteristics of TMA enrollees in the first month of TMA enrollment during each policy period: Policy 1 (3/1/2008-6/30/2012), no premiums; Policy 2 (7/1/2012-3/31/2014), premiums for those 133% FPL and higher; and Policy 3 (4/1/2014-9/30/2015), premiums for all >100% FPL, with 100-133% FPL premiums beginning after 6 months. The response values for Education Level are 0 (less than high school), 1 (high school), or 2 (more than high school).</i>						

We next predict the probability that an individual transitions to TMA as a function of demographic characteristics at initial enrollment in BadgerCare. We estimate probit models and report average marginal effects in Table Q.8.3. Each coefficient in the table represents the change in the predicted probability of transitioning to TMA for a one-unit change in the characteristic, with all other characteristics held at the average. For each policy period, we first estimate the probability of ever transitioning. We then limit the sample to the individuals who transitioned. Among that population, we estimate the probability of transitioning with an income higher than 133%FPL. The latter analysis is useful to compare the predictors of a TMA transition according to enrollee income status at the time of transition.

Figure Q.8.2. Income Distribution at First TMA Month by Premium Policy



Notes: The figure shows the proportion of TMA enrollees whose income was in the described categories in their first month of TMA enrollment during each policy regime: Policy 1 (3/1/2008-6/30/2012), no premiums; Policy 2 (7/1/2012-3/31/2014), premiums for those 133% FPL and higher; and Policy 3 (4/1/2014-9/30/2015), premiums for all >100% FPL, with 100-133% FPL premiums beginning after 6 months.

The results are qualitatively similar across the three premium regimes, with similar sign and statistical significance (Table Q.8.3, columns a-c). The strongest predictor of ever transitioning to TMA is generally the beneficiary’s education level, which is associated with increases of 15 to 40 percentage points in the probability of transition. For example, the coefficient on “Education Level 1” for Policy 1 should be interpreted as follows: relative to those with less than a high school education, the average member with a high school education is 23 percentage points more likely to enroll in TMA conditional on all other factors in the model.

Among individuals that ever transitioned to TMA, those with a higher level of income when they transition to TMA (i.e., > 133% FPL) are different from lower-income transitioners in predictable ways (Table Q8.3, columns d-f). For example, age, income at initial BadgerCare enrollment, and household size are strongly associated with transitioning to TMA with income above 133% FPL relative to transitioning with income at or below 133% FPL. The probability of a transition to TMA with income > 133% FPL increases with education level; however, the magnitude of association is generally smaller than the relationship between education level and the likelihood of ever transitioning.

Table Q.8.3. Predictors of Transitioning to TMA and Income at Transition by Premium Policy						
	Ever Transitioned			Transitioned with Income > 133% FPL		
	Policy 1 (a)	Policy 2 (b)	Policy 3 (c)	Policy 1 (d)	Policy 2 (e)	Policy 3 (f)
Household Size	0.00148 (0.00258)	-0.0108 (0.00734)	0.000940 (0.00369)	-0.0600*** (0.00460)	- (0.0154)	-0.0621*** (0.00841)
Percent FPL at Enrollment	0.00551*** (0.000120)	0.00398*** (0.000736)	0.00381*** (0.000141)	0.000822*** (0.000162)	0.00111** (0.000560)	-0.00201*** (0.000307)
Female	0.0284*** (0.00758)	0.193*** (0.0238)	-0.00791 (0.0110)	-0.103*** (0.0126)	-0.0912* (0.0484)	-0.200*** (0.0250)
Citizen	-0.290*** (0.0189)	-0.486*** (0.0556)	-0.199*** (0.0262)	-0.000854 (0.0295)	-0.00217 (0.0943)	0.121** (0.0560)
Tribal Member	-0.290*** (0.0257)	-0.169** (0.0694)	-0.108*** (0.0397)	0.00704 (0.0449)	-0.147 (0.139)	-1.021*** (0.117)
Black	-0.263*** (0.00909)	-0.118*** (0.0267)	-0.0301** (0.0146)	-0.179*** (0.0163)	-0.0224 (0.0517)	-0.0404 (0.0332)
Hispanic	-0.0633*** (0.0122)	-0.0485 (0.0346)	0.0548*** (0.0176)	-0.0437** (0.0203)	0.0689 (0.0669)	0.0149 (0.0387)
Other Race/Ethnicity	0.00208 (0.0154)	0.0974** (0.0411)	0.00723 (0.0218)	-0.0675*** (0.0248)	0.0820 (0.0750)	-0.0236 (0.0490)
Resides in a Metro Area	-0.0229*** (0.00757)	-0.0287 (0.0217)	-0.00126 (0.0109)	-0.0208* (0.0124)	-0.0351 (0.0424)	-0.00208 (0.0241)
Education Level 1	0.232*** (0.00802)	0.264*** (0.0234)	0.147*** (0.0139)	0.0590*** (0.0140)	0.0479 (0.0475)	0.0432 (0.0323)
Education Level 2	0.372*** (0.0118)	0.334*** (0.0355)	0.230*** (0.0198)	0.186*** (0.0191)	0.213*** (0.0662)	0.0860* (0.0440)
Age	-0.0105*** (0.000420)	-0.0124*** (0.00135)	- (0.000608)	0.0142*** (0.000708)	0.0124*** (0.00264)	0.0152*** (0.00139)
Number of Observations	151,256	19,953	96,774	50,767	4,557	12,657
<p><i>Notes: Table shows the average marginal effects from probit models of the probability a member with the potential to enroll in TMA if they experience a change in earnings that qualifies them does enroll in TMA as a function of demographic characteristics. Independent variables are listed in the far left column; dependent variables are the column headings. Models are estimated for three different time periods reflecting the different premium policies. Policy 1 (3/1/2008-6/30/2012), no premiums; Policy 2 (7/1/2012-3/31/2014), premiums for those 133% FPL and higher; Policy 3 (4/1/2014-9/30/2015), premiums for all >100% FPL, with 100-133% FPL premiums beginning after 6 months. Education level is coded as 0 (less than high school), 1 (high school), or 2 (more than high school). Robust standard errors in parentheses. ***p<0.01; **p<0.05; *p<0.10</i></p>						

We next characterize premium payment within the TMA population, the subset of BadgerCare enrollees that ever transitioned to TMA during the study period. For these subjects, the analysis includes only the months in which they were enrolled in TMA; income is measured in those months.

Table Q.8.4. Number and Fraction of TMA Who Paid Premiums by Premium Policy and Income				
	First Eligible Month		All Eligible Months	
	Policy 2	Policy 3	Policy 2	Policy 3
Income				
100-133% FPL	34	154	298	7,083
	6%	20%	12%	71%
133-140% FPL	859	760	7,900	5,302
	61%	57%	81%	81%
140-150% FPL	884	827	9,275	6,205
	60%	52%	82%	80%
150-160% FPL	670	583	7,583	4,628
	57%	51%	83%	81%
160-170% FPL	557	467	5,955	3,656
	60%	50%	82%	81%
170-180% FPL	386	347	4,144	2,631
	60%	50%	81%	80%
180-190% FPL	297	262	3,062	1,931
	54%	47%	80%	78%
190-200% FPL	190	196	2,270	1,418
	54%	46%	79%	77%
>200% FPL	651	645	7,102	4,481
	44%	38%	73%	73%
Total Number	4,528	4,241	47,589	37,335
TMA Missing Payment Status	14,402	13,638	132,415	84,899
Fraction of Missing 100-133% FPL	98%	99%	98%	98%
<i>Notes: Table shows the number and fraction of TMA enrollees who paid a premium by month of TMA eligibility and by %FPL during the eligible month. The "first eligible month" refers to the member's first month of TMA enrollment. "All Eligible Months" reflects all months of TMA enrollment. The table also reports the number and fraction of TMA enrollees for whom premium payment status was missing in the administrative data. Policy 2 (7/1/2012-3/31/2014) implemented premiums for those 133% FPL and higher; Policy 3 (4/1/2014-9/30/2015), implemented premiums for all >100% FPL, with 100-133% FPL premiums beginning after 6 months.</i>				

Table Q.8.4 shows the number and fraction of TMA enrollees who paid premiums under Policies 2 and 3 according to DHS administrative data. The results are stratified by income level. We report the number and fraction of TMA enrollees with evidence of premium payment in the first month of TMA enrollment and for all months of TMA enrollment. The most notable finding in this table is the higher average

probability of payment in all TMA enrollment months relative to the first month of TMA enrollment. This finding is explained by enrollee disenrollment. Specifically, enrollees who pay their premium in the first month are likely to continue paying and remain enrolled, while those who do not pay in the first month disenroll. Thus, the disenrolled individuals do not contribute to the denominator in subsequent months. The exception to this pattern is the lowest income group, who do not have premiums due in the first month of their TMA enrollment. The table also provides the fraction of TMA enrollees for whom premium payment status is missing in the administrative data. These enrollees are almost always those with incomes of 133% FPL or below, so they likely do not actually have premiums due.

Table Q.8.5 presents the average premium amount paid and the average premium amount unpaid under Policies 2 and 3. Consistent with the structure of analyses reported in Table Q8.4, we report these amounts for the first month of TMA enrollment and for all TMA enrollment months stratified by income at the time of TMA transition. The sample for this analysis includes TMA enrollees who had a record of a premium amount required under policy two or three.

Table Q.8.5. Average Paid and Unpaid Premium Amounts for TMA Enrollees by Premium Policy and Income								
	First Eligible Month				All Eligible Months			
	Policy 2		Policy 3		Policy 2		Policy 3	
Income in FPL	Unpaid	Paid	Unpaid	Paid	Unpaid	Paid	Unpaid	Paid
100-133%	\$ 5.47	\$ 15.09	\$ 17.46	\$ 49.58	\$ 9.92	\$ 20.30	\$ 29.80	\$ 44.05
133-140%	\$ 62.97	\$ 70.90	\$ 70.42	\$ 74.62	\$ 61.76	\$ 72.89	\$ 70.28	\$ 76.36
140-150%	\$ 76.70	\$ 90.68	\$ 85.18	\$ 89.70	\$ 75.30	\$ 91.70	\$ 86.09	\$ 92.34
150-160%	\$ 95.05	\$108.91	\$101.49	\$112.98	\$ 93.13	\$112.52	\$103.44	\$113.05
160-170%	\$111.23	\$135.72	\$119.98	\$131.64	\$110.01	\$136.60	\$123.61	\$133.12
170-180%	\$130.14	\$152.90	\$141.86	\$150.23	\$130.23	\$158.12	\$140.55	\$154.91
180-190%	\$153.12	\$174.41	\$165.46	\$175.50	\$153.54	\$180.55	\$166.57	\$174.07
190-200%	\$178.39	\$194.87	\$183.50	\$199.01	\$181.92	\$198.99	\$187.17	\$203.67
>200%	\$371.29	\$335.40	\$346.23	\$323.30	\$365.61	\$346.79	\$333.85	\$325.13

Notes: Table shows the average amount of premium recorded as paid or not paid among TMA enrollees during the different premium policies by income level and eligible month. "First eligible month" refers to the member's first month of enrollment in TMA; "All Eligible Months" reflects all months of TMA enrollment. Policy 2 (7/1/2012-3/31/2014), premiums for those 133% FPL and higher; Policy 3 (4/1/2014-9/30/2015), premiums for all >100% FPL, with 100-133% FPL premiums beginning after 6 months.

Both paid and unpaid premiums generally appear to be very similar under Policy 2 and Policy 3 for the higher income groups and are increasing in income in the way we would expect. However, for the lowest income group, we see a dramatic increase in both paid and unpaid premiums under Policy 3 relative to Policy 2, reflecting the introduction of premiums for those in this income range. It is also notable that average unpaid premiums are nearly always lower than paid premiums within an income category. For example, under Policy 3, the average unpaid premium amount in the first eligible month was \$119.98 for those 160-170% FPL, while the average paid premium amount was \$131.64. Because the amount of the premium is always tied to income, this finding indicates that within an income category, it is the enrollees with relatively higher-incomes that are more likely to pay their premiums. The subset of TMA enrollees with income above 200% FPL at the time of transition is an exception to this pattern.

Causal analysis of the effect of premiums on TMA enrollment

We use an interrupted time series study design to compare the rate of transitions from BadgerCare adult to TMA status in order to understand whether premium requirements affect the incentive to enroll in, or take up, TMA. Because there is no simultaneous control group of potential TMA enrollees who did not face premium requirements to study, we use the arbitrary timing of introduction of the new premium requirements as a natural experiment. We compare TMA enrollment just before the introduction of the premium requirements to TMA enrollment just after introduction of the premium requirements. Any estimated difference at the date of introduction is interpreted as the causal impact of the premium requirements.

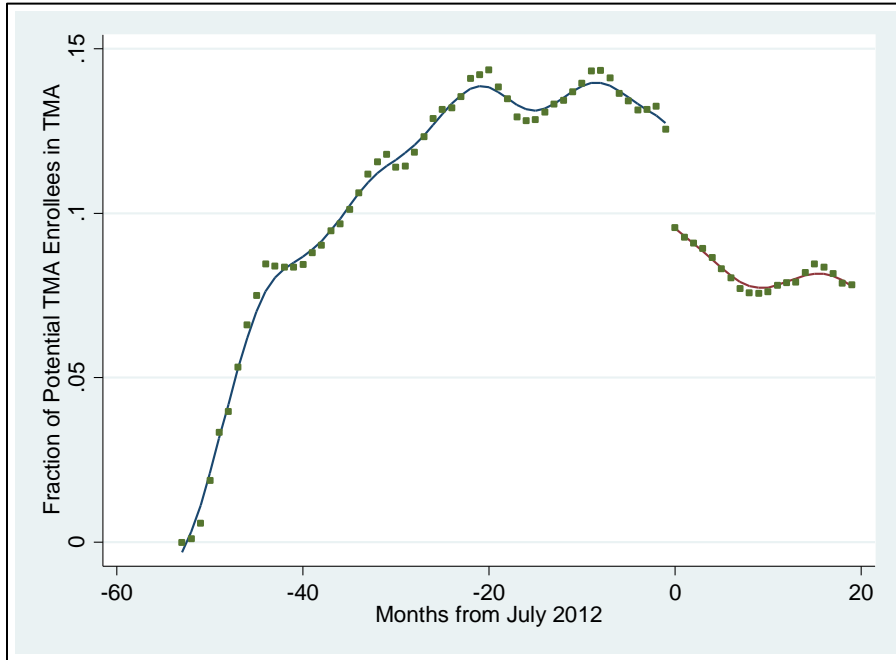
The interrupted time series design allows us to identify the causal effect of premiums on transition rates, under the assumption that enrollment behavior in the TMA population would have evolved similarly over time if not for the premium requirements. We model the time series of enrollment using an interrupted time series design with a local linear regression analysis (i.e., a regression that allows the functional form to fit the natural shape of the data) and studied the change at the implementation of the 2012 and 2014 waiver implementations. We interpret these results as causal implications of the two waivers.

However, we note that the waivers changed more than just premiums. For potential and actual TMA enrollees in particular, there were changes to restrictive re-enrollment policy. As such, the results can only be interpreted as solely attributable to the premium requirements if we believe that other waiver-related changes would not independently affect enrollment in this population. We analyze two measures of TMA enrollment for the interrupted time series analysis; both measures are constructed at the level of the month such that each dot in Figures Q.8.3 and Q.8.4 represents the average for one calendar month. The first outcome measure is a proportion in which the numerator is the number of new TMA spells, and the denominator is the number of active spells for all enrollees that are potentially eligible to transition to TMA enrollment. The second outcome measure is the total number of new TMA spells. .

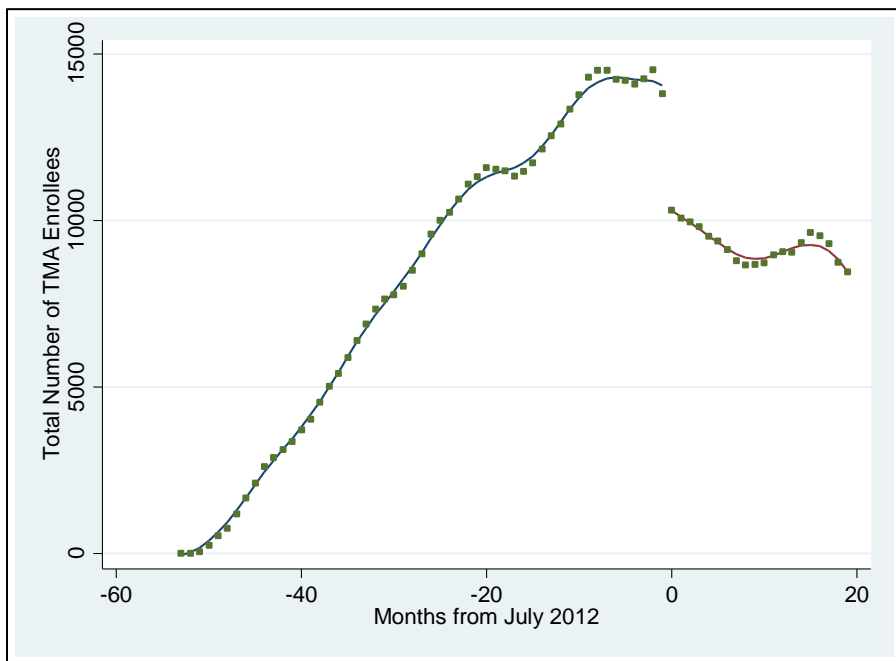
Figure Q.8.3 presents average TMA enrollment by month during the first and second premium policy regimes. There was no premium requirement for TMA enrollees before July 2012. At that time, DHS introduced a premium requirement for TMA enrollees with incomes at or above 133%FPL. Both overall enrollment in TMA and the number of new TMA spells decreased after the introduction of the premium requirement relative to the no premium policy regime. The decreases are driven by those with incomes higher than 133% FPL (results not shown). As shown in Table 8.6, the magnitude of the change measured by the regression analysis is a 3-percentage point decline in enrollment as a fraction of active spells with a decline in the number of new TMA spells of more than 3,500. Both estimates are statistically significant at the 1% level.

Figure Q.8.4 similarly illustrates TMA enrollment during the 2nd and 3rd policy regime. Months -20 through -1 represent the 2nd policy regime in which the DHS required premiums of TMA enrollees with income at or above 133% FPL. Months 0 through 20 represent the premium policy under the DHS 2014 waiver, the introduction of premiums after 6 months of enrollment for those with incomes between 100-133% FPL in addition to required premiums for those at or above 133% FPL. The 2014 waiver caused a decrease in TMA enrollment in both outcome measures, although much smaller than that caused by the 2012 waiver. The decreases are driven by the population with incomes between 100-133% FPL and is consistent with the introduction of premiums for this group after 6 months resulting in a decrease in program take-up. The magnitude of the change measured by the regression analysis is a less than 1 percentage point decline in TMA enrollment as a fraction of active spells with a decline in the number of new TMA spells of less than 700. (See Table 8.6). Both estimates are statistically significant at the 1% level. We note that the change in overall Wisconsin Medicaid eligibility policies in April 2014 may have changed the composition of the pool of potential TMA enrollees.

Figure Q.8.3. Change in TMA Enrollment Due to Premium Implementation: 2012 Waiver
Panel A. New TMA spells as a proportion of all active spells per month



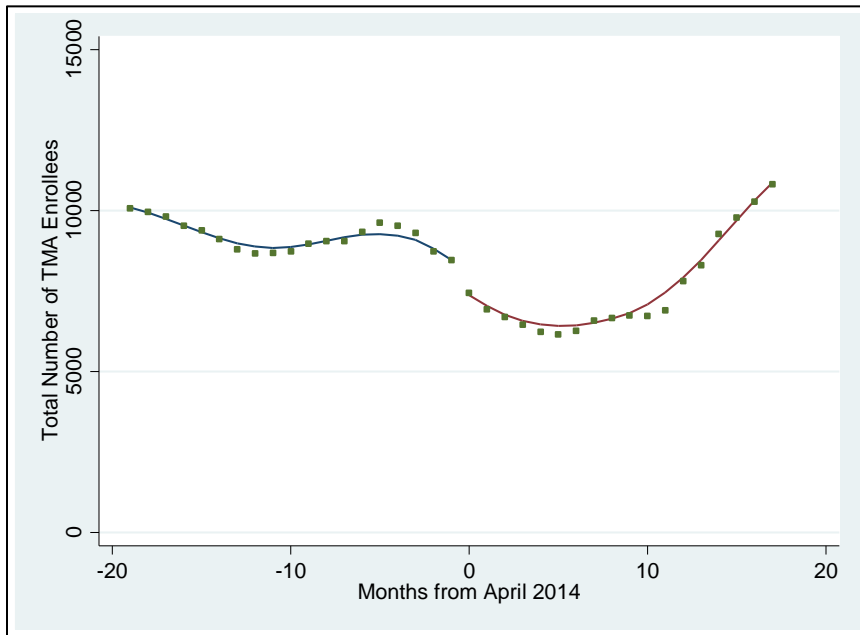
Panel B. Total number of new TMA spells per month



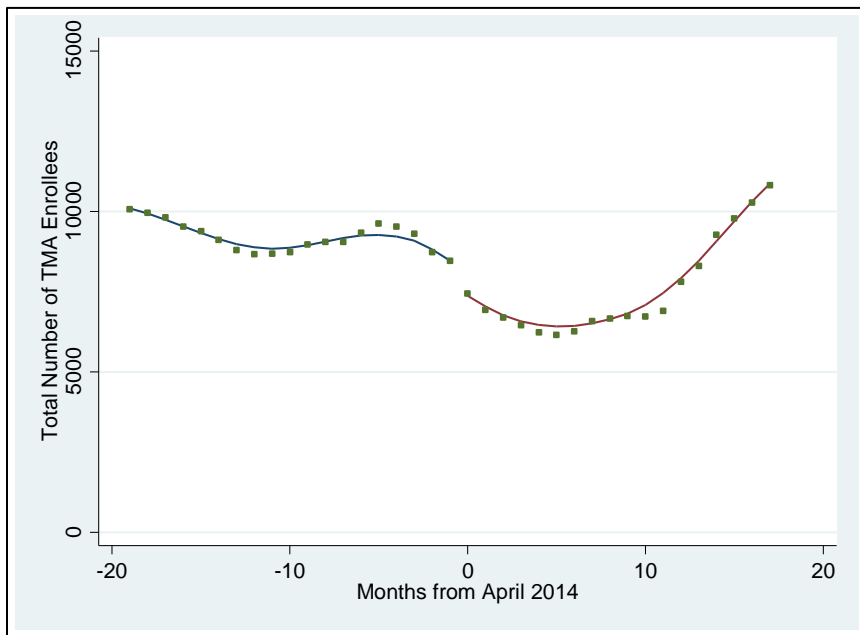
Notes: Figures show TMA take-up by month from March 2008 to March 2014 (July 2012 = 0). Panel A shows the fraction of those potentially eligible to enroll in TMA (defined in text) who were enrolled in TMA in each month. Panel B shows the total number of TMA enrollees in the analysis sample. Each dot on the graph represents the relevant quantity for a particular month; estimated local linear regression lines are superimposed on the graphs.

Figure Q.8.4. Change in TMA Enrollment Due to Premium Implementation: 2014 Waiver

Panel A. New TMA spells as a proportion of all active spells per month



Panel B. Total number of new TMA spells per month



Notes: Figures show TMA take-up by month from July 2012 to September 2015 (April 2014 = 0). Panel A shows the fraction of those potentially eligible to enroll in TMA (defined in text) who were enrolled in TMA in each month. Panel B shows the total number of TMA enrollees in the analysis sample. Each dot on the graph represents the relevant quantity for a particular month; estimated local linear regression lines are superimposed on the graphs.

We next use the interrupted time series design to study the effect of premium policy on the probability of exit from TMA. The outcome measure is the number of TMA exits per month defined as the number of active TMA spells that end in the month. We modeled the time series of exits using an interrupted time series design with a local linear regression analysis and studied the change in exits at the waiver implementation. Figure Q.8.5 depicts the number of TMA exits by month. In Panel A, we compare monthly TMA exits before and after implementation of the DHS July 2012 waiver premium policy. In Panel B, we compare monthly TMA exits under the DHS 2012 waiver premium policy to TMA exits under the DHS 2014 waiver premium policy. Each dot on the graph represents the number of spells ending in one month.

Under each waiver, there is a temporary increase in the number of TMA exits in the month immediately after waiver implementation. This sharp increase is larger in magnitude for the 2012 waiver (an increase of more than 2,000 exits) and is smaller in magnitude and less noticeable for the 2014 waiver (an increase of approximately 400 exits). After this unsustainable spike in exits, we observe an increase in the overall level of TMA exits relative to the preceding premium policy period. For the regression analysis, we focus on the level change by excluding the month of implementation. The regression analysis does not statistically detect an overall increase in the level of exits resulting from either waiver beyond the one-time changes at the point of implementation. (See Table Q8.6).

We next use a regression discontinuity (RD) design within the TMA population in order to study the effect of premium amounts on enrollment spell length. The regression discontinuity design compares the enrollment behavior of TMA enrollees who have incomes just low enough to qualify them for a particular premium amount to those who have incomes just higher, qualifying them for a higher premium amount. The strength of this design is that it ensures populations are highly similar (as all study subjects have taken up TMA) rather than relying on a comparison to adults who did not take up TMA. We know from the descriptive analysis that individuals who do not enroll in TMA are different from those who enroll in TMA in observable ways; they may also be different in unobservable ways that are predictive of the enrollment outcome. We perform the RD analysis for each level of the required premium under each waiver. All regression results discussed in this section of the text are summarized in Table Q.8.6, which includes the coefficients and standard errors from the local linear regression analyses. Reported standard errors are heteroscedasticity-robust.

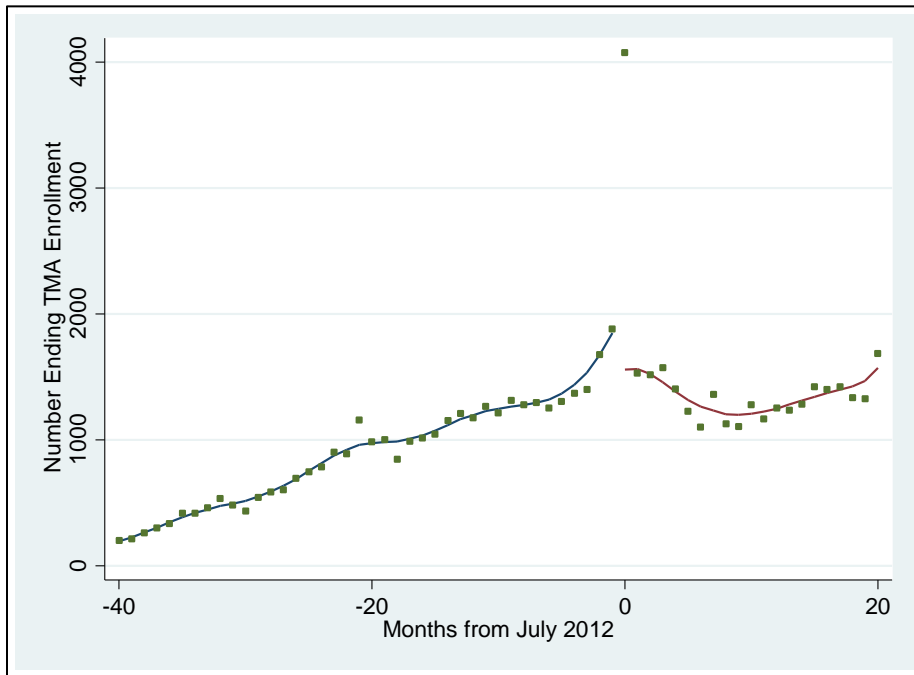
Figure Q.8.6 compares the average length of a TMA enrollment spell by income level for all enrollees with at least one month of TMA enrollment under the DHS 2012 and 2014 waivers. Each dot on the graph represents the average length of spell for a one-percentage FPL bin. For example, the dot at 100% represents all TMA enrollees with incomes above 100% and below 101% FPL. Spells with less than twelve months of exposure to each waiver are not included in this analysis. Panel A pools spells from the 2012 waiver period (July 2012 – March 2014), and Panel B pools spells from the 2014 waiver period (April 2014 – September 2015).

These graphs suggest that the 133% FPL threshold, shown with a vertical red line, is an important determinant of length of enrollment spell under both premium policies. The disjuncture in the length of spell on either side of the red vertical line provides visual evidence of this relationship. It is difficult to see any evidence in these graphs that the other premium thresholds are important determinants of length of enrollment spell. Regression evidence supports these conclusions, although the differences at the 133% threshold are not statistically different from zero in the 2012 waiver. The magnitude of the decrease in length of enrollment spell is -.6 months for the 2012 waiver and suggests a decline of 2.1 months for the 2014 waiver.

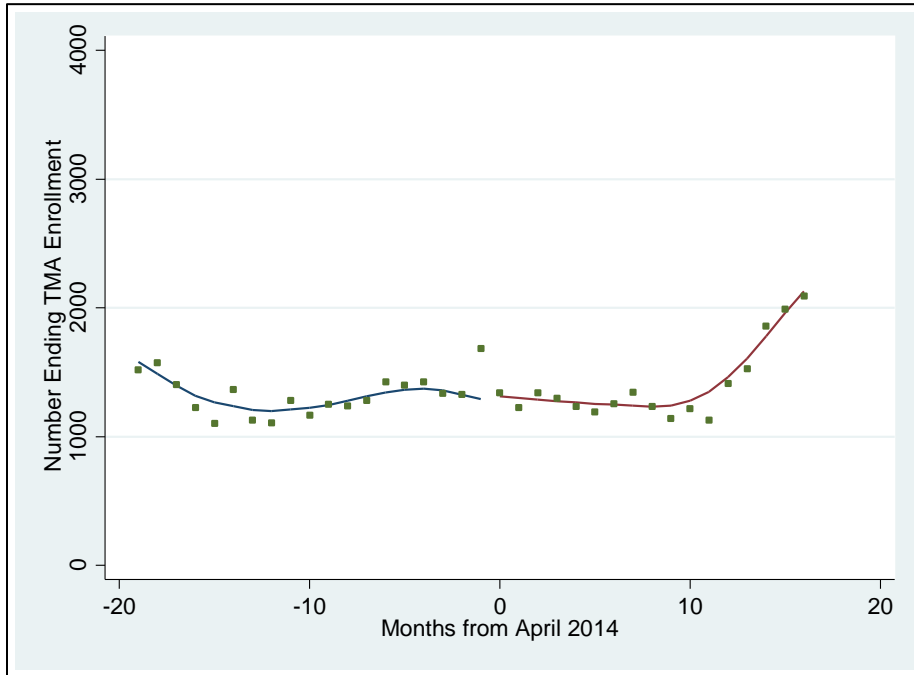
Differences in TMA enrollment spell length at the higher income thresholds where premiums changes are not typically statistically different from zero in our regression analyses beyond a couple of anomalies which are sensitive to the model specification and unlikely to be causal. Average length of enrollment decreased for both those with income between 100-133% FPL and those with income greater than 133% FPL for the 2014 waiver relative to the 2012 waiver. However, the difference between the income groups was larger for the 2014 waiver at the 133% FPL threshold. This finding suggests that the 2014 waiver increased the degree that the 133% margin mattered for length of enrollment spell, magnifying the difference between enrollees with income below and above 133% FPL. Because the 2014 waiver made the premium policies more similar for those above and below 133% FPL, this result is somewhat in contrast to what we might expect. It also appears sensitive to the specification of the regression and merits further exploration in future analyses.

Figure Q.8.5. Change in TMA Exits Due to Premium Implementation

Panel A. Change in Number of Exits at 2012 Waiver

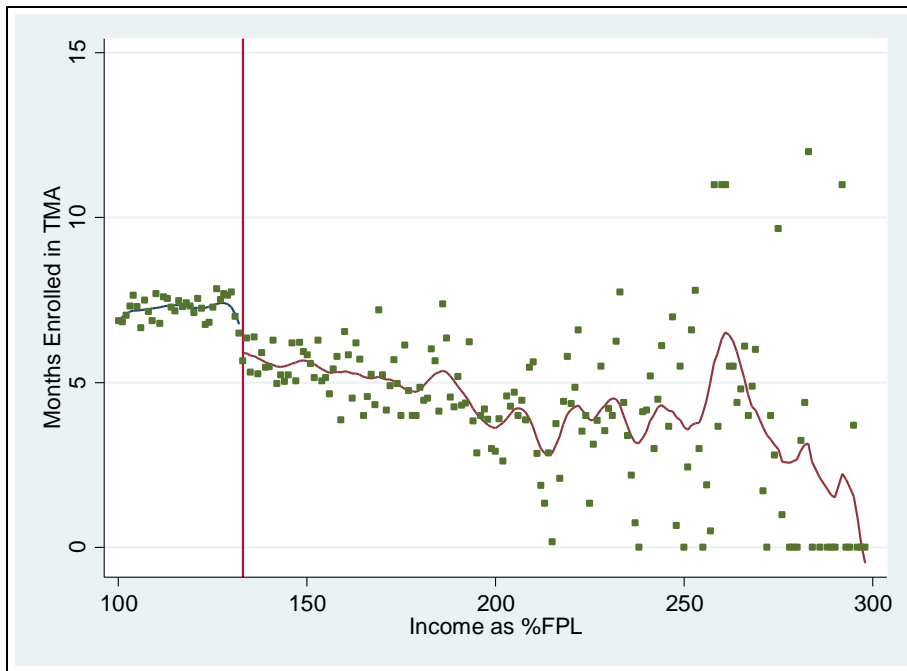


Panel B. Change in Number of Exits at 2014 Waiver

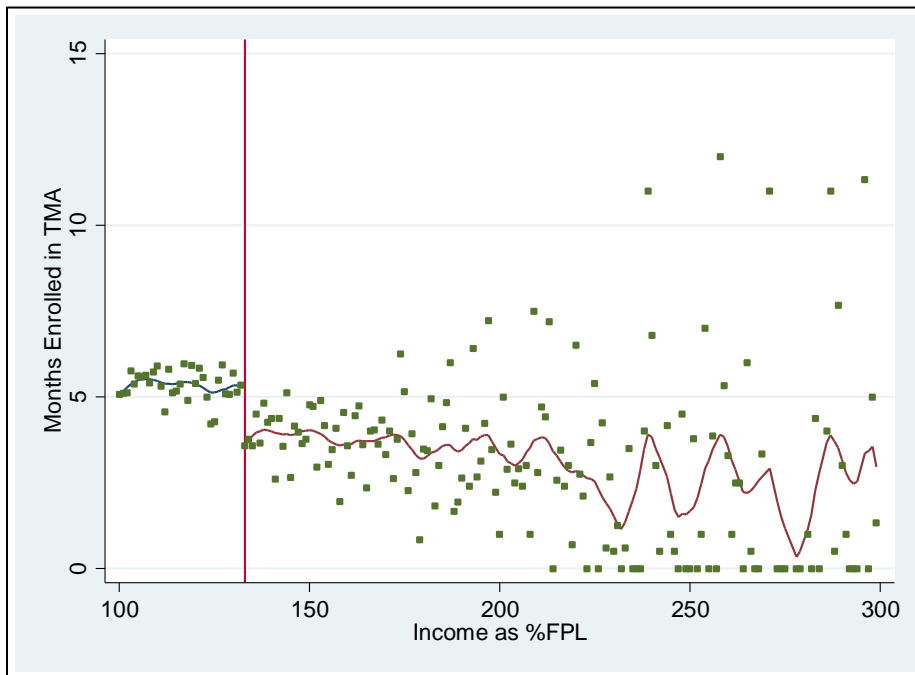


Notes: Figures show the fraction of active TMA enrollment spells which end for each month. Panel A describes spell ends March 2008 to March 2014 (July 2012 = 0) and Panel B shows spell ends July 2012 to September 2015 (April 2014 = 0). Each dot on the graph represents the relevant quantity for a particular month; estimated local linear regression lines are superimposed on the graphs.

Figure Q.8.6. Length of TMA Spell by Income
Panel A. Number of Months Enrolled, 2012 Waiver



Panel B. Number of Months Enrolled, 2014 Waiver



Notes: Figures show the length of TMA enrollment spells by income as a percent of the federal poverty line. Panel A shows enrollment spells beginning after July 2012 and ending before March 2014 (Policy 2) and Panel B shows spells beginning after April 2014 and ending by September 2015 (Policy 3). Each dot on the graph represents the relevant quantity for a particular month; estimated local linear regression lines are superimposed on the graphs.

Table Q.8.6. Summary of Results		
	2012 Waiver	2014 Waiver
TMA Take-up		
<i>As Fraction of Total</i>	-0.029***	-0.007***
	(.0015)	(.001)
<i>Number</i>	-3,559***	-679***
	(288)	(92)
Number of TMA Exits	-187	77
	(115)	(46)
TMA Spell Length		
<i>at 133% FPL</i>	-0.569	-2.107***
	(0.509)	(.638)
<i>at 140% FPL</i>	-.262	-.747
	(.624)	(.757)
<i>at 150% FPL</i>	-.204	.917
	(.636)	(.779)
<i>at 160% FPL</i>	1.859***	.750
	(.701)	(.816)
<i>at 170% FPL</i>	-.930	-.685
	(.825)	(.967)
<i>at 180% FPL</i>	-.243	1.867*
	(.997)	(.994)
<i>at 190% FPL</i>	.145	.539
	(1.010)	(1.347)
<i>at 200% FPL</i>	-.247	.405
	(1.296)	(1.607)
<i>Notes: Table shows results of estimation of the change at the threshold date or income level corresponding to Figures Q.8.3-Q.8.6. Robust standard errors in parentheses. ***p<0.01; **p<0.05; *p<0.10</i>		

Questions 10-12: Restrictive Reenrollment Period for Failure to Pay Premium

Q10: What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?

The objective here is to understand whether the 3-month RRP led to differences in premium payment behavior and length of spell among TMA individuals. To identify the effects of RRP on premium payment and enrollment, we evaluate changes in RRP policy described in Section II.A. Specifically, observe related impacts before and after the 2014 waiver in the stringency of RRP enforcement along with changes under the 2014 waiver that affected the lower income group (100-133% FPL) specifically.

Approach

Our previously submitted Evaluation Design Report describes two related evaluation strategies:

1. A month-level hazard analysis in the post-waiver period focusing on changes in enrollment among individuals with income between 100-133% who “cross-over” from being exempt from premiums to being subject to premiums and RRP in their sixth month of enrollment.
2. A historical comparison that examines enrollment trends among similar TMA cohorts that were subject to RRP the 2012 waiver versus the 2014 waiver. This model takes advantage of the fact that cohorts in earlier and later periods are substantially similar in their demographics and behaviors, but that they are subject to different RRP policies.

For this first Interim Evaluation Report, we focus on the second approach. The first approach remains a topic of substantial interest, but requires developing and refining a file structure that facilitates person-month level analysis (rather than aggregating all months of a TMA spell into a single row of data).

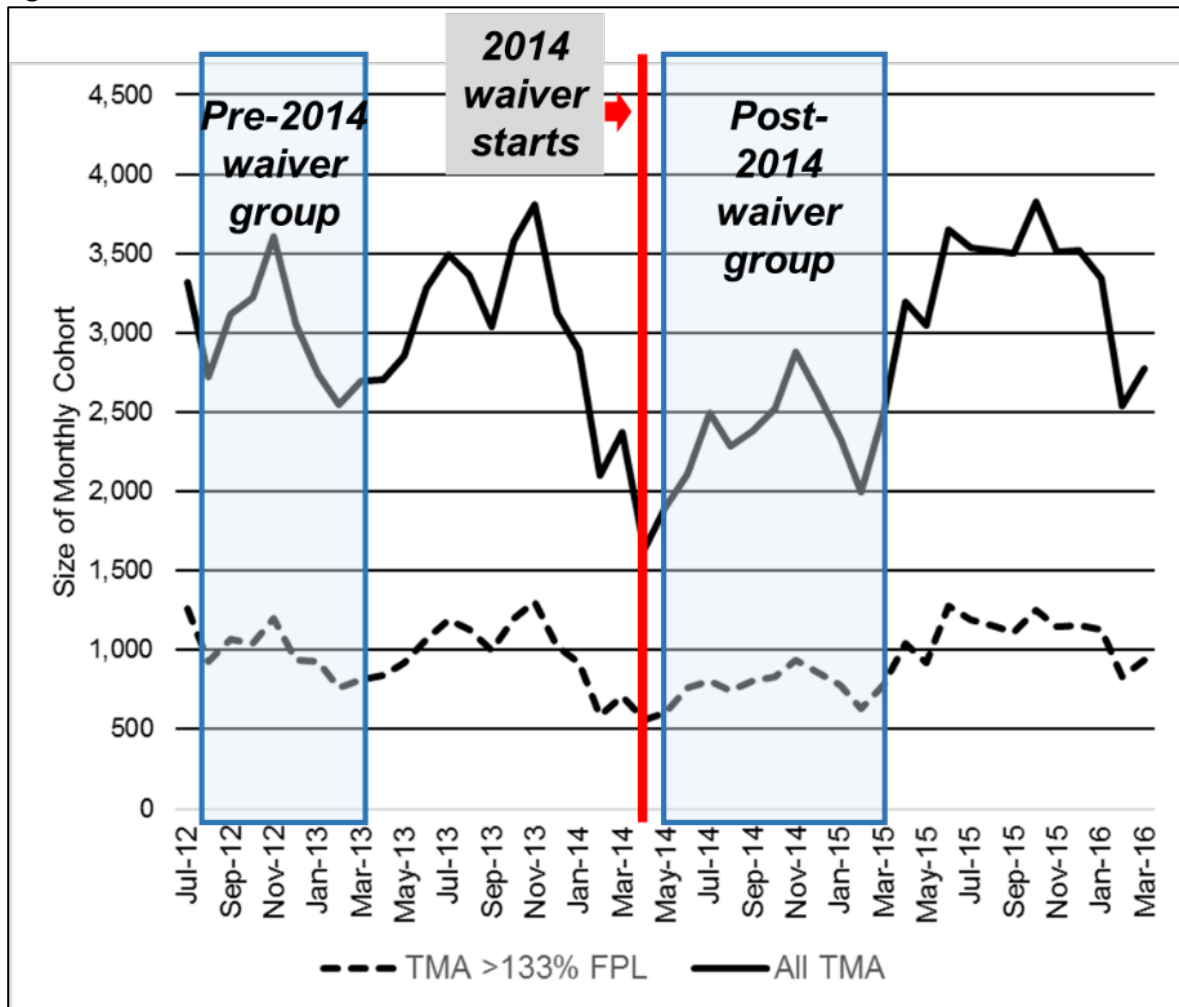
Preliminary Findings

For the purposes of our analyses, we focus only on individuals who had periods of enrollment in TMA (i.e., enrollment spells) that could be observed under either the 2012 waiver or the 2014 waiver for at least 12 months. The 2012 waiver was in effect from July 2012 through the end of March 2014, and the 2014 waiver was introduced in April 2014. Our observation period extends through May of 2016. As such, our “pre-2014 waiver group” includes individuals who began their TMA enrollment spells between July 2012 and March 2013. Our “post-2014 waiver group” includes individuals who began TMA enrollment between April 2014 and May 2015.

These inclusion criteria ensure that each cohort is exposed to only one type of RRP policy, and that we observe each sample member for the entire length of his/her TMA enrollment spell, a maximum of 12 months. We impose a 1-month “washout” period at the beginning of each RRP policy period, July 2012 and April 2014 respectively, to address transitional changes that might otherwise contaminate trends within the groups.

Figure Q.10.1 shows the trends in the size of monthly cohorts of individuals entering TMA from July 2012 to March 2016. The study groups for this analysis are shown with blue shading. The bold line shows the total number of individuals entering TMA in each study month, while the dotted line shows the number of individuals entering TMA who have incomes >133% FPL. Only this latter group of TMA enrollees is subject to premiums and RRP in their first month.

Figure Q10.1. Trends in TMA Cohort Size



In a sensitivity analysis, not shown, we relax our restrictions. We find that rates of RRP continued to increase in late 2015, but most of the other trends related to spell length remain similar when including cohorts from late 2013-early 2014 or individuals in late 2015.

The mean size of new cohorts during this time period is about 2,300 individuals per month. Figure Q10.1 shows how the size of new cohorts fluctuated over the study period, with the largest cohorts in late 2013 before the 2014 waiver but with entry cohort sizes returning to the pre-waiver levels in 2015. The smallest cohorts occurred around the time of the 2014 waiver. Individuals in the higher income group comprised about one-third of new cohorts across the study period.

Characteristics of TMA population: Tables Q10.1 and Q10.2 display characteristics of the TMA study population during the 2012-2014 time period compared to the 2014-2016 time period. The sample is divided into two subgroups: individuals entering TMA with incomes 100-133% FPL and those entering with incomes >133% FPL. Pairwise t-tests are used to compare differences in means between the two samples and p-values are displayed in the table.

Table Q10.1. Characteristics of Individuals entering TMA at 100-133% FPL by time period			
	Entered TMA 7/2012-3/2013	Entered TMA 4/2014-5/2015	p-value for difference
Age	33.124	33.178	0.567
Female	71.8%	73.8%	p<.001
Non-Hispanic white	65.1%	61.5%	p<.001
Non-Hispanic black	15.6%	18.3%	p<.001
Hispanic	9.0%	9.9%	0.013
Other race/ethnicity	8.1%	8.5%	0.198
Citizen	96.0%	95.9%	0.691
Resides in a metropolitan area	39.8%	39.3%	0.414
High school graduate	93.5%	97.3%	p<.001
First month of TMA income (% FPL)	113.538	111.277	p<.001
N	17,896	14,462	

Table Q10.2. Characteristics of individuals entering TMA at >133% FPL by time period			
	Entered TMA 7/2012-3/2013	Entered TMA 4/2014-5/2015	p-value for difference
Age	34.542	34.639	0.492
Female	67.7%	68.1%	0.559
Non-Hispanic white	69.1%	65.5%	p<.001
Non-Hispanic black	12.6%	15.5%	p<.001
Hispanic	8.6%	10.4%	p<.001
Other race/ethnicity	7.6%	7.1%	0.186
Citizen	96.0%	95.8%	0.536
Resides in a metropolitan area	39.3%	39.5%	0.85
High school graduate	98.1%	98.8%	0.503
First month of TMA income (% FPL)	173.892	176.555	p<.001
N	8,512	7,162	

When comparing within income group, both tables show no time period differences with respect to age, citizenship, and metro residence. The TMA population in the later time period, April 2014 – May 2015, is more likely to be black and Hispanic and slightly less likely to be white. There are also modest, but

significant, income differences. For the group with income between 100% -133% FPL, the percentage of individuals that are high school graduates increased in the later time period.

Differences in outcomes of interest: Table Q10.3 and Q10.4 display means for five key outcomes related to the study question for individuals pre-and post-2014 waiver. The outcomes are disaggregated by initial income group (100-133% FPL or >133% FPL):

1. TMA enrollment longer than six months;
2. Total months of TMA enrollment;
3. An indicator for whether an individual entered an RRP;
4. Months of RRP (among those with any RRP); and
5. Months of RRP (averaged across the full sample, including individuals who did not experience an RRP).

Outcome #5 can be calculated by multiplying outcome #3 by outcome #4:

$$\text{Months of RRP across the full sample} = (\text{Months of RRP among those with any RRP}) \times (\text{percentage of individuals who entered RRP in the sample})$$

It helps illustrate the average effect of changes in prevalence of RRP and length of RRP in the entire TMA population. For current purposes, we restrict our analyses to first instances of an RRP; most individuals in the sample only enter RRP once in their TMA history.

Table Q10.3. Outcomes for TMA Enrollees 100-133% FPL by time period			
	Entered TMA 7/2012- 3/2013	Entered TMA 4/2014- 5/2015	p-value for difference
More than 6 months of TMA enrollment	92.2%	85.9%	p<.001
Length of TMA enrollment (months)	10.77	9.79	p<.001
Any RRP indicator	1.7%	11.5%	p<.001
Length of RRP in months (if any)	8.73	2.82	p<.001
Length of RRP in months (averaged across the population)	0.15	0.324	p<.001

Table Q10.3 shows that individuals under the 3-month RRP who started TMA with income between 100%-133% FPL experienced a slightly decreased likelihood of experiencing 6 months of enrollment – 92.2% versus 85.9% (first row). The mean length of TMA enrollment in this group decreased by roughly 1 month on average, 10.77 versus 9.79 (second row). There were large increases in the percentage of people who experienced an RRP – from under 1.7% to 11.5% after the 2014 waiver (third row). Consistent with the policy change, the mean length of RRP among those who experienced an RRP decreased from 8.73 to 2.82 months (fourth row).

Some individuals' mean RRP length is less than 12 months during the 2012-2013 period because they may have been removed from the program or otherwise left before the 12-month period of restrictive reenrollment. In a separate analysis not displayed here, we find that all individuals during this period with an RRP of less than 12 months did not reenter the program. Across the entire study population, including beneficiaries who did not enter an RRP, the mean length of RRP was 0.15 months in the 2012-2013 period, which increased to 0.324 months in the 2014-2015 period (fifth row).

Table Q10.4 Outcomes for TMA Enrollees >133% FPL by time period			
	Entered TMA 7/2012-	Entered TMA 4/2014-5/2015	p-value for difference
More than 6 months of TMA enrollment	72.0%	64.3%	p<.001
Length of TMA enrollment (months)	8.70	8.15	p<.001
Any RRP indicator	8.4%	29.5%	p<.001
Length of RRP in months (if any)	9.25	3.36	p<.001
Length of RRP in months (averaged across the population)	0.773	0.992	p<.001

Among individuals who entered TMA >133% FPL, the probability of staying for 6 months decreased from 72.0% to 64.3% (first row, Table Q10.4). The mean length of TMA in this group did not decrease substantially after April 2014 – going from 8.70 to 8.15 months (second row). The percentage of individuals with any RRP increased from 8.4% to 29.5% (third row), whereas the mean length of RRP decreased from 9.25 months to 3.36 months among those individuals who experienced an RRP (fourth row). Notably, the mean number of RRP months within the post-waiver cohort is longer than 3 months (fifth row). In a separate analysis, not reported here, we find some cases of 12-month RRP that persist after the 2014 waiver. We are currently investigating the potential explanations for this finding. Averaged in the full study population, the mean length of RRP increased slightly – from 0.77 to approximately 1 month.

TMA enrollment spell length: To provide more insight into the changes in timing of TMA enrollment spell lengths, Figures Q10.2 and Q10.3 plot survival curves for length of TMA enrollment for individuals entering TMA with incomes between 100%-133% FPL and at or above 133% FPL during the two-time periods. Survival curves help to illustrate that percentage of individuals who remain in the program over successive intervals of time (in this case the percent remaining in each month, up to 12 months when TMA enrollment ends for all individuals).

Figure Q10.2. Enrollment Spell Length for Individuals entering TMA with Incomes 100-133% FPL

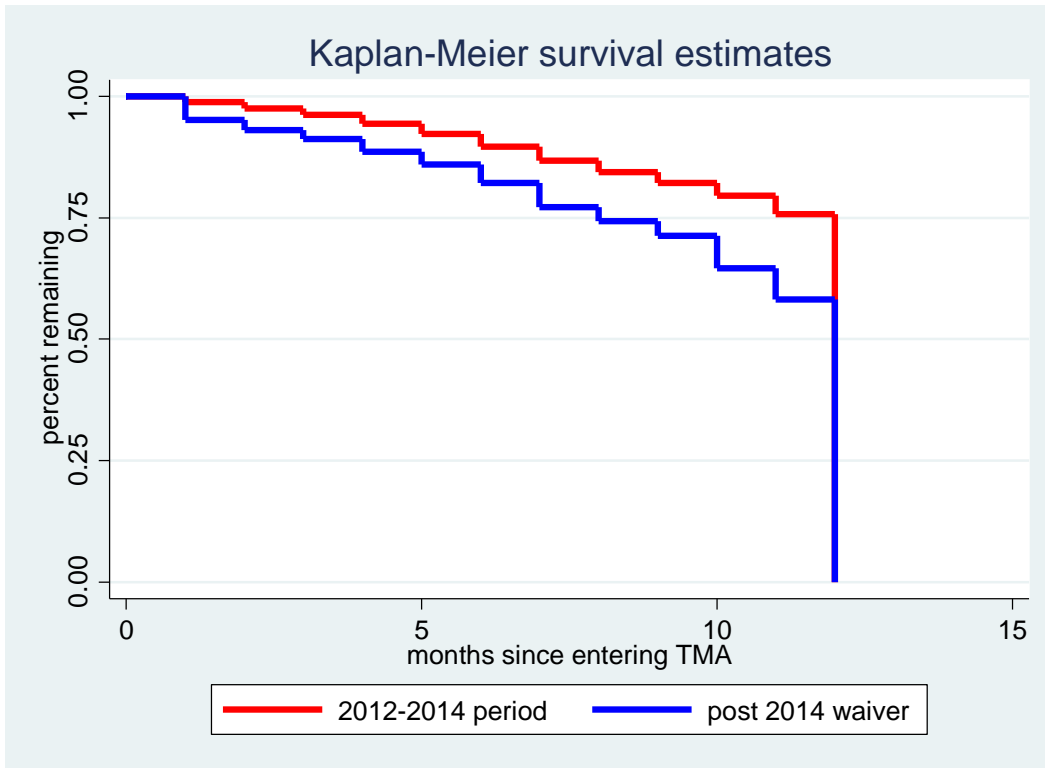
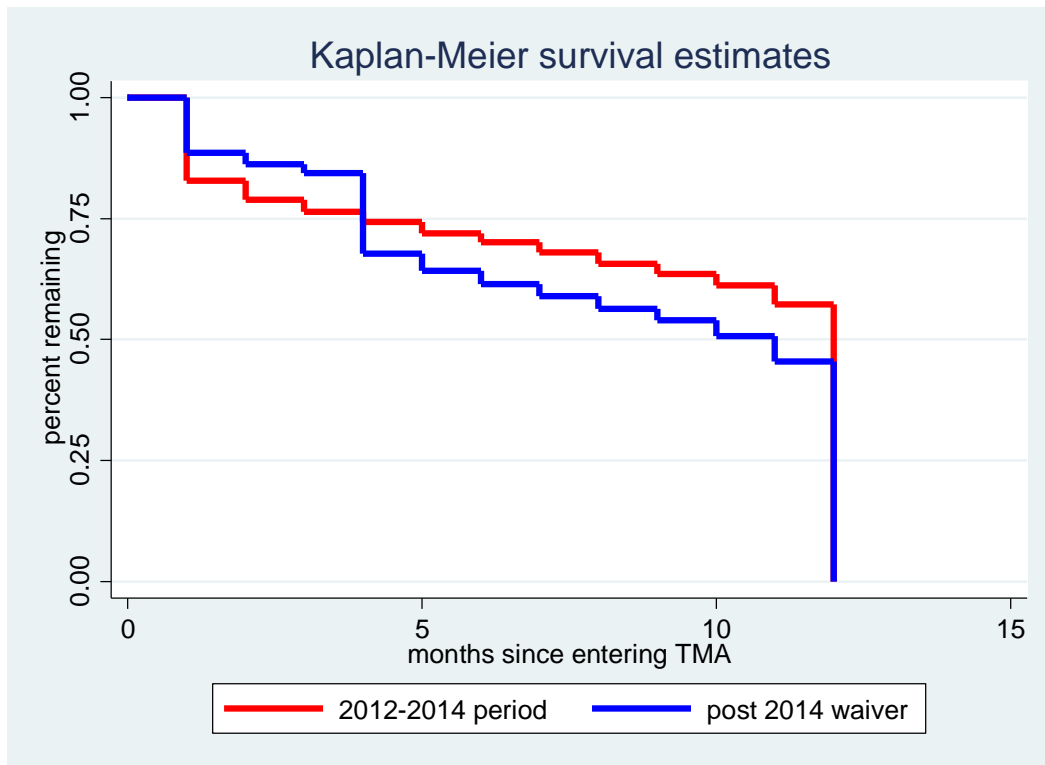


Figure Q10.3. Enrollment Spell Length for Individuals entering TMA with Incomes >133% FPL



The survival curves illustrate that individuals entering TMA with income between 100%-133% FPL have consistently lower odds of retention in every month after the first month in the post-2014 waiver period relative to the comparison cohort in the 2012-2014 period. The gap in monthly retention between the two groups, showing that that 2014 waiver members are increasingly less likely to retain TMA as time goes on, widens after six months--the time of first exposure to RRP for individuals with incomes 100-133% FPL.

For individuals entering TMA with income at or above 133% FPL, retention in TMA is actually higher in the first four months after the 2014 waiver than it is for their counterparts in the earlier period. However, after four month's retention in the post-waiver TMA group decreases below the levels of the TMA comparison group shown in red.

Regression Estimates

To test for differences in the outcomes related to enrollment and RRP entry after the waiver, we estimated three regression models using ordinary least squares (OLS) regression (Table Q.10.5). OLS coefficients for binary outcomes can be interpreted as linear probabilities, in percentage points. All models adjusted for socio-demographic covariates. Model 1 compares changes only for individuals with income between 100% - 133% FPL during the 2012-2013 period compared to 2014-2015, Model 2 compares changes only for individuals with income at or above 133% FPL for the same time periods.

We hypothesized that there would be larger effect sizes among individuals with income at or above 133% FPL, since these individuals are affected by the changes in the premium and RRP policy beginning in their first month. By contrast, individuals with income between 100% - 133% FPL did not face a premium and RRP during the 2012-2013 period, and are only affected by the 2014 waiver's premium and RRP policy after the first six months of enrollment in the 2014-2015 period.

Regression estimates presented here are very similar to the unadjusted differences presented in Tables Q.10.3 and Q.10.4. Specifically, for both income groups, after the 2014 waiver the probability of remaining enrolled for six months decreases, and length of TMA also decreases. We observe the largest change among individuals entering TMA with income between 100-133% FPL. After implementation of the 2014 waiver, the probability of entering an RRP increases dramatically (particularly for individuals >133%), while the average length of RRP, among those with any RRP, decreases by more than 5 months in both income groups. Averaged across the population there is a modest increase in the mean length of time that individuals spend in RRP of about 0.2 or 0.3 months in the post-waiver period relative to the duration spent in an RRP in the pre-waiver period.

Table Q10.5 Regression Estimates for Changes in Outcomes After the 2014 Waiver		
	Model 1: Changes after 2014 waiver for individuals 100-133%	Model 2: Changes after 2014 waiver for individuals >133%
	-0.064	-0.071
More than 6 months of TMA enrollment	(0.004)**	(0.010)**
	-1.038	-0.491
Length of TMA enrollment (months)	(0.043)**	(0.089)**
	0.1	0.213
Any RRP indicator	(0.004)**	(0.008)**
	-5.780	-5.355
Length of RRP in months (if any)	(0.121)**	(0.149)**
	0.188	0.252
Length of RRP in months (averaged across population)	(0.014)**	(0.045)**
<i>Note: Standard errors are shown in parentheses. Regression models adjust for individual age, sex, race/ethnicity, citizen status, metro residence, and high school graduation. *p<.05, **p<.001.</i>		

Q11. Does the RRP impact vary by income level? and

Q12: If there is an impact from the RRP, explore the break-out by income level.

The third regression model tests for differences in outcomes related to enrollment and RRP entry from 2012-2013 compared to 2014-2015 within the relatively higher income segment of the TMA population, adults with income above 160% FPL. We do not have a clear hypothesis about whether these relatively higher income enrollees who face premiums will have lower retention after the 2014 policy change than those closest to the cutoff. While these individuals may have greater resources with which to pay premiums, they may also be more likely to leave the program if they can obtain private health insurance.

The RRP impact may vary by income level either because higher-income individuals have a different willingness to pay premiums or because they have different private insurance options available that may be more appealing. For the purposes of this report, we only test this difference at one break point – individuals with incomes >160% FPL compared to those with income between 133% and 160% FPL. This number was chosen because it represents the upper half of TMA enrollees with income at or above 133% FPL in TMA. We present these results in Table Q.11.1.

The results for the higher-income subgroup with income above 160% FPL are very similar to the overall pattern of results for individuals with income above 133% FPL presented in Table Q.10.5 under the column heading, “Model 2.” For mean length of RRP, the effect is even more pronounced for individuals >160% FPL. Further exploring subgroup differences by income will be an important task for future work.

Table Q11.1 Regression Estimates for Individuals >160% FPL after 2014 waiver		
	Changes after 2014 for individuals 133-160%	Changes after 2014 for individuals >160% FPL
More than 6 months of TMA enrollment	-0.057 (0.012)**	-0.083 (0.015)**
Length of TMA enrollment (months)	-0.420 (0.117)**	-0.504 (0.134)**
Any RRP indicator	0.216 (0.018)**	0.227 (0.013)**
Length of RRP in months (if any)	-4.571 (0.202)**	-6.166 (0.205)**
Length of RRP in months (averaged across the population)	0.369 (0.052)**	0.126 (0.075)
<i>Note: Standard errors are shown in parentheses. Regression models adjust for individual age, sex, race/ethnicity, citizen status, metro residence, and high school graduation. *p<.05, **p<.001.</i>		

Question 17: Childless Adults' Benefit Plan and Continuity of Coverage

Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?

The objective of this question is to understand whether and to what extent the provision of standard Medicaid benefits to childless adult (CLAs) beneficiaries increased continuity of health coverage. In this Interim Evaluation Report, we focus on enrollment-related outcomes from the CARES data that characterize continuity of health insurance coverage. In subsequent reports, we will include measures that reflect continuity of health care.

The Wisconsin Department of Health Services is specifically interested in measuring CLA Standard Plan enrollees' outcomes relative to the two comparators, A and B, described below. Table Q17.1 provides an operational definition of the study groups we have constructed to execute the requested comparisons. These groups are mutually exclusive. In this Interim Evaluation Report, we report our preliminary findings for Comparison B.

- A. Comparison of CLA beneficiaries' outcomes while enrolled in the Standard Plan relative to their outcomes while enrolled in the Core Plan; and
- B. Comparison of post-waiver outcomes for two groups of CLA beneficiaries enrolled in the Standard Plan: new CLA beneficiaries who became eligible on or after April 2014; and continuing CLA beneficiaries who transitioned from Core plan coverage to Standard Plan coverage in April 2014.

Table Q17.1. Study groups and time periods to implement the requested comparisons for Question 17

Study Time Period	Continuing CLA Enrollees	Parents/Caretakers	New CLA Enrollees
4/1/13 - 3/31/15 Comparison A	CLAs with at least one month of Core plan enrollment between April 2013-March 2014 and one month of Standard plan enrollment between April 2014-March 2015. Core plan beneficiaries who enrolled after October 2009 are excluded.	Parent/caretakers with at least one month of Standard plan enrollment between April 2013-March 2014 and one month of Standard plan enrollment between April 2014-March 2015.	
4/1/14 – 3/31/16 Comparison B	CLAs with at least one month of Core plan enrollment between April 2013-March 2014 and one month of Standard plan enrollment between April 2014-March 2015.		CLAs with at least 1 month of Standard plan enrollment beginning on or after 4/1/2014 and no Core plan enrollment between April 2013-March 2014.

The UW's Evaluation Design Report (Attachment B) outlines several analytic tasks to address Question 17. For ease of reference to the Design Report, we restate those analytic tasks here followed by our preliminary results.

“Descriptive analysis of administrative data. We will describe the continuity of health insurance coverage for CLA beneficiaries by sample membership (i.e., new and continuing enrollees), and for continuing CLA enrollees relative to the continuing parent/caretaker comparison group. “

Comparison B: A comparison of post-waiver outcomes for two groups of CLA beneficiaries enrolled in the Standard plan: new CLA beneficiaries who became eligible on or after April 2014; and continuing CLA beneficiaries who transitioned from Core plan coverage to Standard plan coverage in April 2014

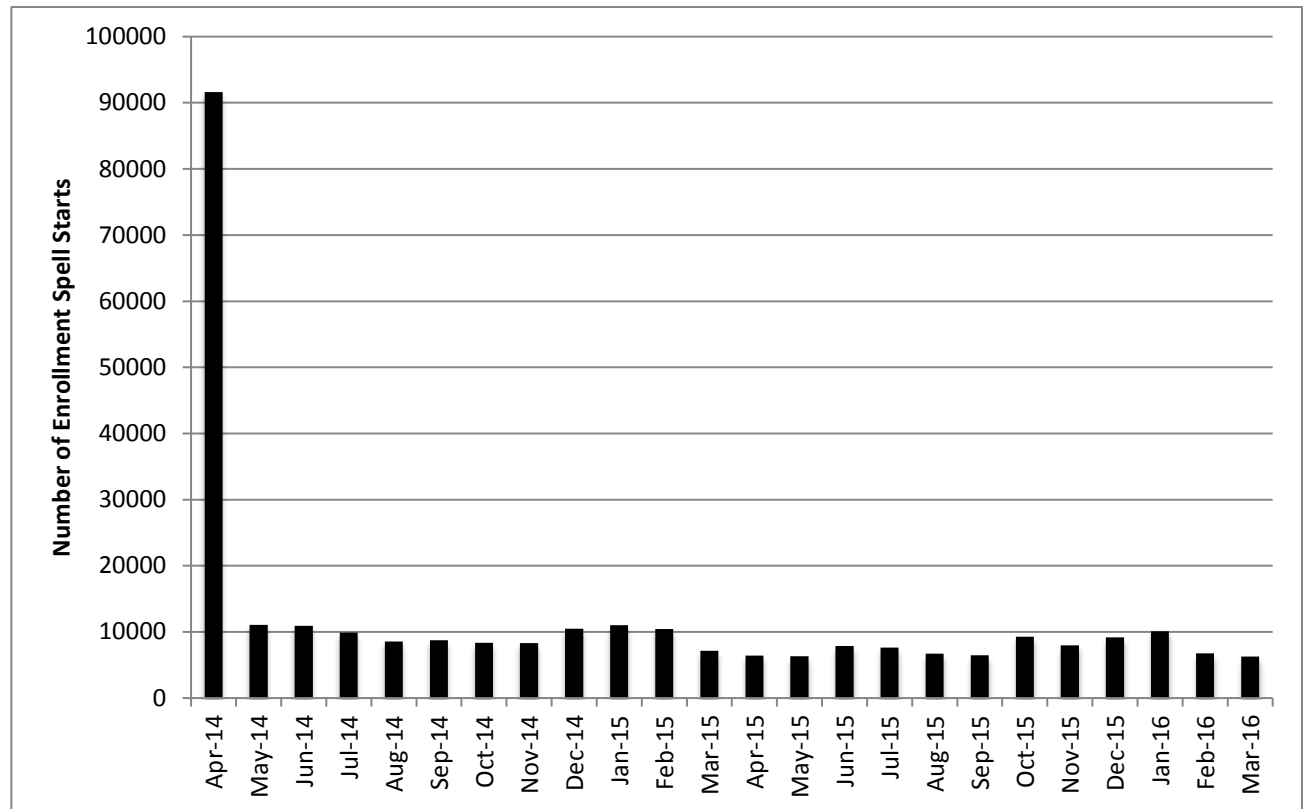
Table Q17.2 summarizes demographic characteristics and Medicaid enrollment history for the continuing CLA enrollees and the new CLA enrollee populations. These data are useful for considering if there are compositional differences between the study groups that may also be related to coverage continuity. The demographic variables reflect the most recently reported data for each subject through March of 2016 unless noted. The Medicaid enrollment variables capture Core and Standard plan enrollment between January 2009 - March 2013. Because study groups are defined in part based on Medicaid enrollment between April 2013– March 2014, we omit these 12 months in the construction of the enrollment history variables.

Relative to continuing CLA enrollees (N=11,159) the new CLA enrollees (N=248,217) are younger, and more likely to be non-White and male. On average, the new CLA enrollees had fewer total Medicaid and CLA enrollment months before April 2013 than the continuing CLA enrollees. We note two potential explanations for the non-equivalence of the study groups across these characteristics: 1) the availability of the Standard plan may attract a different childless adult population than did the Core Plan; and/or 2) beneficiaries who remain enrolled in the Core plan five years after its introduction may differ systematically from the Core plan population as a whole. Within the scope of this evaluation, we cannot determine which of these (or other) explanations may prevail. However, it is important to consider the potential source of differences between the groups and how these differences may influence health coverage continuity.

Figures Q17.1 and Q17.2 illustrate the distribution of enrollment spell starts by month for the study period, April 2014 through March 2016. For purposes of this analysis, an enrollment spell begins with the enrollment start date and ends with an enrollment gap of more than 1 month. For example, if a beneficiary enrolls in April 2014, disenrolls in June 2014, re-enrolls in July 2014 and again disenrolls in December 2014, we define the enrollment spell start as April 2014 and the spell end as December 2014. Figure Q17.1 illustrates the distribution of spell starts for new CLA enrollees.

Table Q17.2. Average Characteristics of Continuing and New Childless Adult Beneficiaries					
	(1) Continuing		(2) New		p-value
	%/Mean	SD	%/Mean	SD	
Gender, Citizenship, Race, Ethnicity					
% Female	53	50	41	49	<0.01
% Citizen	99	10	98	14	<0.01
% Tribal Member	1	9	2	14	<0.01
% Black	15	35	23	42	<0.01
% White	77	42	61	49	<0.01
% Hispanic	4	19	7	25	<0.01
% Other Race/Ethnicity	3	18	6	24	<0.01
% Resides in a metropolitan area	41	49	38	49	0.26
Education level					
% < high school graduate	16	37	23	42	<0.01
% >= high school graduate	63	48	62	49	<0.01
% missing education	21	40	16	37	<0.01
Age as of April 2014					
19-34	16	37	47	50	<0.01
35-49	27	44	27	44	0.64
50+	57	49	26	44	<0.01
Core and Standard plan enrollment, 1/2009 - 3/2013					
Total months enrolled	37.2	10.3	3.6	10.3	< 0.01
Total CLA months enrolled	36.9	10.7	0.7	4.0	< 0.01
Number of individuals	11,159		248,217		
<i>Continuing beneficiaries have at least 1 month of CLA Core enrollment between April 2013-March 2014, and at least one month of CLA Standard Plan enrollment between April 2014-March 2015. New beneficiaries have at least one month of CLA Standard Plan enrollment on or after April 2014 and no CLA Core enrollment between April 2013-March 2014.</i>					

Figure Q17.1 Enrollment spell starts by month for new CLA beneficiaries, April 2014 - March 2016



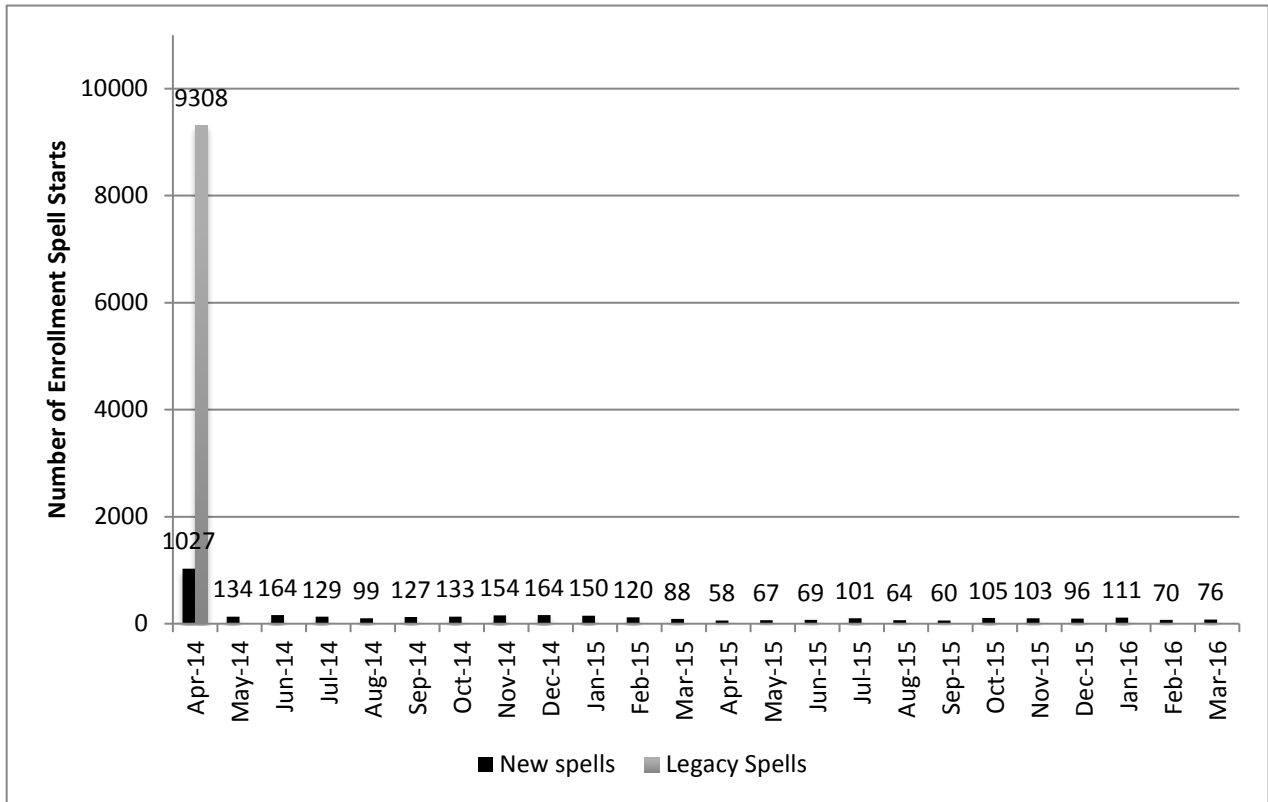
Note: New beneficiaries have at least one month of CLA Standard plan enrollment on or after April 2014 and no CLA Core enrollment between April 2013-March 2014.

In the first month of Standard plan availability for childless adults in Wisconsin, 91,617 adults enrolled. New spell starts quickly settled to a rate of roughly 10,000 per month through the first year of the waiver. New spells are defined as spells that began on or after April 2014. From April 2015 – March 2016, the number of new spell starts per month ranged from approximately 6,200 to 10,000 among new CLA beneficiaries.

Figure Q17.2 illustrates the distribution of spell starts for continuing CLA enrollees. For this group, we define a second type of spell in order to account for all spells active for continuing CLA enrollees during the demonstration period. A “legacy” spell begins before April 2014 and ends on or after April 2014. In Figure Q17.2, we assign legacy spells a start date of April 2014.

Figure Q17.2 shows that, among continuing CLA beneficiaries in April 2014, 9,308 individuals had an active enrollment spell that began before April 2014 (i.e., a legacy spell). Additionally, 1,027 childless adults began a new enrollment spell in April 2014. These are individuals who had at least one month of Core enrollment from April 2013-March 2014 and exited the Core plan before April 2014. Throughout the first two years of the waiver, we observe new enrollment spells in each month among the continuing CLA study group. The frequency of these spell starts was typically less than 150 spell starts/month.

Figure Q17.2. Enrollment spell starts by month for continuing CLA beneficiaries, April 2014- March 2016



Note: Continuing beneficiaries have at least 1 month of CLA Core enrollment between April 2013- March 2014, and at least one month of CLA Standard plan enrollment between April 2014- March 2015. New spells have a start date on or after 4/2014. Legacy spells began before 4/2014 and end on or after 4/2014.

Table Q17.3 defines the evaluation outcomes for continuity of health insurance. Each outcome is assessed at the level of enrollment spell. We assess the duration of enrollment spells, the probability of spell renewal, and the probability of disenrollment in the post-waiver period, April 2014 – March 2016. We consider only the renewals and enrolled months that occur on or after 4/2014 when comparing spell disposition for the continuing and new CLA enrollees. We define the renewal month as month 12 of the enrollment spell (e.g., December for a spell start in January).

Table Q17.3. Continuity of health insurance coverage outcome measures		
Outcome	New Enrollment Spells	Legacy Enrollment Spells
Duration	Total number of months from enrollment start to disenrollment	Total number of months from 4/2014 to disenrollment
Renewal	Enrolled \geq 1 month beyond renewal month	
Disenrollment	A gap of \geq 2 months in CLA enrollment before 3/2016	

Table Q17.4 shows that the large majority of spells that we observe for continuing CLA beneficiaries began before April 2014. Among continuing CLA beneficiaries, the average duration of legacy spells in the post-waiver period is longer than their new spells, and the likelihood of renewal is greater than their new spells. We test the equivalence of new spell outcomes between continuing and new CLA enrollees. This comparison is useful for considering the level of enrollment mobility for the new CLA population relative to a stable insured CLA population when they face the same coverage and enrollment flexibility.

We find statistically significant differences in the disposition of new spells across the continuing and new CLA enrollees. The average enrollment duration for new spells is 11.0 months for continuing CLA enrollees and 10.8 months for new CLA enrollees. Slightly more than one-third of each study group is likely to renew, specifically 38% of continuing CLA beneficiaries and 35% of new CLA beneficiaries. Just under half of new spells ended in disenrollment before March 2016 for continuing CLA beneficiaries while 53% of new spells ended in disenrollment before March 2016 among new CLA beneficiaries. These unadjusted findings suggest a tendency toward greater enrollment continuity among the continuing CLA enrollees than the new CLA enrollees when faced with a common benefits package and open enrollment.

Table Q17.4. Frequency and characteristics of enrollment spells for continuing and new CLA beneficiaries, 4/2014 - 3/2016				
	Continuing CLA Enrollees		New CLA Enrollees	
	(1)	(2)	(3)	Columns (2) vs. (3)
	Legacy Spells	New Spells	New Spells	
	Mean [SD]	Mean [SD]	Mean [SD]	p-value
Average spell length, post-waiver	17.6	11.0	10.8	0.10
	[0.09]	[0.13]	[0.01]	
Probability of renewal, post-waiver	0.85	0.38	0.35	<0.01
	[0.004]	[0.008]	0.001	
Probability of disenrollment, post-waiver	0.45	0.49	0.53	<0.01
	[0.005]	[0.008]	[0.001]	
N Spells	9,308	3,469	287,591	
<i>Continuing beneficiaries have at least 1 month of CLA Core enrollment between April 2013-March 2014, and at least one month of CLA Standard Plan enrollment between April 2014-March 2015. New beneficiaries have at least one month of CLA Standard Plan enrollment on or after April 2014 and no CLA Core enrollment between April 2013-March 2014. A legacy spell begins before 4/2014 and ends on or after 4/2014; only the spell months post-waiver are considered here. A new spell begins on or after 4/2014.</i>				

Regression Estimates

We implement regression analyses to compare the continuity of coverage outcomes across study groups adjusting for demographic characteristics and the month and policy period in which the spell began in order to better isolate the association between Standard Plan coverage and the outcome. We use two samples for each analysis. Sample 1 includes new spells only, those initiated on or after 4/2014.

Sample 2 includes all spells active on or after April 2014 including legacy spells and new spells. While Sample 1 includes only a subset of the spells observed for the continuing CLA group, it allows us to observe the disposition of spells that are initiated for each group under the same policy regime (i.e., Standard plan coverage and open enrollment).

We use ordinary least squares regression to compare average spell duration for new CLA enrollees relative to continuing CLA enrollees in the post-waiver period, April 2014 – March 2016. Each coefficient in Table Q17.5 represents the mean difference in spell duration (in months) associated with a one-unit change in the characteristic holding all other variables at their mean value. Standard errors are in parentheses below the estimate. Consistent with the unadjusted findings (Table Q17.4), the average duration of new spells among new CLA enrollees is shorter than new spells among continuing CLA enrollees by a magnitude of 0.37 months. Including all active spells, the average duration of spells among new CLA enrollees is 0.65 months shorter than spells among continuing CLA enrollees.

Several potential explanations exist for these differences in spell length including the new enrollment and benefit features under the waiver and differences in the characteristics of new and continuing CLA enrollees that may be related to spell length. This descriptive analysis cannot distinguish between these possibilities; however, differences between new and continuing CLA enrollees in socio-demographic attributes and Medicaid enrollment history (Table Q17.2) suggest the plausibility of the latter explanation.

To estimate the association between the availability of Standard plan coverage for childless adults and the probability of spell renewal, we use logit regression and present the average marginal effects from these analyses in Table Q17.6. Each estimate in Table Q17.6 represents the difference in the probability of spell renewal associated with a one-unit change in the characteristic holding all other variables at their mean values. The probability of spell renewal is lower among new CLA enrollees than among continuing CLA beneficiaries by 4.5 and 6.4 percentage points for the sample of new spells and of all active spells respectively. Individuals who renew their enrollment spell relative to those who do not are also older, more likely to be female, and less likely to be of Hispanic origin.

Table Q17.5. The mean difference in spell duration between new and continuing CLA beneficiaries

	(1)	(2)
	New Spells	Active Spells
	β (se)	β (se)
New CLA beneficiary	-0.366***	-0.649***
	(0.127)	(0.130)
Female	0.151***	0.147***
	(0.0338)	(0.0359)
White	ref	ref
Black	0.269***	0.229***
	(0.0333)	(0.0340)
Other Race	0.169***	0.158***
	(0.0502)	(0.0501)
Hispanic	-0.386***	-0.411***
	(0.0483)	(0.0483)
Ages 19-34	ref	ref
Ages 35-49	0.455***	0.475***
	(0.0295)	(0.0295)
Ages 50+	0.479***	0.486***
	(0.0354)	(0.0362)
% FPL	-0.00769***	-0.00871***
	(0.00203)	(0.00230)
< High school graduate	ref	ref
>= High school graduate	-0.0439	-0.0294
	(0.0308)	(0.0309)
Missing education	-1.003***	0.985***
	(0.0463)	(0.0467)
Resides in non-metropolitan area	ref	ref
Resides in metropolitan area	-0.454***	-0.441***
	(0.0263)	(0.0262)
Post waiver spell start	n/a	-7.556***
		(0.154)
Constant	7.610***	15.54***
	(0.145)	(0.127)
N	290,996	300,304

Column (1) includes all spells initiated on or after 4/2014. Column (2) includes all spells active on or after 4/2014. Regression models adjust for calendar month of enrollment spell start with the inclusion of calendar month indicator variables. Standard errors are clustered at the person-level to account for correlation within person across multiple spells. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table Q17.6. The mean difference in the probability of spell renewal for new CLA beneficiaries relative to continuing CLA beneficiaries in the post-waiver period, April 2014 - March 2016

	(1)	(2)
	New Spells	Active Spells
	Average Marginal Effect (se)	Average Marginal Effect (se)
New CLA beneficiary	-0.0450***	-0.0639***
	(0.00885)	(0.00955)
Female	0.0275***	0.0281***
	(0.00195)	(0.00199)
White	ref	ref
Black	-0.000786	-0.00171
	(0.00240)	(0.00245)
Other Race	0.00614	0.00657
	(0.00400)	(0.00410)
Hispanic	-0.0407***	-0.0403***
	(0.00394)	(0.00380)
Ages 19-34	ref	ref
Ages 35-49	0.0395***	0.0406***
	(0.00226)	(0.00230)
Ages 50+	0.0529***	0.0535***
	(0.00238)	(0.00244)
% FPL	-0.000741***	-0.000841***
	(0.0000278)	(0.0000286)
< High school graduate	ref	ref
>= High school graduate	-0.00333	-0.00268
	(0.00234)	(0.00240)
Missing education	-0.0271***	-0.0267***
	(0.00329)	(0.00329)
Resides in non-metropolitan area	ref	ref
Resides in metropolitan area	-0.0282***	-0.0284***
	(0.00201)	(0.00202)
Post waiver spell start	n/a	-0.550***
		(0.00549)
N	290,996	300,304
<p><i>Column (1) includes all spells initiated on or after 4/2014. Column (2) includes all spells active on or after 4/2014. Regression models adjust for calendar month of enrollment spell start with the inclusion of calendar month indicator variables. Standard errors are clustered at the person-level to account for correlation within person across multiple spells. The average marginal effect represents the difference in the probability of spell renewal associated with a one-unit change in the characteristic holding all other variables at their mean values. ***p<0.01; **p<0.05; *p<0.10</i></p>		

We next characterize the likelihood that a spell ends in disenrollment before March 2016, the end of the observation period for this analysis. For this set of analyses we include only one spell per subject: the first new spell per subject on or after 4/2014; or the first active spell per subject on or after 4/2014. We implement Cox proportional hazard models to estimate the adjusted relative probability of disenrollment (conditional on being enrolled in the prior month) for new beneficiaries compared to continuing beneficiaries. Hazard models are useful to understand the factors associated with the occurrence and timing of event. The event in this case is disenrollment.

Each exponentiated coefficient in Table Q17.7 should be interpreted as the percentage difference in likelihood of disenrollment in the first 2 years post-waiver relative to the excluded category. During the post-waiver period, new spells for new CLA beneficiaries are 8.9% more likely to end in disenrollment than new spells for continuing CLA beneficiaries. This estimate is slightly larger (10.1%) when we allow the legacy spell to serve as a subject's first spell. The strongest predictor of disenrollment is age less than 35 years.

Overall, preliminary analyses indicate that, in the first two years of the waiver period, the new CLA beneficiaries experienced less continuous health insurance coverage than continuing CLA beneficiaries when continuity is defined by enrollment spell duration, renewal and disenrollment. It is highly plausible that underlying differences between the two study groups may explain this divergence in coverage continuity, although we cannot separate that potential explanation from the availability of Standard Plan coverage.

Table Q17. 7. Cox proportional hazards estimates of the relative probability of disenrollment for new beneficiaries compared to continuing CLA beneficiaries in the post-waiver period, April 2014 - March 2016		
	(1)	(2)
	First New Spell	First Active Spell
	Hazard Ratio (se)	Hazard Ratio (se)
New CLA beneficiary	1.089***	1.101***
	(0.0281)	(0.0325)
Female	0.958***	0.960***
	(0.00526)	(0.00520)
White	ref	ref
Black	1.015**	1.021***
	(0.00703)	(0.00700)
Other Race	0.994	0.997
	(0.0113)	(0.0112)
Hispanic	1.106***	1.110***
	(0.0121)	(0.0120)
Ages 19-34	ref	ref
Ages 35-49	0.849***	0.846***
	(0.00557)	(0.00550)
Ages 50+	0.851***	0.853***
	(0.00575)	(0.00568)
% FPL	1.000***	1.001***
	(0.0000144)	(0.0000134)
< High school graduate	ref	ref
>= High school graduate	1.031***	1.029***
	(0.00694)	(0.00685)
Missing education	1.152***	1.153***
	(0.0108)	(0.0106)
Resides in non-metropolitan area	ref	ref
Resides in metropolitan area	1.102***	1.099***
	(0.00632)	(0.00622)
Post-waiver spell start	n/a	1.794***
		(0.0599)
N	251,133	259,320
<p><i>Column (1) includes all spells initiated on or after 4/2014. Column (2) includes all spells active on or after 4/2014. Regression models adjust for calendar month of enrollment spell start with the inclusion of calendar month indicator variables. Standard errors are clustered at the person-level to account for correlation within persons across multiple spells. ***p<0.01; **p<0.05; *p<0.10</i></p>		

V. NEXT STEPS

Ongoing progress on the BadgerCare waiver evaluation requires that we continue, in collaboration with DHS, to establish a more efficient process to create data files within the DHS data warehouse. With that expectation, the project-wide focus of Years 02 and 03 will involve the following methodological work:

- Merge enrollment data files for evaluation populations to their claims and encounter data in order to construct analytic files for health care outcomes analyses.
- Construct claims- and encounter- based measures of unnecessary services and health outcomes, as summarized in Table 2 of the Approved Evaluation Design (Attachment A).
- Begin development of cost of care measures.
- Integrate findings from survey data with analyses from administrative data, toward a comprehensive response to hypotheses, particularly Questions 6, 9, and 17 as outlined in the Approved Evaluation Design (Attachment A).

Hypotheses-specific analyses for each of the waiver populations will proceed as follows and within the project workplan (Attachment E):

Transitional Medicaid (TMA) population

- To further extend our analysis of the impact of the 2014 waiver: estimate hazard models to evaluate the month-level risk of disenrollment based on both fixed individual characteristics and time-varying covariates (e.g., the change in exposure to premiums in the 6th month for individuals with incomes 100-133% FPL observed after the 2014 waiver)
- To further disentangle differences across income groups: stratify the sample in additional analysis by income levels and also conduct multivariate analysis to examine whether income differences arise after adjusting for other factors.
- Estimate models that link the enrollment data with premiums paid in order to calculate the impact of RRP policies on total amounts of premiums paid to the state.
- Integrate analysis of administrative data with survey data in order to examine differences that arise between individuals surveyed from the TMA and RRP categories in the 2016 survey.
- Begin evaluating changes in health care use attributable to the RRP policy – for example, changes in use of medical care before and after an RRP is experienced.

Childless Adults (CLA)

- Conduct analysis of health insurance coverage continuity for continuing CLA enrollees relative to continuing parent enrollees.
- Examine the impact on health care use of enrollment in the Standard plan relative to the Core plan. Investigation of this broad question requires a stepped approach. During the evaluation's second year, we will prioritize two types of outcomes: 1) unnecessary care use; and 2) use of services for which the benefits under the Standard plan differed most significantly from Core plan coverage (e.g., mental health and substance use disorder treatment).

VI. ATTACHMENTS

- A. Approved Waiver
- B. DHS Evaluation Design as originally submitted to and approved by CMS
- C. UW Recommended Changes and Crosswalk
- D. CMS Comments and UW/DHS Responses
- E. Workplan timeline and adjustment table
- F. Survey Instrument
- G. Descriptive view of raw survey responses



**BadgerCare Reform
Demonstration Draft
Evaluation Design**

October 31, 2014

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1. Executive Summary

In response to Section XI (Sections 47 – 48) of the Special Terms and Conditions (STCs) for the Wisconsin BadgerCare Reform Demonstration Project approved for the Wisconsin Department of Health Services, this document describes the proposed design for evaluating the effectiveness of the Demonstration in terms of the following domains of focus: Better Care, Better Health, and Reducing Costs.

Specifically, the evaluation design which is a mix of both quantitative and qualitative research techniques focuses on the application of rigorous scientific methods to arrive at an understanding of how the changes implemented under the Demonstration impact two Medicaid populations—(1) those individuals who are eligible for Medicaid through Transitional Medical Assistance (TMA Adults) and (2) those childless adults with an effective income level at, or below, 100% of the federal poverty level (FPL). As shown in the following figure, the Demonstration will result in a premium payment requirement for Parents & Caretaker Relatives over 133% FPL from the first day that transitional medical assistance (TMA) is effective (A2/A2). These premiums will be based on a sliding scale (Appendix 1) relative to household income with a cap of 9.5% of household income. Members between 100% and 133% FPL (A1/A1) will be eligible for TMA coverage for the first six (6) months of enrollment without paying a premium, but then will be required to pay premiums thereafter on the same scale. For both groups, once the period during which they are required to pay a premium begins, premium payment will be a condition of continued enrollment. Adults who do not make a premium payment will be dis-enrolled from BadgerCare Plus after a 30-day grace period and prohibited from reenrolling in BadgerCare Plus for 3 months—at which time they are eligible to re-enroll with the applicable premium payment structure.

Figure 1A: Plan Assignment and Premium Requirement Thresholds for TMA Adults

FPL	Before	After	STC- Cross Reference
<= 100%	C	C	N/A
>100 & <=133%	A1	A1 —	Population 1
> 133%	A2	A2 —	Population 1

———— Standard Plan



With respect to the TMA Adults, the evaluation will assess the impact of the premium requirement on measures such as the incidence of unnecessary services (e.g., Emergency Department visits or Inpatient Stays for Ambulatory Care Sensitive Conditions, 30 Day-All Cause Readmissions), changes in the cost of care (e.g., total allowed amounts for care in the demonstration period for the population as a whole and within sub-groups stratified on premium rate, education level, gender, etc.), measures of health process outcomes (e.g., preventive screening adherence rates), and measures of health outcomes as a function of cost (i.e., cost-effectiveness). Many of these measures will utilize claims, enrollment, and eligibility data from administrative sources, but factors affecting disenrollment will be identified using survey instruments and case studies (requirements are described in sections 3.3 and 3.4, respectively).

The second population included in this Demonstration is the non-pregnant, non-disabled childless individuals between 19 and 64 years of age whose income level does not exceed 100% of FPL. As depicted below, populations D/D* will move from the Core Plan or Basic Plan (limited benefit plans available to childless adults prior to April 1, 2014) to the Standard Plan—although, Basic Plan members were required to reapply before being enrolled to the Standard Plan. Please see appendix 3 for a full description of the BadgerCare Plus benefit plans and covered services. Childless adults with incomes that do not exceed 100% FPL who were previously enrolled in the BadgerCare Plus Core Plan have been transitioned to the BadgerCare Standard Plan, and those above 100% FPL may have moved to the federal Marketplace. Effective April 1, 2014, all new childless adults with incomes that do not exceed 100% FPL will be enrolled in the Standard Plan.

Figure 1B: Plan Assignment Changes for Childless Adults (CLA)

FPL	Before	After	STC Cross-Reference
100%	D	<u>D*</u>	Population 2
200%	B	<u>B</u>	N/A

 Standard Plan

Co[redacted]lan

No[redacted]Plan/Market Place

*Population also includes individuals formerly on Core Plan wait-list

As with the evaluation of the Demonstration's impact on the TMA population, the evaluation of the Demonstration's impact on the CLA population will focus on measures of better health, better care, and reducing costs, and this evaluation will also study the effect an expanded set of available services has on these outcomes.

As outlined in the following table, the evaluation design will utilize multiple research methodologies and data sources to provide answers to the following questions— derived from Section 48, paragraph b of the STCs—for the TMA and CLA populations.

Table 1: Evaluation Questions and Associated Data Analysis Methods

Evaluation Question	Evaluation Method			
	Case Study	Administrative Data Analysis	Case-Control Matching Study	Enrollment/Disenrollment Survey
For the TMA: Demonstration participants: Payment of Premiums				
1. Will the premium requirement reduce the incidence of unnecessary services?	Y	Y	Y	--
2. Will the premium requirement lead to improved health outcomes?	Y	Y	Y	--
3. Will the premium requirement slow the growth in healthcare spending?	Y	Y	Y	--
4. Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?	Y	Y	Y	--
5. Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?	Y	Y	Y	--
Association of Enrollment Status to Utilization and/or Costs				
6. Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?	Y	Y	Y	Y
7. Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for individuals that have disenrolled and then re-enrolled?	Y	Y	Y	Y
Enrollment Analysis by Payment of Premiums				

Evaluation Question	Evaluation Method			
	Case Study	Administrative Data Analysis	Case-Control Matching Study	Enrollment/Disenrollment Survey
8. What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?	Y	Y	Y	--
9. How access to care affected by the application of new, or increased, premium amounts?	Y	Y	Y	Y
Payment of Premiums and 3-Month Restrictive Re-enrollment				
10. What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?	Y	Y	Y	Y
11. Does this impact vary by income level?	Y	Y	Y	--
12. If there is an impact, explore the break-out by income level.	Y	Y	Y	--
For CLA Adults: Effects of the Benefit Plan for demonstration expansion group				
13. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries result in improved health outcomes?	Y	Y	Y	--
14. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries achieve a reduction in the incidence of unnecessary services?	Y	Y	Y	--
15. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Outcomes/Cost) of Medicaid services?	Y	Y	Y	--
16. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Utilization/Cost) of Medicaid services?	Y	Y	Y	--
17. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?	Y	Y	Y	Y

2. Evaluation Design Overview

2.1 Development Approach

In order to develop an evaluation design that is capable of answering the questions set forth in the preceding table, the following logic models were employed to focus development of the design on the activities and external influences that affect the outcomes being studied.

Figure 2a: Program Logic Model for BadgerCare Reform – TMA Adults

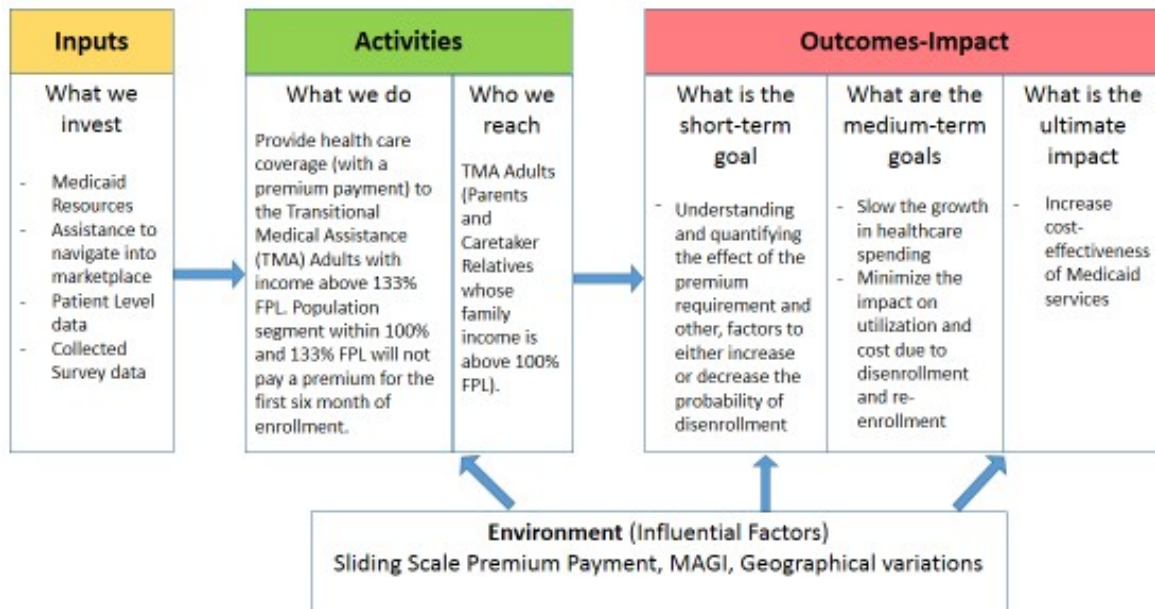
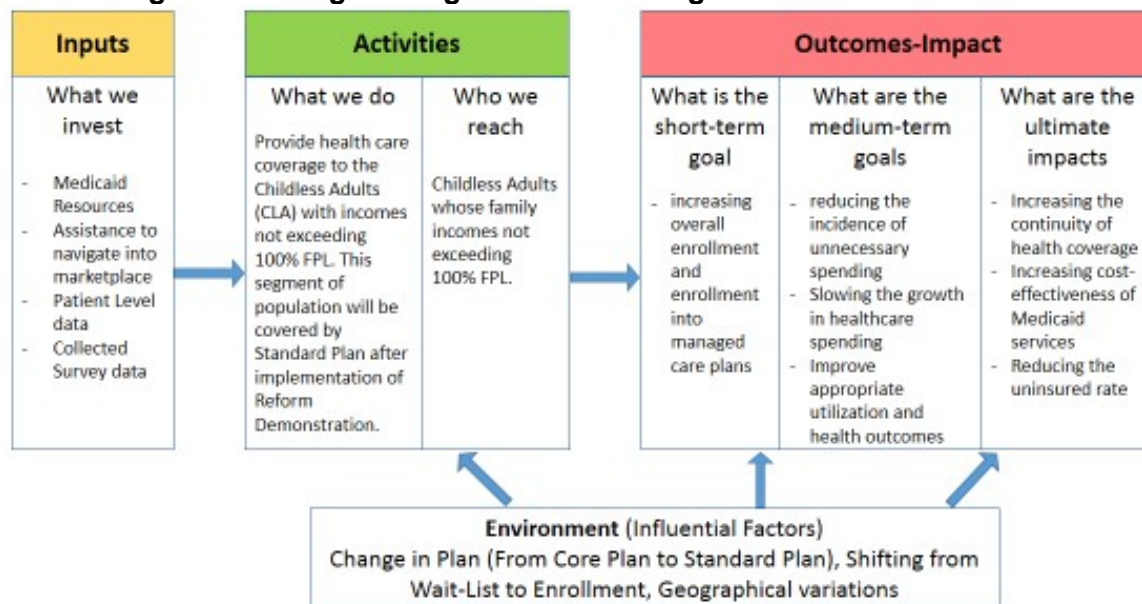


Figure 2b: Program Logic Model for BadgerCare Reform – Childless Adults



These models will also provide the logical framework to be used in evaluating the effectiveness of the Demonstration. Logic models (Taylor-Powelare et. al., 2003) are graphical representations of the logical relationships between the resources, activities, outputs and outcomes of a program. Whereas there are many ways in which logic models can be presented, the underlying purpose of the logic model is to identify the possible "if-then" (causal) relationships between the elements of the program. For example, the current logic model identifies the resources available for the Demonstration program, the types of activities that can be effectively implemented using those resources, and the specific outputs and outcomes that can be expected as a result of those activities.

2.2 Target Populations

As described previously, two target populations will be studied under this evaluation—TMA Adults and Childless Adults.

2.2.1 TMA Population.

In the TMA population, the Demonstration will enable the State to test the impact of requiring a premium payment that aligns with the insurance affordability program in the federal Marketplace based on their household income when compared to federal poverty level (FPL). This population is divided into two segments—those individuals with incomes above 133 percent of the FPL (who will be required to pay a premium starting from the first day of enrollment) and those with incomes between 100-133 percent of the FPL (who will be required to pay a premium after the first 6 calendar months of TMA coverage).

2.2.2 CLA Population.

The Childless Adults (CLA) population consists of Non-pregnant, Non- Disabled Childless Adults between 19 and 64 years of age who have family incomes that do not exceed 100 percent FPL. As a result of the

Demonstration, this population will be moved from the Core or Basic Plan to the Standard Plan¹—which offers more comprehensive services compared to the Core or Basic Plan. This population will likely include a large portion of the individuals who were on the Core Plan wait-list.

The State will isolate or exclude from the evaluation any overlapping initiatives (e.g. integrated care models coupled with payment reform) that target the TMA or CLA populations. At this time the State has not identified any current initiatives that would impact this evaluation, and will provide a detailed analysis plan for controlling the effects of such initiatives on the current evaluation's studied outcomes.

2.3 Stage of Development

The Demonstration project began April 1, 2014 and will continue until December 2018. There will be short-term, medium-range and long-term outcomes expected from this project. The target populations will be monitored using claims, eligibility and enrollment data. At the end of the demonstration period, the study populations will be surveyed regarding enrollment and

disenrollment events. The populations will also be surveyed for case studies (to be identified by the selected evaluator) to augment the findings generated by the analysis of administrative data.

2.4 Inputs

The State and CMS have dedicated resources to the Medicaid Program. The State has modified the program to reduce the uninsured population in the state as well as increase health outcomes for the Medicaid population. To evaluate these goals, the evaluator will collect enrollment and medical claims data from the interChange System (hosted and operated by HP Enterprise Services), eligibility data from the Client Assistance for Re-employment and Economic Support System (CARES). In addition, the evaluator will develop and collect data using a survey of selected members. The State will also support the activities and human resources necessary to complete the evaluation process through the demonstration period, December 31, 2018

¹ Basic Plan members were required to reapply before being enrolled in the Standard Plan

2.5 Activities

During the Demonstration, the State will provide healthcare coverage to both the TMA and CLA population in accordance with the terms outlined. As outlined in STC 26, the State will hold a public forum (initial within first 6 months and annually thereafter) to solicit comments on the progress of the demonstration project and will provide a summary of the forum in the subsequent Quarterly Report submitted following the close of the quarter in which the forum is held. In addition to these summaries, the Quarterly Report will include initial findings included as part of the evaluation design—e.g., enrollment/disenrollment rates, measures of unnecessary services, counts of services accessed, etc—.

2.6 Outcomes

The evaluation will assess whether the Demonstration achieves the following goals:

- Ensure every Wisconsin resident has access to affordable health insurance and reducing the State's uninsured rate.
- Provide a standard set of comprehensive benefits for low income individuals that will lead to improved healthcare outcomes.
- Create a program that is sustainable so Wisconsin's healthcare safety net is available to those who need it.

Successful accomplishment of these goals will be demonstrated or inferred by achievement of short-, medium-, and long-range goals within the two study populations.

2.6.1 TMA Population

The short term goal is:

- a) understanding and quantifying the effect of the premium requirement and other, factors to either increase or decrease the probability of disenrollment

The medium range goals are:

- b) slowing the growth in healthcare spending

- c) minimizing the impact on utilization and cost due to disenrollment and re-enrollment
- d) improve appropriate utilization, quality and health outcomes The long term goal is:
- e) increasing cost-effectiveness of Medicaid services

2.6.2 CLA Population

The short term goal is:

- a) increasing overall enrollment and enrollment into managed care plans

The medium range goals are:

- b) reducing the incidence of unnecessary spending
- c) slowing the growth in healthcare spending
- d) improve appropriate utilization and health outcomes The long term goals are:
- e) increasing the continuity of health coverage
- f) increasing cost effectiveness of Medicaid services
- g) reducing the uninsured rate

In the following sections, the evaluation design describes the Core Elements of the evaluation—including the specific research questions posed, the methods used to arrive at the answers to those research questions, the outcome measures used to evaluate the impact of the demonstration, and the sources of those measures. The evaluation design also provides details on the sources of data that will be used to perform the analyses (i.e., the independent, dependent, and co-varying factors that will be studied) as well as an explanation of the establishment of the baseline measures and control groups for each of the populations under study.

3. Evaluation Design

Having framed the evaluation design development in terms of the preceding logic models, the following evaluation questions identified in STC 48.b. will be addressed using a variety of research methodologies.

Table 2: Evaluation Questions and Associated Data Analysis Methods

Evaluation Question	Evaluation Method			
	Case Study	Administrative Data Analysis	Case-Control Matching Study	Enrollment/Disenrollment Survey
For the TMA: Demonstration participants: Payment of Premiums				
1. Will the premium requirement reduce the incidence of unnecessary services?	Y	Y	Y	--
2. Will the premium requirement lead to improved health outcomes?	Y	Y	Y	--
3. Will the premium requirement slow the growth in healthcare spending?	Y	Y	Y	--
4. Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?	Y	Y	Y	--
5. Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?	Y	Y	Y	--
Association of Enrollment Status to Utilization and/or Costs				
6. Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?	Y	Y	Y	Y
7. Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for individuals that have disenrolled and then re-enrolled?	Y	Y	Y	Y
Enrollment Analysis by Payment of Premiums				
8. What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?	Y	Y	Y	--
9. How access to care affected by the application of new, or increased, premium amounts?	Y	Y	Y	Y
Payment of Premiums and 3-Month Restrictive Re-enrollment				
10. What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?	Y	Y	Y	Y
11. Does this impact vary by income level?	Y	Y	Y	--
12. If there is an impact, explore the break-out by income level.	Y	Y	Y	--
For CLA Adults: Effects of the Benefit Plan for demonstration expansion group				
13. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries result in improved health outcomes?	Y	Y	Y	--
14. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries achieve a reduction in the incidence of unnecessary services?	Y	Y	Y	--

Evaluation Question	Evaluation Method			
	Case Study	Administrative Data Analysis	Case-Control Matching Study	Enrollment/Disenrollment Survey
15. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Outcomes/Cost) of Medicaid services?	Y	Y	Y	--
16. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Utilization/Cost) of Medicaid services?	Y	Y	Y	--
17. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?	Y	Y	Y	Y

The proposed research methods used to answer these questions—and the application of the methods to specific research questions—are described in the following sections. The DHS will procure for an independent evaluator before the end of the second demonstration year, March 31, 2016. The DHS will consult with CMS if the selected evaluator proposes additional research methods.

3.1 Administrative Data Analysis

Analysis of administrative data will be conducted using Medicaid enrollment and claims data from the interChange System and from the Medicaid eligibility determination and maintenance system, Client Assistance for Re-employment and Economic Support System (CARES), hosted by Deloitte.

3.2 Case-Control Matching Study

Within the TMA population for which FPL is 133% or more, there will be a portion of the population that will lose the coverage due to non-payment of premiums.

The best estimate about the percent of drop-outs is that approximately 40% will fall into this category within first twelve months of the demonstration. To answer the research questions related to this section of the TMA population, matching sample will be constructed from the remainder 60% of the cohort who maintained their coverage during the first year. The matching will be executed following standard statistical procedures such as, propensity score matching or exact covariate matching. Since the case group and the matched control group are drawn from a somewhat homogenous population, i.e. TMA with 133% or more FPL, any matching method for a specific outcome may inherit biases due to unobserved covariates. To overcome any shortcomings from this situation Heller, Rosenbaum & Small (2009) recommended to perform sensitivity analysis using split-sample technique. In our case we will execute matching to determine comparable control group and apply 10%-90% split-sample technique to test the sensitivity of biases due to unobserved covariates.

Here we discuss the split-sample approach in the context of a research question: Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for individuals that have disenrolled and then re-enrolled? This is a direct comparison of costs and utilization between the groups of members who were continuously enrolled versus the members who were disenrolled and reenrolled again. Let's call the disenrollment/re-enrollment group as treatment and continuously enrolled group as control. The treatment group may have different health outcomes and/or costs than the control group due to some cofactors which are not adjusted. As Zhang et.al., (2011) mentioned 'after adjustment for observed covariates, the key source of uncertainty in an observational study is the possibility that differences in outcomes between treated and control subjects are not effects of the treatment but rather biases from some unmeasured way in which treated and control subjects were not comparable'.

Heller, Rosenbaum, and Small (2009) suggested to split the sample at random into a small planning sample of 10% and large analysis sample of 90% to perform a sensitivity analysis that asks how failure to control some unmeasured covariates might alter the conclusion of the research question. The planning sample will be used to design the study and guide the analysis plan – whereupon the planning sample will be discarded. All analyses and interpretations will be based on untouched, unexamined, untainted analysis sample.

As an example, we demonstrate how the research question 5 will be analyzed using the proposed method. The research question states: 'Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for individuals that have dis-enrolled and then re-enrolled?' For the overall analysis the whole cohort will be considered at the beneficiary level analysis for several outcome variables. One of those is unnecessary ED visits.

The predictor variables are FPL level and the indicator variable whether the beneficiary lost coverage due to dis-enrollment after controlling for some demographic factors. This analysis will produce measures of impact of dis-enrollment over the costs and/or unnecessary utilization. To highlight this effect in some form of causation, we will have to apply method of observational studies where the beneficiaries who were dis-enrolled during the first year after demonstration will be considered as 'Cases'. Applying matching technique we will find comparable controls from the pool of beneficiaries who had continuous coverage during the first year. Furthermore, to

avoid the risk of bias in finding right controls, we will employ split-sample technique to determine the sensitivity of that bias. We propose to have a 10%-90% split for planning and analysis pair samples as were done in Heller, Rosenbaum & Small (2009) and Zhang, Small, Lorch, Srinivas and Rosenbaum (2011).

3.3 Enrollment/Disenrollment Survey

DHS intends to contract with an independent evaluator during the second year of the demonstration and will conduct two surveys during the course of the demonstration. DHS will target completing a survey at the end of the second demonstration year and one at the end of the fourth year of the demonstration.

The surveys will be designed so that the sample size represents all major demographic sections of the study population and all levels of FPL eligibility.

We are proposing two separate surveys be employed for the two study populations. The focus for TMA Adults population will be to capture the effects of premium payments on enrollment status. For the Childless Adults, the surveys will try to discern the effects of enhanced benefits, based on survey respondents answers regarding their service needs, on health outcomes.

The survey data will be matched with claims and eligibility data used in administrative analysis to find the impact of premium payments on disenrollment, re-enrollment, churning and subsequently its impact on healthcare cost and utilization. DHS will update Table 3 to include additional measures identified from the surveys.

3.4 Case Study

The case study will be designed to provide information to address several of the questions included in the BadgerCare Demonstration Reform program. The first set of questions (1-10) relate to the TMA Adults (Population 1) and the second set (11-14) for Childless Adults (Population 2). To address these questions, in addition to administrative data analysis, case-control study and application of survey methodology, we propose phone interviews to investigate how premium payment and restrictive enrolment impacted health outcomes, costs and general impact of the program.

4. Data Analysis and Interpretation

The data analysis plan includes the four methods of evaluation previously discussed—Administrative Data Analysis, Case-Control Matching Study, Case Study and Enrollment/Disenrollment Survey Study. As depicted in the Question/Method Matrix (Table 2, below), each research question will be evaluated by different combinations of these methods. The proposed methods can be modified and adapted according to the evaluator's determination satisfying the standards agreed upon by the State and CMS. The outcome measures for each of these questions and related factors that will be needed to complete the analyses are described later in this section. The data analyses will be organized by the two study populations—TMA Adults and Childless Adults, respectively.

Further, in order to most effectively utilize these methods to research the questions specified in STC 48.b. The questions will be further broken out into a larger number of more specific research questions. The following question/method matrix identifies the research methods that will be employed to address each of the resulting research questions, and a description of the application of each method to the study of the associated question is detailed in this section.

Table 3: Evaluation Questions and Associated Data Analysis Methods

Evaluation Question	Evaluation Method			
	Case Study	Administrative Data Analysis	Case-Control Matching Study	Enrollment/Disenrollment Survey
For the TMA: Demonstration participants: Payment of Premiums				
18. Will the premium requirement reduce the incidence of unnecessary services?	Y	Y	Y	--
19. Will the premium requirement lead to improved health outcomes?	Y	Y	Y	--
20. Will the premium requirement slow the growth in healthcare spending?	Y	Y	Y	--
21. Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?	Y	Y	Y	--
22. Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?	Y	Y	Y	--
Association of Enrollment Status to Utilization and/or Costs				
23. Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?	Y	Y	Y	Y
24. Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for individuals that have disenrolled and then re-enrolled?	Y	Y	Y	Y
Enrollment Analysis by Payment of Premiums				
25. What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?	Y	Y	Y	--
26. How access to care affected by the application of new, or increased, premium amounts?	Y	Y	Y	Y
Payment of Premiums and 3-Month Restrictive Re-enrollment				
27. What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?	Y	Y	Y	Y
28. Does this impact vary by income level?	Y	Y	Y	--
29. If there is an impact, explore the break-out by income level.	Y	Y	Y	--
For CLA Adults: Effects of the Benefit Plan for demonstration expansion group				
30. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries result in improved health outcomes?	Y	Y	Y	--
31. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries achieve a reduction in the incidence of unnecessary services?	Y	Y	Y	--

32. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Outcomes/Cost) of Medicaid services?	Y	Y	Y	--
33. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Utilization/Cost) of Medicaid services?	Y	Y	Y	--
34. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?	Y	Y	Y	Y

4.1 Population Segment Definition

In order to facilitate the discussion of the analyses applied to the two study populations, each population "segment" will be described in further detail below:

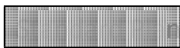

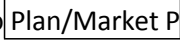
Figure 3A: Plan Assignment and Premium Requirement Thresholds for TMA Adults

FPL	Before	After	STC- Cross Reference
<= 100%	C	C	N/A
>100 & <=133%	A1	A1 <u> </u>	Population 1
> 133%	A2	A2 <u> </u>	Population 1

 Standard Plan

Figure 3B: Plan Assignment Changes for Childless Adults (CLA)

FPL	Before	After	STC Cross-Reference
100%	D	<u>D</u>*	Population 2
200%	B	<u>B</u>	N/A


 Core Plan
 No Plan/Market Place

*Population also includes individuals formerly on Core Plan wait-list

Segment A1: Parents and Caretaker Relatives who are non-pregnant, non- disabled whose effective family income is between 100% and 133% of FPL.

Segment A2: Parents and Caretaker Relatives who are non-pregnant, non- disabled whose effective family income is over 133% of FPL.

Segment A1: Same baseline population as Segment A1, but these members will have a twelve-month extension to have the same benefit as A1. Hence this segment of the population will not be considered for the initial analysis plan. When

more detailed information will be available in 2015 for this segment, the analysis plan can be amended based on policy decisions reached.

Segment A2: Same baseline population as Segment A2, who will be subjected to pay premiums during Demonstration based on sliding scale cost-sharing structure

Segment B: Non-pregnant, non-disabled childless individuals who are from 19 through 64 years old with an effective income between 100% and 200% FPL.

Segment B: Same baseline as population Segment B, who will be transitioned from Core Plan/Basin Plan to marketplace in the Demonstration project and is not a part of the evaluation design.

Segment C: Parents and Caretaker Relatives who are non-pregnant, non-disabled whose effective family income does not exceed 100% of FPL. The benefits for this segment will remain unchanged after the implementation of the Demonstration Reform and is not a part of the evaluation design.

Segment D: Non-pregnant, non-disabled childless individuals who are from 19 through 64 years old with an effective that does not exceed 100%, before Demonstration.

Segment D*: This segment of the study population will include all the baseline population which are entering Demonstration from segment D and all the uninsured or people on the Core Plan waitlist who qualified to be part of Segment D.

4.2 Data Analysis Method

The three major analytical strategies will be adopted for the data analysis to test the evaluation hypotheses. The methods are described in further detail below.

1. Means Test
2. Multivariate Regression modeling
3. Cost-Effectiveness Analysis

Means Test

For all the measures that are population based, the predictors cannot be associated to the changes that are observed in time. The overall measures are compared before and after implementation time periods. The changes will be viewed as the effects of the reform demonstration. Multiple comparisons will be carried out to determine measurement changes from baseline and over time.

Multivariate Regression Modeling

The measures from Medicaid Adult Core Set and NCQA HEDIS will be modeled using difference-in-difference (DID). These measures are population based, with overall rates and percentages are calculated related to sections of populations. Individually each member will have dichotomous response for each of the measures indicating whether or not the member received services (e.g. screening) received during a specific time period. Those dichotomous variables are then modeled by predictors and control variables.

For the hypothesis where the outcome is measured as the indicator of disenrollment, similar dichotomous variables will be used. The annual total cost variables are on continuous type but most likely will be positively skewed. For this reason all cost data will be log-transformed before modeling by predictors and control variables.

Cost-Effectiveness Analysis

Cost-effectiveness analysis typically relates cost of care to the quality outcomes as a population-based measure. The primary factor in this analysis is how the effect of time is addressed. For example, adherence to control medication may have a significant impact on Asthma outcomes. If the intervention is geared toward raising medication adherence, then the cost of care will increase during the first few months of the intervention due to higher rates of medication refill.

However, the long term effect of the higher adherence in terms of reduced ER visit or hospitalizations might not be observed immediately. So the cost-effectiveness will be very low (potentially negative) for initial months. For each of the outcomes the potential lag-time will be considered for cost-effectiveness analysis.

For each research question described in the preceding Question/Method Matrix (Table 3, above), the outcome variable(s) and the predictors are stated below. We found that most of the questions needed to be analyzed by controlling several variables. Instead of repeating those under each question, the list is mentioned here. Unless otherwise mentioned for any given question it will be assumed that the research question will be analyzed using this set of control variables.

Demographics (Age[Group], Gender, Race & Ethnicity), Education, County, Region, Risk Score[ACG or CDPS], belongs to MCO or FFS, Tribal population*. Some risk scores use Age and Gender as predictors. In that case, age and gender can be dropped for modelling purposes.

Questions 1 thru 12 relate to the population segments A2 and A2. Population segment A2 data is used to create baseline measures for comparison of measures calculated at a future date during the Demonstration. Otherwise, data from population segments A2 and A2 will be merged to develop statistical models and case-control studies. All 12 research questions will be analyzed at the beneficiary level. The claims and eligibility data will be used to create beneficiary level variables. The questions for which the cofactors or outcomes are time-varying variables longitudinal analysis methods are proposed.

The reports that will be generated to monitor health outcomes shown in Table 3, will be calculated at aggregate level.

Question 1: *Will the premium requirement reduce the incidence of unnecessary services?*

Hypothesis 1.1: The incidence of unnecessary services (such as Emergency Department visits and Inpatient Stays for Ambulatory Care Sensitive Conditions (ASCs), 30-Day All Cause Readmissions and overall inpatient stays) will be lower for TMA members in the demonstration than the incidence of unnecessary services for the same population prior to the demonstration.

Members in transitional medical assistance who are paying premiums will be more engaged in the health care decision making process and will make more efficient use of preventive and primary care, reducing the incidence of unnecessary services such as Emergency Department visits and Inpatient Stays for Ambulatory Care Sensitive Conditions (ASCs), 30-Day All Cause Readmissions and overall inpatient stays.

Outcome Variables: Emergency Department visits and Inpatient Stays for Ambulatory Care Sensitive Conditions (ASCs), 30-Day All Cause Readmissions and overall inpatient stays.

Predictor / Explanatory Variable(s): FPL (hence sliding scale premium).

Data Analysis Method: Changes in the number of unnecessary services over time (during the prior year and the five-year duration of the study) will be examined as a function of the individual premium payment levels determined by the premium schedule. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s) and perform sub-group analyses (i.e., separate models for different sub-sections of the population). For case-control analyses a split-sample method will be used to assign individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this

division of the sample will be maintained during the rest of the study period for comparison purposes.

Question 2: Will the premium requirement lead to improved health outcomes?

Hypothesis 2.1: Health care outcomes (as defined in table 3 below) for the TMA population who are paying premiums will be better than the health care outcomes for these members prior to the demonstration.

Hypothesis 2.2: Health care outcomes (as defined in table 3) for TMA members who are paying premiums will be better than health care outcomes for members not paying premiums.

TMA members who are paying premiums will be more engaged in the health care decision making process and will make more efficient use of preventive and primary care, leading to improved health outcomes.

Table 4: Outcome Measures Frequently used by DHS to Determine Healthcare Quality

Focus Area	NQF Measure #	CMS Adult Core Set #	Measure
Preventive / Screening	0031	Measure 3	Breast Cancer Screening (BCS) (HEDIS-NCQA)
Chronic	0057	Measure 19	Comprehensive Diabetes Care- HbA1c Testing (HEDIS-NCQA)
	0063	Measure 18	Comprehensive Diabetes Care- LDL-C Screening (HEDIS-NCQA)
Mental Health	0105	Measure 20	Antidepressant Medication Management (AMM- Effective Continuation Phase) (HEDIS)
	0004	Measure 25	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment (IET-Engagement of AOD Treatment) (HEDIS-NCQA)
			Tobacco Cessation (Counseling only) – Wisconsin specific measure – the percentage of adult smokers that received tobacco cessation counseling during the calendar year
	0576	Measure 13	Follow-up After Hospitalization for Mental Illness – 30 Days After Discharge (FUH-30) (HEDIS-NCQA)
Emergency Dept.			Ambulatory Care – Emergency Department Visits (AMB) sans revenue code 0456 (HEDIS-NCQA)

DHS will explore including additional health care outcomes measures from medical record data as agreed upon with HMOs and other Medicaid providers in the state.

Outcome Variables: The outcome variables will be recorded as member-specific data. The screening, preventive and primary care indicators are binary variables based on whether a member reported to have obtained the age, gender, and chronic condition specific services specified by NCQA for relevant HEDIS measures.

Predictor/Explanatory Variable(s): FPL (hence sliding scale premium).

Data Analysis Method: The changes in the likelihood that a member will receive screening, preventive and primary care services over time (during the prior year and the five-year duration of the study) will be examined as a function of the individual premium payment levels determined by the premium schedule. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates.

Therefore, we are proposing to develop generalized estimation equation (GEE) models for the binary outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) will be performed.

For case-control analyses a split-sample method will be used to assess the assignments of individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this division of the sample will be maintained during the rest of the study period for comparison purposes.

Question 3: Will the premium requirement slow the growth in healthcare spending?

Hypothesis 3.1: Healthcare spending for TMA members paying premiums during the demonstration will be lower compared to the healthcare spending for the same members prior to the demonstration.

Hypothesis 3.2: Healthcare spending for TMA members paying premiums during the demonstration will be lower compared to the healthcare spending for members (of similar makeup) outside of the demonstration.

Outcome Variable: The evaluation will consider using Allowed Amounts, Paid Amounts, and/or per member costs as the outcome variable for cost calculations (e.g. the allowed amount is calculated as the amount paid by Wisconsin Medicaid for services based on the maximum allowable fee schedule or the capitation payments made to Medicaid HMOs).

Predictor / Explanatory Variable(s): FPL levels defined in terms of levels on the sliding premium scale.

Data Analysis Method: Healthcare spending over time (during the prior year and the five-year duration of the study) will be evaluated as a function of individual premium payment level. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) are proposed.

Since the cost data are generally positively skewed (with long right side tail), assumptions related to linear regressions do not hold true for modeling purposes. Some kind of transformation of cost data is needed to apply linear regression methods. Most common of those are log transformations of the cost data. This process might result in hidden biases during transforming back to the predicted values of the cost data (Manning & Mullahy, 2001) and corrective measures can be adopted as described in that research publication.

For case-control analyses a split-sample method will be used to assign individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this division of the sample will be maintained during the rest of the study period for comparison purposes. See section 5 for data collection methods and baseline development.

Question 4: Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?

Hypothesis 4.1: The cost-effectiveness for TMA members paying premiums during the demonstration will be higher (over time) as compared to the cost effectiveness for the same members prior to the demonstration.

Outcome Variable: Cost-Effectiveness is usually calculated as cost divided by a measure of health outcomes. In this case the cost variable(s) utilized in Question 2 can be used along with the measure of unnecessary services utilized in Question 1 in combination with the health care outcomes measures listed below:

Predictor / Explanatory Variable(s): FPL levels defined in terms of levels on the sliding premium scale.

Data Analysis Method: The need is to analyze the changes in cost-effectiveness (specifically aimed at unnecessary services over time and the health outcomes defined in table 3 above), during the baseline year and the five-year duration of the study, as explained by the individual premium payment requirements by FPL. This outcome variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) are proposed.

For case-control matching study using split-sample technique, samples can be determined during the first year of the Demonstration. This division of the sample will be maintained during the rest of the study period for comparison purposes.

Question 5: Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?

Hypothesis 5.1: The cost-effectiveness for TMA members paying premiums during the demonstration will be higher (over time) as compared to the cost effectiveness for the same members prior to the demonstration.

Outcome Variable: Cost-Effectiveness will be determined as to whether changes in cost resulted in fewer unnecessary utilization healthcare services. In this case the cost variable(s) used in Question 2 can be used along with the measure of unnecessary

services (such as Emergency Department visits and Inpatient Stays for Ambulatory Care Sensitive Conditions (ASCs), 30-Day All Cause Readmissions, and overall inpatient stays).

Predictor / Explanatory Variable(s): FPL levels defined in terms of levels on the sliding premium scale.

Data Analysis Method: The need is to analyze the changes in cost-effectiveness (specifically aimed at reduction of unnecessary services), during the prior year and the five-year duration of the study, as explained by the individual premium payment requirements by FPL. This outcome variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) are proposed.

For the case-control matching study, the control group will be identified by propensity score matching and the split-sample technique used to determine the sensitivity of bias present in the matching method. The case and control samples will be determined during the first year of the Demonstration. This division of the sample will be maintained during the rest of the study period for comparison purposes.

Question 6: Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?

Hypothesis 6.1: Utilization, costs, and health care outcomes will not be impacted for those individuals who were disenrolled, but re-re-enrolled after the 3-month restrictive re-enrollment period due to the limited amount of time that individuals would not have access to benefits.

Outcome Variable: Unnecessary services (i.e. ED Visits and Inpatient Stays for Ambulatory care Sensitive Conditions) and avoidable events (i.e. 30-Day All-Cause

Readmissions and Unnecessary Medical Services and Devices) as well as the health care outcomes defined in table 3.

The evaluation will consider using Allowed Amounts, Paid Amounts, and/or per member costs as the outcome variable for cost calculations (e.g. the allowed amount is calculated as the amount paid by Wisconsin Medicaid for services based on the maximum allowable fee schedule or the capitation payments made to Medicaid HMOs).

Predictor / Explanatory Variable(s): FPL levels defined in terms of levels on the sliding premium scale. Disenrollment/Re-enrollment history will be used to identify common patterns of disenrollment and re-enrollment and the effect of these patterns on the outcome variable will be assessed.

Data Analysis Method: We are proposing longitudinal regression methods for this analysis. The enrollment / disenrollment / re-enrollment information can be used multiple ways. Indicator variables can be developed to identify whether a member had any of these statuses within a certain unit of time and these variables will be added to the regression model. Alternatively, the enrollment status can be counted and categorized to discover differential effects of disenrollment/re-enrollment vs. continuous enrollment.

Question 7. Are costs, utilization of services, and/or health outcomes different for those that are continuously enrolled compared to costs/utilization for individuals that have disenrolled and then re-enrolled?

Hypothesis 7.1: Utilization, costs, and health care outcomes will not be different for those individuals who are continuously enrolled compared to those for individuals that have disenrolled and then re-enrolled due to the limited amount of time that individuals would not have access to benefits.

Outcome Variable: Unnecessary services (i.e. ED Visits and Inpatient Stays for Ambulatory Care Sensitive Conditions) and avoidable events (i.e. 30-Day All Cause Readmissions and utilization of unnecessary medical services and devices).

The evaluation will consider using Allowed Amounts, Paid Amounts, and/or per member costs as the outcome variable for cost calculations (e.g. the allowed amount is calculated as the amount paid by Wisconsin Medicaid for services based on the maximum allowable fee schedule or the capitation payments made to Medicaid HMOs).

Predictor / Explanatory Variable(s): FPL (hence sliding scale premium). Disenrollment/Re-enrollment history (Identify few frequent patterns of disenrollment / re-enrollment and create dummy variables on those patterns).

Data Analysis Method: We are proposing longitudinal regression methods for this analysis. The enrollment / disenrollment / reenrollment information can be used multiple different ways. Indicator variable can be developed whether a member had any of these statuses within a certain unit of time and use the variable in models. Otherwise, the enrollment status can be counted and categorized to discover differential effects.

A Case-Control matching method using split-sample approach will be employed to determine if there are significant different outcomes between the groups of different insurance status.

Question 8. What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?

Hypothesis 8.1: TMA members with higher incomes will transition faster out of BadgerCare Plus than TMA members with lower income. The impact of the premium will vary by income level as TMA members with higher income will have more health care coverage options than members with lower income levels and may transition out of BadgerCare Plus faster.

Outcome Variable: Disenrollment/Re-enrollment history (Identify frequent patterns of disenrollment / re-enrollment and create dummy variables on those patterns).

Predictor / Explanatory Variable(s): FPL (hence sliding scale premium) with possible categorization into wider intervals (smaller number of buckets). STC Attachment B.

Data Analysis Method: Depending on the type of outcome variable that is used the analysis method will be selected. For example, if enrollment / disenrollment indicator is a categorical variable then either logistic regression analysis or generalized linear models can be employed to answer the research question.

Question 9. How is access to care affected by the application of new, or increased, premium amounts?

Hypothesis 9.1: The premium requirement will have no effect on access to care.

Outcome Variable: Access to care can be defined as availability of Preventive Care, Behavioral Health Care, Specialist Care, Post-Acute Care, will be measured through survey questions for TMA population related to accessing needed care such as whether members have a primary care physician and if they have had difficulties scheduling appointments with providers for needed care.

Predictor / Explanatory Variable(s): FPL (hence sliding scale premium) with possible categorization into wider intervals (smaller number of buckets). Appendix 1. Also, dummy variables can be created to depict if the premium payment is new or an increased amount from past payments.

Data Analysis Method: Generally 'Access To Care' can be determined as continuous or discrete variable, depending on the emphasis of the domain of care. Based on that determination an appropriate regression model can be developed for longitudinal data.

Question 10. What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?

The 3-month restrictive re-enrollment period for failure to make a premium payment will have variable impact on membership continuation and enrollment. We envision that after the restrictive re-enrollment period is over and members reenroll again their

likelihood of paying regular premiums will increase. The comprehensive benefit package that Wisconsin Medicaid members receive will incentivize them to continue paying their premiums and remain enrolled in Medicaid after their return beyond the restrictive reenrollment period. We also presume that this effect will vary by income level, since members with higher incomes will have more opportunities to purchase health insurance outside of BadgerCare Plus. The next three hypotheses are based on this context.

Hypothesis 10.1: The 3-month restrictive re-enrollment period for failure to make a premium payment will increase retention for both payment of premiums (after members return to Wisconsin Medicaid) and TMA member's enrollment after adjusting for the member's acuity.

Outcome Variable(s): This is a Dyad Outcome. A suitable combination category class can be created based on the premium amount and pattern of enrollment / disenrollment. The categories will be created so that variability can be observed based on 3-month restrictive enrollment.

Predictor / Explanatory Variable: This is a Binary variable and based on whether any member had experienced this condition.

Data Analysis Method: The categorization of dual outcome variables will create a nominal variable since there may not be a logical ordering between the categories. The logistic regression method for nominal variables may be applied to answer this research question.

Question 11. Does this impact (as described in Question 10) vary by income level?

Hypothesis 11.1: The impact (as described in Question 10) will vary by income level and other variables.

Outcome Variable: This is a Dyad Outcome. A suitable combination category class can be created based on the premium amount and pattern of enrollment / disenrollment.

The categories will be created so that variability is observed based on 3-month restrictive enrollment.

Predictor / Explanatory Variable(s): Categorical variables created by smaller number of income classes.

Data Analysis Method: The categorization of dual outcome variables will create a nominal variable since there may not be a logical ordering between the categories. The logistic regression method for nominal variables may be applied to answer this research question.

Question 12. If there is an impact (as described in Question 10), explore the break-out by income level.

Hypothesis 12.1: (as described in Question 10) We will explore the break-out by income level.

Outcome Variable: This is a Dyad Outcome. A suitable combination category class can be created based on the premium amount and pattern of enrollment / disenrollment.

The categories will be created so that variability is observed based on 3-month restrictive enrollment.

Predictor / Explanatory Variable(s): Categorical variables created by smaller number of income classes.

Data Analysis Method: The categorization of dual outcome variables will create a nominal variable since there may not be a logical ordering between the categories. The logistic regression method for nominal variables may be applied to answer this research question.

To find the break-out point(s) in the income level where significant differences are observed, exploratory analyses can be employed using different cut-off points of the income scale.

Questions 13 thru 16 relate to the population segment D and D*. Population segment D data are used to create baseline measures where only comparison of measures will be made to a future date during the Demonstration. Otherwise, data from population segments D and D* will be merged to develop statistical models and for case-control studies. Note: population segment D* will have new members who were on the uninsured or on the Core Plan waitlist before implementation of the Demonstration and were enrolled to BadgerCare Plus after the Demonstration.

Question 13. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries result in improved health outcomes?

Hypothesis 13.1: Childless adults who were previously (prior to April 1, 2014) enrolled in the BadgerCare Plus Core Plan will have better health outcomes in the demonstration than prior to the demonstration due to the enhanced benefit package in the Standard Plan such as mental health and dental.

Hypothesis 13.2: Newly eligible childless adults enrolled in the Standard Plan starting on April 1, 2014 will have better health outcomes as compared to the childless adults enrolled in the Core Plan for a similar period of enrollment during the demonstration.

Outcome Variable: Health Outcome Measures as shown in the following Table 3.

Table 5: Outcome Measures Frequently used by DHS to Determine Healthcare Quality

Focus Area	NQF Measure #	CMS Adult Core Set #	Measure
Preventive / Screening	0031	Measure 3	Breast Cancer Screening (BCS) (HEDIS-NCQA)
Chronic	0057	Measure 19	Comprehensive Diabetes Care- HbA1c Testing (HEDIS-NCQA)
	0063	Measure 18	Comprehensive Diabetes Care- LDL-C Screening (HEDIS-NCQA)
Mental Health	0105	Measure 20	Antidepressant Medication Management (AMM- Effective Continuation Phase) (HEDIS)

	0004	Measure 25	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment (IET-Engagement of AOD Treatment) (HEDIS-NCQA)
			Tobacco Cessation (Counseling only) – Wisconsin specific measure – the percentage of adult smokers that received tobacco cessation counseling during the calendar year
	0576	Measure 13	Follow-up After Hospitalization for Mental Illness – 30 Days After Discharge (FUH-30) (HEDIS-NCQA)
Emergency Dept.			Ambulatory Care – Emergency Department Visits (AMB) sans revenue code 0456 (HEDIS-NCQA)

Wisconsin Medicaid will explore including additional health care outcomes measures from medical record data as agreed upon with HMOs and other Medicaid providers in the state. Some additional health care outcomes could also be derived from the survey questions.

Wisconsin Medicaid will include EPSDT measures as part of health care outcomes pending further analysis of the 19 to 20 age cohort covered under the Core Plan and the new childless adult population to assess cell size.

Predictor / Explanatory Variable(s): The health outcomes measures for the childless adult population who were covered by the Core Plan before implementation of the demonstration and during the demonstration. Hence the combination of time period and benefit plan is the predictor for this analysis.

Data Analysis Method: First, the basic analysis for this research question will be calculation and comparison of different measures over time. DHS has baseline data and values for the measures in Table 3 for the BadgerCare Plus Standard Plan population; for the Core Plan population, DHS has baseline data but not specific baseline values which can be calculated through administrative data using the algorithms developed by our fiscal vendor for the Standard Plan population. The baseline measures will be used for most of the comparison purposes. We propose to adjust some of the measures by suitable control variables, though HEDIS measures as described in the table above, are not adjusted by any covariates.

A second analysis will be to examine the changes in the likelihood that a member will receive screening, preventive and primary care services over time (during the years prior to the demonstration and the five-year duration of the study) will be examined as a function of the enhanced benefit package of the Standard Plan. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop generalized estimation equation (GEE) models and use a logistic regression model for the binary outcome variable(s).

Sub-group analyses (i.e., separate models for different sub-sections of the population) will be performed.

For case-control analyses a split-sample method will be used to assess the assignments of individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this division of the sample will be maintained during the rest of the study period for comparison purposes.

Question 14. Will this (as described in Question 13) achieve a reduction in the incidence of unnecessary services?

Hypothesis 14.1: For childless adults who were previously (prior to April 1, 2014) enrolled in the BadgerCare Plus Core Plan there will be a reduction in the incidence of unnecessary services (such as Emergency Department visits and Inpatient Stays for Ambulatory Care Sensitive Conditions, 30-Day All Cause Readmissions) during the demonstration compared to prior to the demonstration due to the enhanced benefits provided in the Standard Plan, specifically mental health and dental.

Hypothesis 14.2: Newly eligible childless adults enrolled in the Standard Plan starting on April 1, 2014 will show more efficient utilization of services compared to the childless adults enrolled in the Core Plan for a similar period of enrollment during the demonstration.

Outcome Variable: Unnecessary services and avoidable events (such as Emergency Department visits and Inpatient Stays for Ambulatory Care Sensitive Conditions, 30-Day All Cause Readmissions and unnecessary medical services and devices).

Predictor / Explanatory Variable(s): Most notable predictor as described in the question is the effect of time and the enhanced benefit package.

Data Analysis Method: Changes in the number of unnecessary services over time (during the prior year and the five-year duration of the study) will be examined as a function of the enhanced benefit package provided in the Standard Plan. This explanatory variable as well as some of the control variables (e.g., age, risk score, income level) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s) and perform sub-group analyses (i.e., separate models for different sub-sections of the population). For case-control analyses a split-sample method will be used to assign individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this division of the sample will be maintained during the rest of the study period for comparison purposes.

Question 15. Will the provision increase the cost effectiveness (Outcomes/Cost) of Medicaid services?

Hypothesis 15.1: For childless adults who were previously (prior to April 1, 2014) enrolled in the BadgerCare Plus Core Plan there will be increased cost effectiveness during the demonstration than prior to the demonstration due to the enhanced benefits provided in the Standard Plan, specifically mental health and dental.

Hypothesis 15.2: Newly eligible childless adults enrolled in the Standard Plan starting on April 1, 2014 will show higher cost effectiveness compared to the childless adults enrolled in the Core Plan for a similar period of enrollment during the demonstration.

Outcome Variables: Cost-Effectiveness will be determined as to whether changes in cost resulted in better health outcomes. In this case the cost variable(s) will be determined as total cost of care per member and the health outcomes will be that are listed in Table 3, screening / preventive measures, chronic condition management, mental health related measures and frequency of ED visits.

Predictor / Explanatory Variable(s): Most notable predictor as described in the question is the effect of time and the enhanced benefit package.

Data Analysis Method: Changes in the number of unnecessary services over time (during the prior year and the five-year duration of the study) will be examined as a function of the enhanced benefit package provided in the Standard Plan. This explanatory variable as well as some of the control variables (e.g., age, risk score, income level) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s) and perform sub-group analyses (i.e., separate models for different sub-sections of the population). For case-control analyses a split-sample method will be used to assign individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this division of the sample will be maintained during the rest of the study period for comparison purposes.

Question 16. Will the provision increase the cost effectiveness (Utilization/Cost) of Medicaid services?

Hypothesis 16.1: For childless adults who were previously (prior to April 1, 2014) enrolled in the BadgerCare Plus Core Plan there will be increased cost effectiveness during the demonstration than prior to the demonstration due to the enhanced benefits provided in the Standard Plan, specifically mental health and dental.

Hypothesis 16.2: Newly eligible childless adults enrolled in the Standard Plan starting on April 1, 2014 will show higher cost effectiveness compared to the childless adults enrolled in the Core Plan for a similar period of enrollment during the demonstration.

Outcome Variable: Cost-Effectiveness will be determined as to whether changes in cost resulted in fewer unnecessary utilization healthcare services. In this case the cost variable(s) will be determined as total cost of care per member that can be used along with the measure of unnecessary services (such as Emergency Department visits and Inpatient Stays for Ambulatory Care Sensitive Conditions (ASCs), 30-day all cause readmissions, and overall inpatient stays).

Predictor / Explanatory Variable(s): Most notable predictor as described in the question is the effect of time and the enhanced benefit package.

Data Analysis Method: The effect may vary by income level or any other demographic variables. So some adjustment by control variables are also proposed for this question. The means test will determine any significant difference in cost-effectiveness measures from before to after demonstration.

There will also be an analysis of the changes in cost-effectiveness (specifically aimed at reduction of unnecessary services), during the prior year and the five-year duration of the study, as explained by the enhanced benefit package provided in the Standard Plan. This outcome variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) are proposed.

For the case-control matching study, the control group will be identified by propensity score matching and the split-sample technique used to determine the sensitivity of bias present in the matching method. The case and control samples will be determined during the first year of the Demonstration. This division of the sample will be maintained during the rest of the study period for comparison purposes.

Question 17. Will it demonstrate an increase in the continuity of health coverage?

Hypothesis 17.1: For childless adults who were previously (prior to April 1, 2014) enrolled in the BadgerCare Plus Core Plan there will be an increase in the continuity of coverage in the demonstration compared to prior to the demonstration due to the enhanced benefits provided in the Standard Plan, specifically mental health and dental.

Hypothesis 17.2: Newly eligible childless adults enrolled in the Standard Plan starting on April 1, 2014 will show an increased continuity of coverage compared to the childless adults enrolled in the Core Plan for a similar period of enrollment during the demonstration.

Outcome Variable: Any preferred measure of Continuity of Coverage. The measure will be calculated by combining data from claims and eligibility. Moreover, the continuity of care will be determined as part of the survey to CLAs related to usual sources of care and their experience in getting needed care before and after the demonstration.

Predictor / Explanatory Variable(s): Enrollment binary variable.

Data Analysis Method: Comparison between before and after implementation of Demonstration will be made and the measure will be analyzed over time.

A summary of the analysis plan for each of the questions is provided, below, as Table 4.

Table 6: BadgerCare Reform Demonstration Evaluation Data Analysis Plan					
Research Question	Proposed Variables in analysis and/or model development			Anticipated Analysis level & Comments	Proposed Data Analysis Method
	Outcome Variable	Predictors / Independent Variable(s)	Control Variables		
For the TMA: Demonstration participants: Payment of Premiums					
1. Will the premium requirement reduce the incidence of unnecessary services?	Unnecessary ED Visits as defined in Billings et al., (2000) paper. Ambulatory Care Sensitive Visits (Non-Emergent, Primary Care Treatable, Avoidable). Also, 30-Day All Cause Readmissions and Unnecessary Medical Services & Devices.	FPL (hence sliding scale premium)	Demographics (Age[Group], Gender, Race & Ethnicity), Education, County, Region, Risk Score[ACG or CDPS], belongs to MCO or FFS, Tribal population*.	Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population	Changes in the number of unnecessary services over time (during the prior year and the five-year duration of the study) will be examined as a function of the individual premium payment levels determined by the premium schedule. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time- varying covariates. Therefore, it is proposed to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population).
2. Will the premium requirement lead to improved health outcomes?	The outcome variables will be recorded as member-specific data. The screening, preventive and primary care indicators are binary variables based on whether a member reported to have obtained the age, gender, and chronic condition specific services specified by NCQA for relevant HEDIS measures.	FPL (hence sliding scale premium)	Some risk scores use Age and Gender as predictors. In that case, age and gender can be dropped for modelling purposes.	Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population	The changes in the likelihood that a member will receive screening, preventive and primary care services over time (during the prior year and the five-year duration of the study) will be examined as a function of the individual premium payment levels determined by the premium schedule. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time- varying covariates. Therefore, we are proposing to develop generalized estimation equation (GEE) models for the binary outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) will be performed.
3. Will the premium requirement slow the growth in healthcare spending?	Allowed Amount will be used as the outcome variable for all cost calculations. This will be calculated as the amount paid by Wisconsin Medicaid for services based on the maximum allowable fee schedule or the capitation payments made to Medicaid HMOs.	FPL (hence sliding scale premium)		Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population	Healthcare spending over time (during the prior year and the five-year duration of the study) will be evaluated as a function of individual premium payment level. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) are proposed.

<p>4. Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?</p>	<p>Cost-Effectiveness is usually calculated as cost divided by a measure of health outcomes. In this case the cost variable(s) utilized in Question 2 can be used along with the measure of unnecessary services utilized in Question 1.</p>	<p>FPL (hence sliding scale premium).</p>		<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population</p>	<p>The need is to analyze the changes in cost-effectiveness (specifically aimed at unnecessary services over time), during the prior year and the five-year duration of the study, as explained by the individual premium payment requirements by FPL. This outcome variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) are proposed.</p>
<p>5. Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?</p>	<p>Cost-Effectiveness will be determined as to whether changes in cost resulted in fewer unnecessary utilization healthcare services. In this case the cost variable(s) used in Question 2 can be used along with the measure of unnecessary services (such as Emergency Department visits and Inpatient Stays for Ambulatory Care Sensitive Conditions (ASCs), 30-Day All Cause Readmissions, and overall inpatient stays).</p>	<p>FPL levels defined in terms of levels on the sliding premium scale.</p>		<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population</p>	<p>The need is to analyze the changes in cost-effectiveness (specifically aimed at reduction of unnecessary services), during the prior year and the five-year duration of the study, as explained by the individual premium payment requirements by FPL. This outcome variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) are proposed. For case-control matching study, the control group will be identified by propensity score matching method and the split-sample technique used to determine the sensitivity of bias present in matching method. The case and control samples will be determined during the first year of the Demonstration. This division of the sample will be maintained during the rest of the study period for comparison purposes.</p>
<p>Association of Enrollment Status to Utilization and/or Costs</p>					
<p>6. Is there any impact on utilization and/or costs associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?</p>	<p>Unnecessary ED Visits as defined in Billings et al., (2000) paper. Ambulatory Care Sensitive Visits (Non-Emergent, Primary Care Treatable, Avoidable). Also, 30-Day All Cause Readmissions and Unnecessary Medical Devices. Overall PMPY Cost of Care (Medical and Pharmacy Expenditures). Allowed Amount will be considered for cost calculations.</p>	<p>FPL (hence sliding scale premium). Disenrollment/Re-enrollment history (Identify few frequent patterns of disenrollment / re-enrollment and create dummy variables on those patterns).</p>	<p>Demographics (Age[Group], Gender, Race & Ethnicity), Education, County, Region, Risk Score[ACG or CDPS], belongs to MCO or FFS, Tribal population*. Some risk scores use Age</p>	<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population</p>	<p>Longitudinal regression methods are proposed for this analysis. The enrollment / disenrollment / re-enrollment information can be used multiple ways. Indicator variables can be developed to identify whether a member had any of these statuses within a certain unit of time and these variables will be added to the regression model. Alternatively, the enrollment status can be counted and categorized to discover differential effects of disenrollment/re-enrollment vs. continuous enrollment.</p>

<p>7. Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for individuals that have disenrolled and then re-enrolled?</p>	<p>Unnecessary ED Visits as defined in Billings et al., (2000) paper. Ambulatory Care Sensitive Visits (Non-Emergent, Primary Care Treatable, Avoidable). Also, 30-Day All Cause Readmissions and Unnecessary Medical Devices. Overall PMPY Cost of Care (Medical and Pharmacy Expenditures). Allowed Amount will be considered for cost calculations.</p>	<p>FPL (hence sliding scale premium). Disenrollment/Re-enrollment history (Identify few frequent patterns of disenrollment / re-enrollment and create dummy variables on those patterns).</p>	<p>and Gender as predictors. In that case, age and gender can be dropped for modelling purposes.</p>	<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population</p>	<p>Longitudinal regression methods are proposed for this analysis. The enrollment / disenrollment / reenrollment information can be used multiple different ways. Indicator variable can be developed whether a member had any of these statuses within a certain unit of time and use the variable in models. Otherwise, the enrollment status can be counted and categorized to discover differential effects.</p>
<p>Enrollment Analysis by Payment of Premiums</p>					
<p>8. What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?</p>	<p>Disenrollment/Re-enrollment history (Identify few frequent patterns of disenrollment / re-enrollment and create dummy variables on those patterns).</p>	<p>FPL (hence sliding scale premium) with possible categorization into wider intervals (smaller number of buckets). Appendix 1.</p>	<p>Demographics (Age[Group], Gender, Race & Ethnicity), Education, County, Region, Risk Score[ACG or CDPS], belongs to MCO or FFS, Tribal population*.</p>	<p>Beneficiary level Analysis. The control sample will be selected by split-sample method from within the TMA Adults population</p>	<p>Depending on the type of outcome variable that is used the analysis method will be selected. For example, if enrollment / disenrollment indicator is a categorical variable then either logistic regression analysis or generalized linear models can be employed to answer the research question.</p>
<p>9. How is enrollment or access to care affected by the application of new, or increased, premium amounts?</p>	<p>Access to care can be defined through survey questions related to whether members have a primary care physician and if they have had difficulties scheduling appointments with providers for needed care.</p>	<p>FPL (hence sliding scale premium) with possible categorization into wider intervals (smaller number of buckets). Appendix 1. Also, dummy variables can be created to depict if the premium payment is new or an increased amount from past payments.</p>	<p>Some risk scores use Age and Gender as predictors. In that case, age and gender can be dropped for modelling purposes.</p>	<p>Beneficiary level Analysis. The control sample will be selected by split-sample method from within the TMA Adults population</p>	<p>Generally 'Access To Care' can be determined as continuous or discrete variable, depending on the emphasis of the domain of care. Based on that determination appropriate regression model can be developed for longitudinal data. The source of these data will be enrollment surveys.</p>
<p>Payment of Premiums and 3-Month Restrictive Re-enrollment</p>					
<p>10. What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?</p>	<p>This is a Dyad Outcome. A suitable combination category class can be created based on amount of premium and pattern of enrollment / disenrollment. The categories will be created so that variability are observed based on 3-month restrictive enrollment.</p>	<p>This is a Binary variable and determined whether any member had experienced this condition or not.</p>	<p>Demographics (Age[Group], Gender, Race & Ethnicity), Education, County, Region, Risk Score[ACG or CDPS], belongs to MCO</p>	<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population</p>	<p>The categorization of dual outcome variables will create a nominal variable since there may not be a logical ordering between the categories. The logistic regression method for nominal variables may be applied to answer this research question.</p>

11. Does this impact vary by income level?	This is a Dyad Outcome. A suitable combination category class can be created based on amount of premium and pattern of enrollment / disenrollment. The categories will be created so the variability are observed based on 3-month restrictive enrollment.	As income level is associated with premium payment, which is the outcome variable, the predictor must be carefully defined so that it is separated form outcome.	or FFS, Tribal population*. Some risk scores use Age and Gender as predictors. In that case, age and gender can be dropped for modelling purposes.	Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population	The categorization of dual outcome variables will create a nominal variable since there may not be a logical ordering between the categories. The logistic regression method for nominal variables may be applied to answer this research question.
12. If there is an impact, explore the break-out by income level.	This is a Dyad Outcome. A suitable combination category class can be created based on amount of premium and pattern of enrollment / disenrollment. The categories will be created so that variability is observed based on 3-month restrictive enrollment.	As income level is associated with premium payment, which is the outcome variable, the predictor must be carefully defined so that it is separated form outcome.		Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population	To find the break-out point(s) in the income level that makes significant difference in outcome variable, exploratory analyses can be employed using different cut-off points of the income scale.
For Childless Adults: Effects of the Benefit Plan for demonstration expansion group					
13. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries result in improved health outcomes?	Health Outcome Measures as shown in Table 2.	Groups that will be predictors are: CLA population and Core Plan Group.	Demographics (Age[Group], Gender, Race & Ethnicity), Education, County, Region, Risk Score[ACG or CDPS], belongs to MCO or FFS, Tribal population*. Some risk scores use Age and Gender as predictors. In that case, age and gender can be dropped for modelling purposes.	Aggregate level analysis: Baseline measures are calculated for the start of the study period and compared with similar measures from before and after the implementation. Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA Adults population.	The basic analysis for this research question will be calculation and comparison of different measures over time. The baseline measures will be used for most of the comparison purposes. We propose to adjust some of the measures by suitable control variables, though HEDIS measures as described in the table above, are not adjusted by any covariates. A second analysis will be to examine the changes in the likelihood that a member will receive screening, preventive and primary care services over time (during the years prior to the demonstration and the five-year duration of the study) will be examined as a function of the enhanced benefit package of the Standard Plan. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop generalized estimation equation (GEE) models and use a logistic regression model for the binary outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) will be performed. For case-control analyses a split-sample method will be used to assess the assignments of individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this division of the sample will be maintained during the rest of the study period for comparison purposes.

<p>14. Will this achieve a reduction in the incidence of unnecessary services?</p>	<p>Unnecessary ED Visits as defined in Billings et al., (2000) paper. Ambulatory Care Sensitive Visits (Non-Emergent, Primary Care Treatable, Avoidable). Also, 30-Day All Cause Readmissions and Unnecessary Medical Devices.</p>	<p>Before and after implementation comparison.</p>		<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA Adults population</p>	<p>: Changes in the number of unnecessary services over time (during the prior year and the five-year duration of the study) will be examined as a function of the enhanced benefit package provided in the Standard Plan. This explanatory variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s) and perform sub-group analyses (i.e., separate models for different sub-sections of the population). For case-control analyses a split-sample method will be used to assign individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this division of the sample will be maintained during the rest of the study period for comparison purposes.</p>
<p>15. Will the provision increase the cost effectiveness (Outcomes/Cost) of Medicaid services?</p>	<p>Cost-Effectiveness will be determined as to whether changes in cost, even though increment, resulted in better health outcomes. In this case the cost variable(s) will be determined as total cost of care per member and the health outcomes will be that are listed in Table 4.2, screening / preventive measures, chronic condition management, mental health related measures and frequency of ED visits.</p>	<p>Before and after implementation comparison.</p>		<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA Adults population</p>	<p>Changes in the number of unnecessary services over time (during the prior year and the five-year duration of the study) will be examined as a function of the enhanced benefit package provided in the Standard Plan. This explanatory variable as well as some of the control variables (e.g., age, risk score, income level) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s) and perform sub-group analyses (i.e., separate models for different sub-sections of the population). For case-control analyses a split-sample method will be used to assign individuals to the case and control groups. The samples will be determined during the first year of the Demonstration and this division of the sample will be maintained during the rest of the study period for comparison purposes.</p>

<p>16. Will the provision increase the cost effectiveness (Utilization/Cost) of Medicaid services?</p>	<p>Cost-Effectiveness will be determined as to whether changes in cost, even though increment, resulted in fewer unnecessary utilization healthcare services. In this case the cost variable(s) will be determined as total cost of care per member that can be used along with the measure of unnecessary services (such as Emergency Department visits for Ambulatory Care Sensitive Conditions (ASCs), 30-day all cause readmissions, and overall inpatient stays).</p>	<p>Most notable predictor as described in the question is the effect of time.</p>	<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA Adults population</p>	<p>The effect may vary by income level or any other demographic variables. So some adjustment by control variables are also proposed for this question. The means test will determine any significant difference in cost-effectiveness measures from before to after demonstration. There will also be an analysis of the changes in cost-effectiveness (specifically aimed at reduction of unnecessary services), during the prior year and the five-year duration of the study, as explained by the enhanced benefit package provided in the Standard Plan. This outcome variable as well as some of the control variables (e.g., age, risk score) are time-varying covariates. Therefore, we are proposing to develop longitudinal regression models for outcome variable(s). Sub-group analyses (i.e., separate models for different sub-sections of the population) are proposed. For the case-control matching study, the control group will be identified by propensity score matching and the split-sample technique used to determine the sensitivity of bias present in the matching method. The case and control samples will be determined during the first year of the Demonstration. This division of the sample will be maintained during the rest of the study period for comparison purposes.</p>
<p>17. Will it demonstrate an increase in the continuity of health coverage?</p>	<p>Measure of Continuity of Coverage.</p>	<p>Before and after implementation comparison.</p>	<p>Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA Adults population</p>	<p>The effect may vary by income level or any other demographic variables. So some adjustment by control variables are also proposed for this question.</p>

5. Data Collection Methods

Data will be collected from 3 main sources over the course of the evaluation. The two basic sources are the interChange System enrollment and claims data (captured and maintained by HP Enterprise Services, hereinafter identified as 'Enrollment and Claims/Encounter Data') and the Eligibility CARES data (captured and maintained by Deloitte, hereinafter mentioned as 'Eligibility Data'). A periodic data collection schedule will be developed by the evaluator according to analytical and reporting needs. The data fields needed to answer research questions and to create the measure to report to CMS periodically will be determined by the evaluator.

These two data sources are updated on a regular basis and hence the periodic data extraction will capture all the latest updates. To develop the baseline data, the evaluator will use Medicaid eligibility and claims data extracted at the beginning of the demonstration. All claims and eligibility data for those members will be collected twenty-four months prior to the implementation start date (April 2, 2014). These data will be archived for the exclusive use of the evaluation project, and the data format and storage location will be determined by the evaluator.

For all case-control matching analyses, since the income level (FPL) is a major matching variable, we propose to adopt a split-sample approach to define the control group. The cohort of new members joining the segments will be included into the segments for analysis purposes. The new members may be treated separately for the case-control study since those members will not have sufficient data from before implementation date.

In the middle of the demonstration and at the end of the study period, the enrollment / disenrollment / reenrollment survey will be administered by the evaluator. The survey information will be augmented with enrollment and claims data and eligibility data to provide a deeper understanding of the member perspective about premium payments, 3-month restrictive reenrollment and its' effect on health outcomes, continuity of coverage and cost of providing health care.

6. Quarterly Progress Report Contribution

Where appropriate and practical, summary statistics will be broken out by the levels of covariates such as FPL, gender, etc. to provide consistent indicators of program performance throughout the Demonstration period, however, no inferential statistics will be calculated until the second yearly report—at which time interim findings pertaining to sub-group differences in process outcomes, health outcomes, and cost-savings may be included in the quarterly progress reports.

7. Estimated Evaluation Budget

As noted previously DHS intends to contract with an independent evaluator during the second year of the demonstration and will conduct two surveys during the course of the demonstration. DHS will produce an evaluation budget as part of the contracting process,. DHS contracted with the University of Wisconsin (UW) Population Health Institute to complete the evaluation for the Wisconsin Medicaid Section 1115 Health Care Reform Demonstration (BadgerCare) (11-W-00125/5) and Childless Adults Section 1115 Demonstration (11-W-00242/5).

The UW Population Health Institute conducted one survey (at the end of the demonstrations) along with the data evaluation. The total cost for the survey and evaluation for the two expiring waivers is \$400,000. DHS anticipates that the costs to conduct the evaluation for the current demonstration will be higher than the expiring demonstrations due to the additional survey and evaluation in demonstration year 3. DHS estimates the cost to be between \$500,000 and \$800,000.

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ATTACHMENT B: UW EVALUATION DESIGN REPORT

Recommended Changes and Crosswalk to DHS Evaluation

EVALUATION OF WISCONSIN'S BADGERCARE PLUS HEALTH COVERAGE

for

PARENTS & CARETAKER ADULTS AND FOR CHILDLESS ADULTS

2014 CMS Section 1115 Waiver Provision

Design Report: Analytic Methods

**Submitted to the
WISCONSIN DEPARTMENT OF HEALTH SERVICES
December, 2015**

by the
Health Policy Research Team
UW Population Health Institute

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I. INTRODUCTION/BACKGROUND

The UW Population Health Institute (The Institute) is conducting an evaluation of the Wisconsin BadgerCare Reform Demonstration Project, as outlined by the Wisconsin Department of Health Services (DHS) and approved by the federal Centers for Medicare and Medicaid Services (CMS). The evaluation uses rigorous methods to arrive at an understanding of how the changes implemented under Wisconsin's 2014 Medicaid 1115 Waiver Demonstration affect two Medicaid populations —(1) those individuals who are eligible for Medicaid through Transitional Medical Assistance (TMA Adults) and (2) those childless adults (CLAs) with an effective income level at, or below, 100% of the federal poverty level (FPL).

The evaluation will address the 17 evaluation questions defined by DHS in the “BadgerCare Reform Demonstration Draft Evaluation Design” of 10/31/2014. Building on this draft design, the Institute's team will utilize state-of-the art social scientific methods to rigorously answer each question. This design report outlines the selected methodological and statistical approaches, fulfilling the first deliverable for the project.

The design report proceeds as follows. We first summarize the proposed methods according to each evaluation question in Table 1 and then describe the data sources required for this evaluation. Our detailed explanation of the methodological approaches specific to each evaluation question is organized according to the programmatic changes authorized by the 1115 Waiver: Premium changes; 3-month RRP; and Standard Plan coverage for CLAs. Finally, an attachment at the end of this document provides a cross-walk between the evaluation team's plans and the DHS' Draft design, to clarify how this design report aligns with and meets the DHS and CMS evaluation objectives.

Table 1 Evaluation Questions and Associated Data Analysis Methods

Evaluation Question	Evaluation Method			
	Administrative Data		Survey Data	
	Descriptive Analysis	Causal Analysis	Descriptive Analysis	Causal Analysis
For TMA demonstration participants: Payment of Premiums				
1: Will the premium requirement reduce the incidence of unnecessary services?	X	DD & WP		
2: Will the premium requirement lead to improved health outcomes?	X	DD & WP		
3: Will the premium requirement slow the growth in healthcare spending?	X	DD & WP		
4: Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?	X	DD & WP		
5: Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?	X	DD & WP		
Association of enrollment status to utilization and costs				
6: Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?	X	WP	X	
7: Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for beneficiaries that have disenrolled and then re-enrolled?	X	DD		
Enrollment analysis by payment of premiums				
8: What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?	X	ITS & RD		
9: How is access to care affected by the application of new, or increased, premium amounts?		RD ^a	X	RD ^a
Payment of Premiums and Three Month Restrictive Re-enrollment				
10: What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?	X	HZ		
11: Does the RRP impact vary by income level?	X			
12: If there is an impact from the RRP, explore the break-out by income level.	X			
For CLA Adults: Effects of the Benefit Plan for Demonstration Expansion Group				
13. Will the provision of a benefit plan that is the same as the one provided to all	X	DD		

other BadgerCare adult beneficiaries result in improved health outcomes?				
14. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries achieve a reduction in the incidence of unnecessary services?	X	DD		
15. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Outcomes/Cost) of Medicaid services?	X	DD		
16. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Utilization/Cost) of Medicaid services?	X	DD		
17. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?	X	DD	X	WP ^b

Legend:

DD = Differences-in-Differences

ITS = Interrupted Time Series

RD= Regression Discontinuity

WP = Longitudinal within-person analysis

HZ = Hazard modeling

^a Contingent on approval and feasibility of matching survey data to CARES data.

^b Contingent upon sufficient sample size for panel compo

II. DATA SOURCES

The evaluation will require administrative data from the Wisconsin DHS on (a) claims and encounters, (b) diagnostic codes, (c) enrollment, and disenrollment reason codes, and (d) premium payment information. We will also conduct a survey, in 2016 and 2018, of current and disenrolled members, assessing measures of utilization, health, and response to premiums.

A. Administrative Data from Wisconsin DHS

1. Enrollment Data

We will use longitudinal administrative data from the CARES system to measure enrollment. CARES also contains demographic information, including age, sex, educational attainment, county of residence, income, and income sources. The CARES data may contain data about an applicant's health insurance status at the time of application, although we have found previously that these fields are only regularly filled for the subset of enrollees for which this question is applicable (i.e., those for whom crowd-out provisions pertain.)

From these data, we will ascertain, where relevant, the month a person disenrolled from BadgerCare Plus (BC+). We will utilize reason codes associated with disenrollment. Further, these data contain "premium payment files" that contain monthly information on the dollar amount of premium owed, whether it was paid, and the date of payment.

2. Unemployment Insurance Earnings Data

We will use longitudinal administrative data from the Unemployment Insurance earnings reporting system to augment the enrollment data with individual measures of reported quarterly employment, wages, and firm industry code. In addition to these measures of individual-specific employment and wages (which are only available at case-level in CARES) and industry of employment, the unemployment insurance earnings data will allow us to assess the employment dynamics of individuals who transition from standard BadgerCare Plus into TMA.

3. Claims/Encounter Data

We will obtain claims and encounter data from the State's MMIS claims database. These data files include detailed ICD-9 diagnostic codes. We will draw claims data for the period from February 2008 (the beginning of the BC+ program) throughout the end of the current 1115 demonstration period. The claims and encounter data contain detailed information on diagnoses, procedure, and billing codes from which we will construct outcomes measures of health care use including health-related measures, general care use, and unnecessary care use as summarized in Table 2. Our health care use measures will include all-cause emergency department (ED) visits, inpatient hospitalizations, and outpatient visits. We will further categorize ED and inpatient measures of utilization into visits/admissions for ambulatory care sensitive conditions (ACSC) and preventable hospitalizations. Likewise, we will examine types of outpatient visits (e.g., primary, specialty and dental care).

ED visits will be measured as a day with an ED claim, identified using procedure billing codes. ACSC ED visits will be defined following Billings et al., (2000) and using the corresponding algorithm. Using this method, an ED visit is classified on a probabilistic basis into one of five categories, with the first three considered ACSC: (1) non-emergent, (2) emergent/primary care treatable, (3) emergent but preventable, and (4) emergent not preventable, (5) injuries, mental health, drug or alcohol, other.

Hospitalizations will be measured as the number of hospital stays, using bed day revenue codes to identify them in the claims. This analysis will distinguish between new admissions and transfers between hospitals, as transfers should not be considered new hospitalizations. Since transfers cannot be observed directly, any gap of less than two days between an admission and a discharge or last bed day will be considered a transfer.

Table 2 Health and health care outcome measures derived from MMIS data

Focus	Data Source	Description	Evaluation Question
Health-related			
Preventive health			
Breast cancer screening (BCS)	MMIS	NQF measure 0031; CMS adult core set #3;	1-7, 9, 13,15
Influenza immunization	MMIS	NQF measure 0041	1-7, 9, 13,15
Chronic health			
Diabetes care HBA1c testing	MMIS	NQF measure 0057; CMS adult core set #19	1-7, 9, 13,15
Diabetes care-LDL-C screening	MMIS	NQF measure 0063; CMS adult core set #18	1-7, 9, 13,15
Mental health & substance use disorder			
Antidepressant medication management	MMIS	NQF measure 0105; CMS adult core set #20	1-7, 9, 13,15
Follow-up within 30 days after hospitalization for mental illness	MMIS	NQF measure 0576; CMS adult core set #13	1-7, 9, 13,15
Tobacco cessation counseling	MMIS		1-7, 9, 13,15
Initiation and engagement of alcohol and other drug dependence treatment	MMIS	NQF measure 0004; CMS adult core set #25	1-7, 9, 13,15
Health care use, general			
Office-based visits	MMIS	Non-emergency department outpatient and office-based visits, total and defined by type (e.g., dental, primary, specialty)	1-7, 9, 13,15
Emergency department visits	MMIS	ED visits, all cause	1-7, 9, 13,15
Inpatient admissions	MMIS	Inpatient admissions, all cause	1-7, 9, 13,15

Potentially avoidable/unnecessary health care use			
30-day all cause hospital readmission	MMIS		1-5, 9, 14,16
Emergency department visit for ambulatory care sensitive condition (ACSC)	MMIS		1-5, 9, 14,16
Inpatient stay for ACSC	MMIS		1-5, 9, 14,16
Preventable hospitalization	MMIS		1-5, 9, 14,16

Preventable hospitalizations will be measured using AHRQ (2010) Preventive Quality Indices (PQIs). PQIs indicate conditions for which good outpatient care can potentially prevent the need for hospitalization, or for which early intervention can prevent complications or more severe disease. The PQIs considered here will be hospital admissions due to the following: (1) short-term complications from diabetes, (2) perforated appendix, (3) long-term complications from diabetes, (4) chronic obstructive pulmonary disease (COPD), (5) hypertension, (6) congestive heart failure, (7) dehydration, (8) bacterial pneumonia, (9) urinary tract infection, (10) angina without procedure, (11) asthma.

Outpatient visits will be measured as the number of provider-day visits. Total outpatient visits will be defined using a procedure code that is used only for outpatient visits (which includes skilled nursing visits). We will follow HEDIS, CMS, and NQF technical specifications as appropriate to construct the measures of health-related care use identified in Table 2.

Health care costs will be estimated by using FFS allowable charges for FFS visits and by imputing costs for Medicaid managed care encounters using the same FFS schedule of allowable charges. Monthly costs per member will be calculated by summing the total amount spent on visits in all service categories by each member, and then dividing by the number of months enrolled.

B. Survey Data

We will utilize the UW Survey Center to conduct surveys for this project. We will conduct a mixed-mode mail and telephone survey to reach a statistically valid sample of the three study cohorts:

- BadgerCare TMA current
- BadgerCare RRP – both those currently in an RRP and those returned from an RRP
- BadgerCare Childless Adults- both currently enrolled and those who were enrolled prior to March 2014

In order to develop a longitudinal panel that can facilitate over-time comparisons, where possible the survey will resample from the 1,054 respondents from the Spring 2014 survey that was fielded under the prior BadgerCare waiver evaluation. We anticipate that more than half of the new survey sample will be comprised of resampled respondents.

The survey design and process will be based on and informed by that utilized by the Oregon Health Study⁴, the Urban Institute's Health Reform Monitoring Survey⁵, the RAND Patient Satisfaction Survey⁶, and lessons learned administering the national Medicaid CAHPS⁷ and elsewhere⁸. The survey will include questions pertaining to health care coverage and utilization during enrollment and during the time not enrolled in BadgerCare, about health status, and about the effect of premiums on enrollment decisions.

The survey will be fielded in Spring 2016 and Spring 2018. It will include an initial mailing with two follow-up letters, and then a telephone follow-up interview to selected respondents and non-respondents. Tracking methods will be utilized to locate individuals no longer BadgerCare-enrolled who are not reached through state-provided addresses information.

⁴ Finkelstein A, et al. The Oregon Health Insurance Experiment: Evidence from the First year.. National Bureau of Economic Research, NBER Working Paper No. 17190, July 2011.

⁵ Urban Institute. Health Reform Monitoring Survey. Available at <http://hrms.urban.org/about.html>

⁶ Patient Satisfaction Questionnaire from RAND Health. Available at http://www.rand.org/health/surveys_tools/psq.html

⁷ CMS Technical Assistance Brief Number 3. Guidance for Conducting the Consumer Assessment of Healthcare Providers and Systems (CAHPS) 5.0H Child Survey. December 2012.

⁸ Beebe TJ, Davern ME, McAlpine DD, Call KT, Rockwood TJ. (2005) Increasing Response Rates in a Survey of Medicaid Enrollees: The Effect of a Prepaid Monetary Incentive and Mixed Modes (Mail and Telephone. Medical Care. Vol 43(4).

III. METHODOLOGICAL & STATISTICAL APPROACH

Payment of Premiums and The Effect of Premiums: Questions 1-5, 8,9

Question 1: Will the premium requirement reduce the incidence of unnecessary services?

A. DHS proposed: “Case Study”, “Administrative Data Analysis”, and “Case-Control Matching” by statistically matching those who drop out of TMA within 12 months of premium implementation to those who do not drop out.

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* We will provide rates of unnecessary service use over time by TMA status, income, premium payment status, and other demographic characteristics available through CARES. We will include tabulations as well as a graphical and regression analysis.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare rates of unnecessary service use for those affected by the policy (Treatment Group 1) to those not affected by the policy (Comparison Group 1 and Comparison Group 2 in separate analyses), over time. A purely descriptive analysis would not account for secular changes that might affect unnecessary service use nor the potential for selection into TMA status. This design allows us to identify the causal effect of premiums by assuming that the unnecessary service use for the treatment group would have evolved similarly over time as that of the comparison group(s) in the absence of the implementation of the premium requirement. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable. We will also perform a within-person analysis that considers whether outcomes change over time for those affected by the policy conditional on remaining enrolled.

2. Study Population

Among adults eligible to qualify for TMA, we will use two comparison groups common to Questions 1-5, 8 and 9 in order to isolate the effect of the premium requirements on the outcomes of interest. Comparison Group 1 is defined as all BadgerCare adults below 100% FPL beginning at least 2 years prior to the July 2012 original premium. Because this group never experienced any change in their premium requirements, they provide a good benchmark for general trends in health care usage, costs, and program enrollment. However, since the treatment group (TMA adults) were all originally members of MA adults, it is possible that the composition of Comparison Group 1 changes over time due to the new TMA premium policies. While we will study this directly under Question 8, we will also use an alternative comparison group, parents and caretakers who entered with incomes higher than 100% FPL and so are not eligible for TMA (Comparison Group 2).

Comparison Group 2 was subject to the same policy as TMA from July 2012 – March 2014 and may provide a better match for the TMA group after the time of their transition, as they have

similar income levels. The use of Comparison Group 2 will only be historical since Comparison Group 2 lost eligibility effective April 2014.

For the time dimension of the study, we will consider the outcomes of the treatment and comparison groups across three time periods: first, prior to any premium requirements; second, under the July 2012-April 2014 conditions; and finally, under the April 2014 – present conditions. (Table 3, below)

Timeline	Comparison Group 1	Comparison Group 2	Treatment Group
	MA adults (<100% FPL)	Higher-income parents/caretakers (100-200% FPL)	TMA adults
Prior to premium introduction (Feb 2008- June 2012)	Not required to pay premiums	Parents who enrolled at >150% FPL were required to pay premiums; those 100-150% were not	Not required to pay premiums
First premium policy (July 2012- March 2014)	Not required to pay premiums	Premiums introduced for 133-150%; increased for >150%	Premiums introduced for 133-200%
Current waiver premium policy (April 2014 – present)	Not required to pay premiums	No longer eligible	Premiums introduced for 100-133%

3. Data Requirements

Source:	Time	Purpose:
CARES	(February 2008 – present)	Identification of study population during and prior to TMA period
MMIS Claims	(February 2008 – present)	Identification of outcome measures for study population (Necessary/unnecessary emergency department visits, ambulatory care sensitive inpatient stays, 30 day all cause readmissions)

4. Expected Limitations

- a. *Outcome measure.* While we will use empirically validated measures of the outcome, identification of “unnecessary” visits through claims data algorithms is an imperfect process and will inevitably misclassify some visits that were “necessary” as “unnecessary” and vice versa.
- b. *Parallel trends assumption.* This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than the premium requirement changes for Treatment Group 1 but not the comparison groups at the same time as the premium requirement was implemented, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 2: Will the premium requirement lead to improved health outcomes?

A. **DHS proposed:** “Case Study”, “Administrative Data Analysis”, and “Case-Control Matching” by statistically matching those who drop out of TMA within 12 months of premium implementation to those who do not drop out.

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* Description of health-related outcomes over time by TMA status, income, premium payment status, and other demographic characteristics available through CARES. We will include tabulations and a graphical and regression analysis.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare health-related outcomes for those affected by the policy (Treatment Group 1) to those not affected by the policy (Comparison Group 1 and Comparison Group 2 in separate analyses), over time. A purely descriptive analysis would not account for secular changes that might affect health-related outcomes nor the potential for selection into TMA status. This design allows us to identify the causal effect of premiums by assuming that the health-related outcomes for the treatment group would have evolved similarly over time as that of the comparison group(s) in the absence of the implementation of the premium requirement. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable. We will also perform a within-person analysis that considers whether outcomes change over time for those affected by the policy conditional on remaining enrolled.

2. Study Population: Same as Question 1

3. Data Requirements

Source	Time Frame	Purpose
CARES	(February 2008 – present)	Identification of study population during and prior to TMA period
MMIS Claims	(February 2008 – present)	Identification of health-related outcomes (Table 2)

4. Expected Limitations

- a. *Outcome measure.* While we will use empirically validated measures as described in Table 2, identification of health-related outcomes through claims data algorithms is an imperfect process as it requires the enrollee to utilize the health care system in order to appear unhealthy.
- b. *Parallel trends assumption.* This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than the premium requirement changes for Treatment Group 1 but not the comparison groups at the same time as the premium requirement was implemented, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 3: Will the premium requirement slow the growth in healthcare spending?

A. **DHS proposed:** “Case Study”, “Administrative Data Analysis”, and “Case-Control Matching” by statistically matching those who drop out of TMA within 12 months of premium implementation to those who do not drop out.

B. **Evaluation Team Proposes:**

1. Method

a. *Descriptive analysis of administrative data.* Description of healthcare spending over time by TMA status, income, premium payment status, and other demographic characteristics available through CARES. We will include tabulations and a graphical and regression analysis.

b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare healthcare spending for those affected by the policy (Treatment Group 1) to those not affected by the policy (Comparison Group 1 and Comparison Group 2 in separate analyses), over time. A purely descriptive analysis would not account for secular changes that might affect healthcare spending nor the potential for selection into TMA status. This design allows us to identify the causal effect of premiums by assuming that the healthcare spending for the treatment group would have evolved similarly over time as that of the comparison group(s) in the absence of the implementation of the premium requirement. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable. We will also perform a within-person analysis that considers whether outcomes change over time for those affected by the policy conditional on remaining enrolled.

2. **Study Population:** Same as Questions 1 and 2

3. Data Requirements

Source	Time Frame	Purpose
CARES	(February 2008 – present)	Identification of study population during and prior to TMA period
MMIS Claims	(February 2008 – present)	Identification of healthcare spending outcomes

4. Expected Limitations

Parallel trends assumption. This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than the premium requirement changes for Treatment Group 1 but not the comparison groups at the same time as the premium requirement was implemented, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 4: Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?

A. **DHS proposed:** “Case Study”, “Administrative Data Analysis”, and “Case-Control Matching” by statistically matching those who drop out of TMA within 12 months of premium implementation to those who do not drop out.

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* Description of cost-effectiveness over time (as defined by the ratio of health-related outcomes to spending) by TMA status, income, premium payment status, and other demographic characteristics available through CARES. We will include tabulations and a graphical and regression analysis.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare the health-related outcomes/spending ratio for those affected by the policy (Treatment Group 1) to those not affected by the policy (Comparison Group 1 and Comparison Group 2 in separate analyses), over time. A purely descriptive analysis would not account for secular changes that might affect the ratio of health-related outcomes to spending nor the potential for selection into TMA status. This design allows us to identify the causal effect of premiums by assuming that the health outcomes/spending ratio for the treatment group would have evolved similarly over time as that of the comparison group(s) in the absence of the implementation of the premium requirement. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable. We will also perform a within-person analysis that considers whether outcomes change over time for those affected by the policy conditional on remaining enrolled.

2. **Study Population:** Same as Questions 1-3

3. Data Requirements

Source	Time Frame	Purpose
CARES	(February 2008 – present)	Identification of study population during and prior to TMA period
MMIS Claims	(February 2008 – present)	Identification of health-related outcomes (Table 2) and healthcare spending

4. Expected Limitations

- a. **Outcome measure.** While we will use empirically validated measures as described in Table 2, identification of health-related outcomes through claims data algorithms is an imperfect process as it requires the enrollee to utilize the health care system in order to appear unhealthy. We note that Outcomes/Cost is also not a typical measure of “cost-effectiveness”, which is normally expressed as a denominator of a gain in health and a numerator of the cost associated with the health gain. Regardless, we will not be able to directly identify the specific costs of any particular change in health outcomes, only “changes in costs” and “changes in health outcomes” induced by the premium requirement.

b. **Parallel trends assumption.** This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than the premium requirement changes for Treatment Group 1 but not the comparison groups at the same time as the premium requirement was implemented, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 5: Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?

A. **DHS proposed:** “Case Study”, “Administrative Data Analysis”, and “Case-Control Matching” by statistically matching those who drop out of TMA within 12 months of premium implementation to those who do not drop out.

B. **Evaluation Team Proposes:**

1. Method

- a. *Descriptive analysis of administrative data.* Description of cost-effectiveness over time (as defined by the ratio of healthcare utilization to spending) by TMA status, income, premium payment status, and other demographic characteristics available through CARES. We will include tabulations and a graphical and regression analysis.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare the ratio of healthcare utilization to spending for those affected by the policy (Treatment Group 1) to those not affected by the policy (Comparison Group 1 and Comparison Group 2 in separate analyses), over time. A purely descriptive analysis would not account for secular changes that might affect the ratio of healthcare utilization to spending nor the potential for selection into TMA status. This design allows us to identify the causal effect of premiums by assuming that the ratio of healthcare utilization to spending for the treatment group would have evolved similarly over time as that of the comparison group(s) in the absence of the implementation of the premium requirement. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable. We will also perform a within-person analysis that considers whether outcomes change over time for those affected by the policy conditional on remaining enrolled.

2. **Study Population:** Same as Questions 1-4

3. Data Requirements

Source	Time Frame	Purpose
CARES	(February 2008 – present)	Identification of study population during and prior to TMA period
MMIS Claims	(February 2008 – present)	Identification of healthcare utilization (emergency department use, hospitalizations, and outpatient use) and healthcare spending

4. Expected Limitations

- a. **Outcome measure.** While we will use empirically validated measures as described in Table 2, identification of health outcomes through claims data algorithms is an imperfect process as it requires the enrollee to utilize the health care system in order to appear unhealthy. We note that Utilization/Cost is also not a typical measure of “cost-effectiveness”, which is normally expressed as a denominator of a gain in health and a numerator of the cost associated with the health gain. Regardless, we will not be able to directly identify the specific costs of any particular change in health outcomes, only “changes in costs” and “changes in healthcare utilization” induced by the premium requirement.
- b. **Parallel trends assumption.** This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than the premium requirement changes for Treatment Group 1 but not the comparison groups at the same time as the premium requirement was implemented, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 8: What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?

A. **DHS proposed:** “Case Study”, “Administrative Data Analysis”, and “Case-Control Matching” by statistically matching those who drop out of TMA within 12 months of premium implementation to those who do not drop out.

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* We will provide a description of TMA enrollment over time, including the probability of transitioning to TMA, by TMA status, income, premium payment status, and other demographic characteristics available through CARES.
- b. *Causal analysis of administrative data.* We will use an interrupted time series study design to compare the rate of transitions from MA adult to TMA status in order to understand whether premium requirements affect the incentive to take up TMA and/or experience the types of transitions that would lead to a qualifying event. We will also use this design to study the probability of exit from TMA. This design allows us to identify the causal effect of premiums by assuming that enrollment behavior in the TMA population would have evolved similarly over time if not for the premium requirements. We will use econometric modeling techniques that appropriately account for serial correlation.

Second, we will use a regression discontinuity design within the TMA population in order to study the effect of premium amounts. This design involves comparing the enrollment behavior of those who transition and have incomes just low enough to qualify them for a particular premium amount relative to those who transition and have incomes just higher, qualifying them for a higher premium amount. The strength of this design is that it ensures populations are highly similar (as both transitioned from MA) rather than relying on a comparison of adults who did not transition, who may be different from those who did in unobservable ways that are predictive of the enrollment outcome. We will perform this analysis for each level of the required premium.

2. Study Population: Same as Questions 1-5

3. Data Requirements

Source	Time Frame	Purpose
CARES	February 2008 – present	Identification of study population during and prior to TMA period. Identification of premium amounts and payment status.
UI Earnings reports	First quarter 2008 - present	Verification of changes in earnings

4. Expected Limitations

a. Interrupted time series assumption. This analysis relies on the idea that no other programmatic changes occurred at the same time as the premium changes. To this end, we will not be able to separate the effects of the premium from other simultaneously implemented policies.

b. Regression discontinuity assumption. This analysis requires the assumption that TMA adults are not purposefully selecting into their premium-paying group (for example, by influencing their reported income). This assumption is somewhat testable and will be addressed by studying transition probabilities at the premium margins.

3. Income as a confounder. Because premiums are higher as income increases, it is not completely possible to separate the effect of the premium from the effect of income on average. In particular, we will not be able to conclude whether the effects may differ for higher income groups due to the amount of the premium or due to the beneficiaries' higher incomes.

Question 9: How is access to care affected by the application of new, or increased, Premium amounts?

A. **DHS proposed:** "Case Study", "Administrative Data Analysis", "Case-Control Matching", and "Enrollment/Disenrollment Survey"

B. **Evaluation Team Proposes:**

1. Method

a. *Descriptive analysis of survey data.* : The survey that will be fielded in Spring 2016 will include questions that will provide measures of access to care (e.g., usual source of care and experience of any unmet need for medical care), which is not well measured from administrative claims data. The survey will include both current TMA enrollees as well as those who have been placed in an RRP, so that both those who are and are not currently paying premiums are represented. We will summarize survey measures of beneficiary access to care stratified by TMA and premium-requirement status, providing tabular, graphical, and regression-adjusted analyses.

b. *Matched analysis of administrative data.* If feasible, we will enhance the survey by matching the survey data to the administrative data. This will allow us to observe more precise measures of income and enrollment, which will facilitate a causal analysis. In particular, we will use a regression discontinuity design within the TMA population in order to study the effect of premium amounts. This design involves comparing the surveyed access to care responses of those who transition and have incomes just low enough to qualify them for a particular premium amount relative to those who transition and have incomes just higher, qualifying them for a

higher premium amount. The strength of this design is that it ensures populations are highly similar rather than relying on a comparison of adults who did not transition, who may be different from those who did in unobservable ways that are predictive of the enrollment outcome. We will perform this analysis for each level of the required premium using appropriate econometric techniques.

2. **Study Population:** Same as Questions 1-5,8

3. **Data Requirements**

Source	Time Frame	Purpose
CARES	February 2008 – present	Identification of study population during and prior to TMA period. Identification of premium amounts and payment status.
Survey	Point-in-time measures valid at time of survey implementation	Measuring access to care

4. **Expected Limitations**

- a. **Survey data sample.** While the survey team will follow best practices in design, feasible limitations in limitations will not allow the identification of very small differences in access to care.
- b. **Regression discontinuity assumption.** This analysis requires the assumption that TMA adults are not purposefully selecting into their premium-paying group (for example, by influencing their reported income). This assumption is somewhat testable and will be addressed by studying transition probabilities at the premium margins.
- c. **Income as a confounder.** Because premiums are higher as income increases, it is not completely possible to separate the effect of the premium from the effect of income on average. In particular, we will not be able to conclude whether the effects may differ for higher income groups due to the amount of the premium or due to the beneficiaries’ higher incomes.

Restrictive Reenrollment Period for Failure to Pay Premium: Questions 6-7, 10-12

The 2014 waiver introduced a 3-month restrictive reenrollment period (RRP) for TMA beneficiaries who failed to pay the required premium after a 30-day grace period. Unlike the 12-month RRP that had previously been in place for BadgerCare+ members, the RRP included in the 2014 waiver allows beneficiaries to re-enter the program before the end of the RRP period if they repay previously owed premiums. TMA members with incomes between 100%-133% FPL are exempted from premiums in their first six months of enrollment and are therefore not subject to the RRP during this time.

For those beneficiaries who experience an RRP, the period of disenrollment may affect both outcomes related to service use (utilization, cost, and access) as well as outcomes related to enrollment. Relative to patterns of utilization before entering an RRP, beneficiaries may decrease their use of health services while in an RRP since they are temporarily uninsured, but then increase their service use in the

immediate period after returning to the program due to “pent-up” demand for care (Question 6). Over longer-periods of time, these may lead to differences in spending and service utilization between those who experience RRP versus those who remain continuously enrolled (Question 7). The presence of an RRP may also be hypothesized to reduce the likelihood that beneficiaries fail to make premium payments, at least insofar as beneficiaries are concerned about losing benefits for an extended period of time (Question 10). The impact of the RRP penalty may also differ depending on the member’s income level (Questions 11-12), but the direction of the association has not yet been hypothesized.

Question 6: Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?

A. DHS proposed: “Case Study”, “Administrative Data Analysis”, “Case-Control Matching”, and “Enrollment/Disenrollment Survey”

B. Evaluation Team Proposes:

1. Method

Question 6 will be addressed through (1) an analysis of administrative data (claims and enrollment from CARES and MMIS) and (2) through an analysis of survey data. The survey will contribute to assessment of both questions 6 and 7, which has several new questions designed to focus on the experiences of being in an RRP.

- a. Administrative data analysis: A key analytical challenge in measuring the impact of the RRP is to identify the impact of being placed in an RRP on post-RRP outcomes independent of other individual-level factors that may drive utilization changes. For example, a beneficiary may experience a health event that causes both a temporary inability to work (increasing financial strain) and which leads to greater than average utilization in the pre-RRP period. Risk of entering an RRP may also be influenced by changes in the environment, such as the secular trends in the state economy. To account for these factors, we will estimate a regression model that compares pre- and post-RRP trends taking advantage of repeated measures of utilization within the same beneficiary, and also taking advantage of data from other beneficiaries who experience RRP at different times. In this estimation strategy, beneficiaries in pre-RRP periods can serve as controls for themselves in the post-RRP period as well as for other beneficiaries who experience RRP at different times.

The regression equation measuring the impact of the RRP can be expressed as:

$$Y_{it} = \beta_0 + \beta_1 Post-RRP_{it} + \beta_2 Pre-RRP_{it} + \beta_3 Demographics_i + \beta_4 Month_t + \beta_5 Person_i + \epsilon_{it}$$

Where Y represents any outcome measure, for person i observed at time t . $Post-RRP$ is an indicator for being observed in a post-RRP period and $Pre-RRP$ is an indicator for being observed in a pre-RRP period. The omitted time period in these models are periods of “regular enrollment.” $Demographics$ represents time-invariant individual-level demographics. $Month$ is a monthly indicator for time point where the individual is observed (in order to adjust for secular time trends). $Person$ is an individual-level random effect, which allows the model to apply a different intercept term to each beneficiary. Standard errors will be adjusted to account for the auto-correlation of individual-level data across months and the clustering of multiple RRP

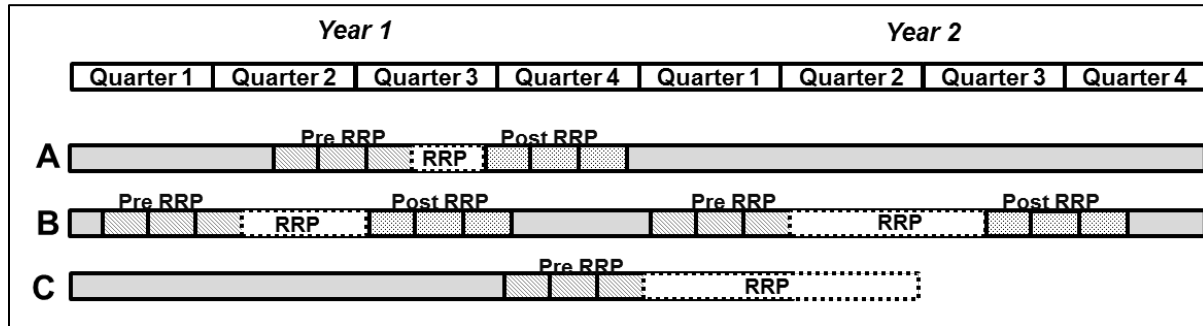
within the same beneficiary. This regression approach can be adapted for a variety of outcomes using generalized linear models. These models will allow us to specify the appropriate functional form for the outcome (e.g., probit models for binary outcomes and negative binomial or Poisson models for number of visits).

- b. Survey Data Analysis: The survey that will be fielded in Spring 2016 and Spring 2018 will provide a special module of questions specifically designed to capture the experiences of beneficiaries who have experienced a recent RRP. To ensure that an adequate sample of these beneficiaries are captured in the data collection process, we will allocate approximately 20% of the sample (~200 interviews) to beneficiaries whom the state indicates have been recently placed in an RRP. Comparison of responses will be conducted within the RRP sample between those that return to BadgerCare and those that do not return, and between the RRP and non-RRP samples (especially other TMA beneficiaries). The analysis will adjust for other differences in income and demographics. This comparison will reveal whether beneficiaries in an RRP experience a greater prevalence of access problems than do other demographically similar BadgerCare enrollees.

2. Study Population

For the administrative data analyses we will identify all beneficiaries who were placed in an RRP at any point from January 1, 2014-December 31, 2015. The maximum length of an RRP is 3 months, but we expect that many members will have RRP less than 3 months (as they can rejoin the program after paying owed premiums). We also assume that some beneficiaries will remain disenrolled beyond the length of the RRP. We will test the sensitivity of several sample restrictions, such as limiting the sample to beneficiaries who have disenrollment periods of 1-6 months.

Figure 1. Measuring RRP for Hypothetical TMA Beneficiaries



For each beneficiary who is placed in an RRP, we will define two adjacent time periods: the pre-RRP period and post-RRP period. We can define these periods in terms of monthly segments (e.g., 3 months pre and 3 months post RRP). All time periods that are outside of the window of time adjacent to the RRP will be considered “regular enrollment” periods.

Figure 1 illustrates this approach for 3 hypothetical beneficiaries (A, B, and C). Person A experiences a brief RRP in year 1; person B experiences two separate RRP in years 1 and 2; person C enters an RRP in year 2, but does not re-join the program for a period of at least 6 months. Other time periods, shown in light gray comprise regular enrollment periods.

3. Data Requirements

Source	Time Frame	Purpose
CARES	January 1, 2014-December 31, 2015	Identification of study population: beneficiaries during and prior to three-month RRP
MMIS Claims	January 1, 2014-December 31, 2015	Measures of cost, utilization, and access to care created using claims data
Survey	Point-in-time measures valid at time of survey implementation	Identification of study population: beneficiaries that experience RRP and return; beneficiaries that experience RRP and do not return; beneficiaries that do not experience an RRP; Measures of utilization

4. Expected Limitations

- a. **Selection Bias from Life Events:** entry into an RRP is not a random process – it is more likely to occur to individuals that experience “life events” that precede non-payment of premiums. Failure to control for these life events can bias the interpretation of the “RRP effect” since these events can influence utilization independent of the RRP. However, it is difficult to know what the direction of bias will be since life events can be either negative (e.g., loss of employment, marital dissolution) or positive (e.g., new coverage options through a job gain or spousal employment). We will address this issue in regression models by controlling for individual-level variables that may be associated with greater risk of life events (such as demographics). We will also, where possible, attempt to identify whether the RRP coincides with life events that are observed through other state databases (such as gains or losses in employment).
- b. **Survey Response Bias:** respondents to the RRP survey may be different than the population experiencing the RRP (for example, individuals who agree to complete a survey may have a greater likelihood of rejoining the program). To address this survey response bias, we will use survey weights to adjust the sample closer to the overall population of RRP individuals (e.g., adjusting by demographic factors that may influence both survey response and RRP experiences).

Question 7: Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for beneficiaries that have disenrolled and then re-enrolled?

A. DHS Proposed: “Case Study”, “Administrative Data Analysis”, “Case-Control Matching”, and “Enrollment/Disenrollment Survey”

C. Evaluation Team Proposes:

1. Methods

To examine the effects of experiencing a disruption in coverage due to an RRP relative to being continuously enrolled on utilization, cost, and health care outcomes, we will use a difference-in-differences design to compare the longer-term trends in outcomes between the population of TMA beneficiaries that experience RRP to several alternative groups that do not experience RRP.

The first comparison is a within-group comparison for TMA with incomes 100-133% FPL in their first six months (when they are not subject to RRP) versus their second six months when they are subject to RRP. The advantage of this comparison is that we observe the group during a time period when they are not at risk of losing coverage due to an RRP compared to a time period when the policy changes and they are exposed to an RRP. Second, we can look at TMA populations who remain continuously enrolled (i.e. never experience an RRP), but are otherwise similar to those who do experience an RRP (using a propensity score matching process with baseline demographic characteristics). Third, we can compare TMA beneficiaries with an RRP to similar beneficiaries in the CLA population, which is not subject to RRP, and is therefore less likely to experience enrollment gaps.

Matching: A challenge with such a comparison is that differences between RRP and non-RRP beneficiaries may also reflect unmeasured differences in underlying preferences for insurance, need for care, and access to alternative health care resources. If these differences are not accounted for, comparisons will provide biased estimates of the effect of being in the RRP group. One strategy to address the comparability problem is to apply propensity score matching to the sample. A propensity score reflects the degree to which beneficiaries in the non-RRP group are like beneficiaries in the RRP group based on a set of observable characteristics taken from some baseline period (such as the first two months of coverage). The propensity score can be derived using demographic information (race, age, sex), income category, and health service utilization measures. This method can be implemented using a regression model that assigns each individual in the non-RRP group a probability of being similar to an RRP individual. Examining whether the matched samples are similar on observable covariates can test balance between the RRP and non-RRP groups.

Estimation Approach: After matching, we can estimate a regression model of the following form:

$$Y_{it} = \beta_0 + \beta_1 RRP\text{-}Group_{it} + \beta_2 Year_t + \beta_3 Person_i + \epsilon_{it}$$

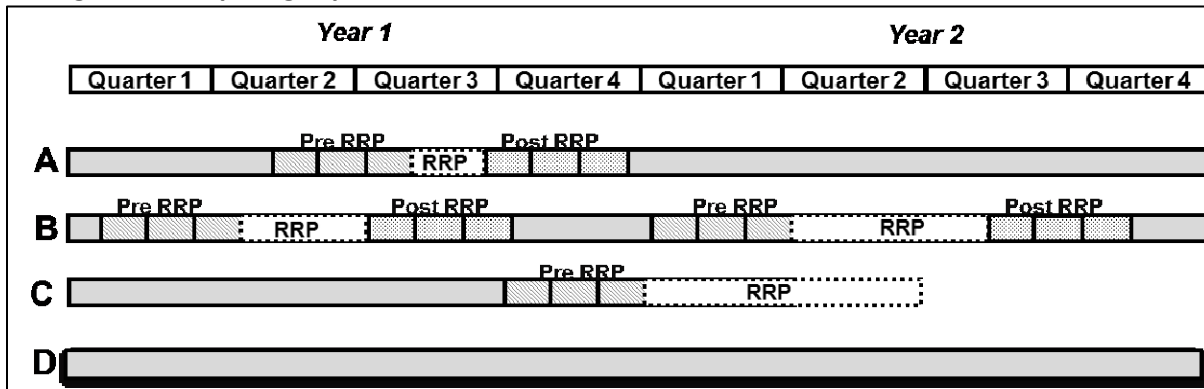
Where Y represents any study outcome related to either spending or utilization (for example, in 6 month increments) for person i observed at year t . $RRP\text{-}Group$ is an indicator for whether an individual is in the TMA population that experienced an RRP versus the matched group that did not experience an RRP. $Year$ is an indicator for the calendar year of data (to account for secular trends).

Person represents an individual-level random effect. Since beneficiaries can contribute data from multiple years, data will be clustered at the level of the beneficiary.

2. Study Population

Whereas Question 6 is focused on changes in utilization and spending that occur after an RRP within the population that experiences an RRP, Question 7 is focused on overall trends in costs and utilization in the RRP population versus the non-RRP population. This is represented in Figure 2 where the comparison is now between beneficiaries A, B, and C to beneficiary D (and others like him/her). The simplest way to conduct this comparison is to sum all utilization and spending over defined time periods (e.g., six month increments) and compare averages in the TMA subgroup that experienced RRP versus the TMA group that did not experience RRP.

Figure 2. Comparing experience of RRP and non-RRP TMA beneficiaries



3. Data Requirements:

Source	Time Frame	Purpose
CARES	January 1, 2014- December 31, 2015	Identification of study population: beneficiaries in TMA who experience an RRP versus CLA or TMA individuals who don't experience an RRP
MMIS Claims	January 1, 2014- December 31, 2015	Measures of cost, utilization, and access to care created using claims data

4. Expected Limitations:

Matching Bias: With the exception of the first comparison that focuses on the same population at two different time periods, this research question will be addressed by matching groups with RRP experience to groups that do not experience an RRP. Matching is most effective if the observable variables used to create the comparison group are closely related to selection into the treatment group. While this assumption cannot be directly tested, we can examine the robustness of the matching method by comparing different matching and weighting strategies.

Question 10: What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?

A. DHS Proposed: “Case Study”, “Administrative Data Analysis”, “Case-Control Matching”, and “Enrollment/Disenrollment Survey”

B. Evaluation Team Proposes:

1. Methods

For both analyses described below, we will measure the payment of premiums as a function of two processes: the average length of total enrollment and, conditional on being enrolled in the program, the amount of premiums owed that are paid to the program during the time enrolled in the program.

Analysis 1: The Effect of Premiums and RRP on Enrollment:

This first analysis will address the question of how much enrollment duration changes after the imposition of premiums with RRP (without further disentangling the effect of premiums from the RRP). We will compare enrollment patterns among TMA individuals with incomes 100%-133% FPL in their first six months in the program (when they are not subject to premiums or RRP) to TMA beneficiaries in this same income group (100%-133% FPL) in their second six months in the program (when they are subject to premiums) and to TMA beneficiaries in income groups above 133% FPL in their first six months of enrollment. Using both comparison groups is necessary because the group of TMA beneficiaries that persist in the program after six months may be more highly selected toward individuals with a long-term demand for public insurance.

Estimating Enrollment Trends: We will apply hazard modeling to compare the relative risk of disenrollment in the first six months for TMA individuals with income 100%-133% FPL to disenrollment rates in the comparison groups over the six month segments noted above. The hazard model assumes that every individual has some underlying probability of leaving the program, whether or not they are subject to premiums and/or an RRP, and that this risk can be modeled as a function of time spent in the program, demographics, and policy variables. The population 100%-133% FPL in their first six months provides a baseline rate with which to compare disenrollment rates in segments of the program with higher incomes or with longer periods of enrollment. The hazard model will allow us to calculate the rate of leaving the program comparing a baseline (no premiums or RRP) to the rate with premiums and RRP, conditional on a set of time invariant person-level covariates.

Analysis 2: Historical Comparison with the 12 Month RRP

This analysis will consider the differences in both disenrollment rate and total premiums paid between individuals subject to the 3 month RRP 2016 versus the effect of 12 month RRP among demographically similar individuals in the past. The time periods will be July 2012-December 2013 (12 month RRP) versus July 2014-December 2015 (3 month RRP).

The two populations will first be matched on demographic and income covariates. Once comparable cohorts have been created, the analysis will calculate the mean length of an enrollment spell and the amount paid per month of enrollment, conditional on being in the program. These two parameters can be combined to estimate the unconditional predicted amount of money paid to the program during a time of enrollment.

Average total amount paid = (Mean number of months of enrollment)(Amount paid per month during enrollment)*

2. Study Population

This question considers how the RRP for the TMA population would affect the rate of premium payments relative to a situation in which beneficiaries are subject to premiums but are not locked-out through the RRP. Because there is no segment of the Wisconsin program that currently is required to pay premiums and is not subject to an RRP, there is no readily available comparison group. It is also important to note that the 3 month RRP is different than the previously existing 12 month RRP not only because it is shorter but also because it is less binding (i.e., beneficiaries are allowed to re-enter the program before the end of 3 months as long as they pay owed premiums).

3. Data Requirements:

Source	Time Frame	Purpose
CARES	January 1, 2014-December 31, 2015	Comparing TMA enrollees 100-133% FPL before and after premium requirement begins (after first six months of enrollment)
CARES	July 2012-December 2013; July 2014-December 2015	Comparing TMA enrollees subject to the 3 month RRP versus TMA enrollees subject to the 12 month RRP

4. Expected Limitations

- a. **Generalizability (Approach 1):** The first approach focuses on the disenrollment effect of being subject to a premium plus RRP on a specific income group (100-133% FPL). This effect may not apply to higher income levels. Addressing heterogeneity by income is a key objective of Questions 11 and 12, below.
- b. **Identifying Premium Effect (Approach 1):** As noted above, the first approach does not allow us to disentangle the effect of being subject to premiums versus being subject to RRP. Therefore, these estimates are understood to represent the combined effect of these two policies on the relevant income group where we have the ability to clearly identify over-time variation in the implementation of the policy.
- c. **Secular Trends (Approach 2):** The second approach, comparing the historical 12 month RRP to the current 3 month RRP is challenging because these two policies unfolded against different time varying trends that could independently influence enrollment dynamics (e.g., the implementation of the Affordable Care Act and changes in the state economy). As a possible way to address this, we will explore using enrollment dynamics in a third group (such as parents and caretakers) that is less affected by these premium policy changes but is likely to be influenced by the same secular trends.

Question 11: Does the RRP impact vary by income level?

&

Question 12: If there is an RRP impact, explore the break-out by income level.

A. DHS Proposed: “Case Study”, “Administrative Data Analysis”, and “Case-Control Matching”

B. Evaluation Team Proposes:

1. Methods

Testing for heterogeneity in the effect of the RRP by income level can be accomplished by comparing subgroup effects within the 3 month RRP to the 12 month RRP (i.e., examining whether the average rate of premium payment is higher or lower among beneficiaries with higher income after the switch). This can be operationalized by interacting a variable for income category with the variable for policy group in a model that reports average differences in mean number of months of enrollment (e.g., by looking at whether the enrollment effect is greater for individuals above 200% FPL) and carrying out a similar analysis for estimates of amount paid per month during enrollment. Formal testing of statistical significance for interaction can indicate whether any variation identified is likely to reflect variation that cannot be explained simply by chance differences in the income groups.

2. **Study Population:** same as for Question 10

3. **Data Requirements:** Same as 10

4. Expected Limitations

As indicated in Question 8, there is no way to fully disentangle the effect of premiums from higher income since the two increase together. We will descriptively compare differences in enrollment trends by income level and will attribute those differences to some combined effect of income and premium levels.

Childless Adult Beneficiary Enrollment in the Medicaid Standard Plan: Questions 13-17

The objective of evaluation questions 13-17 is to understand whether and to what extent the provision of standard Medicaid benefits to childless adult (CLAs) beneficiaries improved health, health care, and resource use-related outcomes for CLAs. The WI Department of Health Services is specifically interested in measuring CLA Standard Plan enrollees’ outcomes relative to the two comparators, A and B, described below. We will implement both comparisons for each of the research questions related to childless adult enrollment in the Standard Plan. In the following paragraphs, we describe the general samples and research designs that we will deploy across questions 13-17. We then provide additional analytical detail that is specific to each research question.

A. A comparison of CLA beneficiaries’ outcomes while enrolled in the Standard Plan relative to their outcomes while enrolled in the Core Plan; and

B. A comparison of outcomes for newly eligible CLA beneficiaries enrolled in the Standard Plan relative to outcomes for CLA beneficiaries enrolled in the Core Plan for a similar period of enrollment during the demonstration.

A. Research Design and Sample

Design. We will implement a difference-in-differences (DD) design to estimate the change in outcomes for CLA beneficiaries before enrollment in the Standard Plan and after Standard Plan enrollment relative to the change in outcomes over the same time periods in a propensity-score matched comparison group of parent/caretaker beneficiaries. As illustrated in Table 4, a comparison group of parents/caretakers who were continuously enrolled in the Standard Plan controls for any trends that may have affected the health care use of publicly-insured low-income adults during this period that were not otherwise related to the introduction of Standard Plan coverage for CLA beneficiaries. The DD design with a well-matched comparison group increases our capacity to make causal inferences from the evaluation findings by isolating the impact of the coverage change on the affected population.

Table 4. Difference-in-Differences Research Design for Evaluation of Childless Adult Enrollment in Standard Plan

	Pre-Period *April 2012 - March 2014		Post-Period *April 2014-March 2016	
Treatment Group	Core Plan (A) Cohort of childless adults <=100%FPL	=>	Standard Plan (B) Same cohort of childless adults <=100%FPL	
Comparison Group	Standard Plan (C) Propensity-score matched cohort of parents/caretakers <=100%FPL	=>	Standard Plan (D) Same cohort of parents/caretakers <=100%FPL	
Difference-in-Differences:			[(B-A) - (D-C)]	

**Time segments for the 'pre' and 'post' periods may be adjusted based on enrollment continuity of sample and data availability.*

Sample. We will use the CARES data to identify the sample of CLA beneficiaries that transitioned from the Core Plan to the Standard Plan. Each individual that meets the following criteria will be included in the "transitioner," sample: income that is at or below 100% FPL; enrollment in the Core Plan in March 2014; and enrollment for at least 1 month after the April 1, 2014 transition to the Standard Plan.

Because childless adult and parent/caretaker beneficiaries may differ on observable characteristics, we will employ propensity score methods to construct a statistically matched comparison group of parents/caretakers using CARES and MMIS claims data. The comparison sample of parents/caretakers will include subjects who can be statistically matched to the childless adult beneficiary sample in terms of their administrative characteristics (e.g., month and duration of enrollment, income level, age, gender, county of residence), past utilization (measures of visits in the pre-period), and health history (measured by diagnostic codes in the MMIS data in the pre-period). A large literature has demonstrated that matching on past outcome measures, as we propose here, is an exceptionally strong propensity score matching design.⁹

⁹ See for example: Heckman J, Ichimura H, Todd P. (1997) Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme. *Review of Economic Studies*, Vol. 64, pp. 605-654; Card D and Sullivan D. (1988) Measuring the Effect of Subsidized Training Programs on Movements into

B. Research Design and Sample

Design. We will describe the differences in study outcomes between two groups of CLA Standard Plan enrollees: individuals who enrolled on or after April 1, 2014; and individuals who transitioned from the Core Plan to the Standard Plan in April 2014. The observational study design is illustrated in Figure 3.

Figure 3. Comparing the experience in the Standard Plan of new CLA enrollees to CLA enrollees that transitioned from the Core Plan

CLA Beneficiaries	April 2014-March 2015				April 2015 – March 2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
New Enrollees	=> ----- -----							
Transitioners	=> ----- -----							

This design will yield important insight into the effects on study outcomes of Standard Plan coverage for CLAs who experienced a richer set of benefits from the start of their Medicaid enrollment (i.e., new enrollees) relative to CLAs who initially experienced a more limited set of Medicaid benefits (i.e., transitioners.) We note that the design does not allow us to distinguish between several plausible explanations for potential outcome differences between new enrollees and transitioners. These explanations include prior health insurance coverage and differences across groups in unobserved characteristics related to study outcomes such as care-seeking preferences, health history, etc.

Sample. We will use CARES data to identify two groups of CLA beneficiaries between the ages of 19-64: new enrollees; and transitioners. New enrollees will include CLA beneficiaries with at least 1 month of Standard Plan enrollment beginning on or after 4/1/2014 and no Core Plan enrollment in the prior 12 months. The new enrollee population will thus include both individuals on the Core Plan wait list and individuals that were not on the Core Plan wait list. Each individual that meets the following criteria will be included in the “transitioner,” sample: income that is at or below 100% FPL; enrollment in the Core plan in March 2014; and enrollment for at least 1 month after the April 2014 transition to the Standard Plan.

and out of Employment. *Econometrica*, Vol. 56, pp. 497-530; Deheija R and Wahba S. (1999) Causal Effects in Nonexperimental Studies: Reevaluating the Evaluation of Training Programs. *Journal of the American Statistical Association*, Vol, 94, pp. 1053-1062; Deheija R and Wahba S. (2002) Propensity Score Matching Methods for Nonexperimental Causal Studies. *Review of Economic Studies*, Vol. 84, pp. 151-161; Heckman J, Ichimura H, Smith J, Todd P. (1996) Sources of Selection Bias in Evaluating Programs: An Interpretation of Conventional Measures and Evidence on the Effectiveness of Matching as a Program Evaluation Method. *Proceedings of the National Academy of Sciences*, Vol. 93, pp. 13416-13420. Heckman J and Smith J. (1999) The Pre-Program Earnings Dip and the Determinants of Participation in a Social Program: Implications for Simple Program Evaluation Strategies. NBER Working Paper 6983, National Bureau of Economic Research, Cambridge: MA; and Smith J and Todd P. (2005) Does Matching Overcome LaLonde’s Critique of Nonexperimental Estimators? *Journal of Econometrics*, Vol. 125, pp. 305-353.

Question 13. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries result in improved health outcomes?

A. DHS Proposed: “Case Study;” “Administrative Data Analysis;” and “Case-Control Matching.”

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* We will describe health-related outcomes over time for CLA beneficiaries by sample membership (i.e., new enrollees and transitioners), and for CLA transitioners relative to the matched parent/caretaker comparison group. We will include tabulations as well as a graphical and regression analysis. Study outcomes for Q.13 are summarized in Table 2.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare health-related outcomes for those affected by the change to Standard Plan coverage (CLA transitioners) to those not affected by the coverage change (matched parents and caretakers), over time. A purely descriptive analysis would not account for secular changes that might affect health-related outcomes. This design allows us to identify the causal effect of Standard Plan coverage relative to Core Plan coverage by assuming that the health-related outcomes for the treatment group would have evolved similarly over time as that of the comparison group in the absence of the change in coverage. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable.

1. **Study Population:** CLA transitioners; CLA new enrollees; and matched parent/caretaker sample as described above.

2. Time period

- a. We will compare health-related outcomes for new enrollees relative to transitioners from April 1, 2014 through March 30, 2016.
- b. The pre and post-periods for our DD analyses will include up to 24 months each, April 2012-March 2014 and April 2014-March 2016 respectively.

3. Data Requirements

Source	Time Frame	Purpose
CARES	April 2012 – March 2016	Identification of study samples and the specific months observed for each subject. Provides the demographic data for use in construction of propensity-score matched parent/caretaker group.
MMIS Claims	April 2012 – March 2016	Identification of health-related outcomes. Provides the diagnostic and health care data for use in construction of propensity-score matched parent/caretaker group.

5. Expected Limitations

- a. *Outcome measures.* We will use empirically validated measures whenever possible as described in Table 2. However, identification of health-related outcomes through claims data algorithms is an imperfect process as it requires the enrollee to utilize the health care system in order to appear unhealthy.

- b. *Outcome measures.* The technical specifications for some of the outcomes noted in Table 2 require 18-24 months of continuous enrollment for inclusion in the denominator. This restriction will limit the available sample for measure construction and may affect the generalizability of the finding to the relevant WI Medicaid population. When feasible, we will modify the definition and technical specifications of some measures to balance sample size limitations and evaluation objectives. .
- c. *Parallel trends assumption.* This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than coverage changes for CLA transitioners (that is also related to the outcome) but not the comparison group in April 2014, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 14. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries achieve a reduction in the incidence of unnecessary services?

A. DHS Proposed: “Case Study;” “Administrative Data Analysis;” and “Case-Control Matching.”

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* We will describe rates of unnecessary service use over time for CLA beneficiaries by sample membership (i.e., new enrollees and transitioners), and for CLA transitioners relative to the matched parent/caretaker comparison group. We will include tabulations as well as a graphical and regression analysis. Outcome measures for Q.14 are summarized in Table 2.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare rates of unnecessary service use for those affected by the change to Standard Plan coverage (CLA transitioners) to those not affected by the coverage change (matched parents and caretakers), over time. A purely descriptive analysis would not account for secular changes that might affect health outcomes. This design allows us to identify the causal effect of Standard Plan coverage relative to Core Plan coverage by assuming that the use of unnecessary services for the treatment group would have evolved similarly over time as that of the comparison group in the absence of the change in coverage. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable.

2. Study Population: CLA transitioners; CLA new enrollees; and matched parent/caretaker sample as described above.

3. Time period

- a. We will compare unnecessary service use for new enrollees relative to transitioners from April 1, 2014 through March 30, 2016.
- b. The pre and post-periods for our DD analyses will include up to 24 months each, April 2012-March 2014 and April 2014-March 2016 respectively.

4. Data Requirements

Source	Time Frame	Purpose
CARES	April 2012 – March 2016	Identification of study samples and the specific months observed for each subject. Provides the demographic data for use in construction of propensity-score matched parent/caretaker group.
MMIS Claims	April 2012 – March 2016	Identification of outcome measures. Provides the diagnostic and health care data for use in construction of propensity-score matched parent/caretaker group.

5. Expected Limitations

- a. *Outcome measure.* Identification of “unnecessary” visits through claims data algorithms is an imperfect process and will inevitably misclassify some visits that were “necessary” as “unnecessary” and vice versa.
- b. *Parallel trends assumption.* This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than coverage changes for CLA transitioners (that is also related to the outcome) but not the comparison group in April 2014, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 15. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Outcomes/Cost) of Medicaid services?

A. DHS Proposed: “Case Study;” “Administrative Data Analysis;” and “Case-Control Matching.”

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* We will describe the cost-effectiveness over time (as defined by the ratio of health-related outcomes to spending) for CLA beneficiaries by sample membership (i.e., new enrollees and transitioners), and for CLA transitioners relative to the matched parent/caretaker comparison group. We will include tabulations as well as a graphical and regression analysis. Outcome measures for Q.15 are summarized in Table 2.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare the health-related outcomes/spending ratio for those affected by the change to Standard Plan coverage (CLA transitioners) to those not affected by the coverage change (matched parents and caretakers), over time. A purely descriptive analysis would not account for secular changes that might affect the ratio of health outcomes to spending. This design allows us to identify the causal effect of Standard Plan coverage relative to Core Plan coverage by assuming that the outcome/spending ratio for the treatment group would have evolved similarly over time as that of the comparison group in the absence of the change in coverage. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable.

- c. Expenditures estimation. Health care expenditures will be computed using an algorithm that maps encounter data to a fee-for-service schedule of allowable charges for the Wisconsin Medicaid population.¹⁰

2. Study Population: CLA transitioners; CLA new enrollees; and matched parent/caretaker sample as described above.

3. Time period

- a. We will compare the ratio of health-related outcomes to spending for new enrollees relative to transitioners from April 1, 2014 through March 30, 2016.
- b. The pre and post-periods for our DD analyses will include up to 24 months each, April 2012-March 2014 and April 2014-March 2016 respectively.

4. Data Requirements

Source	Time Frame	Purpose
CARES	April 2012 – March 2016	Identification of study samples and the specific months observed for each subject. Provides the demographic data for use in construction of propensity-score matched parent/caretaker group.
MMIS Claims	April 2012 – March 2016	Identification of outcome measures. Provides the diagnostic and health care data for use in construction of propensity-score matched parent/caretaker group.

5. Expected Limitations

- a. *Outcome measure.* We will use empirically validated measures whenever possible as described in Table 2. Identification of health-related outcomes through claims data algorithms is an imperfect process as it requires the enrollee to utilize the health care system in order to appear unhealthy. We note that outcomes/spending is also not a typical measure of “cost-effectiveness,” which is normally expressed as a denominator of a gain in health and a numerator of the cost associated with the health gain. Regardless, we will not be able to directly identify the specific costs of any particular change in health outcomes, only “changes in costs” and “changes in health-related outcomes” induced by the introduction of Standard Plan coverage.
- b. *Parallel trends assumption.* This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than coverage changes for CLA transitioners (that is also related to the outcome) but not the comparison group in April 2014, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 16. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost (Utilization/Cost) of Medicaid services?

A. DHS Proposed: “Case Study;” “Administrative Data Analysis;” and “Case-Control Matching.”

¹⁰ Leininger L, Friedsam D., Voskuil K., DeLeire T. (2014) Predicting high-need cases among new Medicaid enrollees. *American Journal of Managed Care.* 20(9):e399-e407.

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* We will describe the cost-effectiveness over time (as defined by the ratio of health care use to spending) for CLA beneficiaries by sample membership (i.e., new enrollees and transitioners), and for CLA transitioners relative to the matched parent/caretaker comparison group. We will include tabulations as well as a graphical and regression analysis. Outcome measures for Q.16 are summarized in Table 2.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare the health care use/spending ratio for those affected by the change to Standard Plan coverage (CLA transitioners) to those not affected by the coverage change (matched parents and caretakers), over time. A purely descriptive analysis would not account for secular changes that might affect the ratio of health care use to spending. This design allows us to identify the causal effect of Standard Plan coverage relative to Core Plan coverage by assuming that the care use/spending ratio for the treatment group would have evolved similarly over time as that of the comparison group in the absence of the change in coverage. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable.
- c. *Expenditures estimation.* Health care expenditures will be computed using an algorithm that maps encounter data to a fee-for-service schedule of allowable charges for the Wisconsin Medicaid population.

2. Study Population: CLA transitioners; CLA new enrollees; and matched parent/caretaker sample as described above.

3. Time period

- a. We will compare the ratio of health care use to spending for new enrollees relative to transitioners from April 1, 2014 through March 30, 2016.
- b. The pre and post-periods for our DD analyses will include up to 24 months each, April 2012-March 2014 and April 2014-March 2016 respectively.

4. Data Requirements

Source	Time Frame	Purpose
CARES	April 2012 – March 2016	Identification of study samples and the specific months observed for each subject. Provides the demographic data for use in construction of propensity-score matched parent/caretaker group.
MMIS Claims	April 2012 – March 2016	Identification of outcome measures. Provides the diagnostic and health care data for use in construction of propensity-score matched parent/caretaker group.

5. Expected Limitations

- a. *Outcome measure.* We note that utilization/cost is also not a typical measure of “cost-effectiveness”, which is normally expressed as a denominator of a gain in health and a numerator of the cost associated with the health gain. Regardless, we will not be able to directly identify the

specific costs of any particular change in health outcomes, only “changes in costs” and “changes in healthcare utilization” induced by the premium requirement.

- b. *Parallel trends assumption.* This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than coverage changes for CLA transitioners (that is also related to the outcome) but not the comparison group in April 2014, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Question 17. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?

A. DHS Proposed: “Case Study;” “Administrative Data Analysis;” “Case-Control Matching,” and “enrollment/disenrollment survey.”

B. Evaluation Team Proposes:

1. Method

- a. *Descriptive analysis of administrative data.* We will describe the continuity of health insurance coverage and the continuity of health care over time for CLA beneficiaries by sample membership (i.e., new enrollees and transitioners), and for CLA transitioners relative to the matched parent/caretaker comparison group. We will include tabulations as well as a graphical and regression analysis.
- b. *Causal analysis of administrative data.* We will use a difference-in-differences study design to compare the continuity of coverage and care for those affected by the change to Standard Plan coverage (CLA transitioners) to those not affected by the coverage change (matched parents and caretakers), over time. A purely descriptive analysis would not account for secular changes that might affect continuity of coverage. This design allows us to identify the causal effect of Standard Plan coverage relative to Core Plan coverage by assuming that the continuity of coverage and care for the treatment group would have evolved similarly over time as that of the comparison group in the absence of the change in coverage. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable.
- c. *Descriptive and causal analysis of survey data.* In addition to the 2014 survey of BadgerCare beneficiaries, the 2016 and 2018 surveys will provide repeated cross-sectional measures of health care continuity for CLA beneficiaries with income at or below 100%FPL. Using these data we will describe the continuity of health care over time for CLA beneficiaries. The planned surveys will also include a panel component, a subset of respondents that is surveyed up to three times (i.e., 2014, 2016, and 2018). This panel of respondents enables person-level, fixed effects analyses to estimate the effect of the transition to the Standard Plan from Core Plan coverage on health care continuity. In this fixed effects framework, each person serves as his/her own control. Implementation of this causal analysis is contingent upon retention of a sufficient sample of CLA panel respondents.

- 2. Study Population:** CLA transitioners; CLA new enrollees; and matched parent/caretaker sample as described above.

3. Time period

- a. We will compare continuity of coverage and care for new enrollees relative to transitioners from April 1, 2014 through March 30, 2016.
- b. The pre and post-periods for our DD analyses will include up to 24 months each, April 2012-March 2014 and April 2014-March 2016 respectively.
- c. For survey-based measures, we will describe continuity of care across and within CLA beneficiaries at three time points (2014, 2016, and 2018).

4. Data Requirements

Source	Time Frame	Purpose
CARES	April 2012 – March 2016	Identification of study samples and the specific months observed for each subject. Provides the demographic data for use in construction of propensity-score matched parent/caretaker group. Identification of outcome measures related to coverage continuity (i.e., number and duration of enrollment and disenrollment spells; re-enrollment at renewal; transition to non-CLA Medicaid eligibility category.)
MMIS Claims	April 2012 – March 2016	Provides the diagnostic and health care data for use in construction of propensity-score matched parent/caretaker group.
Survey	Point-in-time measures valid at time of survey implementation	Identification of outcome measures for continuity of care: usual source of care; usual provider of care; receipt of all needed care in the past 12 months.

5. Expected Limitations

- a. *Survey data sample.* While the survey team will follow best practices in design and implementation, it is possible that the resulting sample size will not allow identification of small differences in continuity of care or support within-subject analyses.
- b. *Parallel trends assumption.* This assumption is required for the difference-in-differences analysis but is fundamentally untestable. If something other than coverage changes for CLA transitioners (that is also related to the outcome) but not the comparison group in April 2014, the design would be invalid. While we are not aware of any obvious violations in this context, it should be noted as a potential limitation.

Hypotheses	Evaluation Team Planned Approach	DHS Proposal
Payment of Premiums and The Effect of Premiums: Q 1-5; 8,9		
1: Will the premium requirement reduce the incidence of unnecessary services?	<p><u>1. Descriptive analysis of administrative data.</u> Report the effect of the premium on 5 outcome measures: 1) rates of unnecessary service use, 2) rate on various health outcomes, 3) health spending, 4) cost-effectiveness over time (as defined by the ratio of health outcomes to spending), and 5) cost-effectiveness (as defined by the ratio of healthcare utilization to spending), over time by TMA status, income, premium payment status, and other demographic characteristics available through CARES. We will include tabulations as well as a graphical and regression analysis.</p> <p><u>2. Causal analysis of administrative data using a difference-in-differences study design.</u> Compare the 5 outcome measures for those affected by the policy (Treatment Group 1) to those not affected by the policy (Comparison Group 1 and Comparison Group 2 in separate analyses), over time. A purely descriptive analysis would not account for secular changes that might affect the 5 outcome measures nor the potential for selection into TMA status.</p> <p>This design allows identification of the causal effect of premiums by assuming that the 5 outcome measures for the treatment group would have evolved similarly over time as that of the comparison group(s) in the absence of the implementation of the premium requirement. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable.</p> <p><u>3. We will also perform a within-person analysis</u> that considers whether outcomes change over time for those affected by the policy conditional on remaining enrolled.</p>	<p>“Case Study”, “Administrative Data Analysis”, and “Case-Control Matching” by statistically matching those who drop out of TMA within 12 months of premium implementation to those who do not drop out.</p>
2: Will the premium requirement lead to improved health outcomes?		
3: Will the premium requirement slow the growth in healthcare spending?		
4: Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?		
5: Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?		
8: What is the impact of premiums on enrollment broken down by income level and the corresponding monthly premium amount?	<p><u>1. Descriptive analysis of administrative data.</u> We will provide a description of TMA enrollment over time, including the probability of transitioning to TMA, by TMA status, income, premium payment status, and other demographic characteristics available through CARES.</p> <p><u>2. Causal analysis of administrative data using an interrupted time series study design.</u> Compare the rate of transitions from MA adult to TMA status in order to understand whether premium requirements affect the incentive to take up TMA and/or</p>	

	<p>experience the types of transitions that would lead to a qualifying event. We will also use this design to study the probability of exit from TMA. This design allows us to identify the causal effect of premiums by assuming that enrollment behavior in the TMA population would have evolved similarly over time if not for the premium requirements. We will use econometric modeling techniques that appropriately account for serial correlation.</p> <p>3. <u>Regression discontinuity design</u> within the TMA population to study the effect of premium amounts. This design involves comparing the enrollment behavior of those who transition and have incomes just low enough to qualify them for a particular premium amount relative to those who transition and have incomes just higher, qualifying them for a higher premium amount. The strength of this design is that it ensures populations are highly similar (as both transitioned from MA) rather than relying on a comparison of adults who did not transition, who may be different from those who did in unobservable ways that are predictive of the enrollment outcome. We will perform this analysis for each level of the required premium.</p>	
<p>9: How is access to care affected by the application of new, or increased, premium amounts?</p>	<p>1. <u>Descriptive analysis of survey data</u>: The survey that will be fielded in Spring 2016 will include measures of access to care (e.g., usual source of care and experience of any unmet need for medical care), which is not well measured from administrative claims data. The survey will include both current TMA enrollees as well as those who have been placed in an RRP, so that both those who are and are not currently paying premiums are represented. We will summarize survey measures of beneficiary access to care stratified by TMA and premium-requirement status, providing tabular, graphical, and regression-adjusted analyses.</p> <p>2. <u>Matched analysis of administrative data</u>. If feasible, we will enhance the survey by matching the survey data to the administrative data. This will allow us to observe more precise measures of income and enrollment, which will facilitate a causal analysis.</p> <p>In particular, we will use a <u>regression discontinuity design</u> within the TMA population in order to study the effect of premium amounts. This design involves comparing the surveyed access to care responses of those who transition and have incomes just</p>	<p>“Case Study”, “Administrative Data Analysis”, “Case-Control Matching”, and “Enrollment/Disenrollment Survey”</p>

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	<p>low enough to qualify them for a particular premium amount relative to those who transition and have incomes just higher, qualifying them for a higher premium amount. The strength of this design is that it ensures populations are highly similar rather than relying on a comparison of adults who did not transition, who may be different from those who did in unobservable ways that are predictive of the enrollment outcome. We will perform this analysis for each level of the required premium using appropriate econometric techniques.</p>	
Restrictive Reenrollment Period for Failure to Pay Premium: Q6-7; 10-12		
<p>6: Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled, but re-enrolled after the 3-month restrictive re-enrollment period?</p>	<p><u>Regression model</u> that compares pre- and post-RRP trends taking advantage of repeated measures of utilization within the same beneficiary, and also taking advantage of data from other beneficiaries who experience RRP at different times. In this estimation strategy, beneficiaries in pre-RRP periods can serve as controls for themselves in the post-RRP period as well as for other beneficiaries who experience RRP at different times.</p>	<p>“Case Study”, “Administrative Data Analysis”, “Case-Control Matching”, and “Enrollment/Disenrollment Survey”</p>
<p>7: Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for beneficiaries that have disenrolled and then re-enrolled?</p>	<p><u>Difference-in-differences design</u> to compare the longer-term trends in outcomes between the population of TMA beneficiaries that experience RRP to several alternative groups that do not experience RRP.</p> <ol style="list-style-type: none"> 1. The first comparison is a within-group comparison for TMA with incomes 100-133% FPL in their first six months (when they are not subject to RRP) versus their second six months when they are subject to RRP. The advantage of this comparison is that we observe the group during a time period when they are not at risk of losing coverage due to an RRP compared to a time period when the policy changes and they are exposed to an RRP. 2. Second, we can look at TMA populations who remain continuously enrolled (i.e. never experience an RRP), but are otherwise similar to those who do experience an RRP (using a propensity score matching process with baseline demographic characteristics). Third, we can compare TMA beneficiaries with an RRP to similar beneficiaries in the CLA population, which is not subject to RRP, and is therefore 	<p>“Case Study”, “Administrative Data Analysis”, “Case-Control Matching”, and “Enrollment/Disenrollment Survey”</p>

Crosswalk: UW Research Team Evaluation Methods and DHS Proposed Evaluation Methods

	less likely to experience enrollment gaps.	
10: What impact does the 3-month restrictive re-enrollment period for failure to make a premium payment have on the payment of premiums and on enrollment?	<ol style="list-style-type: none"> 1. <u>Hazard modeling</u> to compare the relative risk of disenrollment in the first six months among TMA individuals with incomes 100%-133% FPL to disenrollment rates in other groups over similar amounts of time. The hazard model assumes that every individual has some underlying probability of leaving the program, whether or not they are subject to premiums and/or an RRP, and that this risk can be modeled as a function of time spent in the program, demographics, and policy variables. 2. Comparison of differences in both disenrollment rate and total premiums paid between individuals subject to the 3 month RRP 2016 versus the effect of 12 month RRP among similar individuals from prior time period, using propensity score matching. 	“Case Study”, “Administrative Data Analysis”, “Case-Control Matching”, and “Enrollment/Disenrollment Survey”
11: Does the RRP impact vary by income level?	<ol style="list-style-type: none"> 1. Comparison of subgroup effects within the 3 month RRP to the 12 month RRP (i.e., examining whether the average rate of premium payment is higher or lower among beneficiaries with higher income after the switch). This can be operationalized by interacting a variable for income category with the variable for policy group in a model that reports average differences in mean number of months of enrollment and carrying out a similar analysis for estimates of amount paid per month during enrollment. 	“Case Study”, “Administrative Data Analysis”, and “Case-Control Matching”
12: If there is an impact from the RRP, explore the break-out by income level.	<ol style="list-style-type: none"> 2. Formal testing of statistical significance for interaction to indicate whether any variation identified is likely to reflect variation that cannot be explained simply by chance differences in the income groups. 	
Childless Adult Beneficiary Enrollment in the Medicaid Standard Plan: Q13-17		
13. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries result in improved health outcomes?	<ol style="list-style-type: none"> 1. <u>Descriptive analysis of administrative data.</u> We will descriptively analyze 3 outcome measures: 1) health-related outcomes over time, 2) rates of unnecessary service use, and 3) the cost-effectiveness over time (as defined by the ratio of health-related outcomes to spending) for CLA beneficiaries by sample membership (i.e., new enrollees and transitioners), and for CLA transitioners relative to the matched parent/caretaker comparison group. We will include tabulations as well as a graphical and regression analysis. 	“Case Study;” “Administrative Data Analysis;” and “Case-Control Matching.”

Crosswalk: UW Research Team Evaluation Methods and DHS Proposed Evaluation Methods

<p>14. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries achieve a reduction in the incidence of unnecessary services?</p>	<p>2. <u>Causal analysis of administrative data.</u> We will use a difference-in-differences study design to compare 3 outcome measures -- 1) health-related outcomes, 2) rates of unnecessary service use, 3) health-related-outcomes/spending ratio -- for those affected by the change to Standard Plan coverage (CLA transitioners) to those not affected by the coverage change (matched parents and caretakers), over time. This design allows us to identify the causal effect of Standard Plan coverage relative to Core Plan coverage by assuming that each of the 3 measures for the treatment group would have evolved similarly over time as that of the comparison group in the absence of the change in coverage. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable.</p>	
<p>15. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Outcomes/Cost) of Medicaid services?</p>	<p>3. Expenditures estimation. Health care expenditures will be computed using an algorithm that maps encounter data to a fee-for-service schedule of allowable charges for the Wisconsin Medicaid population.</p>	
<p>16. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase in the cost effectiveness (Utilization/Cost) of Medicaid services?</p>	<p>1. Descriptive analysis of administrative data. We will describe 2 outcome measures -- 1) the cost-effectiveness over time (as defined by the ratio of health care use to spending) and 2) the continuity of health insurance coverage and the continuity of health care over time -- for CLA beneficiaries by sample membership (i.e., new enrollees and transitioners), and for CLA transitioners relative to the matched parent/caretaker comparison group. We will include tabulations as well as a graphical and regression analysis.</p> <p>2. Causal analysis of administrative data. We will use a difference-in-differences study design to compare the health care use/spending ratio and the continuity of coverage and care for those affected by the change to Standard Plan coverage (CLA transitioners) to those not affected by the coverage change (matched parents and caretakers), over time. This design allows us to identify the causal effect of Standard</p>	<p>“Case Study;” “Administrative Data Analysis;” “Case-Control Matching,” and “enrollment/di senrollment survey.”</p>
<p>17. Will the provision of a benefit plan that is the same as the one</p>	<p>2. Causal analysis of administrative data. We will use a difference-in-differences study design to compare 3 outcome measures -- 1) health-related outcomes, 2) rates of unnecessary service use, 3) health-related-outcomes/spending ratio -- for those affected by the change to Standard Plan coverage (CLA transitioners) to those not affected by the coverage change (matched parents and caretakers), over time. This design allows us to identify the causal effect of Standard</p>	

<p>provided to all other BadgerCare adult beneficiaries demonstrate an increase in the continuity of health coverage?</p>	<p>Plan coverage relative to Core Plan coverage by assuming that the each of the outcomes for the treatment group would have evolved similarly over time as that of the comparison group in the absence of the change in coverage. For estimation, we will use an appropriate econometric model that incorporates the nature and distribution of the outcome variable.</p> <p>3. Expenditures estimation. Health care expenditures will be computed using an algorithm that maps encounter data to a fee-for-service schedule of allowable charges for the Wisconsin Medicaid population.</p> <p>4. Descriptive and potential causal analysis of survey data. In addition to the 2014 survey of BadgerCare beneficiaries, the 2016 and 2018 surveys will provide repeated cross-sectional measures of health care continuity for CLA beneficiaries with income at or below 100%FPL. Using these data we will describe the continuity of health care over time for CLA beneficiaries. The planned surveys will also include a panel component, a subset of respondents that is surveyed up to three times (i.e., 2014, 2016, and 2018). This panel of respondents enables person-level, fixed effects analyses to estimate the effect of the transition to the Standard Plan from Core Plan coverage on health care continuity. In this fixed effects framework, each person serves as his/her own control. Implementation of this causal analysis is contingent upon retention of a sufficient sample of CLA panel respondents.</p>	
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ATTACHMENT C: CMS Comments and UW/DHS Responses

Wisconsin BadgerCare Reform Evaluation Design changes *UW Response to CMS Review, V2*

CMS comments in Font Times Roman
UW Comments in *Font Calibri italics*

The revised plan represents a set of robust evaluation methodologies, including elements like the proposed difference-in-difference study design, in conjunction with a within-person longitudinal analysis, and interrupted time series and regression discontinuity designs. **The main limitations that need to be clarified or addressed are listed below. Items in bold are considered priorities.**

We appreciate CMS' careful and thoughtful review of our Design Report. We had submitted that report to the Wisconsin Department of Health Services under our contract to evaluate Wisconsin's 2014 BadgerCare waiver. The State had provided to us an evaluation plan, titled "[BadgerCare Reform Demonstrate Evaluation Plan](https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/wi/Badger-Care-Reform/wi-badgercare-demo-eval-plan-20141031.pdf)" (<https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/wi/Badger-Care-Reform/wi-badgercare-demo-eval-plan-20141031.pdf>), that had been prepared by a separate consulting firm and pre-approved by CMS, and asked that we use that plan, including its measures and methods, for our evaluation.

Our team, after reviewing that plan, met with Wisconsin DHS, noted concerns about the plan and asked that we propose a revision. DHS understood our perspective, particularly with regard to the scientific methods, and asked that, in preparing a revision, we adhere to the existing 17 study questions as outlined in its existing pre-approved plan and within the existing budget and timeline limits for the evaluation.

We welcome an ongoing discussion about how to best answer questions of importance to both Wisconsin DHS and to CMS. Toward that end, we offer the following responses to the CMS comments.

Effect of Premium Requirements and Payment of Premiums Q 1-5; 8-9

- The proposed evaluation outcome measures listed in Table 2 do not adequately assess whether enrollees are forgoing any necessary care. Evaluators may want to consider adapting additional national standards for preventive care outcome measures for the evaluation such as: adult access to ambulatory care (NCQA), tobacco use cessation (NCQA, NQF #0028), body mass index screening and follow-up (NQF #0421), cervical cancer screening (NQF #0032), screening for clinical depression (NQF #0418), and practitioner follow-up after hospitalization (NQF #0567).

The current evaluation reflects the outcome measures that the WI DHS selected in its CMS-approved [“BadgerCare Reform Demonstrate Evaluation Plan,”](#) (see pages 25 and 35-36 in that original plan) along with additional measures that the UW PHI team suggested to the DHS based on the data available.

We are happy to consider additional variables as outcomes to the extent that we may construct them with the data available and within the current budget and project timeline. For example, time and resources permitting, using the available claims and enrollment data it may be possible to assess access to ambulatory care, cervical cancer screening, and practitioner follow-up after hospitalization. However, the additional measures requested above are beyond the scope of the current project because they require access to clinical information (e.g., electronic medical records) that is not available to the evaluation team.

- **The first comparison population of MA Adults <100% FPL are not exposed to the premium policy because their income requirements do not qualify them. We can expect systematic differences between the treatment population (TMA Adults) and this proposed comparison group on key variables, such as income level, that influence both selection into the groups and subsequent outcomes. Propensity score methods are used with a difference-in-difference framework to balance the groups on these key observable variables. Do the evaluators propose to use propensity score methods in this case, as proposed for the CLA comparison group in Q 13-17?**

Propensity score matching is unnecessary if the common trends assumption is satisfied. If matching appears to be needed, we will use this method. It is important to note that TMA adults were previously members of the MA adults <100% FPL group. In addition, we have planned analyses as indicated that involve only comparisons within the TMA population.

- **The evaluators note that the second comparison group of parents/caretakers was exposed to the premium policy for a limited time period, and can only serve as a historical comparison since they do not have Medicaid coverage in the post-policy period for the treatment group (Table 3). Do the evaluators propose to conduct a difference-in-difference analysis with this comparison population as well? If so, how are the different time periods of exposure to premium payments for the two groups going to be aligned? Alternately, what study design will be used to compare the two groups?**

We plan to use this comparison group in a cohort study (so the timelines would be aligned, for example, 1 year prior). The relevant assumption would be that the outcomes would have evolved similarly for this population in the prior time period so that they provide a good counterfactual for the post-policy period for the treatment group.

- It is possible that the treatment and comparison groups may not be mutually exclusive, meaning that someone may have qualified as an MA adult in earlier years, and may now

qualify as a TMA adult who has to pay a premium. How will the evaluation handle such beneficiaries?

The analysis is planned to be spell-level. Therefore, if the enrollment represents a distinct spell, the individuals will be treated as distinct. We will explore whether controlling for prior enrollment spells is important for the analysis.

- In assessing the impact of premiums on enrollment, the evaluators rightly note that income effects cannot be separated from premium effects. Evaluators may however want to consider stratifying the ITT and RDD analyses by specific income levels to assess if the impact of premiums on enrollment varies by income. The proposed design currently does not get at this question.

The analysis plan states: “We will perform this analysis for each level of the required premium.” This means that at each income level at which the premium changes, we will provide separate estimates. Since the ITT/RDD analyses can only be done at the margins at which the premiums change, and these are also different income levels, the design of the waiver does not allow us to directly assess the question of whether any differing effects are due to higher premiums or higher incomes.

- Does the survey sample of 1,054 refer to respondents with completed surveys? In fielding the survey, and using it to facilitate over-time comparisons, evaluators may want to consider the low response rate of <25% for the adult Medicaid population on mixed-mode mail and phone surveys, to determine their target sample.

The 2014 evaluation surveyed 2,000 total members, with 1,084 total respondents with completed surveys, yielding a (very high) 54% response rate. We have previously conducted extensive research on the response rates of various Medicaid surveys and our project partner, the UW Survey Center has extensive and longstanding expertise in the various methods available to increase response rates, as well as with weighting and oversampling techniques.

- Can the evaluator provide more clarity on how they plan to link survey data to claims? *Each survey instrument has a code on it that allows connection back to unique assigned identifier at the UW Survey Center. That Survey Center identifier is connected in a separate secure data file to each respondent’s Medicaid ID number, which is what is used to connect the responses to the Medicaid claims.*

- **What survey questions will adequately capture whether premiums affect disenrollment and access to care as consequence of disenrollment? Will the evaluators consider conducting interviews or focus groups with disenrolled beneficiaries to obtain qualitative insights to how premiums affect disenrollment?**

We have attached a copy of the full survey instrument here. Several questions within the instrument address premiums, their relationship to enrollment, and access to care as a consequence to disenrollment. On the “Non-RRP” survey version, these concerns are specifically addressed in questions 2,4,8-19, 23, 27, 40-44. The “RRP” survey version specifically addresses these concerns in questions 3-19, 23, 27, 40-44.

We have opted not to conduct focus groups given our very limited evaluation resources. Instead, are conducting enhanced telephone follow-up within the survey protocol, with respondent interviews, to achieve a high survey response rate and to gain robust understanding across all survey elements.

Restrictive Reenrollment Period for Failure to Pay Premiums Q6-7; 10-12

- In assessing Q6, are outcomes to be estimated every beneficiary-month, while additionally including calendar-month in the models to control for time trends?

Yes, that is the current plan.

- As noted previously, evaluators may want to consider oversampling beneficiaries experiencing RRP to allow for pre-post comparisons in Q6. Longitudinal survey response rates for Medicaid beneficiaries can be greatly improved by providing incentives upon completion of the follow-up survey.

We are oversampling beneficiaries experiencing RRP.

- To evaluate Q7, evaluators propose using a difference-in-difference design, but the model specification on Page 20 seems to compare just differences in cost/utilization (calculated over a 6-month periods) between the groups. Please clarify.

Here is our anticipated model for the DD design that involves subjects 100-133% FPL versus those higher income 134%+:

$$Y_{it} = \beta_0 + \beta_1 \text{After_transition}_{it} + \beta_2 \text{High_Income}_{it} + \beta_3 \text{After_transition} * \text{High_Income}_{it} + \beta_4 \text{Demographics}_{it} + \beta_5 \text{CalendarMonth}_{it} + \epsilon_{it}$$

Where Y is some outcome measured for individual i at time t (which is constrained to be in the first six months of TMA). “After transition” is being observed in the time period after April 2014 when the RRP policy changed, “High Income” is being 133%+ FPL and thus subject to the requirements, β_3 is the key DD coefficient which identifies the differences in continuity of coverage and service use outcomes in the post-transition period in the targeted group compared to the untargeted group 100-

133% FPL. Demographics are person-level fixed characteristics and CalendarMonth is a seasonality control for the calendar month in which the RRP began.

- For Q7, it will be important to match RRP and non-RRP beneficiaries by their health status. Hence, evaluators may want to consider including Chronic Illness Disability Payment System (CDPS) risk score computed using all diagnoses on claims/encounters over the baseline period in the propensity score model.

We agree that propensity score matching will be important for matching RRP and non-RRP subjects, and we hope to develop an approach that encompasses a variety of health status/utilization measures. Our team has not previously worked with the CDPS algorithm. It does appear to be available for free to research teams such as ours, and may be feasible with the structure of claims that we have available, but we are not prepared to commit to implementing this algorithm on the claims until we are confident that it can be done with high reliability and within the limited resources our team has available. We can also explore alternative methods for health stratification such as the Charlson Comorbidity Index.

- **In Analysis 1 for Q10-12, evaluators may want to consider conducting a sensitivity analysis comparing disenrollment rates for TMA beneficiaries with varying income levels in the first two months to their respective disenrollment rates in their last two months of TMA eligibility to assess the impact of premiums alone. Since the RRP locks out a beneficiary for three-months, the marginal rate of disenrollment between these first and last TMA eligibility months will capture the burden of premiums alone on disenrollment. Evaluators may want to consider to something similarly unique to assess the effect of RRP alone on disenrollment.**

Thank you for this good suggestion. This is a creative approach that we will certainly explore, as we agree that the potential loss of months of eligibility are much greater for an RRP in months 1 and 2 than they are in months 11 and 12. Offhand, the only concern we have about this approach is that individuals who persist to months 11 and 12 may be a more selected group that is likely to persist in their coverage and pay premiums regularly than those who attrit from coverage earlier, but we can explore approaches to reduce potential bias.

- **In Analysis 2 for Q 10, evaluators propose using a historical comparison group of beneficiaries who experienced the 12 month RRP in a previous policy version. Would this not bias the findings in favor of the 3 month RRP because of the increased opportunity for beneficiaries to pay premiums? What survey questions will adequately capture the impact of RRP on access to care? Will the evaluators consider conducting interviews or focus groups with beneficiaries with RRP to obtain qualitative insights on the consequences of RRP?**

Our study design is conditional, so we don't only look at total months. We look at disenrollment rate/RRP rate from period of TMA entry, and then conditional on exiting TMA, we separately look at length of time out of the program.

We have survey items that ask people where they go for care during the RRP. For example:

[RRP only] During the period of time you could not be enrolled because of Restrictive Reenrollment, which of the following statements applied to your health care needs? Select <i>all</i> that apply.		
	Yes	No
a. I did not need any health care	<input type="radio"/>	<input type="radio"/>
b. I needed health care, but I decided to delay until I had health care coverage again [# Skip to Q7, place usually go]	<input type="radio"/>	<input type="radio"/>
c. I received health care in the hospital emergency room	<input type="radio"/>	<input type="radio"/>
d. I received health care at a community health center or clinic	<input type="radio"/>	<input type="radio"/>
e. I received health care from a private doctor or clinic	<input type="radio"/>	<input type="radio"/>
f. I received health care where I usually do when I have health care coverage	<input type="radio"/>	<input type="radio"/>
[RRP only] How did you pay for the health care you got during the period of time you could not be enrolled in BadgerCare Plus? Select <i>all</i> that apply.		
a. I, or a friend or family member, paid directly (out-of-pocket)	<input type="radio"/>	<input type="radio"/>
b. I was able to get free/charity care	<input type="radio"/>	<input type="radio"/>
c. I used a different health insurance plan	<input type="radio"/>	<input type="radio"/>
d. I still owe money/have debt for those bills	<input type="radio"/>	<input type="radio"/>

We have opted not to conduct focus groups given our very limited evaluation resources. Instead, we are conducting enhanced telephone follow-up within the survey protocol, with respondent interviews, to boost the response rate to the surveys and gain robust understanding across these elements.

Childless Adult Beneficiary Enrollment Q 13-17

To capture the impact of transitioning into a more comprehensive plan on beneficiary outcomes, evaluators may want to consider adapting additional nationally recognized preventive care outcome measures such as: adult access to ambulatory care (NCQA), tobacco use cessation (NCQA, NQF #0028), body mass index screening and follow-up (NQF #0421), cervical cancer

screening (NQF #0032), screening for clinical depression (NQF #0418), and practitioner follow-up after hospitalization (NQF #0567).

The current evaluation reflects the outcome measures that the WI DHS selected in its CMS-approved “[BadgerCare Reform Demonstrate Evaluation Plan](#),” (see pages 25 and 35-36 in that original plan) along with additional measures that the UW PHI team suggested to the DHS based on the data available.

We are happy to consider additional variables as outcomes to the extent that we may construct them with the data available and within the existing budget and project timeline. For example, time and resources permitting, using the available claims and enrollment data it may be possible to assess access to ambulatory care, cervical cancer screening, and practitioner follow-up after hospitalization. However, the additional measures requested above are beyond the scope of the current project because they require access to clinical information (e.g., electronic medical records) that is not available to the evaluation team.

- It will be important to match beneficiaries in the treatment and comparison group by their health status. Hence, evaluators may want to consider including Chronic Illness Disability Payment System (CDPS) risk score computed using all diagnoses on claims/encounters over a baseline period in the propensity score model.

Propensity score matching of the treatment and comparison group is unnecessary if the common trends assumption is satisfied. We appreciate the CMS’ suggestion of the CDPS as a potential matching variable and will consider it if matching appears to be needed. (See also the response to Q7 on page 5.)

- Systematic differences between childless adults and parents/caretakers are likely. While propensity score methods ensure balance between the two groups on measured confounders, are there contingency plans in place if there is no balance observed between the treatment and comparison group on these observed confounders?

In the context of the diff-in-diff design, systematic differences between the groups are only problematic to the extent that they violate the common trends assumption.

If matching appears to be necessary, we will select our matching method based on the degree of overlap in observables between the two groups. If there is insufficient overlap, we will implement a single series interrupted time series model. This design has the capacity to yield causal findings in the absence of a comparison group assuming no concurrent event related to the outcome in April 2014 and a sufficient number of data points before and after April 2014. We have a sufficient number of data points to implement this design and are not aware of any confounding concurrent events.

Additional suggestions for evaluators to consider:

- We suggest rewording the “cost-effectiveness” to either “efficiency” or “smarter spending” since the evaluation measures do not get at true cost-effectiveness.

Our UW evaluation team did not select the content or wording of the State of Wisconsin’s evaluation measures. This language was laid out in the State of Wisconsin’s [document](#) that had previously been approved by CMS and provided to our UW team to follow as part of our evaluation contract.

In our Design Report that we submitted to DHS, we provided clarifying text in the “limitations” section that follows each of the State’s cost -effectiveness questions. This text recognizes the CMS’ point. The representative text from Q15 is included below:

We note that outcomes/spending is also not a typical measure of “cost-effectiveness,” which is normally expressed as a denominator of a gain in health and a numerator of the cost associated with the health gain. Regardless, we will not be able to directly identify the specific costs of any particular change in health outcomes, only “changes in costs” and “changes in health-related outcomes” induced by the introduction of Standard Plan coverage.

If the DHS and CMS would like to alter the language, we propose the text below. These questions are identical to the original DHS questions except for the underlined text.

Q.4. Will the premium requirement increase the ratio of outcomes to spending for Medicaid services?

Q5. Will the premium requirement increase the ratio of health care utilization to spending for Medicaid services?

Q.15 Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase the ratio of outcomes to spending for Medicaid services?

Q.16. Will the provision of a benefit plan that is the same as the one provided to all other BadgerCare adult beneficiaries increase the ratio of health care utilization to spending for Medicaid services?

- There are multiple diagnoses associated with an ED visit claim/encounter. In applying the Billings Algorithm to determine whether an ED visit is for an ambulatory care sensitive condition, we suggest that evaluators consider the ED diagnoses on the claim with the highest with the highest likelihood of being truly emergent. This allows for consistency in classifying ED visits as avoidable/unavoidable.

We will apply the Billings algorithm in a consistent and transparent manner as in our prior work. See, for example:



DeLeire T, Dague L, Leininger L, Voskuil K, Friedsam D. 2013. Wisconsin experience indicates that expanding public insurance to low-income childless adults has health care impacts. Health Affairs. 32(6):1037-1045.

- We suggest adding a discussion on the completeness and accuracy of the Wisconsin encounter data.

We will include this assessment in our annual and final reports, as we have in our previous evaluation projects with Wisconsin DHS.

ATTACHMENT D: Workplan Timeline

	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Status
Project Start-Up							
Attain needed BAA and DUA	█						completed
Secure IRB certification		█					completed
Attain sub-agreements with collaborating investigators, UW Survey Center, IRP, and CHSRA			█				completed
Survey 1							
Draft Survey Instrument	█	█					completed
Submit for DHS and CMS Review/Approval		█	█				completed
Identify and Select Cohort			█	█			completed
Attain mailing information from DHS				█	█		completed
Field Survey				█	█		completed
Survey Data Collection					█	█	completed
Survey Data Analysis and Reporting						█	completed
Telephone Interviews					█	█	completed
Administrative Data Analysis							
Attain enrollment files for both TMA and CLA samples	█	█	█				completed
Conduct matching to identify Pre- and Post-Tx samples		█	█	█	█		partially completed
Match enrollment file to claims and encounter data			█	█	█		partially completed
Refresh data at six month intervals					█	█	completed
Identify and construct relevant outcome measures (eg - 30-day readmission)					█	█	Moved to 2017 Workplan
Conduct analyses - for interim and final reporting					█	█	Moved to 2017 Workplan
Unnecessary Services					█	█	Moved to 2017 Workplan
Improved Health Outcomes					█	█	Moved to 2017 Workplan
Effect of premiums					█	█	Interim analyses completed
Continuity of health coverage					█	█	Interim analyses completed

<p>Slow growth in Healthcare Spending</p> <p>Cost Impact Analysis</p> <p>Effect of RRP</p> <p>Create price/cost measure for cost impact analysis</p>		<p>Begin in 2017 as planned</p> <p>Begin in 2017 as planned</p> <p>Start Interim analyses completed</p> <p>2017 Begin in 2017 as planned</p>
<p>Reports</p> <p>Design Report - Methodological and Statistical Approach</p> <p>Interim Annual Reports</p>		<p>completed</p> <p> completed</p>

ATTACHMENT E: SURVEY INSTRUMENT



**University of Wisconsin
Population Health Institute**
SCHOOL OF MEDICINE AND PUBLIC HEALTH

Current or Former BadgerCare Plus Member Survey

Thank you for taking the time to answer the questions on the following pages. This survey is about your health care coverage through Wisconsin Medicaid or BadgerCare Plus. Your answers will help the Wisconsin Department of Health Services understand how changes to these programs affect your health and health care.

Taking part in this survey is voluntary. You can skip questions that you do not want to answer. If you choose not to take this survey, it will not affect any health care benefits you are getting right now or might get in the future. All information is private and confidential. You will not be individually identified with your responses.

For each question, please fill in the circle next to the answer you choose, or write your answer in the box provided. When you are finished, please place the completed survey into the postage-paid envelope provided, and put it in the mail.

If you have questions about the survey, you can contact one of the people listed below:

Bob Cradock at the University of Wisconsin Survey Center
608-265-9885
cradock@ssc.wisc.edu

Donna Friedsam at the UW Population Health Institute
608-263-4881
dafriedsam@wisc.edu

Thank you again for your help!

Your Health Care Coverage

1. In the past 12 months, how many months did you have some kind of health care coverage? Select *one* answer only.

- No health care coverage during the last 12 months
- 1 to 2 months of health care coverage
- 3 to 5 months of health care coverage
- 6 to 8 months of health care coverage
- 9 to 11 months of health care coverage
- Covered for all of the last 12 months → **Go to Question 3**

2. If you did not have health care coverage in some or all of the past 12 months, what are the reasons you did not have coverage? Select *all* that apply.

	Yes	No
a. I did not qualify for Medicaid/BadgerCare Plus anymore	<input type="radio"/>	<input type="radio"/>
b. I could not afford payments to remain on Medicaid or BadgerCare Plus	<input type="radio"/>	<input type="radio"/>
c. I could not afford payments for private health care coverage, an employer's insurance, or from the federal Marketplace/Healthcare.gov/ACA/Obamacare	<input type="radio"/>	<input type="radio"/>
d. I was not offered health care coverage from an employer	<input type="radio"/>	<input type="radio"/>
e. I was not able to afford the health care coverage an employer offered	<input type="radio"/>	<input type="radio"/>
f. I did not have access to any health care coverage	<input type="radio"/>	<input type="radio"/>
g. I did not want health care coverage	<input type="radio"/>	<input type="radio"/>
h. I did not know how to find information on available health care coverage options	<input type="radio"/>	<input type="radio"/>
i. I did not have the time to get health care coverage	<input type="radio"/>	<input type="radio"/>

3. What type of health care coverage do you *currently* have? Select *all* that apply.

	Yes	No
a. Wisconsin Medicaid Program	<input type="radio"/>	<input type="radio"/>
b. BadgerCare Plus	<input type="radio"/>	<input type="radio"/>
c. Medicare	<input type="radio"/>	<input type="radio"/>
d. Employer or family member's employer	<input type="radio"/>	<input type="radio"/>
e. A private plan I pay for myself	<input type="radio"/>	<input type="radio"/>
f. A health plan from Healthcare.gov, the federal Affordable Care Act (ACA/Obamacare) Marketplace	<input type="radio"/>	<input type="radio"/>
g. Other coverage. Please specify: <input style="width: 200px; height: 15px;" type="text"/>	<input type="radio"/>	<input type="radio"/>
h. None - no coverage/insurance	<input type="radio"/>	<input type="radio"/>

If you *currently* have coverage from Medicaid or BadgerCare Plus, please skip to Question 7.

4. For those who no longer have Medicaid/BadgerCare coverage: What are the reasons you no longer have that coverage? Select *all* that apply.

	Yes	No
a. I am not eligible anymore because I have access to other health care coverage.	<input type="radio"/>	<input type="radio"/>
b. I am not eligible anymore because my income has changed.	<input type="radio"/>	<input type="radio"/>
c. I am not eligible anymore for other reasons.	<input type="radio"/>	<input type="radio"/>
d. The premiums increased and so I dropped my Medicaid/BadgerCare Plus coverage.	<input type="radio"/>	<input type="radio"/>
e. I missed a premium payment, so the Medicaid/BadgerCare Plus program temporarily removed me from coverage.	<input type="radio"/>	<input type="radio"/>
f. Other reason. Please specify: <input style="width: 200px; height: 15px;" type="text"/>	<input type="radio"/>	<input type="radio"/>

5. Have you ever looked for information on health care coverage available from the federal Health Insurance Marketplace (healthcare.gov)? Select *one* answer only.

- Yes
- No, but I plan on looking for information → Go to Question 7
- No, and I do not plan on looking for information → Go to Question 7
- I have not heard about this kind of health care coverage → Go to Question 7
- I do not know how to look for health care coverage → Go to Question 7

6. How did the health care coverage available from the federal Health Insurance Marketplace (healthcare.gov) seem to you? Select *one* answer only.

- There are some good options for me
- I can't afford the required premium payments
- The plans don't cover/include the doctors and providers that I need to see
- I'm not sure

Your Health Care

7. Is there a place you *usually* go to get health care? Select *one* answer only.

Yes

No → **Go to Question 9**

8. Where do you usually go to get health care? Select *one* answer only.

A private doctor's office or clinic

A public health clinic, community health center, or tribal clinic

A walk-in clinic in a store, such as Walmart or a pharmacy

A hospital-based clinic

A hospital emergency room

An urgent care clinic

Some other place. Please specify:

I don't have a usual place

I don't know

9. Do you have at least one person you think of as your personal doctor or health care provider? Select *one* answer only.

Yes, more than one person

Yes, only one person

No, no one

I don't know

10. If you needed health care in the past 12 months, did you get all the care you needed?

Yes → Go to Question 12

No

I did not need care in the last 12 months → Go to Question 12

11. Think about the *most recent time* you went *without* needed health care in the last 12 months. What were the main reasons you went without care at that time? Select *all* that apply.

	Yes	No
a. It cost too much	<input type="radio"/>	<input type="radio"/>
b. I didn't have health care coverage	<input type="radio"/>	<input type="radio"/>
c. The doctor wouldn't take my insurance	<input type="radio"/>	<input type="radio"/>
d. I owed money to the doctor	<input type="radio"/>	<input type="radio"/>
e. I couldn't get an appointment quickly enough	<input type="radio"/>	<input type="radio"/>
f. The office wasn't open when I could get there	<input type="radio"/>	<input type="radio"/>
g. I didn't have a doctor	<input type="radio"/>	<input type="radio"/>
h. Other reason. Please specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>

12. Was there a time in the *last 12 months* when you needed *prescription medication*?

Yes

No → Go to Question 15

13. If you needed prescription medications in the past 12 months, did you get all the medications you needed? Select *one* answer only.

Yes → Go to Question 15

No

I did not need medications in the last 12 months → Go to Question 15

14. Think about the *most recent time* you went *without* prescription medications that you needed in the last 12 months. What were the main reasons you went without prescription medications at that time? Select *all* that apply.

	Yes	No
a. They cost too much	<input type="radio"/>	<input type="radio"/>
b. I didn't have health care coverage	<input type="radio"/>	<input type="radio"/>
c. I didn't have a doctor	<input type="radio"/>	<input type="radio"/>
d. I couldn't get a prescription	<input type="radio"/>	<input type="radio"/>
e. I couldn't get to the pharmacy	<input type="radio"/>	<input type="radio"/>
f. Some other reason. Please specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>

15. How long has it been since you last visited a dentist or a dental care provider for any reason? *Include visits to dental specialists, such as orthodontists.*

- Less than 12 months ago
- Between 1 and 5 years ago
- More than 5 years ago
- I have never visited a dentist or dental care provider
- Not sure

16. In the last 12 months, how many times did you visit a doctor's office, an urgent care or walk-in clinic, or other health care provider to get care for yourself? *Do not include hospital and emergency room visits or dental care. Please give your best guess.*

- 0 times
- 1 time
- 2 times
- 3 or 4 times
- 5 or more times

17. In the last 12 months, how many times did you go to an emergency room to get care for yourself? *Please give your best guess.*

- 0 times → **Go to Question 19**
- 1 time
- 2 times
- 3 or 4 times
- 5 or more times

18. Think about the *most recent time* you went to the emergency room in the last 12 months. What were the main reasons you went to the emergency room instead of somewhere else for health care at that time? Select *all* that apply.

	Yes	No
a. I needed emergency care	<input type="radio"/>	<input type="radio"/>
b. I didn't have health insurance	<input type="radio"/>	<input type="radio"/>
c. The doctors' office/clinic was closed	<input type="radio"/>	<input type="radio"/>
d. I couldn't get an appointment to see a regular doctor soon enough	<input type="radio"/>	<input type="radio"/>
e. I didn't have a personal doctor	<input type="radio"/>	<input type="radio"/>
f. I couldn't afford the copay to see a doctor	<input type="radio"/>	<input type="radio"/>
g. I needed a prescription drug	<input type="radio"/>	<input type="radio"/>
h. I didn't know where else to go	<input type="radio"/>	<input type="radio"/>
i. Some other reason. Please specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>

19. In the last 12 months, how many different times were you a patient in a hospital for at least one overnight? Do not include hospital stays to deliver a baby.

times

20. Overall, how would you rate the quality of the medical care you have received in the last 12 months?

- Excellent
- Very good
- Good
- Fair
- Poor
- I did not receive medical care in the last 12 months

21. How satisfied or dissatisfied are you with the following aspects of your current health care?

	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied
a. The range of health care services available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. The choice of doctors and other providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Your Health Care Costs

22. In the past 12 months, did you have problems paying any medical bills, including bills for doctors, dentists, hospitals, therapists, medical equipment, nursing home, or home care?

- Yes
- No

23. In the past 12 months, did you need any of the following at any time but not get it because of how much it cost? Select all that apply.

	Yes	No
a. Prescription drugs	<input type="radio"/>	<input type="radio"/>
b. Medical care	<input type="radio"/>	<input type="radio"/>
c. To see a general doctor	<input type="radio"/>	<input type="radio"/>
d. To see a specialist	<input type="radio"/>	<input type="radio"/>
e. To get medical tests, treatment, or follow-up care	<input type="radio"/>	<input type="radio"/>
f. Dental care	<input type="radio"/>	<input type="radio"/>
g. Mental health care or counseling	<input type="radio"/>	<input type="radio"/>
h. Eyeglasses or vision care	<input type="radio"/>	<input type="radio"/>

24. Do you *currently* owe money to a health care provider, credit card company, or anyone else for medical expenses?

Yes

No → Go to Question 26

25. About how much do you owe?

\$.00 amount owed

26. In the *last 12 months*, have you had to borrow money, skip paying other bills, or pay other bills late in order to pay health insurance bills?

Yes

No

27. In the *last 12 months*, has a doctor, clinic, or medical service refused to treat you because you owed money to them for past treatment?

Yes

No

I don't know

Your Health

28. In general, would you say your health is:

Excellent

Very good

Good

Fair

Poor

29. How has your health changed in the *last 12 months*?

My health has gotten better

My health is about the same

My health has gotten worse

30. Have you ever been told by a doctor or other health care provider that you have any of the health conditions listed below? Select *all* that apply.

	Yes	No
a. Diabetes or sugar diabetes	<input type="radio"/>	<input type="radio"/>
b. Asthma	<input type="radio"/>	<input type="radio"/>
c. High blood pressure	<input type="radio"/>	<input type="radio"/>
d. Emphysema or chronic bronchitis (COPD)	<input type="radio"/>	<input type="radio"/>
e. Heart disease, angina, or heart attack	<input type="radio"/>	<input type="radio"/>
f. Congestive heart failure	<input type="radio"/>	<input type="radio"/>
g. Depression or anxiety	<input type="radio"/>	<input type="radio"/>
h. High cholesterol	<input type="radio"/>	<input type="radio"/>
i. Kidney problems, kidney disease, or dialysis	<input type="radio"/>	<input type="radio"/>
j. A stroke	<input type="radio"/>	<input type="radio"/>
k. Alcoholism or drug addition	<input type="radio"/>	<input type="radio"/>
l. Cancer, except for skin cancer	<input type="radio"/>	<input type="radio"/>

31. In the past 12 months, have you done any of the following things specifically for any of those health conditions you were told that you have? Select *all* that apply.

	Yes	No
a. I have been to a doctor or clinic	<input type="radio"/>	<input type="radio"/>
b. I have taken medication regularly	<input type="radio"/>	<input type="radio"/>
c. I have been to the hospital emergency room because of the condition(s)	<input type="radio"/>	<input type="radio"/>
d. I have been admitted to the hospital because of the condition(s)	<input type="radio"/>	<input type="radio"/>
e. I have not been treated for the condition(s)	<input type="radio"/>	<input type="radio"/>

32. Have you had your blood cholesterol checked?

- Yes, within the last 12 months
- Yes, but it's been more than 12 months
- Never

33. During the past 12 months, have you had either a flu shot or a flu vaccine that was sprayed in your nose?

- Yes
- No

34. Do you currently smoke cigarettes every day, some days, or not at all?

- Every day
- Some days
- Not at all → **Go to Question 36**

35. In the last 12 months, have you been advised by a doctor or health professional to quit smoking?

- Yes
- No
- I haven't seen a doctor in the last 12 months

36. Does a physical, mental, or emotional condition now limit your ability to work at a job?

- Yes
- No

37. Over the past two weeks, how often have you been bothered by having little interest or pleasure in doing things?

- Not at all
- A few times
- More than half the days
- Nearly every day
- Don't know

38. Over the past two weeks, how often have you been bothered by feeling down, depressed, or hopeless?

- Not at all
- A few times
- More than half the days
- Nearly every day
- Don't know

Your Health Care Coverage Experiences

39. Some people find health care coverage and insurance difficult to understand. For each of the words below, please indicate how confident you are that you understand what the word means.

	Very Confident	Somewhat Confident	Slightly Confident	Not At All Confident
a. Premiums	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Deductibles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Copayments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Coinsurance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

40. Were you enrolled in the BadgerCare program before April 2014?

- Yes
- No → Go to Question 45
- Don't know

41. In April 2014, the BadgerCare Plus program changed its program requirements, including how people can become eligible for the program, what services are covered, and what kinds of payments might be required to participate in the program.

To the best of your knowledge were you affected by any new program requirements?

- Yes
- No
- Don't know

42. Did you ever lose eligibility for BadgerCare Plus and were no longer enrolled because of changes made after April 2014?

- Yes → Go to Question 45
- No

43. Think about changes since April 2014 in the BadgerCare Plus program. Please indicate how each of the items below affected you.

	Increased	Decreased	No Change	Not Sure
a. Monthly premium/payments for health care coverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Penalties for not paying a monthly premium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Copayments to visit a doctor or clinic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Mental health or substance abuse treatment benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

44. Overall, how satisfied or dissatisfied are you with the changes that have taken place since April 2014? Select one answer only.

- Very satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Very dissatisfied

About You

45. Are you male or female?

- Male
- Female

46. What is your current age?

- Younger than age 19
- Age 19 to 25
- Age 26 to 34
- Age 35 to 44
- Age 45 to 64
- Age 65 or older

47. Are you currently employed or self-employed?

- Yes, employed by someone else
- Yes, self-employed
- Not currently employed
- Retired

48. About how many hours per week, on average, do you work at your current job(s)?

- I don't currently work
- I work less than 20 hours per week
- I work 20 to 29 hours per week
- I work 30 or more hours per week

49. What was your household's gross income (before taxes and deductions are taken out) for 2015? Include any cash assistance or unemployment benefits you may have received, and include the income of all members of your household. Select *one* answer only. If you do not know, give your best guess.

- Less than \$4,999
- \$5,000 to \$9,999
- \$10,000 to \$14,999
- \$15,000 to \$19,999
- \$20,000 to \$29,999
- \$30,000 to \$39,999
- \$40,000 to \$49,999
- \$50,000 to \$59,999
- \$60,000 to \$69,999
- \$70,000 to \$79,999
- \$80,000 to \$89,999
- \$90,000 to \$99,999
- \$100,000 or more

50. Would you describe yourself as Spanish, Hispanic, or Latino?

- Yes
- No

51. How would you describe your race? Select *all* that apply.

- White
- Black or African-American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Pacific Islander
- Other, please specify:

52. What is the *highest* level of education you have completed? Select *one* answer only.

- Less than high school
- High school diploma or General Education Development (GED) certificate
- Vocational training or 2-year degree
- Some college but no degree
- A 4-year college degree or more

53. What is your current living arrangement? *Select all that apply.*

- I live alone
- I live with my partner or spouse
- I live with my parents
- I live with other relatives (including children)
- I live with friends or roommates
- Other, please specify:

54. How many family members, including yourself, counting adults and children, are living in your home? (*For example, if you live alone, you should write "1".*)

family member(s) in my home

55. Of the family members living in your home, how many are under age 19?

family member(s) in my home are under age 19

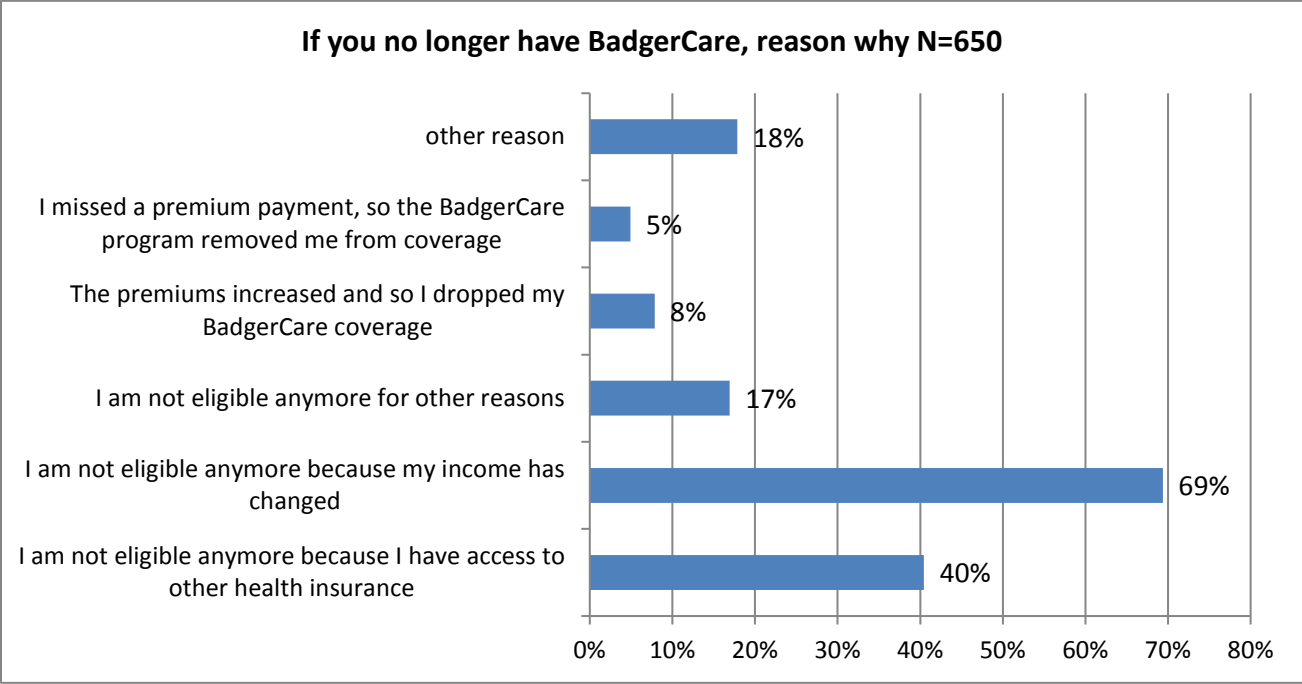
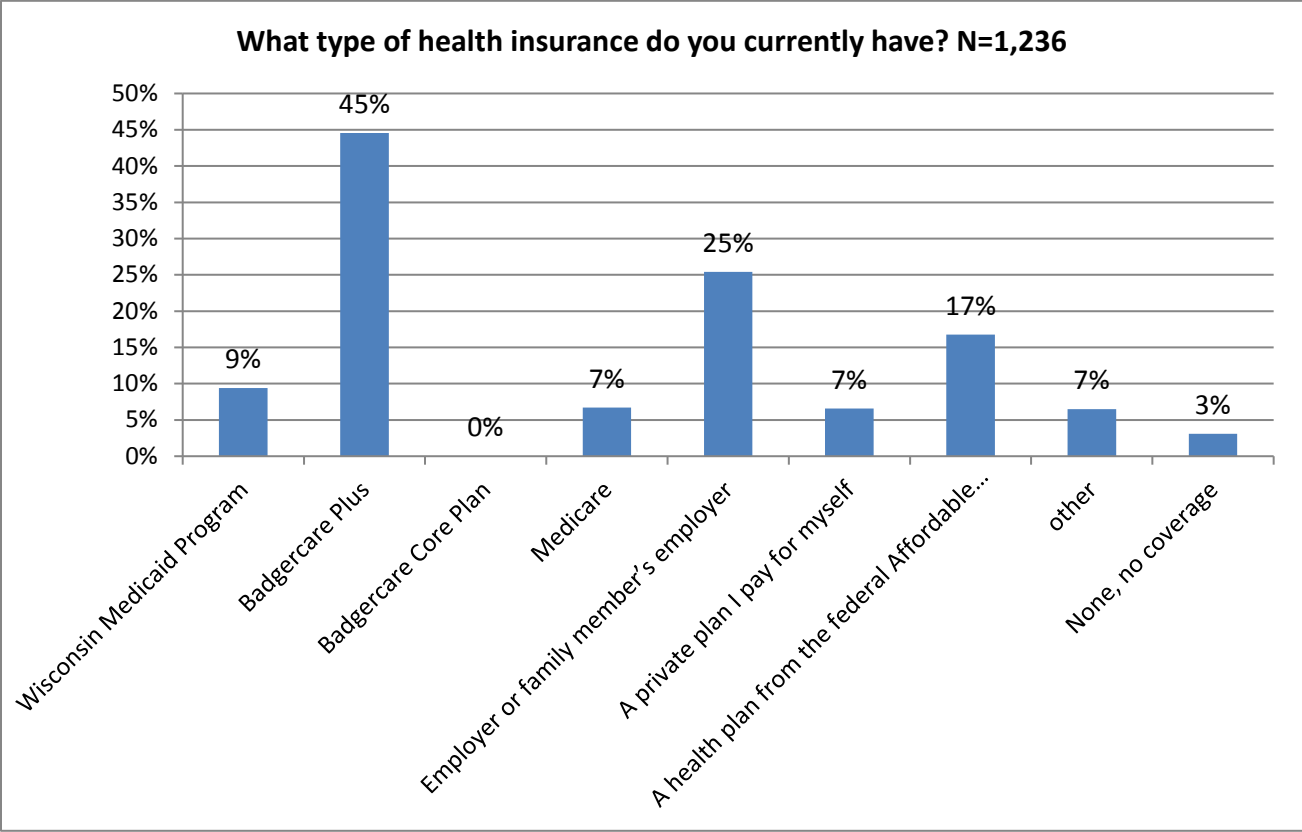
56. Do you have any children under age 19 who you financially support but that do not live in your home?

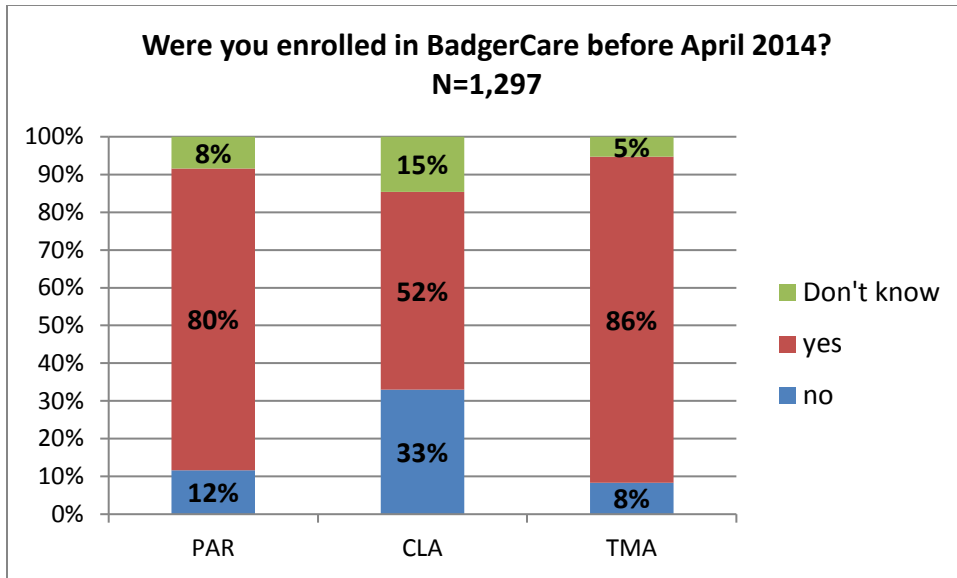
- Yes
- No

Thank you for your participation. When you have finished your survey, please place it in the included postage-paid envelope, and drop it in the mail.

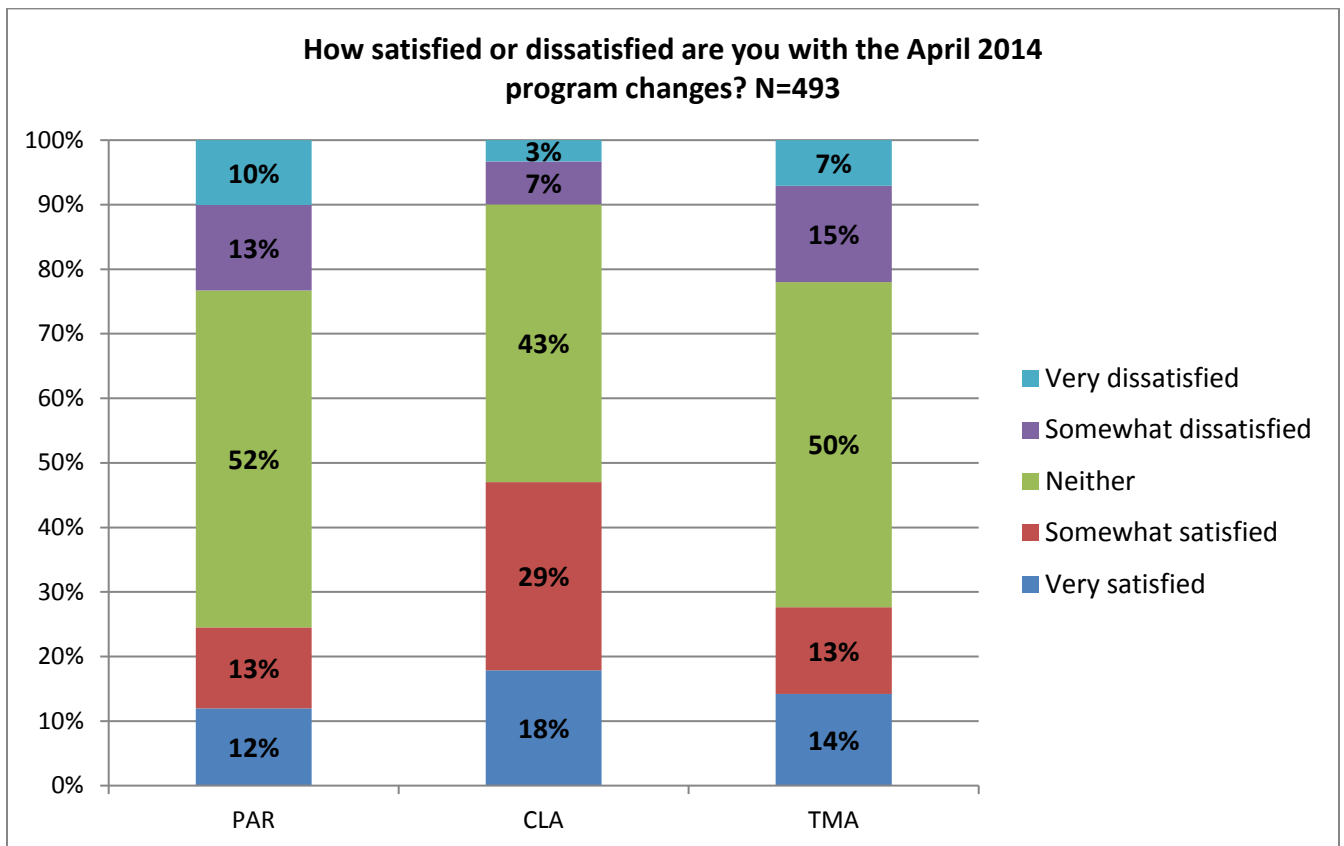
ATTACHMENT F: Descriptive View of Raw Survey Responses

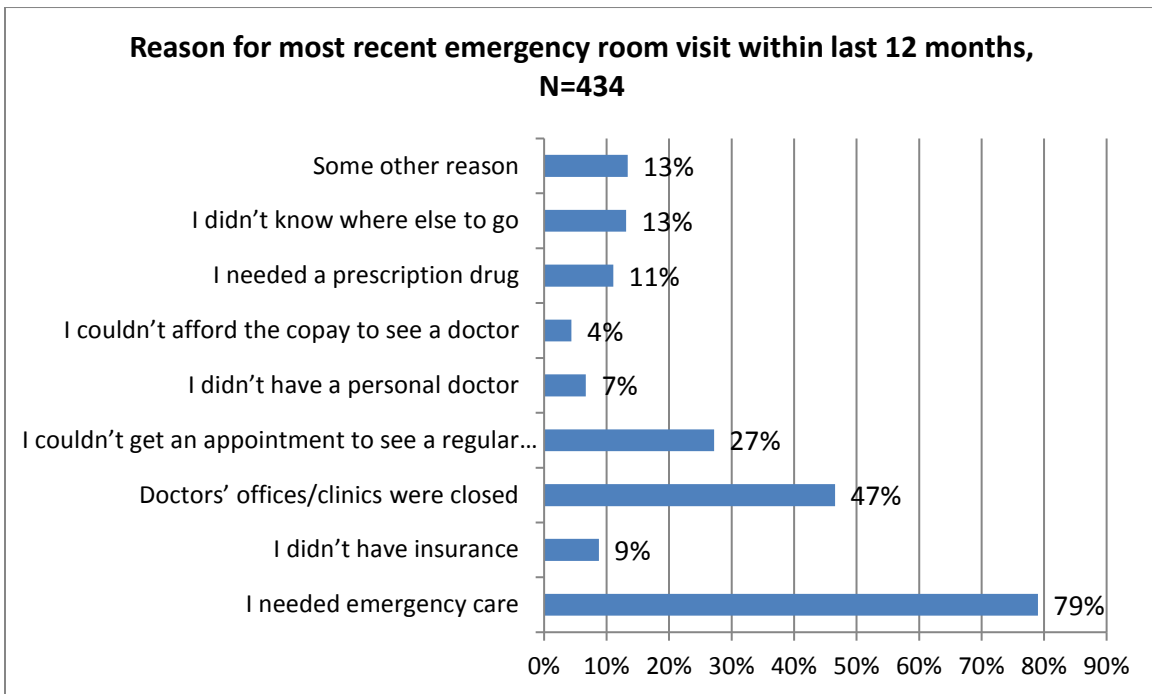
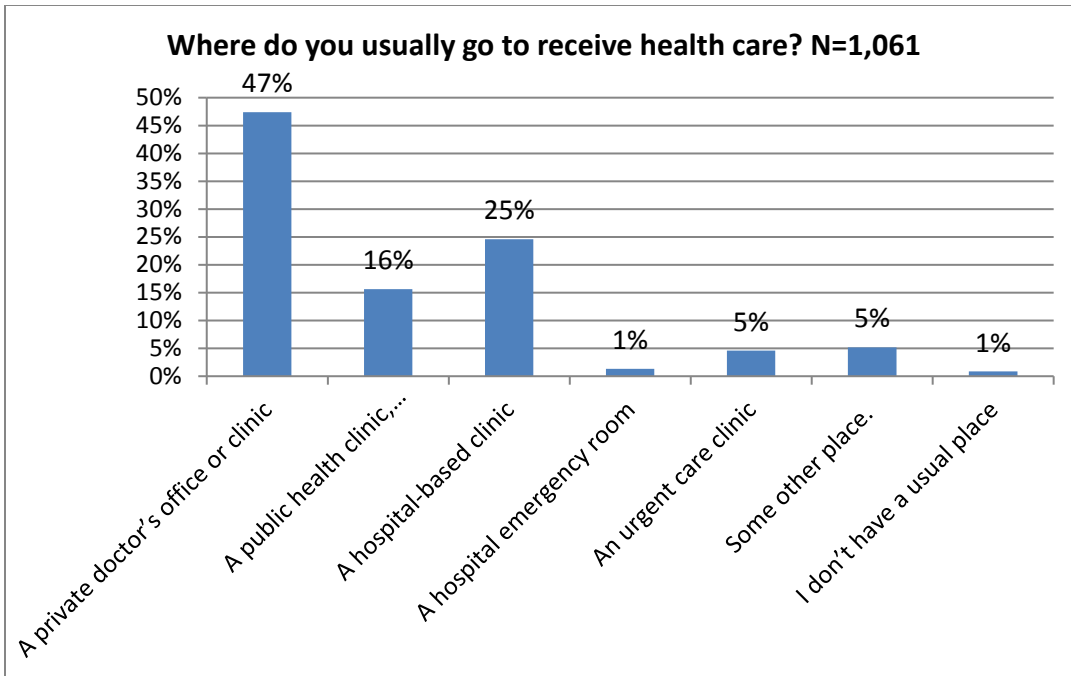
The analysis and results from the survey will be delivered in a separate scientific report. However, in order to demonstrate the progress toward meeting this workplan component, we provide here an initial descriptive view of some of the data elements. These descriptive statistics reflect raw, unweighted responses. They illustrate the kind of information that will be available in the forthcoming scientific report, but the data displayed in this attachment are not intended for drawing causal inferences or for distribution.

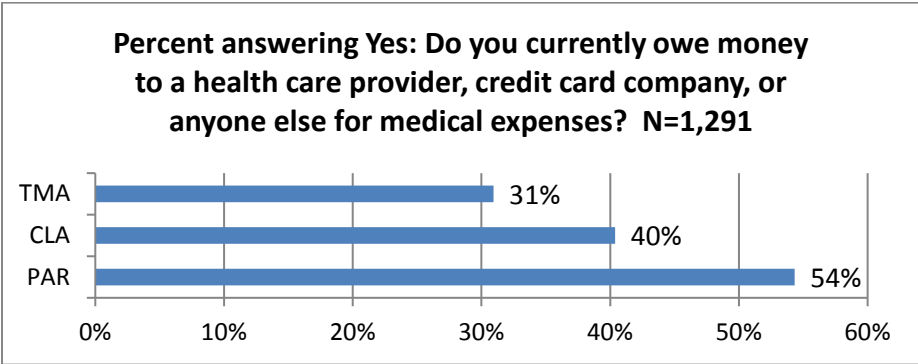
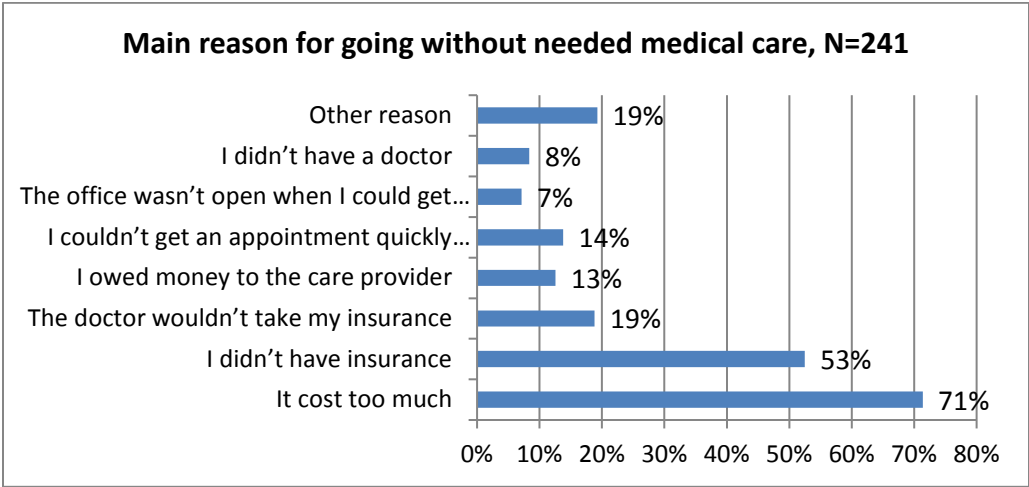
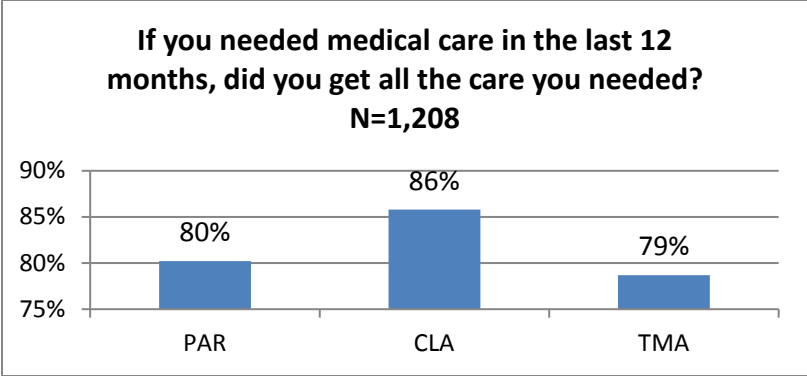




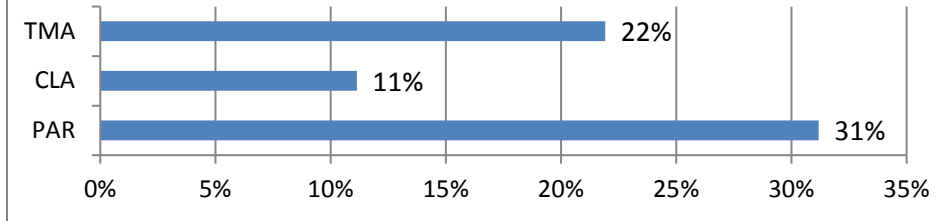
Of those who answered “Yes” indicating they were enrolled in BadgerCare prior to April 2014:



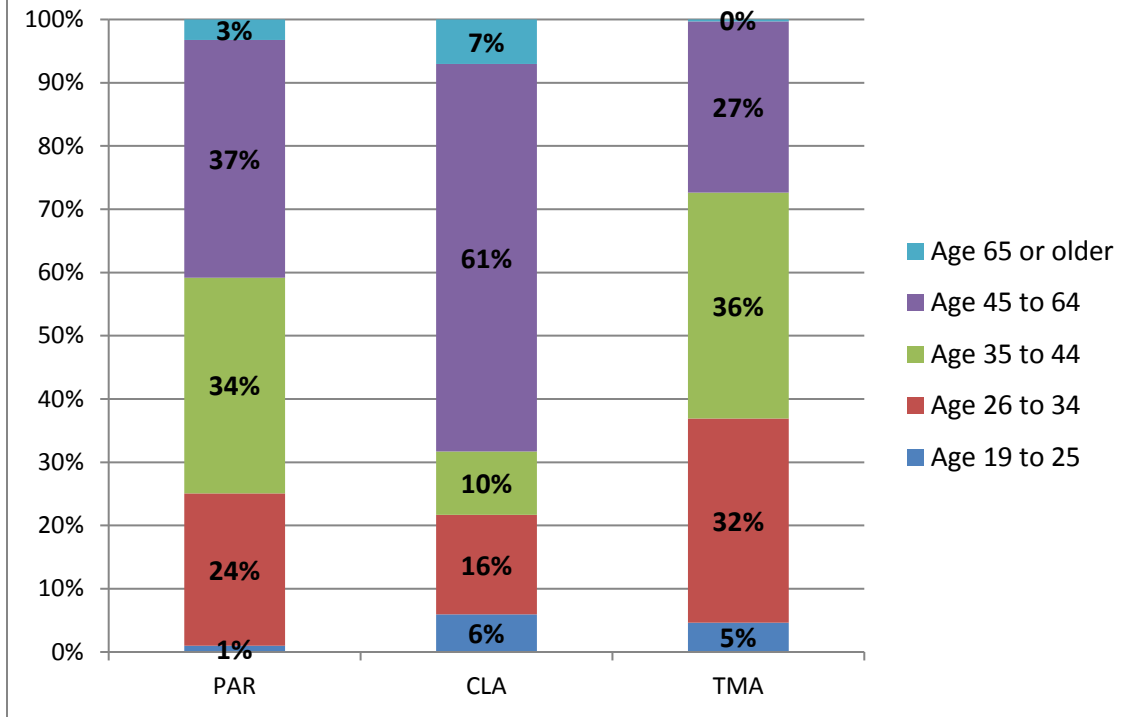


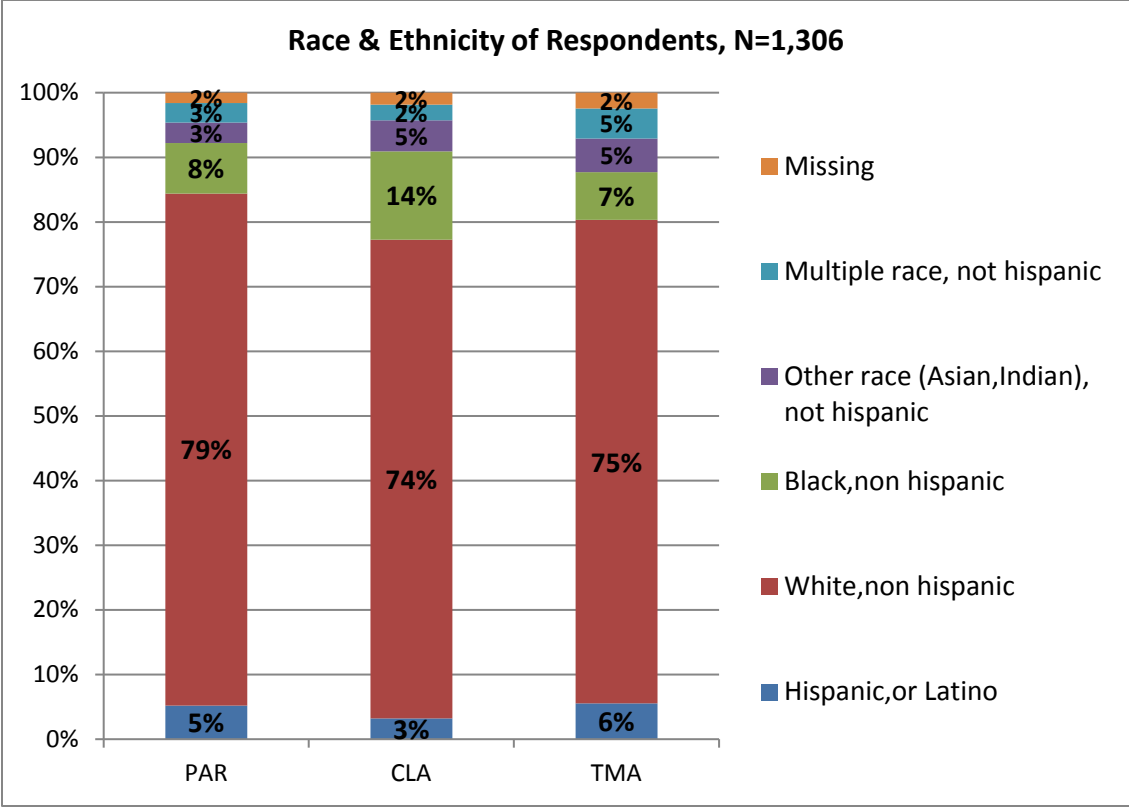


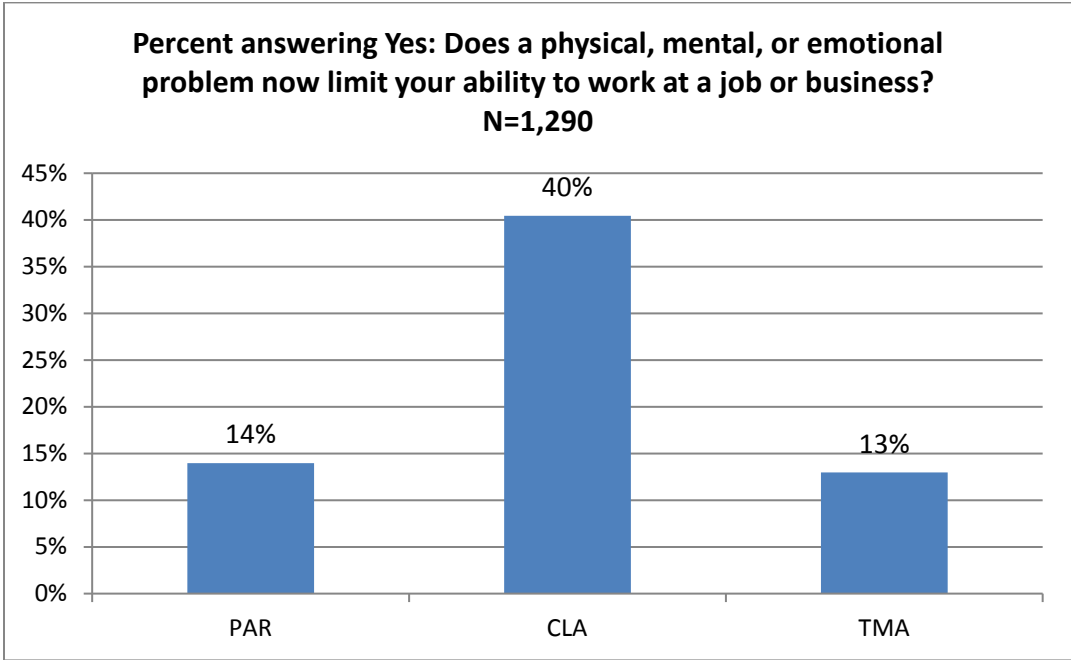
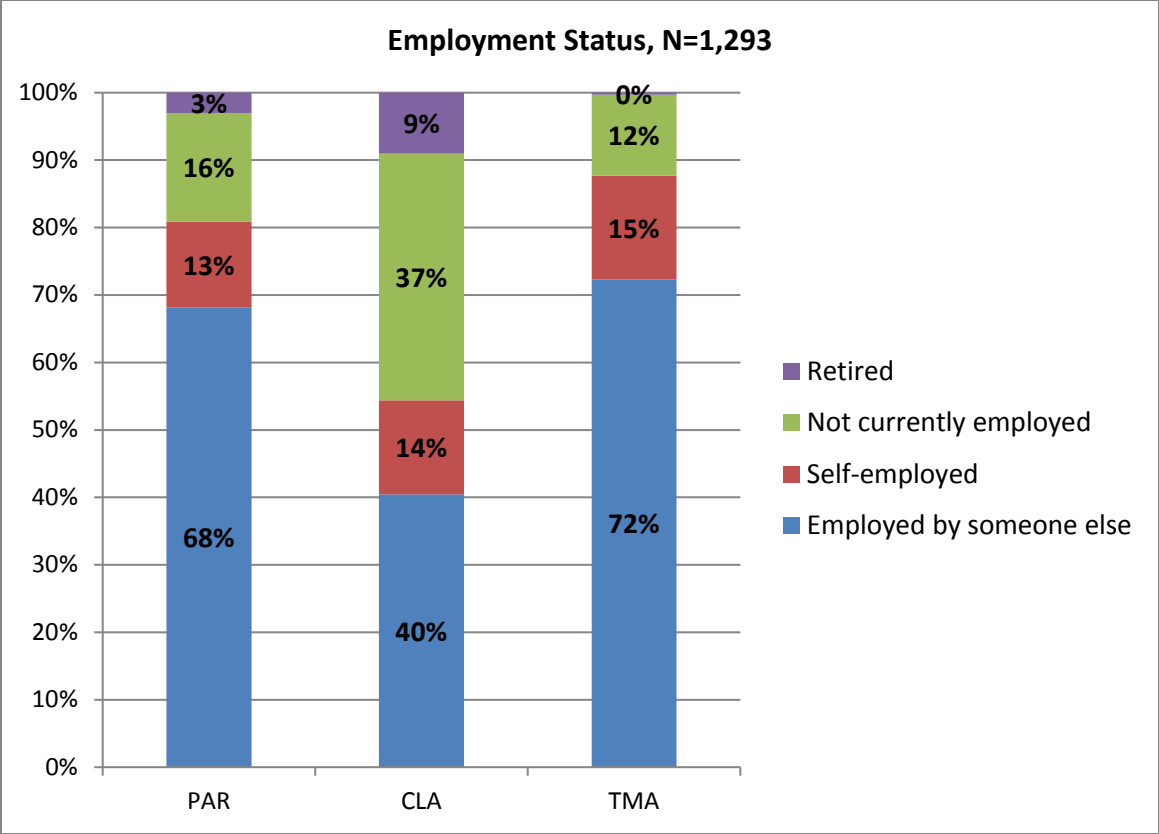
Percent answering Yes: In the last 12 months, have you had to borrow money, skip paying other bills, or pay other bills late in order to pay health care bills? N=1,294



Current Age, N=1,298







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