Evaluation of Wisconsin's BadgerCare Plus Health Coverage

for

Parents & Caretaker Adults and for Childless Adults

2014 Waiver Provisions

Interim Evaluation Report – Year 02

Submitted to the

Wisconsin Department of Health Services

January 26, 2018

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

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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 Medicare and Medicaid Services
Core Plan	A BadgerCare benefit, prior to 2014, with enrollment capped in 2009 for a limited number of Childless Adults with incomes up to 200% FPL; required enrollment fees and provided a limited set of benefits relative to standard Wisconsin Medicaid coverage.
DHS	Wisconsin Department of Health Services
Enrollment Spell	Unless otherwise noted, an enrollment spell is a period that 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 during which a person is locked-out of program enrollment 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

17 Evaluation Questions Defined by the
Wisconsin Department of Health Services

TMA: Payment of premiums

1. Will the premium requirement reduce the incidence of unnecessary services?

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?

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?

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?

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?

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

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?

11. Does this impact vary by income level?

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

CLA: Effects of 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?

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?

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?

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?

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?

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 field 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 claims and encounter data has presented some continuing challenges. The technical features inherent in Business Objects limits the efficiency with which we have been able to retrieve data, and this has substantially delayed the attainment of claims and encounter data needed to conduct analyses. In December 2017, we began a workaround and have made other recommendations to DHS to improve this process.

Survey data: A mixed-mode mail and telephone survey, underway from May-September 2016, yielded 1,305 responses out of 2,559 individuals in the sample, for a response rate of 51%. The respondents represent the following beneficiary groups: 1) parents/caretaker adults, 2) childless adults, 3) TMA beneficiaries, and 4) beneficiaries recently placed in an RRP. A Survey Scientific Report, delivered to DHS in August 2017, provided a detailed discussion of methods, analyses, and findings. This Year 02 Interim Evaluation Report provides a brief summary of that work, along with the full report in Attachment E.

Measures Development

The BadgerCare waiver evaluation requires construction of measures for assessing health utilization, unnecessary services, and outcomes. Developing these measures is necessary to address several hypotheses concerning both the CLA and TMA demonstration populations. In 2017, our team developed the operational definitions and statistical code to construct the majority of health-related, health care use, and unnecessary health care use measures proposed in the UWPHI's Evaluation Design Report. We also constructed a more detailed set of outcome measures related to chronic illnesses including mental health and substance use disorders, and diabetes. These measures are particularly relevant to questions 13 and 15 (see Table III.2) for the evaluation of the transition of childless adults from Core plan coverage to Standard plan coverage because the transition resulted in expanded benefits and/or reduced cost-sharing for mental health and substance use disorder treatment and prescription medications.

As a feasibility check, we additionally generated estimates for the completed measures using a sample of Childless Adults and Parent/Caretaker beneficiaries. These descriptive estimates are intended to demonstrate the utility of these measures, and to provide a preliminary snapshot of changes in these measures over time within each of the subgroups.

Data Analysis

This Year 02 Interim Evaluation Report provides updated findings for TMA-related questions 10-12, new preliminary findings for CLA-related question 13, and a summary of findings from the UWPHI Survey Scientific Report submitted to WI DHS in August 2017.

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

Transitional Medicaid Adults (TMA)

The previous Interim Evaluation Report described the 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. (Question 8) That report also assessed whether the 3-month RRP led to differences in premium payment behavior and length of spell among TMA individuals. (Questions 10-12) In 2017, we conducted further work on these questions, aiming to refine the analysis and conclusions. The new analysis allows us to more directly disentangle changes attributable to facing a premium (after being exempted) versus the effect of the policy change related to the length of RRP. We also result survey findings for questions 6-9.

Questions 10-12 compare TMA enrolled members before and after the 2014 waiver changes. The new findings for these questions include the following:
- The monthly risk of disenrollment was 3.3 times higher for Individuals newly facing premiums (i.e., those affected by the change at six months under the 2014 waiver).
- After the shift from the 12- to the 3-month lock-out for individuals with income at or above 138% FPL, risk of disenrollment became 2.6 times higher.
- Comparing disenrollment with and without a lock-out (as two mutually exclusive ways that a spell could end): The risk of leaving with a lock-out, when an individual is faced with a premium, was 3.2 times higher. The risk of disenrollment with a lock-out after the change from the 12- to 3-month lock-out was also 3.2 times higher.
- Risk of disenrollment without a lock-out has different effects: when faced with a premium, risk of disenrollment without a lock-out was 1.2 times higher, and risk of disenrollment without a lock-out actually decreased by 30% after the policy shift from the 12- to 3-month lock-out.

Survey key findings are as follows:
Question 6: (RRP) Is there any impact on utilization, costs, and/or health care outcomes associated with individuals who were disenrolled and re-enrolled after a 3-month restrictive re-enrollment period (RRP)?

We compared individuals who had recent RRP experience with individuals in TMA with no recent RRP experience.

- Individuals in the RRP groups and TMA groups were similar in some key demographics, but the RRP group was more likely to be from a racial/ethnic minority
- The groups had similar self-reported physical health status, but the RRP group reported lower levels on one measure of mental health than the TMA group
- Individuals in the RRP group were twice as likely to report being currently uninsured, and much more likely to report lacking a usual source of care and holding medical debt.
- Individuals in the RRP group were significantly more likely than the TMA group to report high levels of dissatisfaction with changes that took place in BadgerCare since April 2014.
- In summary, findings indicate much higher levels of unmet medical need and financial distress among people with recent RRP experiences.

Question 9: (TMA) How is access to care affected by the new, or increased, premium amounts?

We assessed financial burden in the TMA population and differences between individuals in TMA who were sampled from program groups with incomes between 100-133% of the federal poverty level (FPL) relative to those with incomes >133% FPL, who had more exposure to premiums.

- TMA members across in the two groups look substantially similar on almost all dimensions.
- Within the overall TMA population, among those who were enrolled in BadgerCare before the April 2014 program changes, 52% report that they were affected by the program changes, while a fifth (19%) report that they do not know if they were affected. A third were not sure if there had been a change in their premiums.
- About 80% report getting all medical care and medications they needed over the past year.
- Of those who report not getting all care of medications needed, most cite cost-related reasons.

Childless Adults (CLA)

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. Waiver evaluation Year 02, focused on a comparison of CLA beneficiaries' outcomes while enrolled in the Standard Plan relative to their outcomes while enrolled in the Core Plan. Specifically, the analyses reported in this Interim Evaluation Report compare health care and health-related outcomes for CLA beneficiaries continuously enrolled from April 2013 – March 2015 to parents and caretakers continuously enrolled during the same period. This comparison isolates the effect of a change in coverage from Core Plan to Standard Plan for CLAs on evaluation outcomes relative to a beneficiary group that was continuously enrolled in Standard Plan coverage for the same time period. The Wisconsin Medicaid Standard Plan has no premiums for eligible members below 100% FPL, and provides the full range of Medicaid benefits.

Year 02 analyses emphasize measures related to mental health and substance use disorders (MHSUD) and diabetes because the Standard plan provided more extensive coverage for outpatient behavioral health treatment and for prescription drug coverage relative to the Core plan. Both conditions are relatively common conditions in the adult Medicaid population, for which clinical treatment recommendations include routine outpatient visits and treatment with prescription medications. Thus, changes in these areas of health care use and health may be observable in a relatively short time-frame.

We also report findings for the survey for Question 17.

Key Findings
- The change in Medicaid coverage from the Core plan to the Standard plan for childless adults led to increases in their use of outpatient and emergency department services overall and mental health and substance use related care more specifically.
- The transition from Core plan to Standard plan was associated with an increase in the percentage of childless adults that received a flu vaccine from 35% to 38%.
- There is no evidence that the transition from Core plan to Standard plan was associated with a change in the percentage of eligible childless adults that received breast cancer screening, an HbA1c test, or smoking cessation counseling.
- Childless adults with at least one prescription drug fill for an antidiabetic medication showed a delayed and modest increase in the use of antidiabetic drugs in the first year after childless adults' transition from the Core plan to the Standard Plan relative to the preceding year.

Survey key findings are as follows:
Question 17: (CLA) 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?

We compared outcomes for the CLA sample in the 2016 survey to outcomes for the CLA sample in the 2014 survey of Wisconsin Medicaid/BadgerCare beneficiaries.
- The likelihood and duration of health insurance coverage increased from 2014 to 2016.
- CLAs' reported need for medical care increased as did their likelihood of obtaining all needed care under the Standard plan compared to the Core plan period.
- The likelihood of borrowing money or skipping payment of other bills in order to pay for health care decreased.
- No significant change occurred in overall self-reported health status. However, the probability of having a work-limiting health problem increased from 2014 to 2016.
- In general, the CLAs under the Standard plan period report better outcomes with respect to coverage and access than CLAs reported under the Core plan period.

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 the 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 at or below 100% FPL at the time of enrollment and for at least three of the six months immediately preceding the month in which the income went above 100% FPL. 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 (the same premium schedule used in the exchanges under the Affordable Care Act). 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 for 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 disenrolled 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

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[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

individuals were ineligible for TMA. There was no mechanism for a return to TMA within those 12 months.

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 Wisconsin 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 shows the socio-demographic descriptors of the TMA and CLA beneficiary populations enrolled 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 serves as a secular comparison group for several analyses.

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[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.

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[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 F. 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 December 2017, we have obtained CARES data from January of 2006 through September of 2017.

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.

- This year, additional staff coding and analytic time was required to eliminate duplicate eligibility rows for members and cases in order to reflect accurate counts of enrollment by program.

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 2016. We are expecting the 2017 update shortly into 2018. 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
The technical features inherent in Business Objects has limited the efficiency with which our team could retrieve data, and this has substantially delayed the attainment of claims and encounter data needed to conduct analyses. In December 2017, we began a workaround and have made other recommendations to DHS to improve this process. DHS constructed a data extract to meet our specifications for the

evaluation question currently being analyzed, and made the extract available to our team within a few weeks' time.

The Wisconsin DHS claims and encounter data became available to the UW evaluation team on March 29, 2017. Much of this year was spent by our data manager obtaining, downloading, and formatting the data through the business objects platform, working off of the UW Health Innovation Program (HIP) servers. Near the end of this year our team worked with the Institute for Research on Poverty (IRP) and the group at DHS to accelerate the process by which we obtain claims and encounter data. Our team created lists of members of interest from CARES. These lists were delivered to DHS by IRP, and the DHS team pulled the relevant data which was loaded onto the HIP servers for our use on January 3rd, 2018.

The drug data provided by DHS was found to be lacking certain crucial variables that had been requested and will be redone. This new data process improves upon the original system that required the data manager to subset data and needed variables into many smaller datasets to download through the business objects platform. However, the arrangement still requires valuable staff time for DHS and UWPHI in negotiating data requests, pulling the data from the servers, and transferring data.

Each time we require additional and updated data for the evaluation, we will rely on DHS to repeat this process – a time- and labor-intensive process for both DHS and UW staff. We have proposed, instead, what we believe would be a substantially more efficient approach: that DHS would allow our team direct access to the data warehouse in a manner similar to that of DHS' other vendors, including the access provided to HP and UW's Center for Health Services Research and Analysis (CHSRA).   Without such access, we anticipate continued delays in analyses that require the use of claims and encounter data.

While experiencing limited access to claims and encounter data, we turned our effort toward developing measures and applying them with a smaller, currently available dataset. Section III.D, below, describes this work toward a more detailed assessment of the experience of the Childless Adult population while awaiting access to claims and encounters for the full waiver population.

B. Survey

The evaluation design included plans to use a survey at two separate points in the four-year evaluation period. A mixed-mode mail and telephone survey, conducted in 2016, yielded 1,305 responses out of 2,559 individuals in the sample, for response rate of 51%. The survey was intended primarily to support understanding of three evaluation questions:

Question 6: (RRP) 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?

Question 9: (TMA) How is access to care affected by the application of new, or increased, premium amounts?

Question 17. (CLA) 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?

Our team in 2017 completed analysis of the 2016 survey and delivered to Wisconsin DHS, in August 2017, the Survey Scientific Report (see Attachment E). That report details the initial findings from the first of the two surveys, fielded in May-September 2016, and identifies what this first survey contributes toward answering the three questions noted above.

The report and findings represented an interim product within the context of a four-year evaluation, including a second survey (planned for 2018) and analysis of administrative data. None of the findings from a single interim product stand on their own or can be considered final conclusions about the waiver hypotheses. The survey's observational findings, while not causal, offer important indicators of the relative experience of BadgerCare members with the 2014 waiver. The interim findings contribute toward our overall analysis of each study hypothesis. This process continues, as we move toward fielding the second survey in 2018, deepening our analysis of the administrative data.

Sections IVA and IVB, below, briefly review the survey's key findings relative to both the CLA and TMA populations. The Survey Scientific Report (Attachment E) describes the survey's methods, including, survey domains, sample construction, response rate, weighting, and analytic approach.

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. The evaluation team pursued measurement development, peer-review of preliminary findings, survey-data analyses, and initial claims/encounter analyses in Year 2. Continued delays occurred in obtaining ready-access to Medicaid claims and encounter data, preventing completion of some tasks originally planned for Year 2.

Table III.1 restates the original evaluation questions and briefly notes the progress-to-date for each question. The work plan, in Attachment D, 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.

This report provides an update to the Interim Evaluation Report submitted to DHS in April 2017, providing new preliminary findings for the evaluation questions addressed during the second year of the project and a discussion of the status of the evaluation project as a whole. More specifically, the report includes updated findings for TMA-related questions 10-12, new preliminary findings for CLA-related question 13, measurement development, and a summary of the UWPHI Survey Scientific Report (Attachment E) submitted to DHS in August 2017.

Table III.1 Evaluation Questions: Progress-to-Date

Evaluation Question	Progress to Date
TMA: Effect of Premiums on Utilization, Cost and outcomes	
1: Will the premium requirement reduce the incidence of unnecessary services? 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?	Specifications completed for claims/encounter based health care and health-related outcomes. Cohorts developed Initial claims/encounter data access achieved in late March, 2017. Alternative data retrieval process begun in December 2017 to improve speed of data acquisition. Outcome measures selected and constructed; Enrollment data updated to 9/2017
TMA: 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? 7: Are costs and/or utilization of services different for those that are continuously enrolled compared to costs/utilization for beneficiaries Please that have disenrolled and then re-enrolled?	Specifications completed claims/encounter based health care and health-related outcomes. Initial claims/encounter data access achieved in late March, 2017; Alternative data retrieval process begun in December 2017 to improve speed of data acquisition. Outcome measures selected and constructed; Enrollment data updated to 9/2017 2016 Survey Scientific Report Completed. Planning for 2018 Survey underway.
TMA: 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?	Datasets cleaned & constructed; Cohorts developed; Outcome measures selected & constructed; Initial selection of regression models; Preliminary analysis & findings
9: How is access to care affected by the application of new, or increased, premium amounts?	Specifications completed claims/encounter based health care and health-related outcomes. Initial claims/encounter data access in late March, 2017; Alternative data retrieval process begun in December 2017 to accelerate data acquisition.

	2016 Survey Scientific Report Completed.
	Planning for 2018 Survey underway.

TMA: Effect of RRP on Premium Payment and 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? 11: Does the RRP impact vary by income level? 12: If there is an impact from the RRP, explore the break-out by income level.	Datasets cleaned & constructed; Cohorts developed; Outcome measures selected & constructed; Updated regression models; Updated analysis & findings

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?	Specifications completed claims/encounter based health care and health-related outcomes. Initial claims/encounter data access achieved in late March, 2017; Alternative data retrieval process begun in December 2017 to improve speed of data acquisition.
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?	Study Cohorts Constructed.
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?	Initial selection of regression models; preliminary analysis and findings reported in Year 2 Report for selected outcomes.
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?	
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?	Dataset cleaned & constructed; Cohorts developed; Outcome measures selected & constructed; Initial selection of regression models; Preliminary analysis; Preliminary findings; 2016 Survey Scientific Report Completed. Planning for 2018 Survey underway.

D. Cross-Cutting Work: Measures Development

The BadgerCare waiver evaluation requires construction of measures for assessing health utilization, unnecessary services, and health outcomes that apply to several hypotheses and both the CLA and TMA demonstration populations. In 2017, our team developed the operational definitions and statistical code to construct the majority of health-related, health care use, and unnecessary health care use measures proposed in the UWPHI's Evaluation Design Report. These measures are needed to complete the evaluation questions listed in the last column of Table III.3.

While most measures in Table III.3 apply to the population as a whole, some measures pertain only to population subgroups. We defined those subgroups as follows. For the measure of Breast Cancer Screening, the measurement subgroup includes women ages 50-64. The HbAIc test is assessed only among individuals with diagnosed diabetes defined as meeting any one of the following conditions: two outpatient visits with a diagnosis of diabetes; two ED visits with a diagnosis of diabetes; or one inpatient admission with a diagnosis of diabetes.

As a feasibility check, we generated estimates for the completed measures using a sample of Childless Adults and Parent/Caretaker beneficiaries. These descriptive estimates are intended to demonstrate the utility of these measures, and to provide a preliminary snapshot of changes in these measures over time within each of the subgroups. The findings are not intended for drawing inferences about the waiver's effects on health and health care outcomes. We will pursue that suite of questions formally in Year 3 of the evaluation.

The findings shown in Table III.4 compare outcomes for two populations: Childless adults enrolled continuously one-year before and one-year after April 1, 2014; and Parent/Caretaker beneficiaries enrolled continuously for the same time period. For each population, the table includes the percentage or average for the specified outcomes in the 12-months before and after implementation of the 1115 waiver. We compared the equivalence of these estimates before and after implementation of the waiver using t-tests. For the CLA population, these estimates reflect the beneficiary experience in the Core and Standard plan respectively. For the parent/caretaker population, all estimates reflect their experience while enrolled in the Standard plan.

Within the childless adult cohort, there were few statistically significant differences in annual estimates of the health care quality measures before and after implementation of the waiver. The exceptions included an increase in the percentage of the cohort that received a flu vaccine from 35% to 38%, and an increase in the average number of ED visits per person per year for ambulatory care sensitive conditions (ACSC) from 0.39 to 0.44. We defined ACSC ED visits as those that were either nonemergent, treatable in a primary care setting, or preventable using a probabilistic method developed for claims data. In both years, less than 20% of childless adults with an observed diagnosis of diabetes had a claim for an HbA1c test. In the cohort as a whole, the presence of a claim for smoking cessation counseling was relatively rare at 7-8% annually. The percentage of the childless adult cohort with any ACSC ED visit in the year was 21-22%.

Table III.2 Health and Health Care Outcome Measures

Focus	Status	Description	Evaluation Question
A. Health-related			
Preventive health			
Breast cancer screening (BCS)	**complete**	NQF measure 0031; CMS adult core set #3;	1-7, 9, 13,15
Influenza immunization	**complete**	NQF measure 0041	1-7, 9, 13,15
Chronic health			
Diabetes care HbA1c testing	**complete**	NQF measure 0057; CMS adult core set #19	1-7, 9, 13,15
Diabetes care-LDL-C screening	***Measure has been retired from CMS adult core set, so no longer included here as an outcome.***	NQF measure 0063; CMS adult core set #18	1-7, 9, 13,15
Mental health & substance use disorder			
Antidepressant medication management	**defined**	NQF measure 0105; CMS adult core set #20	1-7, 9, 13,15
Follow-up within 30 days after hospitalization for mental illness	**defined**	NQF measure 0576; CMS adult core set #13	1-7, 9, 13,15
Tobacco cessation counseling	**complete**		1-7, 9, 13,15
Initiation and engagement of alcohol and other drug dependence treatment	**definition in progress**	NQF measure 0004; CMS adult core set #25	1-7, 9, 13,15
B. Health care use, general			
Office-based visits	**complete**	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	**complete**	ED visits, all cause	1-7, 9, 13,15
Inpatient admissions	**defined**	Inpatient admissions, all cause	1-7, 9, 13,15
C. Potentially avoidable/unnecessary health care use			
30-day all cause hospital readmission	**defined**		1-5, 9, 14,16
Emergency department visit for ambulatory care sensitive condition (ACSC)	**complete**		1-5, 9, 14,16
Inpatient stay for ACSC	**defined**		1-5, 9, 14,16
Preventable hospitalization	**defined, coded**		1-5, 9, 14,16

Among parents and caretaker beneficiaries, the percentage of the cohort that received a flu vaccine decreased from 23% in the year before implementation of the waiver to 21% in its first year of operation. Over this same time period, there was an increase in the percentage of the population that received smoking cessation counseling from 7% to 8% and similarly an increase in the percentage of eligible women who received breast cancer screening from 7% to 8%. There was no evidence of a significant change in either the percentage of the population that had an ED visit for an ACSC, or the average number of such visits per person per year. At the time this report was completed, data were not available to calculate the percentage of parents and caretakers with an observed diagnosis of diabetes that received an HbA1c test.

Table III.3

Annual Measures of Health Care Quality for Childless Adults and Parents Continuously Enrolled, April 2013 - March 2015			
Childless adults (N= 7,510)			
	4/2013-3/2014	4/2014-3/2015	
Binary Outcomes: Any use in the year	Percentage	Percentage	p-value*
Flu vaccine	35	38	<0.01
HbA1c test among eligible patients with diabetes	14	15	0.52
Smoking cessation counseling	7	8	0.16
Breast cancer screening among eligible women (in progress)	21	20	0.26
Emergency department visit, ACSC	21	22	0.09
Continuous Outcomes: Average quantity of use in year	Average	Average	p-value
Emergency department visit, ACSC	0.39	0.44	0.03
Parents/Caretakers (N=69,065)			
	4/2013-3/2014	4/2014-3/2015	
Binary Outcomes: Any use in the year	Percentage	Percentage	p-value
Flu vaccine	23	21	<0.01
Smoking cessation counseling	7	8	0.01
Breast cancer screening among eligible women (in progress)	7	8	0.01
Emergency department visit, ACSC	32	32	0.69
Continuous Outcomes: Average quantity of use in year	Average	Average	p-value
Emergency department visit, ACSC	0.64	0.64	0.85
* T-test of the equivalence of pre- and post-waiver values within eligibility group.			

Supplementary Measures

We constructed a more detailed set of outcome measures related to chronic illnesses including mental health and substance use disorders (MHSUDs), and for diabetes. These measures are particularly relevant to questions 13 and 15 for the evaluation of the transition of childless adults from Core plan coverage to Standard plan coverage because the transition resulted in expanded benefits and/or reduced cost-sharing for MHSUD treatment and prescription medications. We have been aided in this effort through the contributions of Pharmacy School faculty member Dr. Kevin Look and his graduate student Nam Hyo Kim, who bring expertise in prescription drug claims, policy and population health. Table III.5 summarizes this expanded set of measures. Section IV.B of this report describes the application of these measures to our analysis of how the Core-to-Standard plan coverage change affected health-related care use by childless adults.

Table III.4 Supplementary Outcome Measures for Health Care Use Related to Chronic Health Conditions: Mental Health and Substance Use Disorders and Diabetes

Outcome	Unit of analysis	Description	Status
Mental Health and Substance Use Disorder (MHSUD) Related Outcomes			
Probability and Quantity of Health Care Use			
Outpatient MHSUD visit	Person-month & person-year	An office or non-emergency outpatient visit with a diagnosis of MHSUD and/or use of selected procedure codes.	complete
Outpatient MHSUD psychiatrist visit	Person-month & person-year	An office or non-emergency outpatient visit with a diagnosis of MHSUD and/or use of selected procedure codes to a psychiatrist.	defined, coded
Outpatient MHSUD visit to a non-psychiatrist	Person-month & person-year	An office or non-emergency outpatient visit with a diagnosis of MHSUD and/or use of selected procedure codes to any provider other than a psychiatrist.	defined, coded
Emergency department MHSUD visit	Person-month & person-year	An emergency department visit with a diagnosis of MHSUD.	complete
Inpatient MHSUD admission	Person-month & person-year	A hospital admission with a diagnosis of MHSUD.	defined, coded
Receipt of Recommended Treatment Modalities			
Any claim for a psychiatric prescription medication	Person-year	A paid claim for a medication indicated for treatment of psychiatric illness including antidepressant, antipsychotic, antianxiety, antimanic, and select anticonvulsant medications	defined, coded
Any claim for an antidepressant medication among persons diagnosed with Major Depressive Disorder (MDD)	Person-year	A paid claim for an antidepressant medication. The denominator for this measure includes Individuals with an MDD episode in the defined 12-month period.	defined

Any psychotherapy/counseling visit among persons diagnosed with MDD	Person-year	A non-emergency outpatient visit with a procedure code indicating psychotherapy or counseling. The denominator for this measure includes Individuals with an MDD episode in the defined 12-month period.	defined
Duration and frequency of expert-recommended treatment per acute MDD episode			
Pharmacotherapy duration	MDD acute episode	Define the start date of an MDD episode as the date on which the person meets the criteria, either second of 2 outpatient visits with ICD code of 296.2 or 296.3 that occur on 2 separate dates, or one inpatient admission with ICD code 296.2 or 296.3. The end of the episode is defined as the conclusion of the 4th month from that start date. At least 90 continuous days supply of antidepressant medication.	defined
Duration and intensity of psychotherapy	MDD acute episode	a) Visit frequency of 2 or more visits/month in the first 2 months of episode; b) Frequency of 1 or more visit/month in second two months of treatment episode.	defined
Duration of follow-up with either recommended treatment modality	MDD acute episode	Duration of 4 or more months of mental health treatment (psychotherapy or pharmacotherapy)	defined
Diabetes Related Outcomes			
Antidiabetic drug use	Person-month	Number of drug files for the five most commonly prescribed therapeutic classes to treat diabetes: insulins, biguanides, DPP-IV inhibitors, sulfonylureas, and thiazolidinediones	complete
Adherence to oral diabetic drugs	Multiple	Several measures derived from the *Pharmacy Quality Alliance's* adherence measures	defined

IV. INTERIM EVALUATION FINDINGS: Year 02 Update

The following section reviews the work completed in Year 02 of the evaluation, during calendar year 2017, building on progress reported in the Year 01 interim report.   Our preliminary findings are organized by demonstration population.

A.   TRANSITIONAL MEDICAID POPULATION

A1. Background on Study Population and Methods

The TMA 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 IV.A1 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 TMA enrollees 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 IV.A1. Number and Fraction of TMA Enrollees Over Time
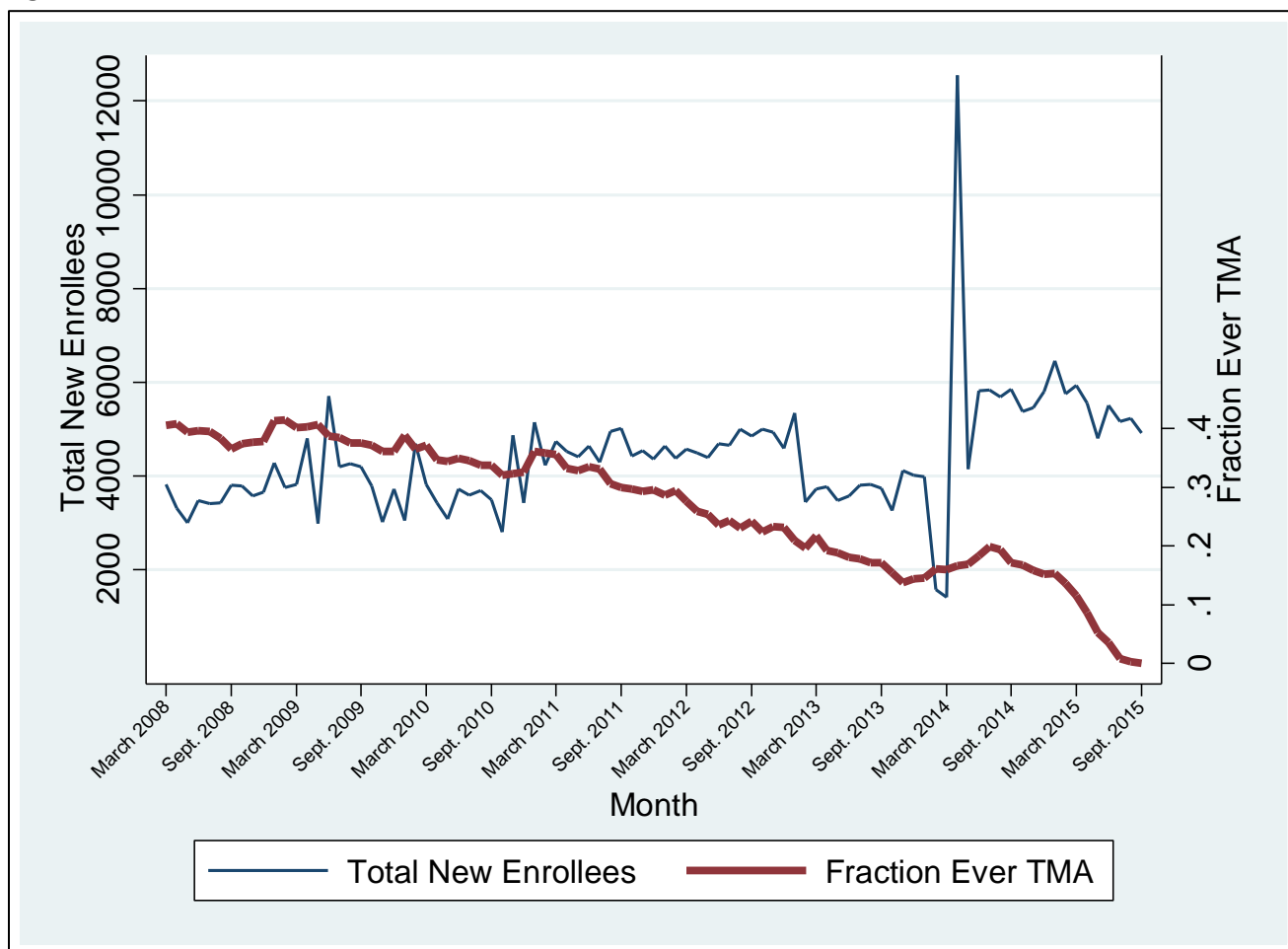
Notes: For each month from March 2008 to September 2015, the figure shows the number of total new enrollees in BadgerCare who were potentially eligible to enroll in TMA. The figure also shows the fraction of these new enrollees who did enroll in TMA during the study period.

A2. TMA and RRP Analyses: Methods

Under the 2012 waiver, Wisconsin introduced premiums for the first time for individuals entering TMA with incomes >133% FPL (>138% FPL when accounting for the 5% income disregard under the modified adjusted group income, MAGI, rule). Non-payment of premiums under the 2012 waiver resulted in 12-month of RRP with no possibility of reenrollment in TMA during this time. The 2014 waiver continued premiums for individuals >133% FPL and added premium requirements for individuals 100-133% FPL beginning in their seventh month of enrollment. The 2014 waiver also reduced the RRP length to 3 months, and allowed individuals to end their RRP if they paid back owed premiums. Evaluation

Questions 10-12 concern the impact of the policy change on enrollment and premium payment:

- *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?*

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- *Q11. Does the RRP impact vary by income level?*
- *Q12: If there is an impact from the RRP, explore the break-out by income level.*

The previous Interim Evaluation Report described the 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. (Question 8). That report also assessed whether the 3-month RRP led to differences in premium payment behavior and length of spell among TMA individuals. (Questions 10-12). In 2017, we conducted further work on these questions, aiming to refine the analysis and conclusions.

The key analytical challenge to evaluating the effect of the 3-month RRP is finding an appropriate comparison condition. Because Wisconsin has never had a population that has been subject to premiums <u>without</u> RRP, we cannot identify how much RRPs on their own affect enrollment and premium policy versus the effect of premiums distinct from RRPs. We had therefore decided to compare the effects of the 3-month RRP implemented in 2014 against the 12-month RRP that was in effect under the 2012 waiver. This method allows insight into a closely related question: whether the stringency of the RRP policy affects premium payment, when the amount of premiums being collected is held fixed over time.

The April 2017 Interim Evaluation report presented a preliminary analysis of this comparison. Briefly, the approach and methods presented then were as follows:
- Aggregated enrollment data on individuals who entered TMA under the 2012 waiver versus the 2014 waiver, and further stratified the sample by individuals who had incomes 100-133% FPL during their first month of TMA versus those with incomes >133% FPL (since only the latter group would be exposed to premiums and RRP in their first month of TMA). We applied "wash-out" periods, excluding individuals who have spells of TMA that cannot be observed for a full 12 months under either the 2012 waiver or 2014 waiver.

- Descriptively compared several outcomes for individuals entering under the 2012 versus 2014 waivers: length of TMA, probability of entry into RRP, and length of RRP (if any). We found that under the 2014 waiver, the share of individuals entering RRP more than tripled, but the average length of RRP substantially decreased. *The major finding was therefore that the implementation of the 2014 waiver was associated with a major increase in RRPs in the TMA population.*

- Estimated regression models, that further indicated the changes associated with the 2014 policy change adjusting for individual demographics. We found a significant drop in the average length of TMA spell under the 2014 policy change and an increase in the incidence of RRP.

We have since then further refined this analysis, with several important extensions and updates as of December 2017:

- *Adopted a more stringent definition of the TMA spell.* Whereas in the April report we allowed the TMA spell to include months where individuals temporarily broke their spell to include months returning to BadgerCare, we now do not count those months spent outside of TMA as part of the TMA spell. This has reduced the mean length of the TMA spell by more than 2 months on average, but we believe that it more appropriately captures the enrollment period of interest. We will still consider alternative definitions of spells for sensitivity analyses.

- *Added several outcomes not previously considered*: new measures included number of months subject to premiums in the TMA spell, total amount of premiums assessed (in dollars), and total amount of premiums collected. These outcomes help provide further insight into whether premium payment change in a manner consistent with the RRP policy. We have also examined whether individuals reenrolled in BadgerCare in the month after they leave TMA. This outcome speaks to the role of TMA in extending public insurance enrollment versus bridging to non-public coverage.

- *Extended our modeling approach.* In our previous analysis, we compared changes in outcomes for individuals in TMA <u>overall</u> under the 2012 waiver versus the 2014 waiver. As we noted in the April 2017 report, there is further value in estimating *"A month-level hazard analysis in the post-wavier 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."* We now estimate a version of this regression model using month level data. This modeling approach is more data intensive, but allows us to now separately identify how enrollment and premium payment changes for individuals after the change in policy in 2014 who have incomes >133% versus those with incomes 100-133% FPL who experience the implementation of new premiums in month 7.

A3. TMA and RRP Analysis: Findings

Table IV.A1 compares characteristics of individuals in our TMA samples under the 2012 versus 2014 waivers. Individuals in the two time periods were very similar along most dimensions and the few significant difference were modest: individuals were about 34 years old on average, about 70% were female, about two-thirds were non-Hispanic white, and 35% resided in metropolitan areas, and the mean household size was roughly 3.5 individuals. The mean monthly income in the sample was about 133% of the poverty level.

Table IV.A2 reports on differences in study outcomes for individuals under the 2012 versus 2014 waivers. All reported differences are statistically significant (P<.001). The mean length of TMA spells under the 2012 waiver was 5.9 months, which decreased to 5.3 months under the 2014 waiver. At the mean, individuals under the 2012 waiver were assessed premiums in 1.7 months of their TMA spells versus 2.4 months under the 2014 waiver. The mean amount of premiums assessed increased from $241 to $256, but the Medicaid agency collected less revenue in both time periods due to premium non-payment.

Specifically, under the 2012 waiver, 29% of individuals had at least one month of premium non-payment and mean amount collected per TMA spell was $173, and under the 2014 waiver 39% of individuals had at least one month of premium non-payment and total amount collected decreased to $153. Though low in both periods, the share of individuals leaving TMA with an RRP increased from 4% of all individuals under the 2012 waiver to 16% under the 2014 waiver. Among those experiencing an RRP, the mean length spent in the lock-outs decreased from 8.6 to 3.5 months. Finally, reenrolling in BadgerCare was a common outcome: 72% of individuals returned to BadgerCare in the month immediately after TMA under the 2012 waiver compared to 55% under the 2014 waiver.

Table IV.A1. Demographic Characteristics of TMA Enrollees in their First Month of Enrollment

	Entered Under 2012 Waiver	Entered Under 2014 Waiver	P-Value
Age	33.64	33.68	0.65
Female	0.70	0.72	P<.001
Race/Ethnicity			
Non-Hispanic White	0.68	0.65	P<.001
Non-Hispanic Black	0.15	0.17	P<.001
Hispanic	0.09	0.1	0.002
Other/unreported	0.08	0.08	0.193
Citizen	0.96	0.96	0.462
Resides in a metropolitan area	0.35	0.35	0.393
Number of individuals in household	3.58	3.57	0.398
Family income %FPL	133	133	0.154
Number of Enrollees	23,383	27,642	

Note: Authors' analysis of TMA enrollment data for individuals entering TMA from 2012-2013 versus 2014-2015. P-value is from pairwise t-test for difference in means.

Table IV.A2. Outcomes Related to Spell Length, Premiums Paid, and Restrictive Reenrollment Periods

	All Individuals			Entered TMA 100-138% FPL			Entered TMA >138% FPL		
	Entered Under 2012 Waiver	Entered Under 2014 Waiver		Entered Under 2012 Waiver	Entered Under 2014 Waiver		Entered Under 2012 Waiver	Entered Under 2014 Waiver	
TMA length	5.94	5.32	***	6.22	5.65	***	5.25	4.55	***
Months Assessed Premiums	1.73	2.35	***	0.73	1.70	***	4.18	3.93	***
Total Premiums Assessed ($)	$241	$256	***	$74	$118	***	$653	$589	***
Total Premiums Paid ($)	$173	$153	***	$15	$20	***	$560	$476	***
Any Months of Non-Payment	0.29	0.39	***	0.17	0.30	***	0.57	0.62	***
Left TMA with a RRP	0.04	0.16	***	0.02	0.12	***	0.10	0.27	***
RRP length (If received RRP)	8.62	3.54	***	7.86	3.08	***	8.97	4.03	***
Reenrolled in BadgerCare in month immediately after TMA	0.72	0.55	***	0.79	0.60	***	0.56	0.42	***
Number of Enrollees	23,383	27,642		16,622	19,542		6,761	8,100	

Notes: Authors' analysis of TMA enrollment data. Entered 100-138% versus >138% FPL reflects income in the first month of TMA enrollment. Premiums assessed reflect the premiums charged to enrollees across their TMA spells, and premiums paid are premiums reflected as collected. We use 138% as the threshold to account for the 5% income disregard allowed under the MAGI criteria (i.e., 133%+5%). ***P<.001.

To provide further insight into disenrollment patterns at the monthly level, Figure IV.2 plots the Kaplan-Meier survival estimates showing the monthly disenrollment rate from TMA for all individuals entering the program in either the 2012 or 2014 waiver. As the plot shows, the rate of disenrollment was highest in the first month of the program in both time periods, when roughly 25% of the sample left TMA. In both time periods, more than half the sample had disenrolled by the sixth month. Comparing the two samples, disenrollment was slightly lower within the first six months during the 2012 waiver than in the 2014 waiver period. After the sixth month, the rate of leaving the program increased much more steeply in the 2014 waiver than in the 2012 waiver.

Figures IV.A3 and IV.A4 illustrate that the monthly disenrollment rates differ for individuals who began their TMA spell 100-138% FPL versus those who began above 138% FPL. Specifically, during the first six months the patterns of disenrollment are virtually identical for individuals 100-138% FPL during the two time periods, but disenrollment drops off much more sharply after the six month after the 2014 waiver. By contrast, individuals who began their spell above 138% FPL disenroll at greater rates beginning in the first month in the post-2014 period than do their counterparts in the 2012-2014 period.

**Figure IV.A2. Kaplan Meir Survival Curve For Overall Risk of Disenrollment by Month in TMA**
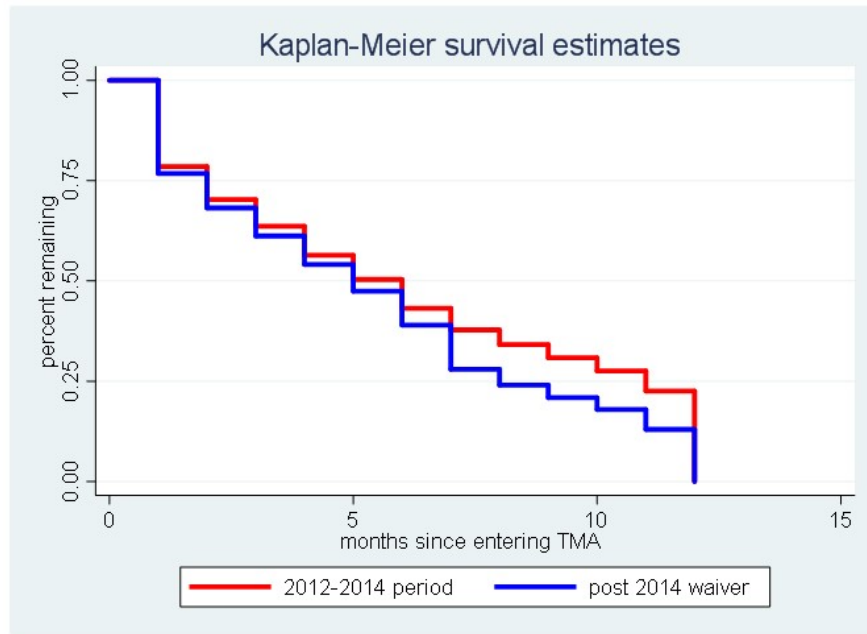
Figure IV.A3. Kaplan Meir Survival Curve For Overall Risk of Disenrollment by Month in TMA for Individuals Who Began Their TMA Spell 100-138% FPL
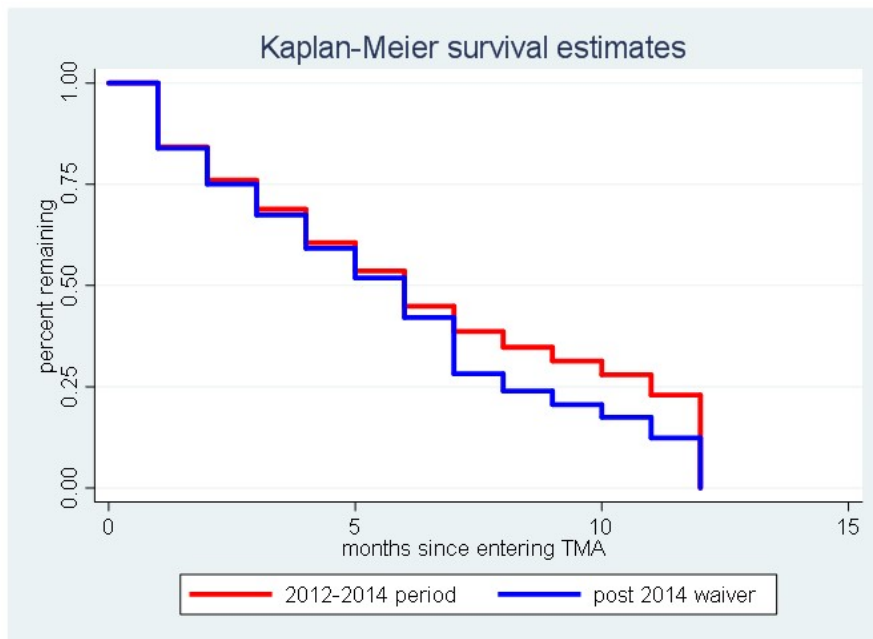
Figure IV.A4. Kaplan Meir Survival Curve For Overall Risk of Disenrollment by Month in TMA for Individuals Who Began Their TMA Spell >138% FPL
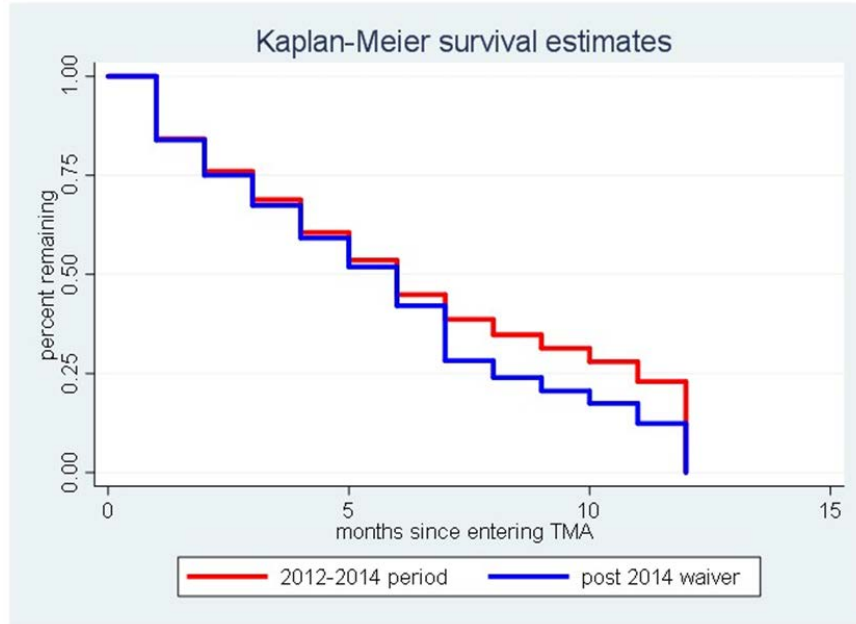
Finally, Table IV.A3 shows regression estimates. These are coefficients derived from survival (time to event) models where the outcome is the probability of disenrollment. These models show monthly enrollment data for TMA enrollees who entered under the 2012 or 2014 waivers (i.e., individuals in the sample contribute an observation for every month in which they are enrolled in TMA).

Table IV.A3. Hazard Models Estimating Risk of Disenrollment Overall and Disenrollment With and Without RRP

	Hazard of Disenrollment for Any Reason			Hazard of Disenrollment (where Spell Ends with RRP)			Hazard of Disenrollment (where Spell Ends Without RRP)		
	Hazard Ratio	95% CI		Hazard Ratio	95% CI		Hazard Ratio	95% CI	
Subject to premium (versus none)	3.34	(3.11, 3.59)	***	3.18	(2.96, 3.42)	***	1.21	(1.16, 1.26)	***
Subject to 3-month lockout (versus 12 month)	2.64	(2.49, 2.80)	***	3.29	(3.10, 3.50)	***	0.7	(.68, .72)	***

Notes: All models are estimated on month-level data. "Subject to premium" is an indicator for whether an individual was required to pay a premium in month of enrollment and "subject to 3-month lock-out" reflects whether an individual who was required to pay a premium was observed after the 2014 waiver change (versus the 12-month lock-out from 2012). Models also control for individual demographics and monthly income. Hazard of disenrollment is estimated from a Cox proportional regression model and hazard of disenrollment with/without lock-out is estimated from competing risk regression models. All coefficients are hazard ratios.

At the <u>month level</u> we can estimate whether an individual is exposed to any premium (versus no premium) and we can also estimate whether, if they are exposed to a premium, whether that is a premium enforced with a 12- versus 3-month RRP. The effect of the premium exposure is identified through the change that happens at month 7 for individuals 100-133% FPL under the 2014 waiver, and the effect of the RRP change is identified under the change that happens under the 2014 waiver when the length of the RRP period is decreased.

Our regression models also include controls for individual demographics (as shown in Table 1; not shown here). After we estimate hazard models for disenrollment for any reason, we then separately estimate hazard models where we further disaggregate whether disenrollment occurs with an RRP, versus disenrollment without RRP.

Individuals newly facing premiums (i.e., those affected by the change at six months under the 2014 waiver) experienced a 334% increase in monthly risk of disenrollment. We also find that after the shift from the 12- to the 3-month RRP for individuals with income at or above 138% FPL, risk of disenrollment increased by 264%. When we examine risk of disenrollment with an RRP, we find roughly similar hazard ratios to the risk of disenrollment for any reason: the risk of leaving with an RRP, when an individual is faced with a premium, increases by 318% and the risk of disenrollment with an RRP after the change from the 12- to 3-month lock-out increases by 329%. Risk of disenrollment without an RRP has different effects: when faced with a premium, risk of disenrollment without an RRP increases by 121%, and risk of disenrollment without an RRP actually decreases by 30% after the policy shift from the 12- to 3-month lock-out.

A4. TMA: Survey Findings

The Survey Scientific Report (Attachment E), submitted to DHS in August 2017, provides detail and complete presentation of the methods, data, and findings from the survey. Below we provide a summary of the questions and analyses pertaining to the TMA population.

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

We compared individuals who had recent RRP experience with individuals in TMA with no recent RRP experience.

- Individuals in the RRP groups and TMA groups were similar in some key demographics, but the RRP group was more likely to be racial/ethnic minority
- The groups had similar self-reported physical health status, but the RRP group reported lower levels on one measure of mental health than the TMA group
- Individuals in the RRP group were twice as likely to report being currently uninsured, and much more likely to report lacking a usual source of care and holding medical debt.
- Individuals in the RRP group were significantly more likely than the TMA group to report high levels of dissatisfaction with changes that took place in BadgerCare since April 2014.

Question 9: _(TMA) How is access to care affected by the new, or increased, premium amounts?_

We assessed financial burden in the TMA population and differences between individuals in TMA who were sampled from program groups with incomes between 100-133% of the federal poverty level (FPL) relative to those with incomes >133% FPL, who had more exposure to premiums.

- TMA members across in the two groups look substantially similar on almost all dimensions.
- Within the overall TMA population, among those who were enrolled in BadgerCare before the April 2014 program changes, 52% report that they were affected by the program changes, while a fifth (19%) report that they do not know if they were affected. A third were not sure if there had been a change in their premiums.
- About 80% report getting all medical care and medications they needed over the past year.
- Of those who report not getting all care of medications needed, most cite cost-related reasons.
- In summary, findings indicate much higher levels of unmet medical need and financial distress among people with recent RRP experiences.

The findings from the survey will be combined with the administrative data analysis to understand the observed outcomes and assess the hypothesized theory of change that undergird the waiver.

A5. TMA: Next Steps

We are currently in the process of updating the enrollment data with a new CARES pull received in November 2017 that extends the existing data (which end in March 2016) through October 2017. As part of this update, we are re-examining the medical status and participation codes used to define the comparison groups to improve the quality of the data used for analysis. This includes determining reasons for duplicate observations and algorithmically determining which observations are to be used for the final sample. Once we have finished this update, we will extend the definition of our analytic sample to include individuals from the new period following the same procedures we have previously used. These data will then be transferred to the UW servers for analysis of health care use and quality in CY2018.

We have constructed the measures for health care use and quality analyses, as described in Section III-D, above. They will be implemented in the TMA population as soon as the TMA claims and encounter data are ready for analysis, and will serve as the basis for analyzing Questions 1,2, 6, and 7. The planned analyses will proceed as follows:

Q1: Will the premium requirement reduce the incidence of unnecessary services?
- Define unnecessary services in the hospital setting as Ambulatory Care Sensitive Visits (Non-Emergent, Primary Care Treatable, Avoidable) using standard algorithms. Unnecessary ED Visits will be defined as in Billings et al., (2000). Also consider 30-Day All Cause Readmissions.
- Test hypothesis by comparing trends in month-level outcomes in the TMA population before and after they are required to pay premiums, as well as by comparing to current enrollees not required to pay premiums.
- Assess whether the incidence of unnecessary services is different across these populations and to the extent possible the degree to which this is due to selection (those who continue to pay premiums and remain enrolled may be less healthy than those who fail to pay premiums)

Q2: Will the premium requirement lead to improved health outcomes?
- Use standard claims-based measures of health-related outcomes as described elsewhere.
- Test hypothesis by comparing trends in month-level outcomes in the TMA population before and after they are required to pay premiums, as well as by comparing to current enrollees not required to pay premiums.
- Assess whether the incidence of unnecessary services is different across these populations and to the extent possible the degree to which this is due to selection (those who continue to pay premiums and remain enrolled may be less healthy than those who fail to pay premiums)

Q6: 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?
- Test this hypothesis primarily within a group of individuals who started TMA paying premiums and were placed in an RRP but then reenrolled in either TMA or BadgerCare within 6 months of

the RRP start (the "treated group") and appear in state administrative data 12 months after the first month of TMA.

- Observe month level trends in outcomes comparing three time-periods (1) the two months directly preceding an RRP (2) the two months directly after reenrollment (3) all other months where we observe enrollment that are not adjacent to an RRP.
- Derive primary month-level outcomes from claims: (1) monthly spending overall and spending in different settings (outpatient, emergency, inpatient, and pharmacy), (2) utilization in these settings by number of visits and visits to the emergency department for ambulatory care sensitive conditions, (3) whether an individual fills prescriptions for a chronic disease medication (e.g., antihypertensive, statins, insulin, and antidepressants) observed at baseline in subsequent months

Q7: 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?

- Extend the analysis proposed for hypothesis 6 using the same "treated group" and matching each individual in the treated group to at least on subject in the data who (1) is similar in terms of demographics and health care use prior to entry into TMA (i.e., during time in BadgerCare) (2) is continuously enrolled in TMA and BadgerCare and has a spell of TMA enrollment that is at least as long as the comparison subject. We can find similar individuals using propensity score matching.
- Tag for comparison individual months early in their TMA spell when they can provide comparison data to the pre-RRP months experienced by their treated counterparts and months later in their spell when they can provide comparison data to the post-RRP months.
- Estimate difference-in-differences models to compare trends in the monthly outcomes in the treated and comparison groups, which will allow us to test whether there are significantly different patterns in utilization and spending among individuals who return after RRP to matched individuals who were continuously enrolled.

B. CHILDLESS ADULTS (CLA)

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 second year of the evaluation focused on a critical dimension of questions 13-16. Specifically, all of these questions require the use of a large and common set of outcomes that characterize health care use and costs across service types and categories as well as health-care quality measures related to health. Here, we describe the preliminary results from this year's work building the outcomes that apply across questions, developing the appropriate study cohorts, and developing our initial analytic models to answer questions 13-16.

B1. Background on Study Population

The Wisconsin Department of Health Services is specifically interested in measuring CLA Standard Plan enrollees' outcomes relative to the two comparators, A and 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.

The evaluation plan includes comparisons, for each of the research questions, related to childless adult enrollment in the Standard Plan. The empirical focus in Year 02 has been on Comparison A. This section describes our general strategy and preliminary findings.

B2. CLA Analysis: Methods

We implemented descriptive analyses and a difference-in-differences (DD) design to estimate the change in selected outcomes for CLA beneficiaries. These analyses compared outcomes before enrollment in the Standard Plan and after Standard Plan enrollment relative to the change in outcomes over the same time periods in a comparison group of parent/caretaker beneficiaries.

Table IV.B1 illustrates the comparison groups for the DD analyses.   The comparison group of continuously enrolled parents and caretakers controls for trends related to health care use that similarly affected both Medicaid enrollee populations, parents and caretakers, and childless adults. The DD design with a plausible comparison group increases the capacity to make causal inferences from the evaluation findings by isolating the impact of the coverage change on the affected population.

Evaluation questions 13-16 concern three domains of outcomes: health care use, health, and health care expenditures. Year 02 of the waiver evaluation focused on building measures, constructing cohorts, and implementing analytical models central to each of these evaluation questions.   Section IIIE, above, reviews our activities in measurement development.

Table IV.B1 Difference-in-Differences Research Design for Evaluation of Childless Adult Enrollment in Standard Plan

	Pre-Period April 2013 – March 2014			Post-Period April 2014-March 2015
Treatment Group	Core Plan (A) Cohort of childless adults	=>		Standard Plan (B) Same cohort of childless adults
Comparison Group	Standard Plan I Cohort of parents/caretakers	=>		Standard Plan (D) Same cohort of parents/caretakers
Difference-in-Differences:				[(B–—) - (D-C)]

Table IV.B2

Characteristics of childless adult and parent/caretaker beneficiaries with continuous enrollment, April 2013 - March 2015			
	Childless adults mean or %	Parents/Caretakers mean or %	p-value*
Subjects, N	7,510	69,065	
Female, %	50.72	76.73	p < 0.001
Age as of 4/2014 by category, %			
19-34	14.79	47.18	p < 0.001
35-49	27.76	46.01	
>= 50	57.44	6.81	
Race, %			
White	76.36	61.53	p < 0.001
Black	14.39	20.68	
Other	2.89	6.95	
Missing	6.35	10.83	
Hispanic, %	4.1	8.96	p < 0.001
High school grad, %	83.49	79.92	p < 0.001
Residence in urban area, %	38.12	41.28	p < 0.001
* Test of the equivalence of value for childless adults relative to parents/caretakers			

We used CARES data to identify the sample of CLA beneficiaries that transitioned directly from the Core Plan to the Standard Plan. Sample inclusion required continuous enrollment throughout the observation period, April 2013 – March 2015. The comparison sample of parents/caretakers includes individuals who were likewise continuously enrolled in parent/caretaker coverage for the full observation period, April 2013 – March 2015. Requiring continuous enrollment for the 24-month period

eliminates the possibility that changes in sample composition may account for any observed effects of the insurance transition on outcomes.

Table IV.B2 summarizes the characteristics of the evaluation population for Year 02 analyses. A total of 7,510 CLA beneficiaries were continuously enrolled from April 2013 – March 2015. There were 69,055 individuals in the comparison sample -- continuously enrolled parents and caretakers for the same time period. We tested the equivalence of the population characteristics using t-tests for binary and continuous measures, and chi-squire tests for categorical measures.

The demographic composition of the two cohorts differs on all measures observed. This is not surprising given the different eligibility criteria. Relative to parents and caretakers, members of the childless adult cohort are more likely to be male, are generally older, and less likely to be a racial or ethnic minority.

B3. CLA Analyses: Findings

B3a. Descriptive Analysis

Year 02 focused on the effects of the transition from Core to Standard plan coverage for childless adults on total health care use, on mental health and substance use disorder (MHSUD) health care use for outpatient and emergency department care, and on diabetes prescription drug use. We focus particularly on MHSUD and diabetes measures in these first analyses for this waiver population because the Standard plan resulted in more extensive coverage for outpatient behavioral health treatment and for prescription drug coverage relative to the Core plan. Both conditions are relatively common, chronic conditions in the adult Medicaid population for which clinical treatment recommendations include routine outpatient follow-up and treatment with prescription medications.   Table IV.B3 summarizes the complete set of measures for these conditions that this evaluation will ultimately assess. (Analyses for inpatient measures will occur next, having now received the necessary inpatient data.) The following pages report the initial set of outcomes.

Table IV.B3 compares the average values for outpatient and emergency department (ED) outcomes in the 12-months before implementation of the waiver for the CLA cohort and the comparison cohort of parent/caretaker beneficiaries.   T-tests measured the equivalence of these baseline estimates between the two cohorts. For each outcome, we assessed the proportion of the population with any visit in the year (e.g., any outpatient visit), and the average number of visits per person per year.

For most measures assessed, the difference in baseline values between the two populations is statistically significant at a threshold of $p < 0.001$. Almost 90% of the childless adult cohort had at least one outpatient visit in the year, compared to 83% among parents and caretakers. Approximately 42% of childless adults had at least one outpatient visit with a diagnosis of MHSUD indicated, relative to 38% of parents and caretakers. The average number of outpatient visits per person per year in the childless adult population was 7.96; for parents and caretakers, individuals had on average 6.62 outpatient visits per year. Outpatient visits with a MHSUD diagnosis were less frequent in both groups. On average

childless adults had 1.65 MHSUD outpatient visits in the year, while parents and caretakers had 1.75 such visits.

Childless adults were on average less likely to have any ED visit in the year overall and for MHSUD conditions, compared to parents and caretakers. Specifically, about 33% of childless adults had at least one ED visit in the year compared to 43% of parents and caretakers. The average number of ED visits for any reason was lower among childless adults than parents. In contrast, both groups had an average of 0.31 ED visits for MHSUD conditions per person per year.

Table IV.B3: Annual Health Care Use in the 12-Months Before Waiver Implementation for Childless Adults and Parents/Caretakers Study Cohorts

	Childless Adults	Parents/ Caretakers	p-value*
OUTPATIENT VISIT			
Binary Outcomes: Any Use in Year (percentage)			
All cause	89	83	<0.001
MHSUD	42	38	<0.001
Continuous Outcomes: Quantity of Use in Year (average)**			
All cause	7.96	6.62	<0.001
MHSUD	1.65	1.75	0.02
EMERGENCY DEPARTMENT VISIT	Proportion or average	Proportion or average	p-value*
Binary Outcomes: Any Use in Year (percentage)			
All cause	33	43	<0.001
MHSUD	14	17	<0.001
Continuous Outcomes: Quantity of Use in Year (average)**			
All cause	0.83	1.06	<0.001
MHSUD	0.31	0.31	0.38
*Test of the equivalence of baseline values across eligibility groups. **The denominator for these measures includes all persons in the cohort including those that did and did not have any care use in the year.			

Figures IV.B1-B8 show the monthly trends for the same set of outcomes from April 2013 through March 2015. The vertical line indicates the first month of the waiver's implementation, April 2014. These figures provide a visual indication of the potential impact of the change in benefits for childless adults and the timing of that effect relative to the insurance transition.   The range of values included on the Y-axes differs across outcome categories to accommodate the variation in the range inherent in the outcomes themselves.

As in Table IV.B3, the sample includes the cohort of childless adult and parent/caretaker beneficiaries that were enrolled continuously from April 2013 – March 2015. The outcome trends suggest that the average likelihood and number of outpatient visits per month overall and MHSUD-related increases over the study period for childless adults relative to parents. This pattern is not repeated for the ED outcomes although there is also significantly greater month-to-month variation in these outcomes which makes it more difficult to observe a pattern.

Figure IV.B1. Proportion of Childless Adult and Parent/Caretaker Sample with Any Outpatient Visit in a Month
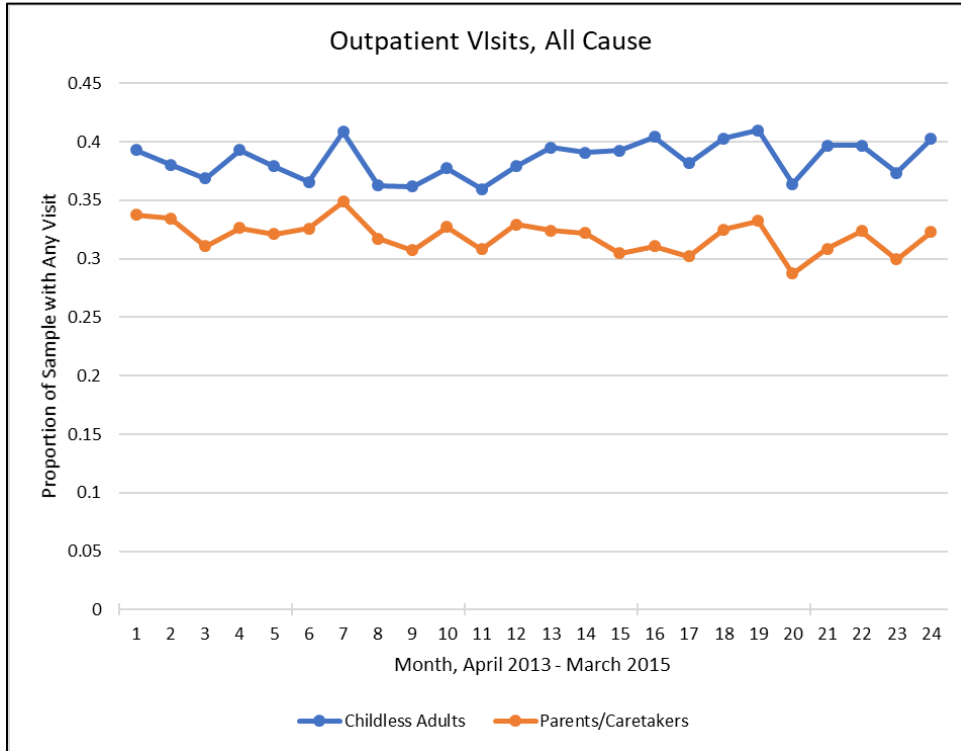
Figure IV.B2. Average Number of Outpatient Visits per Month, Childless Adult and Parent/Caretaker Sample
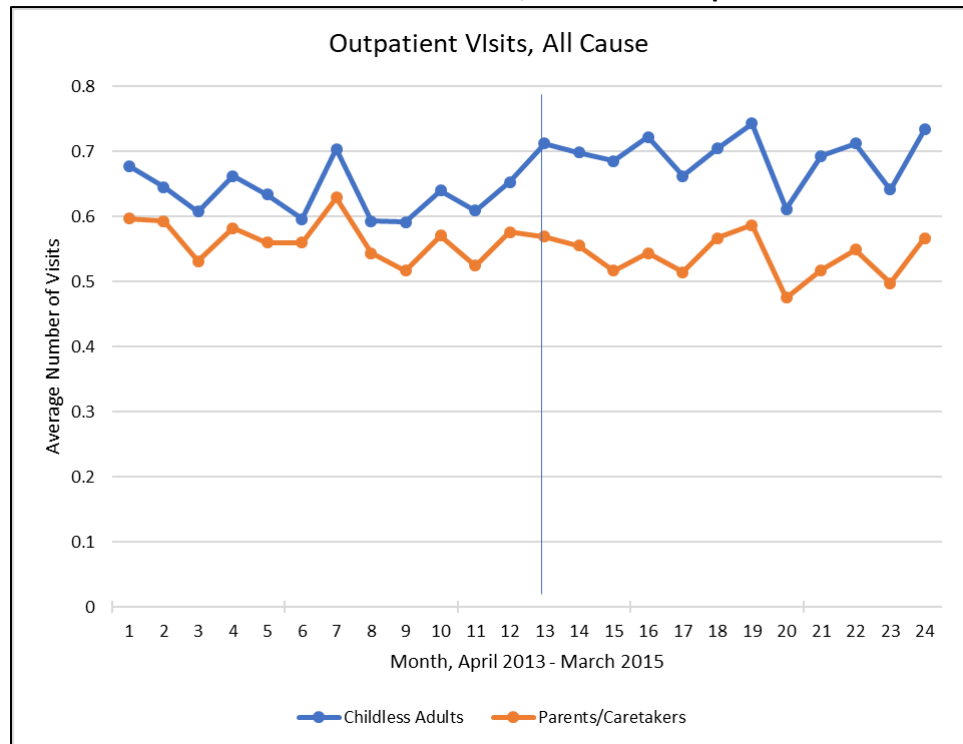
Figure IV.B3. Proportion of Childless Adult and Parent/Caretaker Sample with Any Outpatient MHSUD Visit in a Month
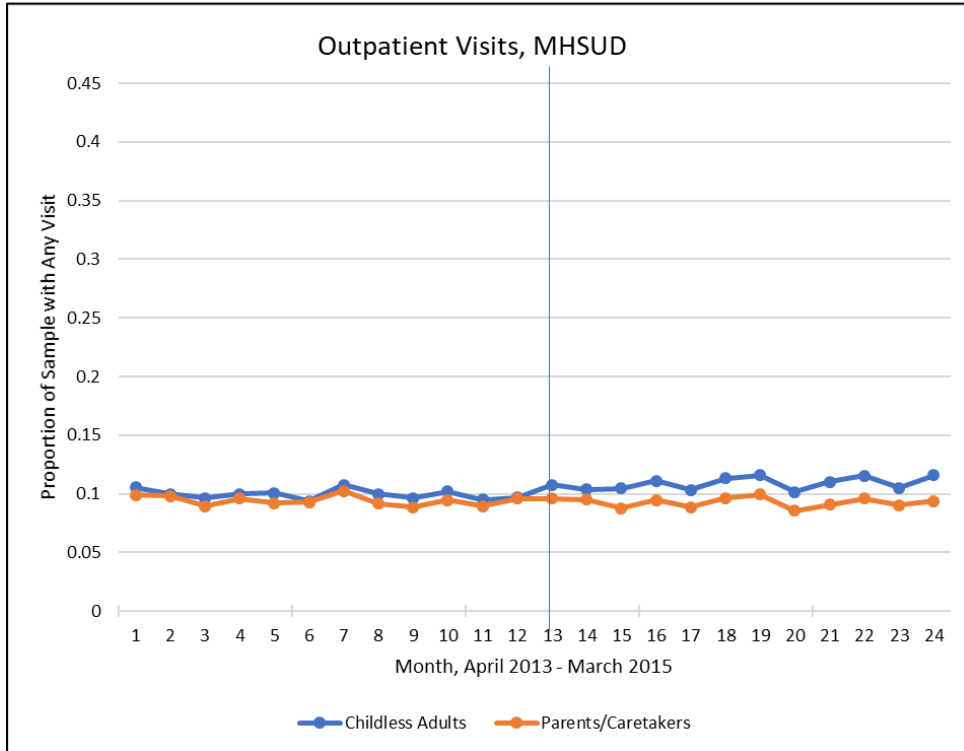
Figure IV.B4. Average Number of Outpatient MHSUD Visits per Month, Childless Adult and Parent/Caretaker Sample
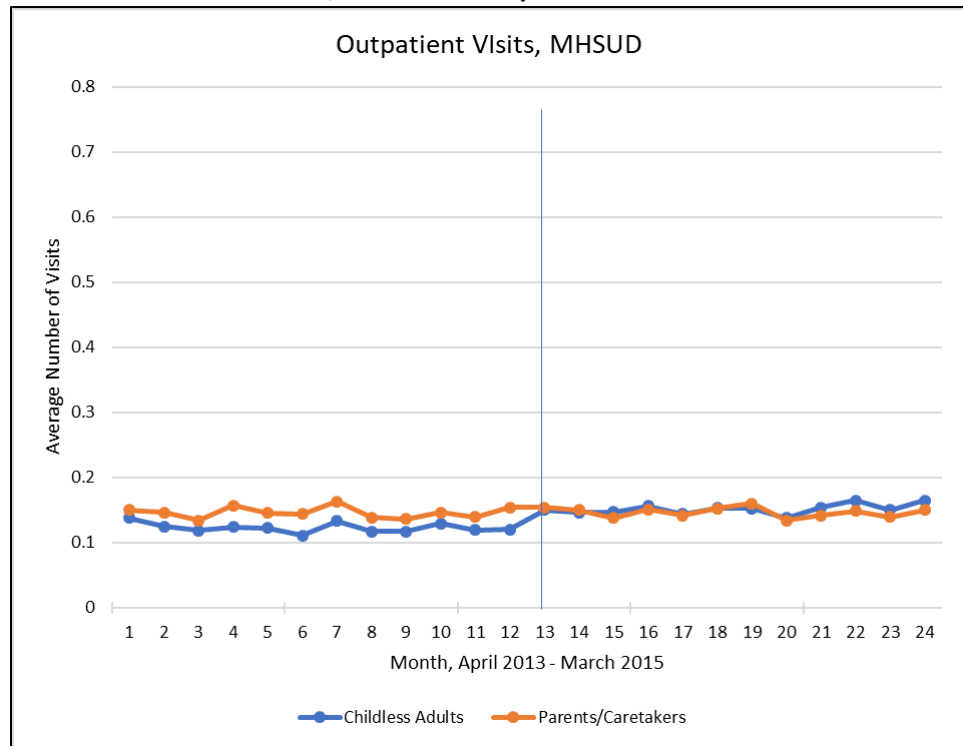
**Figure IV.B5. Proportion of Childless Adult and Parent/Caretaker Sample with Any ED Visit in a Month**
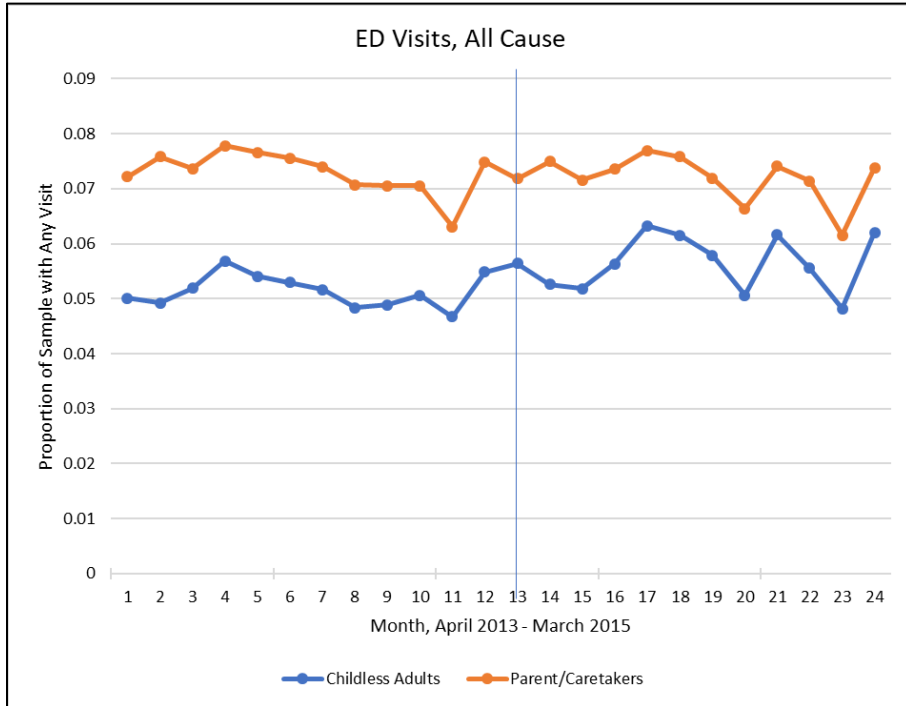
Figure IV.B6. Average Number of ED Visits per Month, Childless Adult and Parent/Caretaker Sample
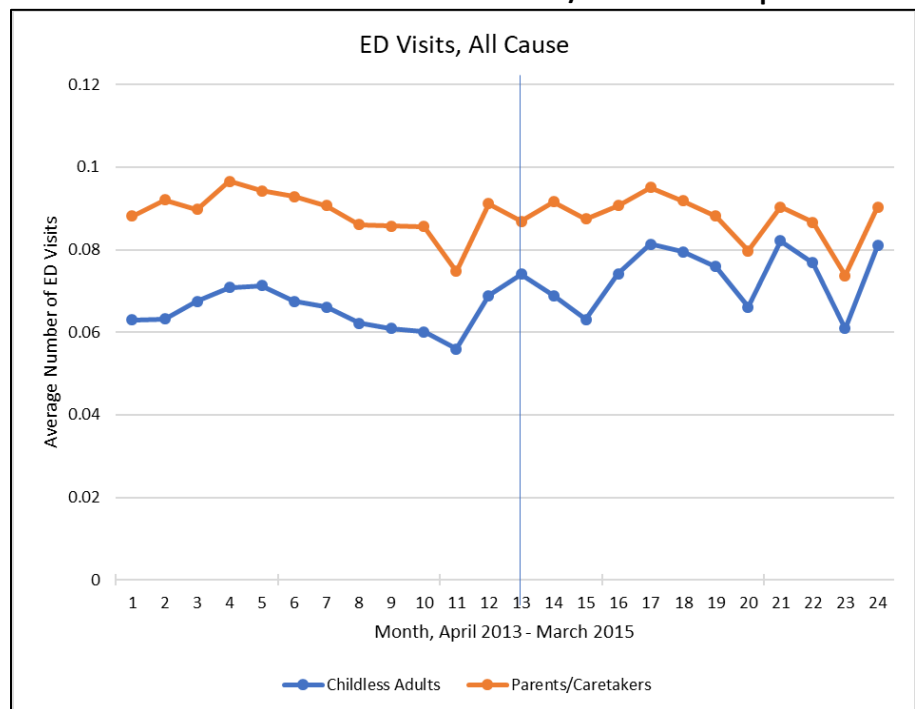
**Figure IV.B7. Proportion of Childless Adult and Parent/Caretaker Sample with Any MHSUD ED Visit in a Month**
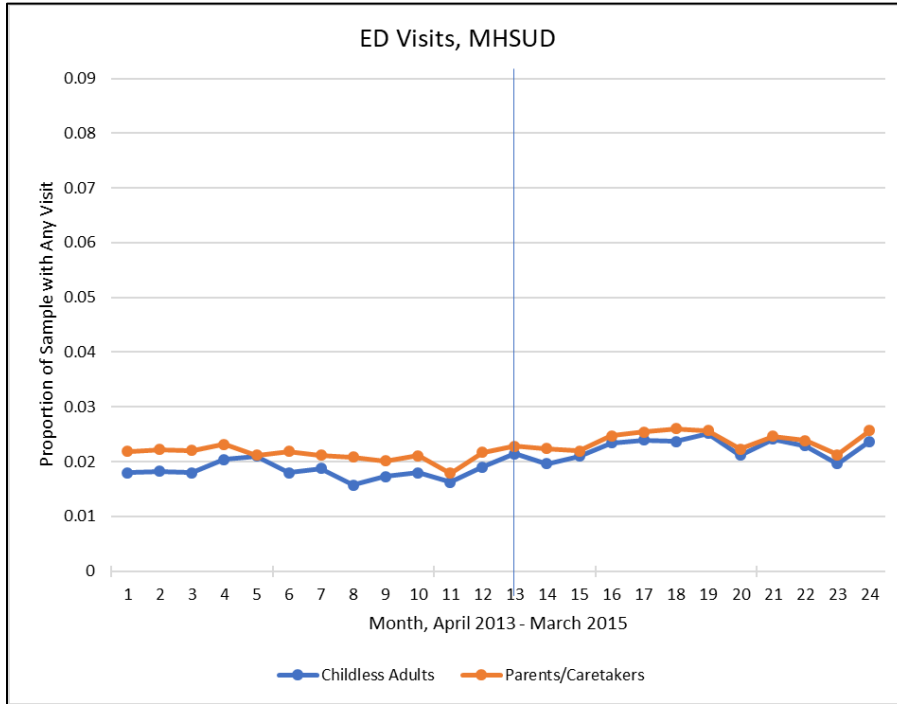
Figure IV.B8. Average Number of MHSUD ED Visits per Month, Childless Adult and Parent/Caretaker Sample
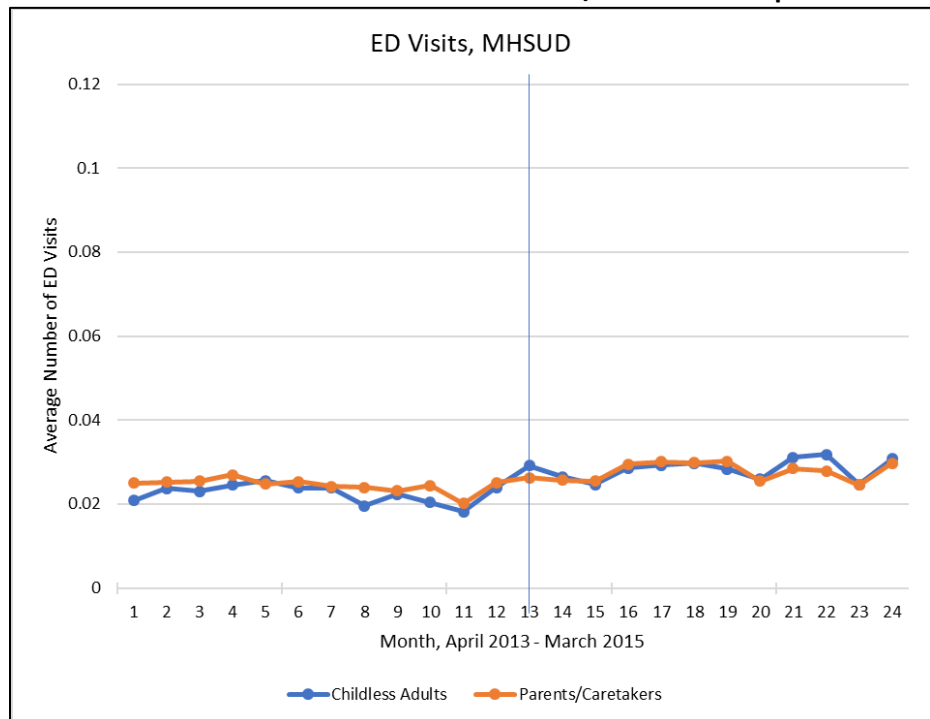
We additionally assessed monthly utilization of antidiabetic drugs among childless adults (CLAs) before and after the 2014 Wisconsin coverage expansion including specifically: 1) the use of and expenditures for antidiabetic drugs, and 2) adherence to oral antidiabetic drugs. For this particular set of analyses, the sample includes only CLA cohort members who had at least one antidiabetic drug claim between April 2013 – March 2015 (N=1,257). We identified antidiabetic drugs using the Hierarchical Ingredient Code and drug name fields in the claims data, and defined therapeutic class of antidiabetic drugs using the American Hospital Formulary Service classification system. The utilization of antidiabetic drugs was evaluated using the number of antidiabetic drug fills, and was also analyzed by therapeutic class.

The total number of antidiabetic drug fills increased by 18%, from 15,189 fills in the pre-period (12 fills per patient per year) to 17,975 fills in the post-period (14 fills per patient per year). As shown in Figure IV.B9, there was an increasing monthly trend of antidiabetic drug fills; however, a delayed, dramatic increase was seen 10 months after the coverage expansion, coinciding at the beginning of the 2015 calendar year. The explanation for this uptick in use is not yet clear.

Among the five most prescribed antidiabetic drug classes for childless adults, the rate of increase in the number of fills was 20% for DPP-IV inhibitors, 19% for biguanides, 15% for insulins, 6% for thiazolidinediones, and 4% for sulfonylureas after the coverage expansion (Figure IV.B10). These descriptive results suggest a delayed and modest increase in the utilization of antidiabetic drugs by childless adults after the 2014 transition to Standard Plan coverage.

Figure IV.B9. Monthly number of antidiabetic drug fills among childless adults
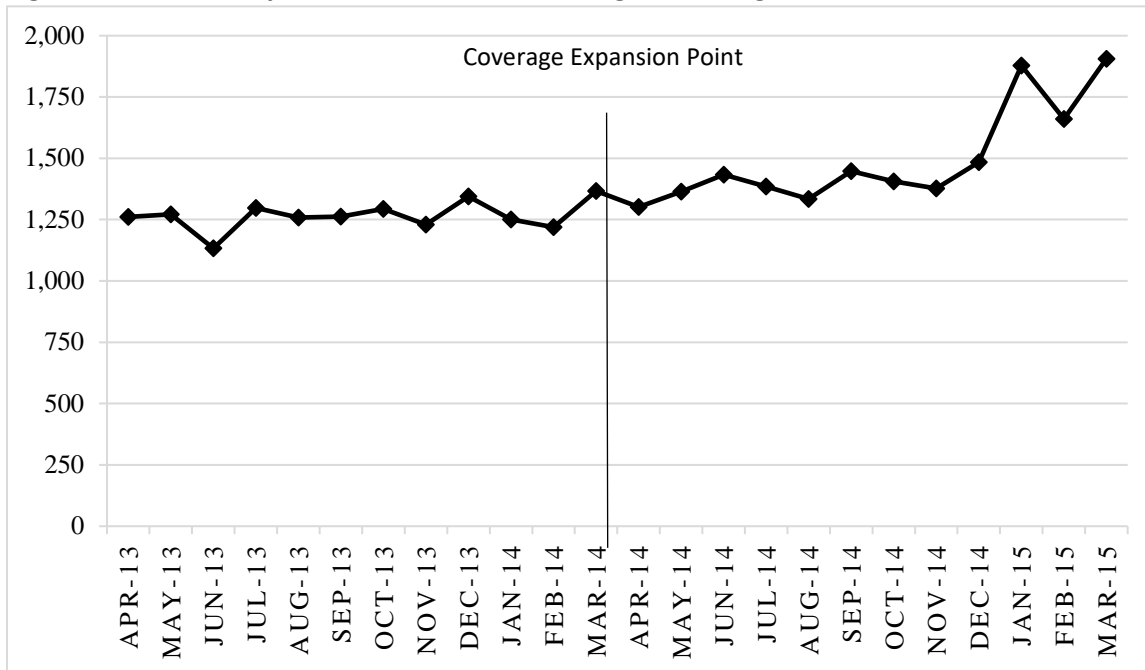
Note: Figure depicts average number of antidiabetic drug fills per month among childless adult cohort members with at least one fill for an antidiabetic drug during the 24-month study period.

Figure IV.B10. Monthly number of antidiabetic drug fills for the five most commonly prescribed therapeutic classes among childless adults
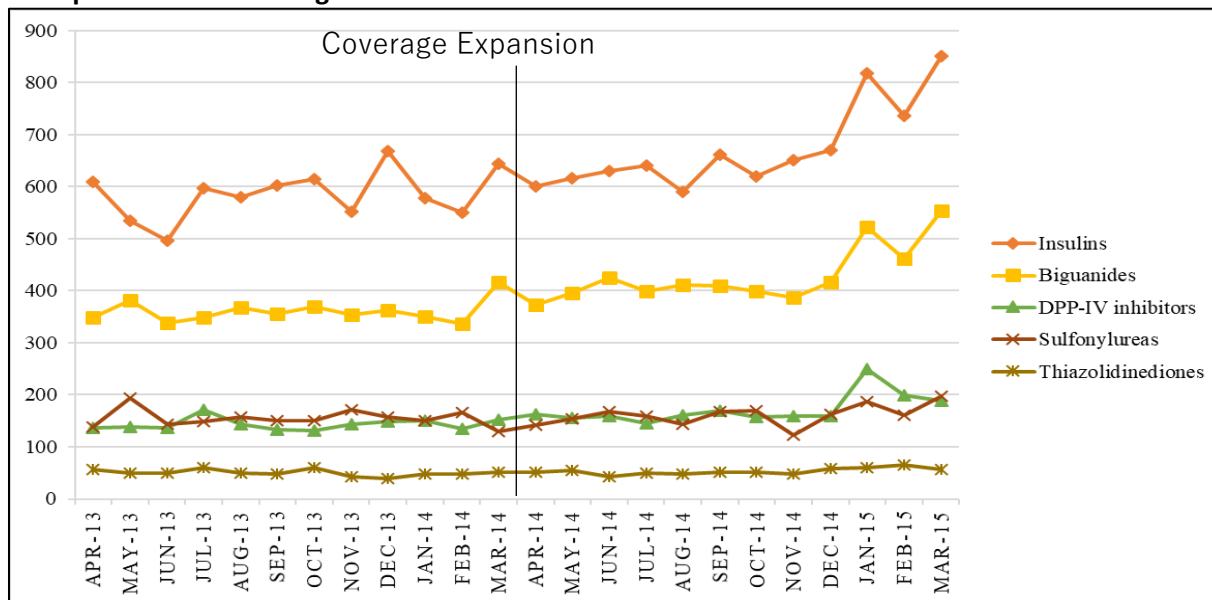
Note: Figure depicts average number of antidiabetic drug fills by type per month among childless adult cohort members with at least one fill for an antidiabetic drug of any kind during the 24-month study period.

Overall, these descriptive results suggest greater use of most categories of the health services assessed thus far among childless adults in the 12-months after implementation of the waiver relative to the preceding 12-months. Next, difference-in-differences analyses examine whether these increases are consistent with changes in the comparison population or unique to the childless adult population.

B3b. Regression Estimates

Our empirical model (described below) used ordinary least squares regression to assess the adjusted relative change in total and MHSUD-related outpatient and ED use among childless adults relative to parents and caretakers after implementation of the waiver. The diabetes-related prescription drug outcomes will undergo similar regression analyses once the data become available in Year 3.

$$Y = \beta_1 TG + \beta_3 TT + \gamma_1(TG * TT) + \varphi X + \varepsilon$$

Y is an outcome of interest, TG is an indicator for membership in the treated group (childless adults), and TT is an indicator for the post-period, April 2014 – March 2015. Observations are at the person-month (subscripts are suppressed.) We allow X to stand for control variables and ε to represent a random error term. The control variables include those noted in Table IV.B4, below. The treatment effect of interest is the coefficient on the interaction term, γ_1. Standard errors are adjusted for multiple observations within person over time.

Table IV.B4 presents the results from the difference-in-differences regression analyses. On average, after implementation of the waiver, the likelihood of having any outpatient visit and having an outpatient visit with a MHSUD diagnosis increased by 2.6 and 1.1 percentage points respectively for childless adults relative to parents and caretakers. Childless adults also experienced an increase of 0.086 in the average number of outpatient visits overall and 0.028 in the number of visits with a MHSUD diagnosis relative to parents and caretakers.

These increases in childless adults' health care use are sizeable relative to the monthly average values in the pre-waiver period. For example, an average increase of 0.028 outpatient MHSUD visits in the month for childless adults after implementation of the waiver, compared to parents and caretakers, represents a 23% relative increase (0.028/0.122). Emergency department use, following implementation of the waiver, also increased among childless adults compared to parents and caretakers. Compared to parents and caretakers, the likelihood of an ED visit in the month increased by 0.6 percentage points, a 11.8% increase from the baseline average (0.006/.051).

Table IV.B4. Change in health care use among childless adults compared to parents and caretakers after the 2014 implementation of the 1115 waiver

		Probability of Any Visit All Cause	Probability of Any Visit MHSUD	Number of Visits All Cause	Number of Visits MHSUD
OUTPATIENT VISITS					
Difference-in-differences estimate	β	0.026***	0.011***	0.086***	0.028***
	se	(0.003)	(0.002)	(0.007)	-0.004
Monthly average in pre-period for CLAs		0.377	0.1	0.634	0.122
EMERGENCY DEPARTMENT VISITS					
Difference-in-differences estimate	β	0.006***	0.002*	0.010***	0.003*
	se	(0.001)	(0.001)	(0.002)	(0.001)
Monthly average in pre-period for CLAs		0.051	0.018	0.065	0.022
Linear difference-in-differences models adjust for age, ethnicity, race, residence in urban area, H.S. education, and duration of Medicaid enrollment between February 2008 - March 2014, and month fixed effects. The pre-period includes 4/2013-3/2014; post-period includes 4/2014-3/2015. The unit of analysis is the person-month. Standard errors are adjusted for within-person correlation. *** p < 0.001; ** p < 0.01; *p < 0.05					

In summary, the regression analyses indicate that the change in Medicaid coverage from the Core plan to the Standard plan for childless adults led to increases in their use of outpatient and emergency department services overall and in MHSUD-related care.

B4. CLA: Survey Findings

The Survey Scientific Report (Attachment E), submitted to DHS in August 2017, provides detail and complete presentation of the methods, data, and findings from the survey. Below we provide a summary of the question and analysis pertaining to the CLA population.

Question 17: (CLA) 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 comparison of outcomes for the CLA sample in the 2016 survey to outcomes for the CLA sample in the 2014 survey finds the following:
- The likelihood and duration of health insurance coverage increased from 2014 to 2016.
- CLAs' reported need for medical care increased as did their likelihood of obtaining all needed care under the Standard plan compared to the Core plan period.
- The likelihood of borrowing money or skipping payment of other bills in order to pay for health care decreased.
- No significant change occurred in overall self-reported health status. However, the probability of having a work-limiting health problem increased from 2014 to 2016.
- In general, the CLAs under the Standard plan period report better outcomes with respect to coverage and access than CLAs reported under the Core plan period.

B5. CLA: Next Steps

Analysis will continue related to the effects of the transition from the Core to Standard Plan on the full set of health care use and health-related outcomes (Tables III.3 and III.5) as specified in Questions 13-16. The immediate priority is to establish with WIDHS an efficient method of obtaining the claims and encounter data needed to proceed on a timely basis. With that process in place, we expect to implement the analyses for Question 13-14 and develop the cost measures needed to complete Questions 15-16 during Year 03. We also expect to complete more in-depth health care analyses of the two chronic conditions highlighted in this report, mental health and substance-use disorder and diabetes, among childless adults who experienced the transition from Core to Standard Plan coverage.

V. NEXT STEPS

The project-wide focus of Year 03 will involve hypotheses-specific analyses for each of the waiver populations as described in the above sections and within the project workplan (Attachment D). The immediate priority is to establish with the Wisconsin Department of Health Services a more efficient method of obtaining the claims and encounter data needed to proceed on a timely basis. With that process in place, near term foci include the following:

Transitional Medicaid (TMA) population
- Finalize analyses on the enrollment-related outcomes associated with the change in RRP policy, and 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.
- Further study the effects of RRP in the 2018 survey sample.
- 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)
- Continue analyses related to the effects of the transition from the Core to Standard Plan on the full set of health care use and health-related outcomes as specified in Questions 13-16.
- Complete more in-depth health care analyses of the two chronic conditions, mental health and substance-use disorder and diabetes, among childless adults who experienced the transition from Core to Standard Plan coverage.

Survey
The results reported in 2017 (Attachment F) from the 2016 (first) survey contribute important interim findings toward the overall analysis of each study hypothesis. Application of the data from the 2016 survey continues, as we deepen the analysis of the administrative data.

We have linked virtually all subjects in the survey to their administrative (claims) records. Linkage of the survey to the claims data may offer several strengths to the evaluation. First, it provides a means of validating some survey-reported measures (e.g., current enrollment status in BadgerCare or Medicaid). Second, the survey domains may be useful in predicting outcomes in the administrative data. For example, we could analyze risk of disenrollment using survey-reported measures (such as self-reported satisfaction with care) in addition to administrative measures (exposure to premium relative to income and health care use, for example). These analyses are complex, and the decision to pursue them will depend on whether they are likely to yield significant new insights and are feasible within current resource and time constraints.

Finally, the 2016 survey results are informing the design of the 2018 survey. We intend to preserve many of the same questions for 2018, facilitating multi-year comparisons. Different sampling scenarios are

planned to address some of the challenges faced with the 2016 survey. We plan to continue the longitudinal component of this study, depending on sample size required for making over-time within-subject comparisons. However, we will discontinue sampling the prior "transitioner" population – those parents between 100-200% FPL who were no longer eligible for BadgerCare after the April 2014 policy changes – as their relationship to the program has become distant and they are no longer part of the study hypotheses.

We are also considering how the potential next Medicaid waiver and other program changes might affect or relate to the timing of the next survey. The 2018 survey could serve as a baseline for the new, pending 1115 waiver. We hope that, within resource constraints, will may find a way to more intensively sample specific groups in 2018 that will be the focus of Wisconsin's new, pending, Medicaid waiver. Regardless of potential programmatic changes, we will work closely with DHS to assure that the survey meets the state's and CMS' evaluation needs and requirements.

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. Survey Scientific Report, August 2017

BadgerCare Reform
Demonstration Draft
Evaluation Design

October 31, 2014

Table of Contents

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**	D*	Population 2
200%	**B**	B	N/A

Standard Plan

Co[_____]lan

No 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
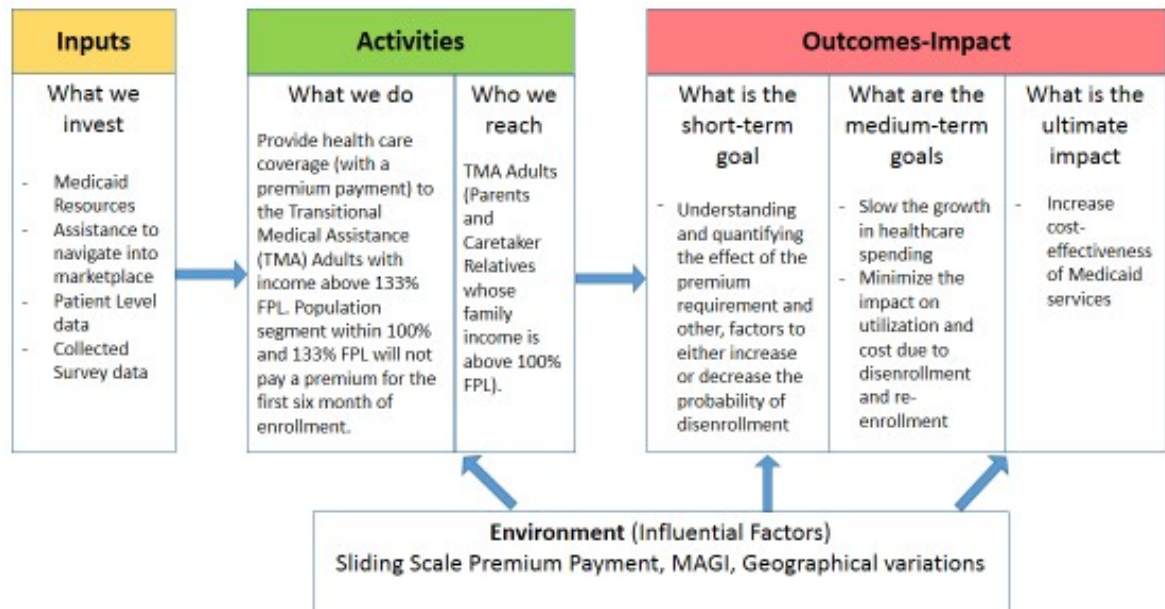
Figure 2b: Program Logic Model for BadgerCare Reform – Childless Adults
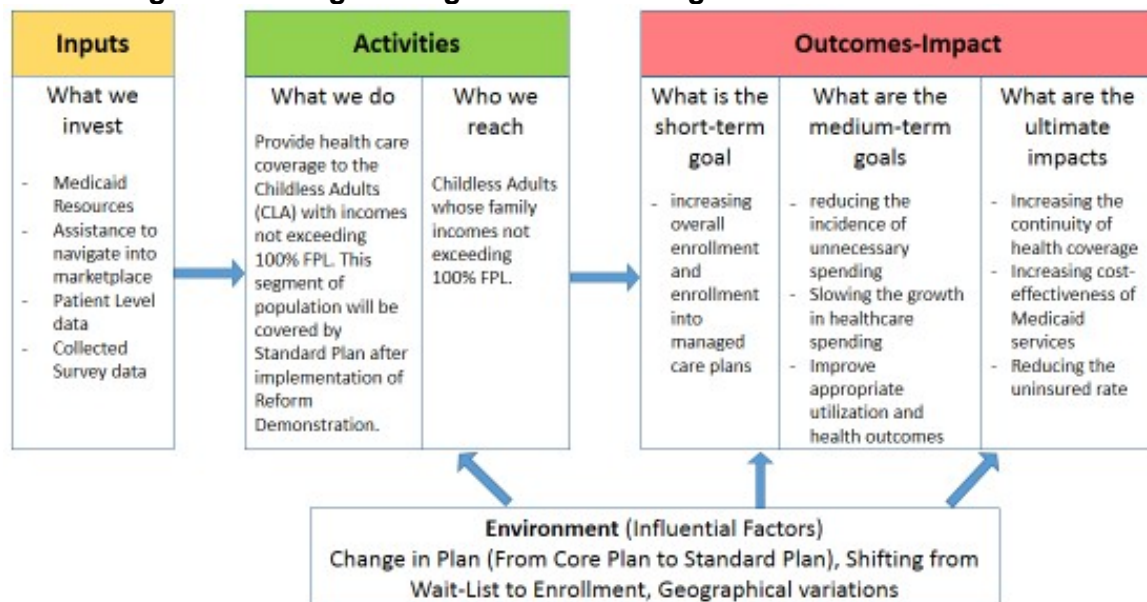
These models will also provide the logical framework to be used in evaluating the effectiveness of the Demonstration. Logic models (Taylor-Powelare et. al., 2003) are graphical representations of the logical relationships between the resources, activities, outputs and outcomes of a program. Whereas there 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 Plan[1]—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

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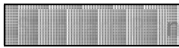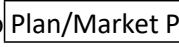
Figure 3A: Plan Assignment and Premium Requirement Thresholds for TMA Adults

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

Standard Plan

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

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

Core Plan/Basic 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 dis- enrollment, 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-transferred before modeling by predictors and control variables.

<u>Cost-Effectiveness Analysis</u>

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.

<u>Outcome Variable</u>: 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).

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

<u>Data Analysis Method</u>: 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.

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

<u>Data Analysis Method</u>: 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.

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

<u>Outcome Variable</u>: 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.

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

<u>Data Analysis Method</u>: 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.

<u>Outcome Variable</u>: 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.

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

<u>Data Analysis Method</u>: 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*. 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	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)		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.

Question	Measure/Definition	FPL/Premium	Demographics	Sample	Analysis Approach
4. Will the premium requirement increase the cost effectiveness (Outcomes/Cost) of Medicaid services?	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.	FPL (hence sliding scale premium).		Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population	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.
5. Will the premium requirement increase the cost effectiveness (Utilization/Cost) of Medicaid services?	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).	FPL levels defined in terms of levels on the sliding premium scale.		Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population	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.
Association of Enrollment Status to Utilization and/or Costs					
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?	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.	FPL (hence sliding scale premium). Disenrollment/Re-enrollment history (Identify few frequent patterns of disenrollment / re-enrollment and create dummy variables on those patterns).	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	Beneficiary level analysis. The control sample will be selected by split-sample method from within the TMA Adults population	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.

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

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?	Disenrollment/Re-enrollment history (Identify few frequent patterns of disenrollment / re-enrollment and create dummy variables on those patterns).	FPL (hence sliding scale premium) with possible categorization into wider intervals (smaller number of buckets). Appendix 1.	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.	Beneficiary level Analysis. The control sample will be selected by split-sample method from within the TMA Adults population	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.
9. How is enrollment or access to care affected by the application of new, or increased, premium amounts?	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.	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.		Beneficiary level Analysis. The control sample will be selected by split-sample method from within the TMA Adults population	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.

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?	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.	This is a Binary variable and determined whether any member had experienced this condition or not.	Demographics (Age[Group], Gender, Race & Ethnicity), Education, County, Region, Risk Score[ACG or CDPS], belongs to MCO	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.

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.

14. Will this achieve a reduction in 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 Devices.	Before and after implementation comparison.		Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA 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 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.
15. Will the provision increase the cost effectiveness (Outcomes/Cost) of Medicaid services?	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.	Before and after implementation comparison.		Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA 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 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.

16. Will the provision increase the cost effectiveness (Utilization/Cost) of Medicaid services?	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).	Most notable predictor as described in the question is the effect of time.		Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA Adults population	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.
17. Will it demonstrate an increase in the continuity of health coverage?	Measure of Continuity of Coverage.	Before and after implementation comparison.		Beneficiary level analysis. The control sample will be selected by split-sample method from within the CLA Adults population	The effect may vary by income level or any other demographic variables. So some adjustment by control variables are also proposed for this question.

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 ther BadgerCare adult beneficiaries result in	X	DD		

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] Continent 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			1-7, 9, 13,15
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 Study[4], the Urban Institute's Health Reform Monitoring Survey[5],the RAND Patient Satisfaction Survey[6] , and lessons learned administering the national Medicaid CAHPS[7] and elsewhere[8]. 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.

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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)

Table 3: Study Population 1, Premium Requirements for Treatment and Comparison Groups

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 <u>difference-in-differences</u> 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 <u>difference-in-differences</u> 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 <u>difference-in-differences</u> 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 <u>interrupted time series</u> 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 <u>regression discontinuity design</u> 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 RRPs 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. <u>Administrative data analysis</u>: 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 RRPs 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 RRPs at different times.

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

   $$Y_{it} = β_0 + β_1 Post\text{-}RRP_{it} + β_2 Pre\text{-}RRP_{it} + β_3 Demographics_i + β_4 Month_t + β_5 Person_i + ε_{it}$$

   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 RRPs

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. <u>Survey Data Analysis</u>**:** 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 RRPs 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 RRPs for Hypothetical TMA Beneficiaries
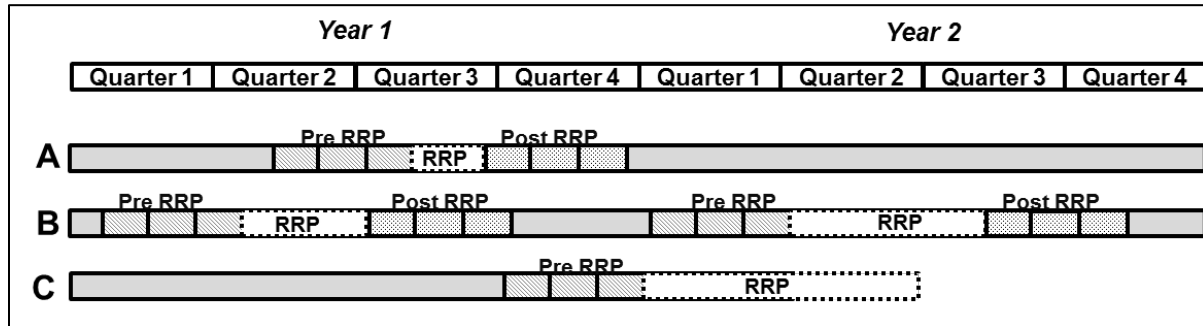
For each beneficiary who is placed in an RRP, we will define two adjacent time periods: the pre-RRP period and post-RRP period. We can define these periods in terms of monthly segments (e.g., 3 months pre and 3 months post RRP). All time periods that are outside of the window of time adjacent to the 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 RRPs 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 RRPs to several alternative groups that do not experience RRPs.

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 RRPs. 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 RRPs, 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:
$$Y_{it} = \beta_0 + \beta_1 RRP\text{-}Group_{it} + \beta_2 Year_t + \beta_3 Person_i + \varepsilon_{it}$$

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-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 RRPs versus the TMA group that did not experience RRPs.

Figure 2. Comparing experience of RRP and non-RRP TMA beneficiaries
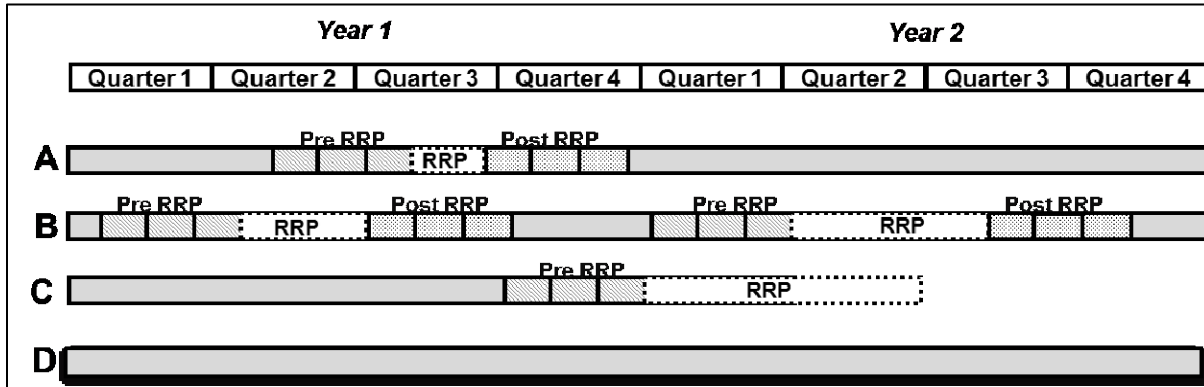
3. **Data Requirements:**

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.

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 submit 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]

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[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.

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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 <u>difference-in-differences</u> 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?

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[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.

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 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.

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 <u>necessary</u> 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 RRPs 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 RRPs.

- 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%+:

  $$Y_{it} = \beta_0 + \beta_1 After\_transition_{it} + \beta_2 High\_Income_{it} + \beta_3 After\_transition*High\_Income_{it} + \beta_4 Demographics_{it} + \beta_5 CalendarMonth + \varepsilon_{it}$$

  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 RRPs 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 *all* that apply.	Yes	No
a. I did not need any health care	○	○
b. I needed health care, but I decided to delay until I had health care coverage again [# Skip to Q7, place usually go]	○	○
c. I received health care in the hospital emergency room	○	○
d. I received health care at a community health center or clinic	○	○
e. I received health care from a private doctor or clinic	○	○
f. I received health care where I usually do when I have health care coverage	○	○
[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 all that apply.		
a. I, or a friend or family member, paid directly (out-of-pocket)	○	○
b. I was able to get free/charity care	○	○
c. I used a different health insurance plan	○	○
d. I still owe money/have debt for those bills	○	○

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 <u>document</u> 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 <u>the ratio of outcomes to spending for</u> Medicaid services?

  Q5. Will the premium requirement increase <u>the ratio of health care utilization to spending for</u> 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 <u>the ratio of outcomes to spending for</u> 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 <u>the ratio of health care utilization to spending</u> 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	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	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
Surveys												
Draft Survey Instrument		Survey 1										Completed
Identify and Select Cohort		▓	▓							Survey 2		Completed S1, In Progress S2
Attain mailing information from DHS			▓									Completed S1, In Progress S2
Field Survey			▓	▓							▓	Completed S1, In Progress S2
Survey Data Collection			▓	▓								Completed S1, Planning for S2
Survey Data Analysis and Reporting				▓	▓							Completed S1, Planning for S2
Telephone interviews				▓								Completed S1, Planning for S2
Administrative Data Analysis	▓											
Attain enrollment files for both TMA and CLA samples		▓										Completed
Conduct matching to identify Pre- and Post-Tx samples		▓	▓									Completed
Match enrollment file to claims and encounter data			▓									Completed
Refresh data at six month intervals			▓		▓		▓			▓	▓	Completed
Create price/cost measure for cost impact analysis					▓	▓	▓	▓	▓	▓		Underway
Identify and construct relevant outcome measures (eg - 30-day readmission)				▓	▓	▓	▓	▓	▓	▓		Completed
Conduct analyses - for interim and final reporting				▓	▓	▓	▓	▓	▓	▓		Underway
Unncessary Services				▓	▓	▓	▓	▓	▓	▓		Underway
Improved Health Outcomes				▓	▓	▓	▓	▓	▓	▓		Underway
Slow growth in Healthcare Spending				▓	▓	▓	▓	▓	▓	▓		Underway
Cost Impact Analysis				▓	▓	▓	▓	▓	▓	▓		Underway
Affect of RRP				▓	▓	▓	▓	▓	▓	▓		Underway
Affect of premiums				▓	▓	▓	▓	▓	▓	▓		Underway
Continuity of health coverage				▓	▓	▓	▓	▓	▓	▓		Underway
Reports												
Design Report - Methodological and Statistical Approach	▓	▓										Completed
Interim Annual Reports					▓					▓		Completed

Evaluation of Wisconsin's BadgerCare Plus Health Coverage

for

Parents & Caretaker Adults and for Childless Adults

2014 Waiver Provisions

SURVEY SCIENTIFIC REPORT

Submitted to the

Wisconsin Department of Health Services

August 25, 2017

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

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A. EXECUTIVE SUMMARY

The UW Population Health Institute is conducting an evaluation of Wisconsin's 2014 Medicaid 1115 Waiver Demonstration related to populations: (1) individuals 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 will field a survey at two separate points in the four-year evaluation period. This report details the initial findings from the first of the two surveys, fielded in April-June 2016. A mixed-mode mail and telephone survey yielded 1,305 responses out of 2,559 individuals in the sample, for response rate of 51%. The survey was intended primarily to support understanding of three evaluation questions.

Key findings include the following:

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

We compared individuals who had recent RRP experience with individuals in TMA with no recent RRP experience.

- Individuals in the RRP groups and TMA groups were similar in some key demographics, but the RRP group was more likely to be racial/ethnic minority
- The groups had similar self-reported physical health status, but the RRP group reported lower levels on one measure of mental health than the TMA group
- Individuals in the RRP group were twice as likely to report being currently uninsured, and much more likely to report lacking a usual source of care and holding medical debt.
- Individuals in the RRP group were significantly more likely than the TMA group to report high levels of dissatisfaction with changes that took place in BadgerCare since April 2014.

Question 9: (TMA) How is access to care affected by the new, or increased, premium amounts?

We assessed financial burden in the TMA population and differences between individuals in TMA who were sampled from program groups with incomes between 100-133% of the federal poverty level (FPL) relative to those with incomes >133% FPL, who had more exposure to premiums.

- TMA members across in the two groups look substantially similar on almost all dimensions.
- Within the overall TMA population, among those who were enrolled in BadgerCare before the April 2014 program changes, 52% report that they were affected by the program changes, while a fifth (19%) report that they do not know if they were affected. A third were not sure if there had been a change in their premiums.
- About 80% report getting all medical care and medications they needed over the past year.
- Of those who report not getting all care of medications needed, most cite cost-related reasons.
- In summary, findings indicate much higher levels of unmet medical need and financial distress among people with recent RRP experiences.

Question 17: *(CLA) 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?*

We compared outcomes for the CLA sample in the 2016 survey to outcomes for the CLA sample in the 2014 survey of Wisconsin Medicaid/BadgerCare beneficiaries.

- The likelihood and duration of health insurance coverage increased from 2014 to 2016.
- CLAs' reported need for medical care increased as did their likelihood of obtaining all needed care under the Standard plan compared to the Core plan period.
- The likelihood of borrowing money or skipping payment of other bills in order to pay for health care decreased.
- No significant change occurred in overall self-reported health status. However, the probability of having a work-limiting health problem increased from 2014 to 2016.
- In general, the CLAs under the Standard plan period report better outcomes with respect to coverage and access than CLAs reported under the Core plan period.

These observational findings, while not causal, offer important indicators of the relative experience of BadgerCare members with the 2014 waiver. The interim findings contribute toward our overall analysis of each study hypothesis. This process continues, as we move toward fielding the second survey in 2018, deepening our analysis of the administrative data.

B. 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 addresses the 17 evaluation questions defined by DHS in the "BadgerCare Reform Demonstration Draft Evaluation Design," of 10/31/2014. The hypotheses focus on programmatic changes authorized by the 1115 Waiver: Premium changes; 3-month restrictive reenrollment period (RRP); and Standard Plan coverage for CLAs.

The evaluation design included plans to use a survey at two separate points in the four-year evaluation period. The survey was intended primarily to support understanding of three evaluation questions:

> Question 6: (RRP) 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?

> Question 9: (TMA) How is access to care affected by the application of new, or increased, premium amounts?

> Question 17. (CLA) 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?

This report details the initial findings from the first of the two surveys, fielded in May-September 2016. The Year 01 progress report, submitted to the Wisconsin Department of Health Services in April 2017, included an initial descriptive view of some of the data elements. The data presented in that report reflected preliminary, unweighted responses, and were not intended to be representative of the state's Medicaid population.

This follow-up scientific report provides a more detailed description of the survey methodology and the responses from the 2016 survey. Additionally, the current estimates are weighted to represent the underlying populations. It links the 2016 survey's responses to the three questions noted above and identifies what this first survey contributes toward answering these questions.

The report and findings presented here represent an interim product within the context of a four-year evaluation, including a second survey and analysis of administrative data. None of the findings from a single interim product stand on their own or can be considered final conclusions about the waiver hypotheses. As the evaluation proceeds, we will place the survey findings in context with the analysis of the administrative data. Section F of this report describes next steps with the survey and further analyses.

C. 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 (referred to as "childless adults"). 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.[11]

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 qualifying adults who were enrolled in Medicaid under parent/caretaker eligibility and had an income of less than 100% FPL for 3 of the last 6 months of their 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 disenrolled 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.

Childless Adults (CLA). The 2014 waiver introduced a change in income eligibility and benefits for non-pregnant, non-disabled adults between 19 and 64 years of age, without dependent children, referred to as "childless adults" (CLAs). 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, DHS eliminated the Core and Basic Plans. The DHS transitioned CLAs beneficiaries with incomes at or below 100% FPL to the Standard Plan, and going forward all new childless adult applicants with incomes not exceeding 100% FPL enroll 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.[12] CLAs with income above 100% FPL are no longer eligible for Medicaid coverage.

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[11] 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

[12] 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

D. Survey: Process and Methods

D1. Overview
The UW Survey Center, our team's subcontracted partner on this project, conducted a mixed-mode mail and telephone survey. The survey protocol was designed to obtain a representative sample of individuals across subgroups (described below) that are of interest to different populations affected by the waivers. The 2016 survey updates a cross-sectional survey of enrollees conducted in 2014. The 2016 survey sampling frame included current beneficiaries who met our study categories (thus permitting cross-sectional analysis in 2016) and a sample of respondents from the 2014 survey, permitting us to conduct longitudinal analysis. Additional information about the 2014 survey and our longitudinal analyses is included in Section D5.

The 2016 survey samples were drawn from four groups:

E. Parents and Caretakers
   - o Parents/Caretakers who remained on the program pre- and post-April 2014
   - o Parents/Caretakers who joined post-2014
   - o Parents/Caretakers >100% FPL who transitioned off of the BadgerCare program after the April 2014 policy change
F. Childless adults (CLA)
   - o CLA who remained eligible from pre-2014 Core Plan coverage
   - o CLA who gained eligibility post-2014
   - o CLA who, with incomes >100% FPL, lost BC coverage post-April 2014
G. Transitional Medical Assistance (TMA)
a. Current TMA members who did not recently experience a restrictive reenrollment period (RRP) in two groups: 100-133% FPL and >133% FPL
H. TMA individuals who recently experienced a Restrictive Reenrollment Period (RRP)

The UW Survey Center conducted the mixed-mode mail and telephone survey to reach a sample size powered to detect differences between groups. The survey was fielded from May 10-September 26, 2016. It included an initial mailing with two follow-letters, and then a telephone follow-up to non-respondents.

D2. Survey Domains
Consistent with the scientific goals of the study, the survey was designed to measure demographics, health status, utilization of care, and health care experiences. Wherever possible we drew upon validated and widely used survey measures, such as those used in the National Health Interview Survey, the Urban Institute Health Reform Monitoring Survey, and the Behavioral Risk Factor and Surveillance System. Items in the survey have been validated for representative population samples, including individuals with low reading proficiency. Additionally, the survey included measures related to satisfaction with program changes, knowledge of program requirements, and health insurance literacy. The 2016 survey instrument is available in the appendix.

D3. Sample Construction and Response Rate

The 2016 survey sample includes a new sample and a resample of Medicaid beneficiaries. To obtain the new sample, the WI DHS drew a random sample of individuals from each enrollee population of interest for the current evaluation and provided this list to the UW Survey Center. The UW Survey Center selected a random sample from this list to generate the new sample for the 2016 survey. The resample includes all respondents to the 2014 survey of WI Medicaid beneficiaries conducted as part of the 2012 section 1115 waiver evaluation. Additional detail regarding the 2014 survey is provided in section D5. Table D.1 presents the size of the enrollee population in February 2016 when the new sample was drawn. The total sample of 2,597 individuals reflects the combined total of new and resampled beneficiaries. Using administrative data, the Survey Center determined a small subgroup of these individuals were not eligible for the survey (for example, people who had moved out-of-state). The remaining eligible cases (N=2,559) comprise the effective survey sample from which the response rate is calculated.

The survey was fielded 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 51% response rate, with rates by specific subgroups detailed in Table D.1.

Table D.1: Enrollee Population, Survey Sample, and Response Rates by Subgroup

	Parents/ Caretaker Adults	Childless Adults	TMA	Current RRP	Total
Enrolled Population	42,271	142,003	9,812	3,830	197,916
Total Sample N	997	600	600	400	2,597
Ineligible Cases	31 total were deemed ineligible			7 ineligible	38
Respondents N	591	278	317	119	1,305
Response rate	**59%**	**46%**	**53%**	**30%**	**51%**
Mail	443	210	246	73	972
Phone	148	68	71	46	333
Notes: Ineligible cases are all individuals who met survey criteria for being interviewed and who were contacted to take the survey. Respondents are individuals in the population of eligible cases who completed the survey.					

D4. Weighting

We created a raking weight[13] for each survey respondent, allowing us to account for under-representation of some population groups in the survey sample relative to their size in the population from which they were sampled (due to differential non-response or to differential sampling of groups). These weights allow us to calculate statistics that are more representative of the underlying populations. Weights were created using a raking weight survey package in Stata that adjusts the marginal proportion of survey respondents to the underlying population using age, sex, race, and geographic location. All estimates presented in this report are weighted.

D5. Longitudinal Design

As noted in section D1, the 2016 survey was designed to facilitate both cross-sectional and longitudinal analysis. It is possible to conduct longitudinal analyses because the 2016 survey includes a planned

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[13] Deville J, Sarndal C, Sautory O. 1993. Generalized Raking Procedures in Survey Sampling. Journal of the American Statistical Association 88(423): 1013-1020.

resample of the respondents to a 2014 survey of WI Medicaid beneficiaries, and a large subset of the questions posed in the 2014 survey. The Institute conducted the 2014 survey as part of the evaluation of the 2012 section 1115 waiver that introduced changes in premium and restrictive reenrollment policies. As describe above, the 2016 total sample (Table D.1) includes all 2014 survey respondents and a random sample of individuals enrolled in Medicaid in 2016. Individuals who responded to both the 2014 and 2016 surveys comprise the longitudinal cohort.

The inclusion of a common set of questions across surveys allows us to compare changes within these same individuals over this time of important programmatic changes. We define a cohort sample member's Medicaid eligibility category according to his/her 2014 sampling group, in the interest of attaining a sufficient sample size for a resample population. For example, a cohort member who was selected for the 2014 survey sample within the CLA eligibility category is included in the 2016 CLA sample. This approach allows us to examine the post-waiver experience of individuals who were enrolled in Medicaid before implementation of the 2014 waiver. We anticipate that cohort members' responses to insurance coverage and Medicaid enrollment may differ across the two surveys because of changes in Medicaid eligibility and the health insurance market more generally during this time period.

In this report, we specifically use the 2014 survey data in our analysis of CLAs' outcomes before and after implementation of the 2014 waiver. We applied the same weighting methodology to the 2014 data as was applied to the 2016 data. Additional discussion about the 2014 sample for these analyses is included in section E, question 17.

D6. Recoding and Analysis
We recoded some survey responses from their original response categories, in order to the ability to interpret the study measures. For example, we dichotomized ordinal scales where there was either an obvious cut point in the data or a justification from prior studies in the literature. We calculated means and proportions for each of the study variables, applying survey weights. To calculate statistical significance for differences between two groups, we calculated standard test statistics (i.e., *t*-statistics for proportions and *chi*-squared statistics for categorical and ordinal data). These statistics were adapted for weighted data in the survey routine in Stata. We consider p<.05 to indicate statistically significant differences.

All results reported here are unadjusted. Regression-adjustment can be accomplished by estimating a regression model that includes the survey outcome as the dependent variable and a predictor for group membership along with covariates for other survey-measured characteristics common to the two groups. Predicted margins can then be calculated to capture differences between samples after accounting for these covariates. Regression adjustment can be helpful in diminishing the influence of observed differences between samples due to factors like demographics, as such differences can operate as confounders (variables that independently influence membership in a particular group and the outcome, and which can bias the association between group membership and the outcome).

However, adjusting also requires care particularly in small survey samples, as there are situations in which "over-adjustment" can introduce bias. This could arise if the adjusting variables are modified by the group membership status. For example, one might consider adjusting for income between TMA and RRP groups when comparing differences in access to care because income differences can plausibly confound the association between RRP status and access. However, household income itself may also respond to the 2014 waiver-related program changes, and thus adjusting for income may diminish

meaningful and important differences between the groups. We intend, in future iterations of our analyses, to select items where regression adjustment may be scientifically merited and might add to our understanding of existing findings. We believe that the unadjusted associations presented here are important as a starting point for understanding associations.

E. Data Analysis and Application to Hypotheses

The following section addresses each of the three survey-related evaluation questions in turn. It is important to note that the survey was not designed to provide stand-alone answers to any of the evaluation questions. Rather, it is designed as a complement to analysis of administrative data. We view the survey analyses as helping us to uncover dimensions related to individual experience that might not otherwise be identified with administrative data.

The tables in each section present data about survey responses to a series of questions. Some of the survey questions included multi-level responses, directing respondents to skip various questions depending on their answers to prior questions. The tables identify, for each question, the total number of respondents eligible to answer that question. In some cases, it will be the full sample, and in other cases, a subset of the sample based on responses to a previous question.

Question 6: Impact of RRP on utilization, costs, and/or health care outcomes

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?

The 2014 waiver introduced changes to the TMA program related to restrictive reenrollment periods (RRPs). The prior waiver, initiated in 2012, enforced 12-month RRPs for non-payment of premiums, with no opportunity for re-entry during that period apart from a change in income status bring the member into a new eligibility category. The 2014 waiver lowered the RRP maximum length to three months and allows individuals to reenter TMA prior to the end of the 3-month period by repaying owed premiums.

Key Findings

There are several key findings: 1) Individuals in the RRP groups and TMA groups were similar in some key demographics, but the RRP group was more likely to be racial/ethnic minority; 2) The groups self-reported similar physical health status, but the RRP group reported at least one symptom of mental health lower than the TMA group (Table 6.3); 3) Striking differences emerge in insurance coverage and access to care, with individuals in the RRP group twice as likely to report being currently uninsured, and much more likely to report having access to care challenges such as lacking a usual source of care and holding medical debt (Table 6.2); and 4) Individuals in the RRP and TMA groups generally reported similar levels of knowledge about health insurance, but individuals in the RRP group were significantly more likely to report high levels of dissatisfaction with changes that took place in BadgerCare since April 2014 (Table 6.5).

Research Design

The current evaluation considers the impact of the new form of RRP on outcomes related to access and health care use. We used the survey to contribute toward this objective, drawing a sample of current and former TMA members with recent RRP experience such that they could accurately report their experience during that short three-month period (while not enrolled in BadgerCare). This posed a survey sampling challenge, with a short three-month RRP time frame and the potential of some to return prior to completing that full period. We thus designed a rapid-turnaround process, sampling and surveying members immediately as they were completing the second month of an RRP.

RRP individuals, by definition, were at one point enrolled in TMA, and had the option to reenroll in TMA after serving an RRP. To understand how RRP status might be associated with health care experiences, we compare them to members of the general TMA population sampled in the 2016 survey. The survey yielded data on 119 individuals with RRP experience and a comparison sample of 317 individuals in the TMA category. (Table 6.1)

Although we would ideally like to compare responses for the same members before and after an experience of RRP, the demographic similarities of the TMA population to the RRP population provides a plausible comparison group for considering the access and health care outcomes of the RRP population. Additionally, assessing program knowledge and satisfaction (questions added to the 2016 survey) allow us to understand how individuals with recent RRP experience may differ in their understanding of program changes or experiences with these changes compared to the overall TMA population.

Description of Sample (Table 6.1)

Overall, 56% of eligible TMA respondents completed the survey and 35% of eligible RRP respondents completed the survey (Table D.1.). The lower response rate among RRP respondents is perhaps not surprising as this population is likely to have lower attachment to the program. As noted, our weighting strategy enables us to account for differential non-response by characteristics like race/ethnicity, age, and sex. Table 6.1 compares the demographic and socioeconomic characteristics of the TMA and RRP samples. The TMA sample was more likely to be 35 or older (60%) relative to the RRP sample (44%). About three-quarters of both groups were female (76% for TMA and 75% for RRP). The TMA sample was significantly different than the RRP sample by race/ethnicity: they were more likely to be white (71% versus 47%) and less likely to be black (8% versus 38%). The groups were similar in terms of educational attainment and income: about half had high school degrees or less and two thirds were in households with annual incomes <$30,000. They were similar in terms of household composition and presence of children in the household.

Analysis

We calculated means and proportions for each of the study variables, applying survey weights. To calculate statistical significance for differences between two groups, we calculated standard test statistics (i.e., *t*-statistics for proportions and *chi*-squared statistics for categorical and ordinal data). These statistics were adapted for weighted data in the survey routine in Stata. We consider p<.05 to indicate statistically significant differences between groups. Unless otherwise noted, all between-group differences reported in this section are statistically significant.

Results

The findings detailed below underscore that those TMA members who fall into an RRP differ from the general TMA population on several salient dimensions. They are much more likely to report a lack of current insurance coverage and a lack of coverage over the prior year. They are also more likely to report problems with access to care, such as not having a usual source of care and financial burden. They are also more likely to report being dissatisfied with changes that occurred in BadgerCare since April 2014. These findings are consistent with the hypothesis that experiencing an RRP leads to greater periods of being uninsured and to worse access to health care. These findings are useful to consider alongside preliminary analyses conducted with the state CARES data that indicated substantially greater risk of disenrollment after the April 2014 policy (albeit for shorter spells of RRP on average).[14]

Coverage, Service, and Access to Care (Table 6.2 and Table 6.3)
Table 6.2 reports findings on health insurance coverage. TMA is a time-limited program, and so we would expect that significant proportions from both the TMA and RRP groups would be observed in non-Medicaid/BadgerCare coverage status. However, individuals in the RRP group were much more likely to report being currently uninsured than the TMA group (18% versus 9%). People in the RRP group were also significantly more likely than the TMA group to report being uninsured for the entire prior year (11% versus 1%). Overall, 45% of TMA respondents reported currently being in Medicaid/BadgerCare compared to 24% of RRP respondents. Conversely, 11% of TMA respondents reported being currently enrolled in employer sponsored insurance compared to 32% of RRP respondents. Coverage under the ACA/Obamacare exchanges was reported by 15% of TMA respondents and 4% of RRP respondents. Other forms of coverage such as private and Medicare were less frequently reported.

While no significant differences emerge between TMA and RRP respondents in reported need for medical care and prescription drugs, large and significant differences appear in ability to access care (Table 6.3). While 78% of TMA respondents said they got "all needed care" in the prior year, only 62% of RRP respondents said the same. While 86% of TMA respondents said their usual source of care was a doctor's office, only 71% of RRP respondents said the same. RRP respondents were much more likely to report receiving care in the emergency department in the prior year (15% of TMA versus 32% of RRP). While 65% of TMA respondents said their medical care in the prior year was "excellent" or "very good" only 41% of RRP respondents said the same. Finally, RRP respondents were much more likely to report medical financial burden: for example, 69% said they had current medical debt compared to 30% of TMA respondents. No significant differences emerged in unmet mental health care need or in receipt of dental care.

Self-Reported Health Status (Table 6.4)
No significant differences appear in self-reported general health status (Table 6.4). For example, 43% of individuals in both groups reported excellent or very good general health, and 13% of TMA and 17% of RRP respondents reported a work-limiting disability. However, RRP respondents were significantly more likely to report mental health problems related to being bothered or not being able to experience pleasure in the last month (a symptom of depression or anxiety): 50% of the TMA sample reported that they experienced these symptoms "at least a few times" compared to 63% of the RRP sample.

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[14] Evaluation of Wisconsin's BadgerCare Plus Health Coverage for Parents & Caretaker Adults and for Childless Adults 2014 Waiver Provisions Interim Evaluation Report – Year 01. UW Population Health Institute. Submitted to the Wisconsin Department of Health Services. April 20, 2017.

Insurance Knowledge and Attitudes About Program Changes (Table 6.5)
No significant differences emerge in self-reported confidence about health insurance terminology between the TMA and RRP group, except that individuals in the RRP group were significantly less likely to report confidence in the term "deductible" (6% of TMA reported "not at all confident" compared to 16% of RRP). (Table 9.6) In terms of self-reported understanding of program changes, individuals in the TMA group were more likely to state that they were enrolled in the program before April 2014 (88% versus 71%). (Table 9.5) No significant differences appear in self-reporting that the respondent was affected by changes in program requirements, and specifically there was no difference in reporting being affected by penalties for not paying a premium. However, RRP respondents were significantly more likely to report dissatisfaction with changes that have taken place since April 2014: whereas 7% of TMA respondents said they were "very dissatisfied" 25% of RRP respondents said the same.

Limitations
These findings are subject to several important limitations. First, although the RRP population is a subsample of individuals with TMA experience, they may differ from the TMA subjects surveyed here due to factors unrelated to being in RRP. For example, this group is different in its racial/ethnic composition and in some measures of socioeconomic status. In future analysis, we will add some limited set of controls to adjust for potential confounding -- although such adjustment will not necessarily allow us to interpret these differences causally. As noted, while it would be better to track the same individuals before and after entry into an RRP, doing so using a survey approach under current resource constraints is not feasible. Our approach thus represents the best attempt to understand how the health and health care access experiences differ between individuals with RRP experiences and other TMA enrollees (or individuals who were at one point eligible for the TMA survey).

Table Q6.1. Demographic and Socioeconomic Characteristics of TMA and RRP Sample

	TMA	RRP	
AGE	N=317	N=319	
Younger than 35	0.40	0.54	*
35 and above	0.60	0.44	
Missing	0	0.01	
SEX	N=317	N=319	
Female	0.76	0.75	
Male	0.24	0.25	
RACE	N=317	N=319	
Spanish, Hispanic or Latino	0.07	0.08	**
White , Non-Hispanic	0.71	0.47	
Black, Non-Hispanic	0.08	0.38	
Other race (Asian, Indian), not Hispanic	0.07	0.05	
Mixed Race, not Hispanic	0.05	0.02	
Missing	0.02	0.01	
EDUCATION	N=317	N=319	
High school diploma or Less than high school	0.50	0.50	
More than high school	0.50	0.48	
Missing	0.01	0.02	
INCOME	N=317	N=319	
< $30000	0.61	0.67	
>= $30000	0.39	0.33	
PARENTAL STATUS	N=317	N=319	
No	0.88	0.89	
Yes	0.11	0.10	
Missing	0.01	0.02	
HOUSEHOLD COMPOSITION	N=317	N=319	
Living alone	0.07	0.05	
Living with partner or spouse	0.27	0.15	
Living with Others	0.63	0.77	
Missing	0.03	0.04	
HOUSEHOLD SIZE	N=317	N=319	
>2 members	0.82	0.79	
<=2 members	0.18	0.21	
HOUSEHOLD AGE	N=317	N=319	
>=Two HH members below 19	0.58	0.61	
0-1 HH member below 19	0.42	0.39	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01			

Table 6.2 Health Insurance Status TMA v RRP

	TMA	RRP	
Currently Have Health Insurance	N=317	N-119	
No	0.09	0.18	*
Yes	0.91	0.82	
Some kind of health care coverage in past 12 months	N=317	N-119	
Full year uninsured	0.01	0.11	**
1-11 months	0.27	0.44	
all 12 months	0.71	0.45	
Missing	0.01	0	
Current health care coverage	N=317	N-119	
Medicaid, BC, BC core	0.45	0.24	**
Employer or family member's employer	0.11	0.32	
Private (I pay for myself), Other	0.07	0.06	
Medicare	0.04	0.08	
ACA/Obamacare	0.15	0.04	
Uninsured	0	0	
Missing	0.18	0.27	
For those who no longer have BadgerCare coverage: Reasons why	N=104	N=50	
Not eligible	0.69	0.40	**
Premium related	0.03	0.37	
Other reasons	0.09	0.13	
Missing	0.2	0.1	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01			

Table 6.3 Utilization and Access, TMA v RRP

	TMA	RRP	
Needed medical care in past 12 months	N=317	N-119	
No	0.04	0.01	
Yes	0.95	0.97	
Missing	0.01	0.01	
Among those who needed care in the past 12 months: Got all the treatment needed	N=297	N=116	
No	0.21	0.37	**
Yes	0.79	0.63	
Missing	0	0	
Among those who went without needed medical care: Main reasons[a]	N=60	N=41	
Non-cost related reasons	0.10	0.03	
Cost related reasons	0.88	0.95	
Missing	0.02	0.02	
Needed prescription medication in past 12 months	N=317	N-119	
No	0.22	0.24	
Yes	0.78	0.74	
Missing	0	0.02	
Among those who needed prescription medications in the past 12 months: Got all medications needed?	N=249	N=89	
No	0.16	0.27	
Yes	0.83	0.72	
Missing	0.02	0.02	
Among those who went without needed prescription medications you needed: Reasons why	N=42	N=29	
Non-cost related reasons	0.16	0.07	
Cost related reasons	0.73	0.87	
Missing	0.1	0.06	
Usual source of care	N=263	N=96	
Doctor's office, health center, clinic	0.86	0.72	**
Urgent care	0.05	0.2	
No usual place, don't know	0.01	0	
Other	0.04	0.06	
Missing	0.04	0.02	
ER visit in the last 12 months	N=317	N-119	
Zero times	0.64	0.51	**
1 time	0.21	0.16	
2 or more times	0.15	0.31	
Missing	0	0.01	

Among those with an ER visit in last 12 months: Main reason[b]	N=109	N=56	
Other reasons	0.73	0.77	
Needed ER only	0.26	0.17	
Missing	0.01	0.06	
Quality of the medical care received in the last 12 months	N=317	N-119	
Did not receive medical care	0.06	0.05	**
Excellent, Very good	0.65	0.41	
Good	0.22	0.19	
Fair, poor	0.07	0.33	
Missing	0	0.01	
Currently owe money to a health care provider, credit card company, or anyone else for medical expenses	N=317	N-119	
No	0.69	0.30	**
Yes	0.29	0.69	
Missing	0.02	0.02	
Had to borrow money, skip paying other bills, or pay other bills late in order to pay health care bills in last 12 months	N=317	N-119	
No	0.80	0.49	**
Yes	0.20	0.47	
Missing	0	0.04	
Refused treatment by a doctor, clinic, or medical service because of money owed	N=317	N-119	
No	0.97	0.83	**
Yes	0.02	0.13	
Missing	0.02	0.04	
During the past 12 months, had either a flu shot or a flu vaccine that was sprayed in your nose?	N=317	N-119	
No	0.72	0.82	
Yes	0.28	0.17	
Missing	0.01	0.02	
Needed but did not get because of cost: mental health care or counseling	N=317	N-119	
No	0.75	0.66	
Yes	0.09	0.16	
Missing	0.16	0.18	

Last visited a dentist for any reason	N=317	N-119	
Less than 12 months ago	0.51	0.46	
Between 1 and 5 years	0.32	0.39	
More than 5 years ago	0.14	0.10	
Never	0.01	0.02	
Not sure	0.02	0.03	
Problems paying any medical bills in past 12 months	N=317	N-119	
Yes	0.27	0.62	**
No	0.73	0.35	
Missing	0	0.03	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01			
[a]Respondents could select more than one reason for this question. "Cost-related reasons" indicates that the respondent selected options a-d on Q.11, while "non-cost-related reasons" indicates the respondent selected options e-h on the survey. See Attachment for the survey question and response options.			
[b]Respondents could select more than one reason for this question. "Needed ER Only" indicates that the respondent selected only one response. "Other Reasons" indicates the respondent selected more than one response. See Q.18 in Attachment for the survey question and response options.			

Table 6.4 Self-Reported Health Status, TMA v RRP

	TMA	RRP	
Self-reported physical and mental health	N=317	N-119	
Excellent, Very good	0.43	0.43	
Good	0.38	0.33	
Fair, poor	0.19	0.24	
A physical, mental, or emotional problem limits ability to work at a job	N=317	N-119	
No	0.87	0.83	
Yes	0.13	0.17	
Smokes cigarettes	N=317	N-119	
Everyday	0.20	0.22	
Some days	0.09	0.14	
Never	0.71	0.62	
Missing	0	0.02	
Been advised by a doctor or health professional to quit smoking	N=84	N=37	
Yes	0.5	0.71	*
No	0.4	0.28	
No visit in past 12 months	0.05	0.01	
Missing	0.05	0	
Over the past two weeks, bothered by having little interest or pleasure in doing things	N=317	N-119	
Not at all	0.50	0.37	*
A few times	0.28	0.24	
More than half the days	0.08	0.11	
Nearly every day	0.08	0.17	
Don't know	0.06	0.09	
Missing	0	0.01	
Over the past two weeks, bothered by feeling down, depressed, or hopeless?	N=317	N-119	
Not at all	0.55	0.46	
A few times	0.26	0.28	
More than half the days	0.08	0.08	
Nearly every day	0.07	0.15	
Don't know	0.03	0.02	
Missing	0	0.01	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01			

Table 6.5 Knowledge and Attitudes about 2014 Waiver Changes, TMA v RRP

	TMA	RRP	
Enrolled in BadgerCare program before Apr 2014	N=317	N-119	
Yes	0.88	0.71	*
No	0.07	0.17	
Don't know	0.05	0.11	
Missing	0	0.01	
Affected by any new program requirements	N=292	N=101	
Yes	0.53	0.38	
No	0.25	0.38	
Don't know	0.19	0.22	
Missing	0.02	0.02	
Lost eligibility for BadgerCare Plus and were no longer enrolled because of changes made after Apr 2014	N=292	N=101	
Yes	0.52	0.49	
No	0.42	0.41	
Missing	0.05	0.11	
April 2014 Changes: Effect on MONTHLY premium/payment for health care coverage	N=147	N=51	
Increase	0.49	0.36	
Decrease	0.03	0.04	
No change	0.24	0.34	
Not sure	0.14	0.21	
Missing	0.1	0.06	
April 2014 Changes: Effect on PENALTIES for not paying a monthly premium	N=147	N=51	
Increase	0.08	0.17	
Decrease	0	0	
No change	0.45	0.48	
Not sure	0.33	0.28	
Missing	0.14	0.07	
April 2014 Changes: Effect on COPAYMENTS to visit a doctor or clinic	N=147	N=51	
Increase	0.09	0.09	
Decrease	0.03	0	
No change	0.54	0.57	
Not sure	0.22	0.27	
Missing	0.13	0.07	

April 2014 Changes: Effect on MENTAL HEALTH or SUBSTANCE ABUSE TREATMENT BENEFITS	N=147	N=51	
Increase	0.01	0.03	
Decrease	0.01	0	
No change	0.45	0.55	
Not sure	0.37	0.35	
Missing	0.15	0.07	
Satisfaction with the changes that have taken place since Apr 2014	N=146	N=49	
Very satisfied	0.11	0.04	*
Somewhat satisfied	0.16	0.23	
Neither satisfied nor dissatisfied	0.46	0.37	
Somewhat dissatisfied	0.13	0.09	
Very dissatisfied	0.07	0.25	
Missing	0.06	0.01	
*Indicates a difference between outcomes that is statistically significant at $p < 0.05$. **Indicates a statistically significant different at $p < 0.01$			

Table 6.6 Understanding of Health Insurance Terms, TMA v RRP

	TMA	RRP	
Confident that you understand what the word means: PREMIUM	N=317	N-119	
Very confident	0.55	0.51	
Somewhat confident	0.21	0.17	
Slightly confident	0.17	0.17	
Not at all confident	0.05	0.13	
Missing	0.02	0.02	
Confident that you understand what the word means: DEDUCTIBLES	N=317	N-119	
Very confident	0.51	0.50	*
Somewhat confident	0.24	0.14	
Slightly confident	0.17	0.18	
Not at all confident	0.06	0.16	
Missing	0.01	0.02	
Confident that you understand what the word means: COPAYMENTS	N=317	N-119	
Very confident	0.62	0.63	
Somewhat confident	0.2	0.14	
Slightly confident	0.11	0.11	
Not at all confident	0.06	0.1	
Missing	0.01	0.02	
Confident that you understand what the word means: COINSURANCE	N=317	N-119	
Very confident	0.27	0.39	
Somewhat confident	0.26	0.18	
Slightly confident	0.18	0.16	
Not at all confident	0.28	0.26	
Missing	0.01	0.02	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01			

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

The survey fielded in 2016 included a range of questions intended to help assess how the application of new, or increased, premium amounts affected access to care. This question pertains to BadgerCare parents (BCP) who experience an increase in income above 100% FPL and enter Transitional Medical Assistance (TMA). As part of Wisconsin's 2014 waiver, TMA enrollees with incomes 100-133% FPL were not required to pay premiums for the first six months of their TMA enrollment, and faced a sliding-scale premium set as a percentage of their income in subsequent months. TMA enrollees with incomes greater than 133% FPL faced a premium for each month enrolled in TMA.

Premiums' effect on the TMA population could manifest in two ways: 1) via enrollment: those in the premium paying category disenroll or lapse their payments and fall into a restrictive reenrollment period (RRP), or 2) differences emerge in program and utilization experience between those in TMA category not immediately exposed to premiums (<133% FPL) and those immediately exposed to premiums (>133% FPL). The discussion in the preceding section (Question 6) explores how premiums affect access to care via enrollment, assessing the impact of RRP on utilization, costs, and/or health care outcomes. We now assess how premiums differentially affect those in the TMA categories.

Key Findings

The main finding is that TMA members across the income ranges look substantially similar on almost all dimensions. Because the experience of the TMA group as a whole is of interest, we summarize some key dimensions related to access to care from the survey using the entire TMA population. For the TMA group as a whole, 88% report having been enrolled in BadgerCare before the April 2014 program changes, so have experienced the program both before and after the changes (Table 9.5). Slightly over half (52%) report that they were affected by the program changes, while a fifth (19%) report that they do not know if they were affected; a quarter say they were not affected, and third were not sure if there had been a change in their premiums (Table 9.5). About 80% report getting all medical care and medications they needed over the past year (Table 9.3). Of those who report not getting all care of medications needed, most cite cost-related reasons. In sum, these findings suggest low levels of understanding of program changes and relatively common financial burden in the TMA program, but the exact linkage to program policy change cannot be established with the survey data.

Research Design

Actively enrolled TMA adults were surveyed in 2016 in two groups stratified by income, which determined the premium policy they faced: 100-133% FPL (Group A) and >133% FPL (Group B). We compare access to care for TMA Group B, who would always have been required to pay a premium to that of TMA Group A, who become subject to a premium requirement only after six months of TMA enrollment. Hypothetically, Group B's immediate exposure to premiums, in comparison to Group A's more limited exposure, might demonstrate the degree to which the April 2014 premium changes affected access to care.

Description of Sample (Table 9.1)

The TMA sample for the 2016 survey, described in Table D.1 included a total of 600 individuals comprised of two groups separated by income at the time the sample was drawn: 100-133% FPL (Group A) and >133% FPL (Group B).   Of these 600 persons, 36 were ineligible to participate in the survey, and a total of 317 completed the survey for an overall response rate of 56%. These 317 respondents to the survey included 165 individuals in Group A and 152 individuals in Group B.

Table 9.1 summarizes the demographic and socioeconomic characteristics of the TMA respondents. The two groups represented among the respondents appear remarkably similar. The only statistically significant difference is age: on average, Group A is more likely to report age older than 35. The two groups do appear to report different household incomes, contrary to what might be expected, with group B more likely to report income less than $30,000/year. However, to compare poverty status in the two groups it would be necessary to further adjust for household income.

Overall the two groups appear to be similar in terms of observable demographics. Sex is similarly distributed across the two groups, both at close to 75% male. About 70% of both groups report that they are non-Hispanic white, and other race and ethnicity categorizations are also similarly distributed across the two groups. Educational attainment is also very similar across the groups with roughly an even split between those having a high school diploma or less and those having more than a high school education. Both groups are highly likely to have children they financially support (close to 90%) and live in households of more than two members (more than 80%).

Analysis

We calculated means and proportions for each of the study variables, applying survey weights. To calculate statistical significance for differences between two groups, we calculated standard test statistics (i.e., *t*-statistics for proportions and *chi*-squared statistics for categorical and ordinal data). These statistics were adapted for weighted data in the survey routine in Stata. We consider p<.05 to indicate statistically significant differences between groups. Unless otherwise noted, all between-group differences reported in this section are statistically significant.

Results

TMA Groups A and B look remarkably similar in their insurance status and other experience over the 12 months prior to the survey (Tables 9.2-9.6). TMA Groups A and B do not demonstrate statistically significant differences on almost any of the survey items. This result is consistent with what we would expect based on the existing literature: that premiums primarily affect health care access and use via enrollment.[15]

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[15] Dague L. 2014. "The Effect of Medicaid Premiums on Enrollment: A Regression Discontinuity Approach," Journal of Health Economics, 37: 1-12. Available at http://www.sciencedirect.com/science/article/pii/S0167629614000642

Although we do not find any statistically significant differences between TMA groups A and B, we believe there is also value in considering the responses of the TMA group as a whole (i.e., combining the response of the two groups to look at overall TMA patterns). This group in total experienced changes in premiums and other program rules after April 1, 2014. The responses reflect how those in a premium-paying eligibility group experience the BadgerCare program and health care generally.

Insurance Status (Table 9.2)
About 9% of TMA respondents report being currently without health insurance coverage, and 71% report having had insurance coverage for all 12 months of the previous year. About 45% of respondents report that they are covered by Medicaid/BadgerCare, with 15% reporting ACA coverage and 18% other private coverage. Proportionately more persons in Group B report Medicaid/BadgerCare coverage, while more in Group A report ACA coverage, but the difference is not statistically significant.
For both groups, 70% of the persons who report no longer having BadgerCare report that the reason is that they are no longer eligible. This is perhaps not surprising, as TMA is, by definition, time-limited coverage.

Access and Service Use (Table 9.3)
About 95% of those in the TMA groups report having needed medical care in the past 12 months and, of those, 79% report getting all the treatment they needed. About 20% identify "cost-related reasons" Among the 21% who report not getting all the care they needed, 88% cited cost-related reasons.

Over three-quarters of respondents on these groups reported needing a prescription medication in the past year and, of these, over 80% reported getting all the medications needed. Among those 16% who went without needed medications, 73% cite cost-related reasons. About 86% report having a doctor's office, health center of clinics as a usual source of care, while 5% report using urgent care as their usual source. About 36% report visiting the emergency department times in the last 12 months, with 15% reporting more than one visit in the last year. Of those reporting emergency department visits, over three-quarters cite reasons other than needing emergency care.

About half of respondents reported that they had last visited a dentist within the past 12 months and about 14% reporting that their dental visit had been over 5 years ago. Only 28% of respondents report having received a flu vaccine in the last year.

Nearly 30% of respondents report owing money for medical expenses, and 27% said they had problems paying medical bills. But very few said they were refused care due to owing money to a provider.

Self-Reported Health Status (Table 9.4)
No significant differences are noted between TMA Groups A and B in their self-reported health status.
About 71% of respondents report good, very good, or excellent health, while 19% report fair or poor health; 13% report that a physical, mental, or emotional problem limits their ability to work at a job.
A fifth of this group reports smoking cigarettes, and 71% of them have been advised by a health professional within the past year to quit smoking.

A substantial proportion of these groups report signs of depression, with 16% reporting being "bothered by having little interest of please in doing things" more than half of the days to nearly every day in the past two weeks. The same proportion reports being "bothered by feeling down, depressed, or hopeless" in the past two weeks. Beyond this, an additional 26-28% report having these feelings a few

times over the past two weeks, leaving about half of the respondents reporting not having these feelings in that time period. This domain is the only area where statistically significant differences emerge between TMA Groups A and B, with Group B about twice as likely as Group A to report feeling various signs of depression on most or all days in the past two weeks.

Knowledge and Attitudes about 2014 Waiver Changes (Table 9.5)
Here again, both TMA groups appear quite similar in their responses. Of these groups, 88% report having been enrolled in BadgerCare before the April 2014 program changes, so have experienced the program both before and after the changes. Slightly over half (52%) report that they were affected by the program changes, while a fifth (19%) report that they do not know if they were affected, and a quarter say they were not affected. Half reported that they lost eligibility due to the April 2014 program changes. Half reported that their monthly premium increased. Less than 10% identified changes in the penalties for not paying a monthly premium, while 45% thought there had been no change, and a third were not sure. About 10% thought that co-payments had increased or decreased, while over half though there had be no change, and 22% were not sure. Virtually no respondents were able to identify changes in mental health or substance abuse treatment benefits, with 45% reporting no change and 37% reporting that they were not sure.

Overall, 27% of respondents report that they are somewhat or very satisfied with program changes, while 20% report that they somewhat or very dissatisfied.

Understanding about Health Insurance Terms (Table 9.6)
TMA members face premiums and, after 12 months, are expected to move to other sources of coverage. Their understanding of their financial responsibilities under TMA and within private insurance affect their ability to maintain coverage.

Three-quarters of TMA members (76%) report feeling very or somewhat confident in their understanding of the word "premium" and 75% in the word "deductibles." Even more (82%) report confidence in understanding "copayments," while substantially fewer (53%) reporting such confidence in the word "coinsurance." These appear strong relative to findings reported by other surveys[16], but at the same time it is important to note that over 20% report that they are only slightly or not at all confident in their understanding of "premium" and deductibles" and a fully 46% reported such lack of confidence in their understanding of the word "coinsurance."

Limitations

It is possible that other factors explain the lack of observed differences between Groups A and B. First, the two groups are in relatively close income range, and may have churn above and below the income dividing line between sample draw and survey response, such that neither group has a continuous experience under a single set of program rules. Second, the number of TMA survey respondents was limited, which means that any differences would need to be fairly large in order for us to reach statistical significance.

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[16] Kenney GM, Karpman M, Long SK. 2013. Uninsured Adults Eligible for Medicaid and Health Insurance Literacy. Health Reform Monitoring Survey. The Urban Institute. Available at http://hrms.urban.org/briefs/medicaid_experience.pdf

Table Q9.1. Demographic and Socioeconomic Characteristics of TMA Sample

	TMA A 100-133% FPL	TMA B >133 FPL	Total	
AGE	N=165	N=152	N=317	
Younger than 35	0.30	0.50	0.40	*
35 and above	0.70	0.50	0.60	
Missing	0	0	0	
SEX	N=165	N=152	N=317	
Female	0.74	0.78	0.76	
Male	0.26	0.22	0.24	
RACE	N=165	N=152	N=317	
Spanish, Hispanic or Latino	0.04	0.09	0.07	
White , Non-Hispanic	0.74	0.68	0.71	
Black, Non-Hispanic	0.07	0.1	0.08	
Other race (Asian, Indian), not Hispanic	0.07	0.07	0.07	
Mixed Race, not Hispanic	0.07	0.04	0.05	
Missing	0.01	0.02	0.02	
EDUCATION	N=165	N=152	N=317	
High school diploma or Less than high school	0.51	0.48	0.5	
More than high school	0.49	0.51	0.5	
Missing	0.01	0.01	0.01	
INCOME	N=165	N=152	N=317	
< $30000	0.51	0.71	0.61	**
>= $30000	0.49	0.29	0.39	
PARENTAL STATUS	N=165	N=152	N=317	
No	0.88	0.88	0.88	
Yes	0.11	0.11	0.11	
Missing	0.01	0.01	0.01	
HOUSEHOLD COMPOSITION	N=165	N=152	N=317	
Living alone	0.03	0.11	0.07	
Living with partner or spouse	0.31	0.24	0.27	
Living with Others	0.63	0.62	0.63	
Missing	0.02	0.03	0.03	
HOUSEHOLD SIZE	N=165	N=152	N=317	
>2 members	0.82	0.82	0.82	
<=2 members	0.18	0.18	0.18	
HOUSEHOLD AGE	N=165	N=152	N=317	
>=Two HH members below age 19	0.53	0.64	0.58	
0-1 HH member below age 19	0.47	0.36	0.42	
*Indicates a difference between outcomes that is statistically significant at $p < 0.05$. **Indicates a statistically significant different at $p < 0.01$				

Table 9.2 Health Insurance Status, TMA Sample

	TMA A	TMA B	Total	
Currently Have Health Insurance	N=165	N=152	N=317	
No	0.09	0.08	0.09	
Yes	0.91	0.92	0.91	
Some kind of health care coverage in past 12 months	N=165	N=152	N=317	
Full year uninsured	0.03	0	0.01	
1-11 months	0.26	0.28	0.27	
all 12 months	0.71	0.71	0.71	
Missing	0.01	0.01	0.01	
Current health care coverage	N=165	N=152	N=317	
Medicaid, BC, BC core	0.39	0.51	0.45	
Employer or family member's employer	0.10	0.11	0.11	
Private (I pay for myself), Other	0.08	0.06	0.07	
Medicare	0.04	0.04	0.04	
ACA/Obamacare	0.19	0.12	0.15	
Uninsured	0	0	0	
Missing	0.21	0.16	0.18	
For those who no longer have BadgerCare coverage: Reasons why	N=60	N=44	N=104	
Not eligible	0.74	0.62	0.69	
Premium related	0.01	0.05	0.03	
Other reasons	0.09	0.08	0.09	
Missing	0.15	0.25	0.2	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01				

Table 9.3 Utilization and Access, TMA Sample

	TMA A	TMA B	Total	
Needed medical care in past 12 months	N=165	N=152	N=317	
No	0.04	0.04	0.04	
Yes	0.96	0.94	0.95	
Missing	0.01	0.02	0.01	
Among those who needed care in the past 12 months: Got all the treatment needed	N=155	N=142	N=297	
No	0.21	0.21	0.21	
Yes	0.79	0.79	0.79	
Missing	0	0	0	
Among those who went without needed medical care: Main reasons[a]	N=31	N=29	N=60	
Non-cost related reasons	0.12	0.08	0.1	
Cost related reasons	0.85	0.92	0.88	
Missing	0.04	0	0.02	
Needed prescription medication in past 12 months	N=165	N=152	N=317	
No	0.24	0.19	0.22	
Yes	0.76	0.80	0.78	
Missing	0	0.01	0	
Among those who needed prescription medications in the past 12 months: Got all medications needed?	N=128	N=121	N=249	
No	0.15	0.17	0.16	
Yes	0.82	0.83	0.83	
Missing	0.03	0.01	0.02	
Among those who went without needed prescription medications you needed: Reasons why	N=20	N=22	N=42	
Non-cost related reasons	0.23	0.10	0.16	
Cost related reasons	0.6	0.86	0.73	
Missing	0.17	0.03	0.1	
Usual source of care	N=140	N=123	N=263	
Doctor's office, health center, clinic	0.88	0.85	0.86	
Urgent care	0.06	0.04	0.05	
No usual place, don't know	0	0.01	0.01	
Other	0.05	0.04	0.04	
Missing	0.02	0.06	0.04	

ER visit in the last 12 months	N=165	N=152	N=317	
Zero times	0.67	0.61	0.64	
1 time	0.21	0.2	0.21	
2 or more times	0.12	0.18	0.15	
Among those with an ER visit in last 12 months: Main reason[b]	N=52	N=57	N=109	
Other reasons	0.75	0.72	0.73	
Needed ER only	0.25	0.26	0.26	
Missing	0	0.02	0.01	
Quality of the medical care received in the last 12 months	N=165	N=152	N=317	
Did not receive medical care	0.07	0.05	0.06	
Excellent, Very good	0.63	0.67	0.65	
Good	0.23	0.21	0.22	
Fair, poor	0.06	0.08	0.07	
Currently owe money to a health care provider, credit card company, or anyone else for medical expenses	N=165	N=152	N=317	
No	0.69	0.69	0.69	
Yes	0.29	0.29	0.29	
Missing	0.02	0.02	0.02	
Had to borrow money, skip paying other bills, or pay other bills late in order to pay health care bills in last 12 months	N=165	N=152	N=317	
No	0.76	0.84	0.8	
Yes	0.24	0.16	0.2	
Refused treatment by a doctor, clinic, or medical service because of money owed	N=165	N=152	N=317	
No	0.96	0.98	0.97	
Yes	0.03	0.01	0.02	
Missing	0.01	0.02	0.02	
During the past 12 months, had either a flu shot or a flu vaccine that was sprayed in your nose?	N=165	N=152	N=317	
No	0.74	0.69	0.72	
Yes	0.26	0.3	0.28	
Needed but did not get because of cost: mental health care or counseling	N=165	N=152	N=317	
No	0.76	0.74	0.75	
Yes	0.09	0.09	0.09	
Missing	0.14	0.18	0.16	

Last visited a dentist for any reason	N=165	N=152	N=317	
Less than 12 months ago	0.56	0.46	0.51	
Between 1 and 5 years	0.3	0.33	0.32	
More than 5 years ago	0.12	0.17	0.14	
Never	0.01	0.02	0.01	
Not sure	0.02	0.01	0.02	
Problems paying any medical bills in past 12 months	N=165	N=152	N=317	
Yes	0.27	0.27	0.27	
No	0.73	0.73	0.73	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01				
[a]Respondents could select more than one reason for this question. "Cost-related reasons" indicates that the respondent selected options a-d on Q.11, while "non-cost-related reasons" indicates the respondent selected options e-h on the survey. See Attachment for the survey question and response options.				
[b]Respondents could select more than one reason for ER use. "Needed ER Only" indicates that the respondent selected only one response. "Other Reasons" indicates the respondent selected more than one response. See Q.18 in Attachment for the survey question and response options.				

Table 9.4 Self-Reported Health Status, TMA Sample

	TMA A	TMA B	Total	
Self-reported physical and mental health	N=165	N=152	N=317	
Excellent, Very good	0.44	0.42	0.43	
Good	0.41	0.36	0.38	
Fair, poor	0.15	0.22	0.19	
A physical, mental, or emotional problem limits ability to work at a job	N=165	N=152	N=317	
No	0.85	0.89	0.87	
Yes	0.15	0.11	0.13	
Smokes cigarettes	N=165	N=152	N=317	
Everyday	0.22	0.18	0.2	
Some days	0.06	0.12	0.09	
Never	0.72	0.7	0.71	
Missing	0	0	0	
Been advised by a doctor or health professional to quit smoking	N=40	N=44	N=84	
Yes	0.7	0.73	0.71	
No	0.3	0.25	0.28	
No visit in past 12 months	0	0.02	0.01	
Missing	0	0	0	
Over the past two weeks, bothered by having little interest or pleasure in doing things	N=165	N=152	N=317	
Not at all	0.59	0.41	0.50	**
A few times	0.26	0.29	0.28	
More than half the days	0.03	0.13	0.08	
Nearly every day	0.07	0.08	0.08	
Don't know	0.04	0.09	0.06	
Over the past two weeks, bothered by feeling down, depressed, or hopeless?	N=165	N=152	N=317	
Not at all	0.66	0.45	0.55	**
A few times	0.22	0.31	0.26	
More than half the days	0.05	0.11	0.08	
Nearly every day	0.04	0.09	0.07	
Don't know	0.03	0.04	0.03	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01				

Table 9.5 Knowledge and Attitudes about 2014 Waiver Changes, TMA Sample

	TMA A	TMA B	Total	
Enrolled in BadgerCare program before Apr 2014	N=165	N=152	N=317	
Yes	0.84	0.92	0.88	
No	0.09	0.06	0.07	
Don't know	0.07	0.03	0.05	
Affected by any new program requirements	N=149	N=143	N=292	
Yes	0.52	0.54	0.53	
No	0.24	0.27	0.25	
Don't know	0.21	0.17	0.19	
Missing	0.03	0.02	0.02	
Lost eligibility for BadgerCare Plus and were no longer enrolled because of changes made after Apr 2014	N=149	N=143	N=292	
Yes	0.53	0.51	0.52	
No	0.4	0.45	0.42	
Missing	0.06	0.04	0.05	
April 2014 Changes: Effect on MONTHLY premium/payment for health care coverage	N=75	N=72	N=147	
Increase	0.49	0.49	0.49	
Decrease	0.03	0.03	0.03	
No change	0.22	0.26	0.24	
Not sure	0.14	0.14	0.14	
Missing	0.11	0.09	0.1	
April 2014 Changes: Effect on PENALTIES for not paying a monthly premium	N=75	N=72	N=147	
Increase	0.05	0.10	0.08	
Decrease	0.01	0	0	
No change	0.42	0.47	0.45	
Not sure	0.37	0.3	0.33	
Missing	0.16	0.13	0.14	
April 2014 Changes: Effect on COPAYMENTS to visit a doctor or clinic	N=75	N=72	N=147	
Increase	0.12	0.07	0.09	
Decrease	0.04	0.01	0.03	
No change	0.44	0.62	0.54	
Not sure	0.25	0.19	0.22	
Missing	0.15	0.11	0.13	

April 2014 Changes: Effect on MENTAL HEALTH or SUBSTANCE ABUSE TX BENEFITS	N=75	N=72	N=147	
Increase	0.02	0	0.01	
Decrease	0.01	0.01	0.01	
No change	0.42	0.49	0.45	
Not sure	0.39	0.36	0.37	
Missing	0.16	0.14	0.15	
Satisfaction with the changes that have taken place since Apr 2014	N=74	N=72	N=146	
Very satisfied	0.09	0.13	0.11	
Somewhat satisfied	0.12	0.19	0.16	
Neither satisfied nor dissatisfied	0.5	0.44	0.46	
Somewhat dissatisfied	0.11	0.15	0.13	
Very dissatisfied	0.10	0.05	0.07	
Missing	0.08	0.04	0.06	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01				

Table 9.6 Understanding of Health Insurance Terms, TMA Sample

	TMA A	TMA B	Total	
Confident that you understand what the word means: PREMIUM	N=165	N=152	N=317	
Very confident	0.59	0.50	0.55	
Somewhat confident	0.21	0.22	0.21	
Slightly confident	0.13	0.22	0.17	
Not at all confident	0.05	0.05	0.05	
Missing	0.03	0.01	0.02	
Confident that you understand what the word means: DEDUCTIBLES	N=165	N=152	N=317	
Very confident	0.56	0.47	0.51	
Somewhat confident	0.24	0.25	0.24	
Slightly confident	0.13	0.21	0.17	
Not at all confident	0.06	0.06	0.06	
Missing	0.01	0.01	0.01	
Confident that you understand what the word means: COPAYMENTS	N=165	N=152	N=317	
Very confident	0.66	0.58	0.62	
Somewhat confident	0.14	0.26	0.2	
Slightly confident	0.12	0.1	0.11	
Not at all confident	0.06	0.06	0.06	
Missing	0.01	0	0.01	
Confident that you understand what the word means: COINSURANCE	N=165	N=152	N=317	
Very confident	0.27	0.27	0.27	
Somewhat confident	0.24	0.27	0.26	
Slightly confident	0.21	0.15	0.18	
Not at all confident	0.26	0.3	0.28	
Missing	0.01	0.01	0.01	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01				

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 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 the 2016 Interim Evaluation Report, we focused on enrollment-related outcomes from the CARES administrative data. We compared the continuity of coverage for newly eligible CLA beneficiaries to the continuity of coverage for 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. This survey report complements those initial findings by characterizing outcomes that are directly related to continuity of health *care* -- health care access and health outcomes-- in addition to the continuity of health insurance coverage.

Key Findings

There are several key findings that provide insight into the continuity of coverage and health care for childless adults under the Core and Standard plans: 1) The likelihood and duration of health insurance coverage increased from 2014 to 2016, the Core- and Standard- plan periods for this analysis (Table 17.4); 2) CLAs' reported need for medical care increased as did their likelihood of obtaining all needed care under the Standard plan compared to the Core plan period (Table 17.5); 3) The likelihood of borrowing money or skipping payment of other bills in order to pay for health care substantially decreased after implementation of the 2014 waiver (Table 17.5); and 4) No significant changes occurred in overall self-reported health status. However, the probability increased from 2014-2016 of having a work-limiting health problem (Table 17.6). In general, the CLAs under the Standard plan period report better outcomes with respect to coverage and access than CLAs reported under the Core plan period. These observational findings, while not causal, provide important indicators of the relative experience of childless adult beneficiaries under two distinct coverage and enrollment policy periods.

Research Design

The Wisconsin Department of Health Services requested an assessment of CLA Standard Plan enrollees' outcomes relative to the two comparators, A and B, described below.   The 2014 and 2016 surveys provide a unique data source to implement comparison A using two alternative samples. Table 17.1 describes these sample, followed by a discussion of their strengths and limitations. The survey data do not support a robust comparison of post-waiver outcomes for new and continuing CLA beneficiaries (i.e., 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 17.1 Study groups and sample sizes

	Sample Description	2014 Sample Size	2016 Sample Size
Sample A1	The cohort of CLA 2014 survey respondents who responded to <u>both</u> the 2014 and 2016 surveys.	118	118
Sample A2	All CLA beneficiaries who responded to the 2014 survey and all CLA beneficiaries who responded to the 2016 survey.	194	278

Sample A1 supports a comparison of outcomes for each individual at two time points, before and after the implementation of the 2014 waiver. This comparison describes the experience of CLA beneficiaries under two Medicaid coverage policies: Core and Standard plan coverage. To attribute a change in outcomes to Standard plan coverage, it is necessary to assume no plausible alternative explanations. By using a cohort sample, we eliminate changes in sample composition as one important alternative explanation. It remains possible that changes over the same time period in factors related to the outcomes may contribute to changes in the outcomes.

For example, this cohort was defined based on their CLA eligibility status before implementation of the 2014 waiver as described in Section D5. A change in insurance coverage options (e.g., ACA exchange plans) after 2014 may affect survey outcomes related to health care access independent of the introduction of Standard plan coverage. It is also worth noting that the generalizability of these estimates may be limited to the degree that cohort sample members differ from the current CLA beneficiary population in ways related to the outcomes (e.g., income, health, etc.).

Sample A2 supports a comparison of outcomes for two cross-sectional samples: CLA beneficiaries enrolled in the Core plan before implementation of the 2014 waiver; and CLA beneficiaries enrolled in the Standard plan after implementation of the 2014 waiver. A potential difference in outcomes between these 2 groups is attributable to Standard plan coverage when two assumptions hold: the groups are comparable with respect to the outcomes and factors related to the outcomes; and no unobserved events or trends confound the relationship between CLA enrollment and outcomes. The cross-sectional samples offer an important potential advantage in generalizability over the cohort Sample A1. Membership in the cross-sectional samples required participation in only one survey, 2014 or 2016, in contrast to the cohort Sample A1 that required a response to both surveys. The attrition in participation that occurs from one survey to the next may reduce the representativeness of the remaining sample.

The survey sampling design does not allow Comparison B, a comparison of post-waiver outcomes for CLA beneficiaries newly enrolled in the Standard plan and continuing CLA beneficiaries. To do so requires samples of the newly enrolled and continuing CLA beneficiaries that represent those two Medicaid populations. The 2016 survey includes the former but not the latter. The administrative data are well suited to support the implementation of Comparison B, and we will continue to use those resources to evaluate this second comparison of interest.

Sample Construction

The analytic sample for this report includes CLA respondents from the 2014 and 2016 surveys. The response rate for CLAs to these surveys was 65% and 55% respectively. The 2014 survey aimed to assess beneficiaries' health, health care use, and health insurance status after the July 2012 implementation of new premium and restricted reenrollment policies. The 2014 survey sample included a random selection of CLA beneficiaries who were enrolled in the Core plan between January 2012-March 2014. For programmatic reasons, the survey was fielded just after implementation of the April 2014 waiver. However, because the reference period for most of the survey questions assessed the beneficiary's experience in the past 12 months, the responses provide an estimate of study outcomes during the Core plan period.

The 2016 survey resampled all of the CLA respondents to the 2014 survey in addition to CLA beneficiaries currently enrolled in the Standard plan in 2016. The subset of 2014 CLA respondents who responded to the 2016 survey comprise Sample A1 (N=118). The CLA respondents to the 2014 survey serve as the comparison population for Sample A2 (N=194). The sample construction is depicted in Table 17.2.

Table 17.2 Survey Sample Construction for Childless Adult Beneficiaries

	(I) 2014 Survey	(II) 2016 Survey
Total Sample N	300	600
* Ineligible	n/a	96
All CLA Respondents (Sample A2)	194	278
Respondents to both 2014 & 2016 (Sample A1)	118	118
Dates of Survey Data Collection	4/1/2014-8/30/14	5/10/16 – 9/26/16
*Individuals who died, moved out of state, or reported no history of Medicaid coverage		

Description of Sample (Table 17.3)

Table 17.3 presents the socio-demographic characteristics of the CLA samples. The data included in column I summarizes the responses for the cohort of individuals under two coverage policies, Core and Standard plan coverage. Few differences appear in the socio-demographic characteristics of this cohort over time; this finding is not surprising given that several outcomes are relatively time-invariant within-person. Educational achievement is an exception. In the 2016 survey, 45% of respondents reported more than a high school education compared to 27% in the 2014 survey. More generally, about 63% of the cohort is female, and more than 70% are White and older than 35 years of age.

Table 17.3 presents the same characteristics for the second comparison of interest in column II, all 2014 CLA survey respondents compared to all 2016 CLA survey respondents. The general profile of the 2016 CLA beneficiary sample after implementation of the waiver is similar to the pre-waiver sample with respect to age, educational achievement, and household size. Several differences in sample characteristics are noteworthy. First, a larger proportion of CLA beneficiaries in the post-waiver period report a non-White race; 55% of the CLA population in 2016 is male compared to 41% in the 2014 CLA population; and the percentage of CLA beneficiaries that report annual income less than $30,000 increased from 83% to 96% consistent with the lower income eligibility threshold after 2014.

Analysis

We calculated means and proportions for each of the study variables, applying survey weights. To calculate statistical significance for differences between two groups, we calculated standard test statistics (i.e., *t*-statistics for proportions and *chi*-squared statistics for categorical and ordinal data). These statistics were adapted for weighted data in the survey routine in Stata. We consider p<.05 to indicate statistically significant differences between groups. Unless otherwise noted, all between-group differences reported in this section are statistically significant.

The overall outcomes of interest for Q17 are health care continuity and health insurance continuity. The survey includes several domains of questions that map directly to these outcomes. Each of the following tables includes the results for Samples A1 and/or A2 for one of these domains. Because the 2016 survey was designed with the current Section 1115 waiver in mind, some questions appear for the first time in 2016. In those instances, the results are reported for the 2016 CLA sample only. While these outcomes have no comparison group, they provide a richer characterization of the current CLA population.

Results

Coverage, Service, and Access to Care (Table 17.4 and Table 17.5)
Insurance Coverage. Within the cohort of CLA subjects (i.e., Sample A1), the percentage that report having any type of health insurance increased from 68% in 2014 to 84% in 2016 as shown in Table 17.4, column I. Similarly, the duration of insurance coverage within the past 12 months increased: 62% of cohort members reported full-year coverage in 2016 compared to 44% in 2014. The percentage of the cohort that reported Medicaid as the current source of health insurance coverage remained constant over time at 15%. The percentage of the group that reported Medicare or the ACA as the source of current health insurance coverage increased from 2014 to 2016 while the proportion reporting other private coverage or no coverage declined.

The relatively low percentage of the CLA cohort that reported Medicaid as the *current* source of coverage is likely a consequence of the time lag between sample selection and survey implementation for the 2014 survey. The 2014 sample was selected based on their Core plan enrollment status before 2014 while survey implementation was delayed until April 2014 for programmatic reasons. Thus, sample members with income greater than 100% FPL were ineligible for Medicaid when the 2014 survey was fielded. When resurveyed in 2016, the percentage of the CLA cohort that reported Medicaid as their current source of coverage remained low.

The results in column II of Table 17.4 compare health insurance coverage for all CLA respondents in 2014 to all CLA respondents in 2016 (i.e., Sample A2). In 2016, CLAs were more likely to report having health insurance; 95% of the sample reported that they currently had health insurance compared to 68% of the 2014 CLA sample. Just over three-quarters of CLAs in 2016 reported having health insurance coverage for 12 of the past 12 months compared to 47% of CLAs in 2014. Significant change occurred in the sources of health insurance coverage for CLAs from 2014 to 2016. The percentage of CLAs that reported Medicaid as the current source of coverage increased from 15% to 68%. Among those who reported no longer having Medicaid/BadgerCare coverage, CLAs in the 2016 sample were less likely to report ineligibility or premium-related reasons than were individuals in the 2014 sample. These differences are

expected given the relatively short time lag between sample selection and survey administration in 2016, and the lack of premium-related programmatic changes for CLAs in 2016.

Service use and access to care. The first column of Table 17.5 shows that self-reported need for medical care and prescription medications increased for the CLA cohort (i.e., Sample A1) from 2014 to 2016 as did the likelihood of obtaining all of the care and prescription medications that were needed. No significant changes occurred in the cohort's reported use of the emergency room, the usual source of care, the quality of care received, or the likelihood of owing money to providers or creditors for medical expenses. The experience of health care use and access for the full 2014 and 2016 CLA sample (i.e., Sample A2) is presented in column II. In 2016, CLAs were more likely than their peers in 2014 to report a need for medical care in the past 12 months and more likely to note that they received all of that care.

For those individuals who went without needed medical care, the probability of reporting a cost-related reason decreased from 87% in 2014 to 72% in 2016 (column II). Similarly, CLAs in 2016 were more likely to report obtaining all of the prescription medications needed in the past 12 months. Among those who did not, 69% reported cost-related reasons in 2016 compared to 95% in 2014. Relatedly, the percentage of CLAs that reported borrowing money or not paying other bills to pay health care bills declined from 32% in 2014 to 8% in 2016. The probability of having one or more emergency room visits in the past 12 months increased from 27% to 43% for CLAs from 2014 to 2016. Overall, 60% of CLAs in 2016 rated their medical care in the prior 12 months as excellent or very good compared to 48% of CLAs in 2014.

Self-reported health (Table 17.6)
Table 17.6 presents the results for self-reported health outcomes. Within the cohort of individuals who participated in both the 2014 and 2016 surveys (i.e., Sample A1), approximately 35% reported excellent or very good health in both years, and the percentage of cohort members who reported a work-limiting physical, mental or emotional problem increased over time from 16% to 24% (column I). As shown in column II, there was no significant difference in self-reported general health between the full 2014 and 2016 samples. However, 46% of individuals in the 2016 sample reported a work-limiting physical, mental, or emotional problem compared to 19% in the full 2014 sample (column II). This finding is likely associated with the reduction in the income eligibility for CLAs from 200% FPL to 100% FPL in April 2014 rather than a consequence of health care continuity or discontinuity. On average, individuals with health problems have lower incomes than similarly situated, healthy individuals because poor health limits employment. As the average income of the CLA enrollee population declines (in response to the income criterion), the prevalence of the correlates or causes of lower personal income increases, including work-limiting health problems.

As previously noted, some survey questions were only available in 2016. Results for these questions are shown in column II. Approximately, 38% of the 2016 CLA sample reports smoking cigarettes at least some days. Among smokers, 61% reported that a physician or health care professional advised them to quit smoking within the past 12 months. Symptoms of poor mental health were relatively prevalent in the CLA population in 2016. Specifically, 28% of CLA individuals in 2016 report mental health problems on more than half of the days in the past two weeks related to being bothered or not being able to experience pleasure in the last two weeks (symptoms of depression or anxiety).

Insurance Knowledge and Attitudes About Program Changes (Table 17.7)
The 2016 survey includes several questions related to the implementation and provisions of the 2014 1115 waiver. Table 17.7 presents the responses to these questions for the full 2016 CLA sample (N=278).

Almost half of the sample reported that they were enrolled in BadgerCare before April of 2014. Among this subgroup, 17% were affected by the waiver's new program requirements, and 18% reported that they were no longer enrolled because of the changes made. Overall, within the sample subgroup who had prior BadgerCare enrollment, 46% reported that they were somewhat or very satisfied with the changes in the program since April 2014. This group reported limited awareness of the differences in coverage for mental health and substance use disorder (MHSUD) treatment under the standard plan relative to the core plan. Specifically, among CLAs who reported enrollment in BadgerCare before 2014, 84% reported either no change in MHSUD coverage or uncertainty about any such change after April 2014.

Limitations

There are several limitations to consider when interpreting these findings. First, the results of the 2014 survey reflect the responses of childless adults who were enrolled in the Core plan at the time the sample was constructed rather than at the time the survey was implemented. Questions that pertain to the respondent's current status rather than his/her status during the past 12 months are unlikely to reflect his/her Core plan experience. Second, to attribute the observed outcome differences between the 2014 and 2016 samples (Sample A2) to Standard plan coverage, it is necessary to assume that the two groups are comparable in factors related to the outcomes. These samples differ across several observable characteristics related to health care access and coverage (e.g., sex, race, income), suggesting that this assumption may not hold. Finally, secular changes between 2014 and 2016 related to health insurance coverage and care access (e.g., employment, ACA, etc.,) may contribute the differences we observe in our study outcomes.

Table 17.3. Demographic Characteristics of Childless Adults

	(I) Sample A1			(II) Sample A2		
	2014	2016		2014	2016	
AGE	118	118		194	278	
Younger than 35	0.19	0.16		0.23	0.26	
35 and above	0.77	0.82		0.75	0.72	
Missing	0.04	0.02		0.02	0.02	
SEX	118	118		194	278	
Female	0.63	0.62		0.59	0.45	
Male	0.37	0.37		0.41	0.55	
RACE	118	118		194	278	
Spanish, Hispanic or Latino	0.05	0.07	*	0.05	0.03	**
White , Non-Hispanic	0.73	0.74		0.69	0.64	
Black, Non-Hispanic	0.11	0.15		0.15	0.19	
Other race (Asian, Indian), not Hispanic	0.01	0.02		0.01	0.07	
Mixed Race, not Hispanic	0.02	0.02		0.02	0.04	
Missing	0.08	0.01		0.09	0.02	
EDUCATION	118	118		194	278	
High school diploma or Less than high school	0.71	0.52	**	0.70	0.69	
More than high school	0.27	0.45		0.28	0.30	
Missing	0.03	0.03		0.02	0.02	
INCOME	118	118		194	278	
< $30000	0.80	0.77		0.83	0.96	**
>= $30000	0.20	0.23		0.17	0.04	
PARENTAL STATUS	118	118		194	278	
No	0.88	0.94	*	0.89	0.93	
Yes	0.09	0.06		0.10	0.06	
Missing	0.03	0		0.02	0.01	
HOUSEHOLD COMPOSITION	118	118		194	278	
Living alone	0.30	0.35		0.35	0.24	**
Living with partner or spouse	0.33	0.37		0.32	0.28	
Living with Others	0.34	0.27		0.31	0.47	
Missing	0.03	0.01		0.02	0.01	
HOUSEHOLD SIZE	118	118		194	278	
>2 members	0.27	0.30		0.28	0.36	
<=2 members	0.73	0.70		0.72	0.64	
HOUSEHOLD AGE	118	118		194	278	
>=Two HH members below 19	0.12	0.11		0.15	0.12	
0-1 HH member below 19	0.88	0.89		0.85	0.88	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01						

Table 17.4. Health Insurance Status, Childless Adults

	(I) Sample A1			(II) Sample A2		
	2014	2016		2014	2016	
Currently Have Health Insurance	N=118	N=118		N=194	N=278	
No	0.3	0.09	**	0.3	0.03	**
Yes	0.68	0.84		0.68	0.95	
Missing	0.03	0.06		0.02	0.02	
Some kind of health care coverage in past 12 months	N=118	N=118		N=194	N=278	
Full year uninsured	0.24	0.12	**	0.23	0.04	**
1-11 months	0.32	0.21		0.29	0.17	
all 12 months	0.44	0.62		0.47	0.76	
Missing	0	0.05		0.01	0.03	
Current health care coverage	N=118	N=118		N=194	N=278	
Medicaid, BC, BC core	0.15	0.15	**	0.15	0.68	**
Employer or family member's employer	0.2	0.2		0.17	0.04	
Private (I pay for myself), Other	0.12	0.09		0.12	0.06	
Medicare	0.08	0.16		0.11	0.05	
ACA/Obamacare	0.13	0.19		0.13	0.11	
Uninsured	0.3	0.09		0.3	0.03	
Missing	0.03	0.11		0.02	0.04	
For those who no longer have BadgerCare coverage: Reasons why	N=92	N=87		N=153	N=56	
Not eligible	0.52	0.67	**	0.49	0.25	**
Premium related	0.23	0.05		0.24	0	
Other reasons	0.17	0.2		0.15	0.23	
Missing	0.08	0.08		0.11	0.52	
*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01. Sample A1 refers to the cohort of childless adults who responded to both the 2014 and 2016 surveys. Sample A2 refers to all childless adults who responded to the 2014 survey and all childless adults who responded to the 2016 survey.						

Table 17.5 Utilization and Access, Childless Adults

	(I) Sample A1			(II) Sample A2		
	2014	2016		2014	2016	
Needed medical care in past 12 months	N=118	N=118		N=194	N=278	
No	0.33	0.06	**	0.3	0.08	**
Yes	0.67	0.93		0.7	0.9	
Missing	0	0.02		0	0.02	
Among those who needed care in the past 12 months: Got all the treatment needed	N=82	N=108		N=137	N=250	
No	0.37	0.19	*	0.3	0.14	**
Yes	0.61	0.81		0.67	0.86	
Missing	0.02	0		0.02	0	
Among those who went without needed medical care: Main reasons	N=27	N=20		N=41	N=32	
Non-cost related reasons	0	0.04		0.01	0.18	*
Cost related reasons	0.87	0.96		0.87	0.72	
Missing	0.13	0		0.11	0.1	
Needed prescription medication in past 12 months	N=118	N=118		N=194	N=278	
No	0.23	0.2		0.21	0.19	
Yes	0.77	0.8		0.79	0.81	
Missing	0	0		0	0.01	
Among those who needed prescription medications in the past 12 months: Got all medications needed?	N=93	N=93		N=154	N=226	
No	0.26	0.14	*	0.29	0.11	**
Yes	0.73	0.81		0.7	0.88	
Missing	0.01	0.05		0.01	0.01	
Among those who went without needed prescription medications you needed: Reasons why[a]	N=22	N=16		N=40	N=28	
Non-cost related reasons	0.04	0.18	*	0.03	0.2	**
Cost related reasons	0.93	0.55		0.95	0.69	
Missing	0.03	0.27		0.02	0.11	
Usual source of care	N=87	N=93		N=148	N=220	
Doctor's office, health center, clinic	0.85	0.86		0.85	0.79	
Urgent care	0.06	0.02		0.09	0.06	
No usual place, don't know	0.02	0.01		0.01	0.03	
Other	0.05	0.08		0.04	0.07	
Missing	0.02	0.03		0.01	0.05	

ER visit in the last 12 months	N=118	N=118		N=194	N=278	
Zero times	0.76	0.77		0.73	0.56	*
1 time	0.13	0.14		0.13	0.22	
2 or more times	0.11	0.09		0.14	0.21	
Among those with an ER visit in last 12 months: Main reason[b]	N=30	N=29		N=53	N=120	
Other reasons	0.68	0.77		0.69	0.57	
Needed ER only	0.32	0.23		0.31	0.41	
Missing	0	0		0	0.02	
Quality of the medical care received in the last 12 months	N=118	N=118		N=194	N=278	
`Did not receive medical care	0.19	0.1		0.18	0.06	**
Excellent, Very good	0.46	0.51		0.48	0.6	
Good	0.19	0.26		0.18	0.22	
Fair, poor	0.16	0.12		0.16	0.1	
Currently owe money to a health care provider, credit card company, or anyone else for medical expenses	N=118	N=118		N=194	N=278	
No	0.53	0.49		0.52	0.63	
Yes	0.47	0.48		0.47	0.36	
Missing	0	0.02		0.01	0	
Had to borrow money, skip paying other bills, or pay other bills late in order to pay health care bills in last 12 months	N=118	N=118		N=194	N=278	
No	0.72	0.76		0.68	0.91	**
Yes	0.28	0.21		0.32	0.08	
Missing	0	0.03		0	0.01	
Refused treatment by a doctor, clinic, or medical service because of money owed	N=118	N=118		N=194	N=278	
No	0.93	0.92		0.91	0.91	
Yes	0.03	0.07		0.06	0.05	
Missing	0.04	0.02		0.04	0.03	
During the past 12 months, had either a flu shot or a flu vaccine that was sprayed in your nose?[a]					N=278	
No					0.75	
Yes					0.25	
Missing					0	
Needed but did not get because of cost: mental health care or counseling[a]					N=278	
No					0.68	
Yes					0.09	
Missing					0.22	

Last visited a dentist for any reason[a]					N=278	
Less than 12 months ago					0.44	
Between 1 and 5 years					0.32	
More than 5 years ago					0.21	
Never					0.02	
Not sure					0.01	
Problems paying any medical bills in past 12 months[a]					N=278	
Yes					0.22	
No					0.76	
Missing					0.02	

*Indicates a difference between outcomes that is statistically significant at p< 0.05.

**Indicates a statistically significant different at p <0.01.

Sample A1 refers to the cohort of childless adults who responded to both the 2014 and 2016 surveys. Sample A2 refers to all childless adults who responded to the 2014 survey and all childless adults who responded to the 2016 survey.

[a]Indicates a question introduced in the 2016 survey.

[a]Respondents could select more than one reason for this question. "Cost-related reasons" indicates that the respondent selected options a-d on Q.11, while "non-cost-related reasons" indicates the respondent selected options e-h on the survey. See Attachment for the survey question and response options.

[b]Respondents could select more than one reason for ER use. "Needed ER Only" indicates that the respondent selected only one response. "Other Reasons" indicates the respondent selected more than one response. See Q.18 in Attachment for the survey question and response options

Table 17.6 Self-Reported Health, Childless Adults

	(I) Sample A1			(II) Sample A2		
	2014	2016		2014	2016	
Self-reported physical and mental health	N=118	N=118		N=194	N=278	
Excellent, Very good	0.36	0.35		0.31	0.27	
Good	0.38	0.37		0.38	0.34	
Fair, poor	0.26	0.28		0.31	0.39	
A physical, mental, or emotional problem limits ability to work at a job	N=118	N=118		N=194	N=278	
No	0.84	0.76	*	0.81	0.54	**
Yes	0.16	0.24		0.19	0.46	
Smokes cigarettes[a]					N=278	
Everyday					0.26	
Some days					0.12	
Never					0.61	
Missing					0.01	
Been advised by a doctor or health professional to quit smoking[a]					N=278	
Yes					0.61	
No					0.31	
No visit in past 12 months					0.04	
Missing					0.04	
Over the past two weeks, bothered by having little interest or pleasure in doing things[b]					N=278	
Not at all					0.36	
A few times					0.26	
More than half the days					0.14	
Nearly every day					0.14	
Dont know					0.09	
Missing					0.01	
Over the past two weeks, bothered by feeling down, depressed, or hopeless?[b]					N=278	
Not at all					0.43	
A few times					0.28	
More than half the days					0.09	
Nearly every day					0.14	
Don't know					0.05	
Missing					0.01	

*Indicates a difference between outcomes that is statistically significant at p< 0.05. **Indicates a statistically significant different at p <0.01. [a]Responses from 2014 are omitted bcause the skip pattern differs from the 2016 survey. [b] Indicates a question introduced in the 2016 survey. Sample A1 refers to the cohort of childless adults who responded to both the 2014 and 2016 surveys. Sample A2 refers to all childless adults who responded to the 2014 survey and all childless adults who responded to the 2016 survey.

Table 17.7 Knowledge and Attitudes about 2014 Waiver Changes, Childless Adults

	Sample A2
	2016
Enrolled in BadgerCare program before Apr 2014	N=278
Yes	0.43
No	0.39
Don't know	0.17
Missing	0.01
Affected by any new program requirements	N=174
Yes	0.17
No	0.5
Don't know	0.29
Missing	0.04
Lost eligibility for BadgerCare Plus and were no longer enrolled because of changes made after Apr 2014	N=174
Yes	0.18
No	0.74
Missing	0.08
MENTAL HEALTH or SUBSTANCE ABUSE TREATMENT BENEFITS	N=143
Increase	0.01
Decrease	0
No change	0.55
Not sure	0.29
Missing	0.13
Satisfaction with the changes that have taken place since Apr 2014	N=143
Very satisfied	0.28
Somewhat satisfied	0.18
Neither satisfied nor dissatisfied	0.36
Somewhat dissatisfied	0.05
Very dissatisfied	0.01
Missing	0.11

Sample A2 refers to all childless adults who responded to the 2014 survey and all childless adults who responded to the 2016 survey. The questions in this table were introduced in the 2016 survey.

F. NEXT STEPS

The results reported here contribute important interim findings toward our overall analysis of each study hypothesis. This process continues, as we move toward fielding the second survey in 2018, and deepen our analysis of the administrative data.

We continue to use the data from the 2016 survey for further analyses:

1. Replicate these survey analyses with adjustment. We will identify a common set of adjustment variables and apply adjustment for specific cases where such methods will improve the comparability of the groups.

2. We have linked virtually all subjects in the survey to their administrative (claims) records.

Linkage of the survey to the claims data may offer several strengths to the evaluation. First, it provides a means of validating some survey-reported measures (e.g., current enrollment status in BadgerCare or Medicaid). Second, the survey domains may be useful in predicting outcomes in the administrative data. For example, we could analyze risk of disenrollment using survey-reported measures (such as self-reported satisfaction with care) in addition to administrative measures (exposure to premium relative to income and health care use, for example). These analyses are complex, and the decision to pursue them will depend on whether they are likely to yield significant new insights and are feasible within current resource and time constraints.

Finally, the 2016 survey results will help inform the design of the 2018 survey. We intend to preserve many of the same questions for 2018, facilitating multi-year comparisons. Different sampling scenarios are possible. We may continue the longitudinal component of this study, depending on sample size required for making over-time within-subject comparisons. Or we may decide to more intensively sample specific groups in 2018 and forgo re-interviewing some from prior surveys.

We will also consider how new Medicaid program changes might affect or relate to the timing of the 2018 survey. Potential changes in state and federal policy in 2018 will pose challenges to fielding a survey intended to capture respondents experience of the 2014 BadgerCare policy changes. However, the 2018 survey could serve as a baseline for the new 1115 waiver. We will work closely with DHS to assure that the survey meets the state's and CMS' evaluation needs and requirements.

ATTACHMENT F: SURVEY INSTRUMENT

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:

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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	○	○
b. I could not afford payments to remain on Medicaid or BadgerCare Plus	○	○
c. I could not afford payments for private health care coverage, an employer's insurance, or from the federal Marketplace/Healthcare.gov/ACA/Obamacare	○	○
d. I was not offered health care coverage from an employer	○	○
e. I was not able to afford the health care coverage an employer offered	○	○
f. I did not have access to any health care coverage	○	○
g. I did not want health care coverage	○	○
h. I did not know how to find information on available health care coverage options	○	○
i. I did not have the time to get health care coverage	○	○

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

	Yes	No
a. Wisconsin Medicaid Program	○	○
b. BadgerCare Plus	○	○
c. Medicare	○	○
d. Employer or family member's employer	○	○
e. A private plan I pay for myself	○	○
f. A health plan from Healthcare.gov, the federal Affordable Care Act (ACA/Obamacare) Marketplace	○	○
g. Other coverage. Please specify:	○	○
h. None - no coverage/insurance	○	○

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

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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.	○	○
b. I am not eligible anymore because my income has changed.	○	○
c. I am not eligible anymore for other reasons.	○	○
d. The premiums increased and so I dropped my Medicaid/BadgerCare Plus coverage.	○	○
e. I missed a premium payment, so the Medicaid/BadgerCare Plus program temporarily removed me from coverage.	○	○
f. Other reason. Please specify: [ ]	○	○

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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**

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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**

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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	○	○
b. I didn't have health care coverage	○	○
c. The doctor wouldn't take my insurance	○	○
d. I owed money to the doctor	○	○
e. I couldn't get an appointment quickly enough	○	○
f. The office wasn't open when I could get there	○	○
g. I didn't have a doctor	○	○
h. Other reason. Please specify:	○	○

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

○ Yes

○ No ⟶ **Go to Question 15**

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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**

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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	○	○
b. I didn't have health care coverage	○	○
c. I didn't have a doctor	○	○
d. I couldn't get a prescription	○	○
e. I couldn't get to the pharmacy	○	○
f. Some other reason. Please specify:	○	○

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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	○	○
b. I didn't have health insurance	○	○
c. The doctors' office/clinic was closed	○	○
d. I couldn't get an appointment to see a regular doctor soon enough	○	○
e. I didn't have a personal doctor	○	○
f. I couldn't afford the copay to see a doctor	○	○
g. I needed a prescription drug	○	○
h. I didn't know where else to go	○	○
i. Some other reason. Please specify: [_____]	○	○

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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	○	○	○	○
b. The choice of doctors and other providers	○	○	○	○

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	○	○
b. Medical care	○	○
c. To see a general doctor	○	○
d. To see a specialist	○	○
e. To get medical tests, treatment, or follow-up care	○	○
f. Dental care	○	○
g. Mental health care or counseling	○	○
h. Eyeglasses or vision care	○	○

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	○	○
b. Asthma	○	○
c. High blood pressure	○	○
d. Emphysema or chronic bronchitis (COPD)	○	○
e. Heart disease, angina, or heart attack	○	○
f. Congestive heart failure	○	○
g. Depression or anxiety	○	○
h. High cholesterol	○	○
i. Kidney problems, kidney disease, or dialysis	○	○
j. A stroke	○	○
k. Alcoholism or drug addition	○	○
l. Cancer, except for skin cancer	○	○

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	○	○
b. I have taken medication regularly	○	○
c. I have been to the hospital emergency room because of the condition(s)	○	○
d. I have been admitted to the hospital because of the condition(s)	○	○
e. I have not been treated for the condition(s)	○	○

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	○	○	○	○
b. Deductibles	○	○	○	○
c. Copayments	○	○	○	○
d. Coinsurance	○	○	○	○

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	○	○	○	○
b. Penalties for not paying a monthly premium	○	○	○	○
c. Copayments to visit a doctor or clinic	○	○	○	○
d. Mental health or substance abuse treatment benefits	○	○	○	○

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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: [   ]

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54. How many family members, <u>including yourself</u>, 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

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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

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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.

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