Utah 1115 SUD

Mid-Point Assessment Report

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Executive Summary

This 1115 SUD Waiver mid-point assessment report is issued in response to the Centers for Medicare & Medicaid standard terms and conditions (STCs) reporting requirements for the Utah 1115 SUD Waiver Demonstration. This report includes data analysis performed by the independent contractor from Utah Medicaid claims and other data, a beneficiary survey conducted by subcontract, and a review of Medicaid data analysis conducted by the Utah Department of Health (UDOH) used for waiver progress monitoring.

With respect to each of these three areas, the independent evaluators have determined that there has been substantial progress made regarding the implementation of the SUD waiver demonstration to date, despite a lack of statistically significant outcomes for each of the five established research hypotheses. Notable findings are as follows:

1. Although lacking statistical evidence thus far for the five primary research hypotheses, most of the outcome measures are trending positively in the hypothesized direction, suggesting that additional time for policy and program implementation may be required to detect the impact of the demonstration on the outcomes. Key to this will be the need to change the research design from a DiD analysis to a longitudinal time series design.

2. The beneficiary survey which will serve as a baseline, appears to indicate patient experiences have been quite favorable. For example, the vast majority of beneficiaries responding to the survey recognize there are specific mental health and substance abuse disorder services available in their communities, if needed. Of those respondents indicating they or a household member needed these services 61% agreed they were able to obtain care “as soon as needed”. When asked to rate counseling or treatment received, the average rating was 6.43/10 and for those receiving services, 62% found the counseling or treatment to be helpful.

3. The supplemental monitoring metrics based on data compiled and analyzed by UDOH were largely trending positively in the direction desired, indicating UDOH is likely on-track to achieve nearly all of their identified goals. For example, of the individual monitoring metrics, 70% were rated as “low risk” of not being achieved by the end of waiver demonstration period.

4. Further, Utah has experienced a rapid expansion of new SUD services to many beneficiaries with significant needs. There has also been extensive planning and training instituted from the beginning of the waiver to strengthen and build a strong statewide capacity to offer SUD service access in a quality manner.

5. Moving forward it appears additional time implementing the SUD treatment interventions associated with the waiver demonstration will be needed in order to determine if the

hypothesized outcomes can be achieved. This notion is true for any new intervention. High fidelity implementation of SUD treatment in multiple locations is a challenge. However, with consistent efforts and uniform and regular progress monitoring, continuous improvement can be made.

6. Another key next step to detecting significant change in waiver outcomes will be the re-design of the evaluation design. Since the original DiD evaluation design integrity was compromised by the relatively early expansion of IMD's into geographical locations designed to be part of the study control sites, the design will need to pivot to a longitudinal time-series approach.

General Background Information

The federal government has established section 1115 of the Social Security Act to allow the approval of demonstration projects that are likely to assist in promoting the objectives of Medicaid. In doing so, the Secretary of Health and Human Services authorizes federal financial support for waiver demonstration costs that would not otherwise qualify for federally matchable expenditures.

The two primary purposes of Medicaid funding are to enable each State to furnish (1) medical assistance on behalf of families with dependent children and of aged, blind, or disabled individuals, whose income and resources are insufficient to meet the costs of necessary medical services, and (2) rehabilitation and other services to help such families and individuals attain or retain capability for independence or self-care. The Utah 1115 waiver demonstration project, with its various amendments seeks to expand the scope of coverage and benefits for certain at-risk beneficiaries. Additionally these services seek to advance the health and wellness of the individual receiving them, thus contributing to the individual attaining independence. So in addition to paying for services, the program also advances the health and wellness needs of its beneficiaries based on actions designed at the state level. Section 1115 demonstration projects offer flexibility to a state to propose new reforms and make adjustments in service delivery with the potential of improving medical care and focus on interventions that drive better health outcomes and quality of life improvements, potentially leading to increased financial independence.

i) States were first granted waivers soon after Medicaid was first established in 1965. Most waivers were small in scope until the 1990s, when states began to use them for a wide range of purposes, including to: expand eligibility, simplify the enrollment and renewal process, reform care delivery, implement managed care, provide long-term services and supports, and alter benefits and cost-sharing.

Although Utah has for many years had both the healthiest population and the lowest per-capita health care costs, there remained many who were unable to obtain health care. So given the flexibility offered by an 1115 waiver to design and improve health care service and delivery, the Utah Department of

Health (UDOH) sought state-specific policy approaches to better serve needy populations. Specific goals [1] to be addressed by the initial 1115 waiver were to:

1. Improve the health of Utahns by increasing the number of low income individuals without access to primary care coverage, which will improve the overall well-being of the health status of Demonstration Population I enrollees (PCN enrollees).Increase access to, stabilize, and strengthen providers and provider networks available to serve Medicaid and low-income populations;

2. Not negatively impact the overall health of Current Eligibles who experience reduced benefits and increased cost sharing.

3. Assist previously uninsured individuals in obtaining employer-sponsored health insurance without causing a decrease in employer's contributions to premiums that is greater than any decrease in contributions to the overall health insurance market.

4. Reduce the number of uninsured Utahns by enrolling eligible adults in the Targeted Adult Medicaid program.

5. Reduce the number of non-emergent Emergency Room visits for the Targeted Adult population.

6. Improve access to primary care, while also improving the health status of the Targeted Adult Population.

7. Provide care that is more extensive to individuals suffering from a substance use disorder, in turn making this population healthier and more likely to remain in recovery.

ii) The Utah 1115 demonstration waiver was first submitted on December 11, 2001, approved on February 8, 2002, implemented on July 1, 2002. It was originally scheduled to expire on June 30, 2007, but since then, there have been six extensions and approximately 17 new waiver amendments. A Utah Department of Health summary of these amendments [2] and extensions are as follows:

- Amendment #1 - This amendment made a technical correction ensuring that those ages 19 and above who are eligible through sections 1925 and 1931) in the demonstration that become pregnant, get the full Medicaid state plan benefit package. It eliminated or reduced the benefit package for Current Eligibles to conform to changes to the benefits available under the state plan. Finally, it increased the co-payment for hospital admissions from $100 to $220, again to conform with changes to the state plan. (Approved on August 20, 2002, effective on July 1, 2002)

- Amendment #2 - This amendment provided a premium assistance option for up to 6,000 of the 25,000 potential expansion enrollees. Specifically, the state subsidizes the employee's portion of the premium for up to 5 years. The employer- sponsored insurance (ESI) must provide coverage equal to or

greater than the limited Medicaid package. The subsidy is phased down over 5 years, to provide a span of time over which employees' wages can increase to the point of unsubsidized participation in the ESI. With this amendment, the state was also granted authority to reduce the enrollment fee for approximately 1,500 General Assistance beneficiaries, who are either transitioning back to work or are awaiting a disability determination. These individuals were required to enroll in PCN, but the $50 fee was prohibitive as they earn less than $260 per month. For this population, the state reduced the enrollment fee to $15. (Approved on May 30, 2003, effective on May 30, 2003).

- Amendment #3 - This amendment reduced the enrollment fee for a second subset of the expansion population. Specifically, approximately 5,200 individuals with incomes under 50 percent of the FPL had their enrollment fee reduced from $50 to $25. (Approved on July 6, 2004, effective on July 6, 2004).

- Amendment #4 - This changed the way that the maximum visits per year for Physical Therapy/Occupational Therapy/Chiropractic Services are broken out for the Current Eligibles ("non-traditional" Medicaid) population. Instead of limiting these visits to a maximum of 16 visits per policy year in any combination, the state provides 10 visits per policy year for Physical Therapy/Occupational Therapy and 6 visits per policy year for Chiropractic Services. (Approved on March 31, 2005, effective on March 31, 2005).

- Amendment #5 - This amendment implemented the adult dental benefit for the Current Eligibles population (section 1925/1931 and medically needy non-aged/blind/disabled adults). (Approved on August 31, 2005, effective on October 1, 2005).

- Amendment #6 - This amendment suspended the adult dental benefit coverage for Current Eligibles of Amendment #5 above. (Approved on October 25, 2006, effective on November 1, 2006).

- Amendment #7 - This amendment implemented an increase in the prescription co-payments for the Current Eligible population from $2.00 per prescription to $3.00 per prescription. (Approved on October 25, 2006, effective on November 1, 2006).

- Amendment #8 - This amendment implemented a Preferred Drug List (PDL) for Demonstration Population I adults in the PCN. (Approved on October 25, 2006, effective on November 1, 2006).

- Amendment #9 - This amendment implemented the State's Health Insurance Flexibility and Accountability (HIFA) application request, entitled State Expansion of Employer Sponsored Health Insurance (dated June 23, 2006, and change #1 dated September 5, 2006). Also, this amendment suspended Amendment #2 - for the initial ESI program, which was absorbed by the new HIFA-ESI program. (Approved on October 25, 2006, effective on November 1, 2006).

This amendment provides the option of ESI assistance to adults with countable household income up to and including 150 percent of the FPL, if the employee's cost to participate in the plan is at least five percent of the household's countable income. The state subsidizes premium assistance through a

monthly subsidy of up to $150 per adult. The employer must pay at least half (50 percent) of the employee's health insurance premium, but no employer share of the premium is required for the spouse or children. Likewise, an ESI component for children provides CHIP- eligible children with family incomes up to and including 200 percent of the FPL with the option of ESI premium assistance through their parent's employer or direct CHIP coverage. The per-child monthly premium subsidy depends on whether dental benefits are provided in the ESI plan. If provided, the premium subsidy is $140 per month; otherwise, it is $120 per month. If dental benefits are not provided by a child's ESI plan, the state offers dental coverage through direct CHIP coverage. Families and children are subject to the cost sharing of the employee's health plan, and the amounts are not limited to the Title XXI out-of-pocket cost sharing limit of five percent.

Benefits vary by the commercial health care plan product provided by each employer. However, Utah ensures that all participating plans cover, at a minimum, well- baby/well child care services, age appropriate immunizations, physician visits, hospital inpatient, and pharmacy. Families are provided with written information explaining the differences in benefits and cost sharing between direct coverage and the ESI plan so that they can make an informed choice. All children have the choice to opt back into direct CHIP coverage at any time.

- Amendment #10 – This amendment enables the state to provide premium assistance to children and adults for coverage obtained under provisions of the COBRA Act of 1986. COBRA provides certain former employees, retirees, spouses, former spouses, and dependent children the right to temporary continuation of employer- based group health coverage at group rates. COBRA coverage becomes available following the loss of ESI due to specified qualifying events, such as an end of employment (voluntary or involuntary); divorce or legal separation; death of employee; entitlement to Medicare; reduction in hours of employment; and loss of dependent-child status. Through this amendment, Utah will provide premium assistance to programmatically- eligible adults and children (as differentiated from individuals who are COBRA-eligible but not otherwise eligible for the Utah COBRA premium assistance program) toward the purchase of COBRA coverage, in a manner similar to the provision of premium assistance for the purchase ESI coverage. (Medicare-eligible individuals who are also COBRA-eligible would be ineligible for the Utah COBRA Premium Assistance Program (CPAP) based on age or the State's standard processes of cross-matching with SSI/SSDI eligibility files).

During its initial period of operation, Utah's COBRA Premium Assistance Program (CPAP) will work in tandem with the subsidy provided under ARRA for the purchase of COBRA coverage. Specifically, ARRA provides a federal subsidy of 65 percent of the cost of COBRA coverage, to individuals and families affected by involuntary job loss occurring September 1, 2008, through December 31, 2009, and as extended by Congress. As long as the individual receives the ARRA subsidy, the state would provide the family with premium assistance based on the number of programmatically-eligible individuals, but limited to the lower of 35 percent of the cost of COBRA that remains the individual's responsibility or the maximum amounts allowable by the state under these STCs. The amendment was approved by CMS on December 18, 2009.

- Amendment #11 - This amendment raised the income eligibility for premium assistance for adults between the ages of 19 and 64 [Demonstration populations III (ESI) and V (COBRA)] from 150 percent of the FPL to 200 percent of the FPL. This amendment was approved by CMS on September 28, 2012.

- Section 1115(e) Extension - On June 23, 2006, the State of Utah formally requested an extension of their PCN 1115 demonstration waiver under the authority of section 1115(e) of the Social Security Act. The demonstration, which would have expired on June 30, 2007, was approved for a 3-year extension from July 1, 2007, through June 30, 2010.

- Section 1115(f) Extension – On March 1, 2010, the State of Utah formally requested an extension of the PCN demonstration under the authority of Section 1115(f) of the Social Security Act. The demonstration, which would have expired on June 30, 2010, was approved for a 3-year extension from July 1, 2010, through June 30, 2013. The demonstration was temporarily extended through December 31, 2013.

- Temporary Extension – The December 24, 2013 amendment and temporary extension, changed the STCs so beginning on January 1, 2014, the cost-sharing for Current Eligibles and adults in the PCN program was required to align with Medicaid regulations and state plan requirements. In addition, the income eligibility for the PCN program decreased from 150 percent FPL to 100 percent FPL.

- Temporary Extension – The December 19, 2014 approval amendment and temporary extension changed the STCs so the FPL for Demonstration Population I was decreased to 95 percent (effectively 100 percent of the FPL because of the 5 percent income disregard) in order to ensure that eligible individuals above 100 percent of the FPL would be able to receive APTC to help purchase insurance through the federally facilitated marketplace (FFM).

- Temporary Extension – On November 19, 2015, the demonstration was temporarily extended through December 31, 2016.

- Temporary Extension – December 16, 2016, the demonstration was temporarily extended on through December 31, 2017.

- Amendment #12 – On June 29, 2017, CMS approved an amendment which allows the state to provide state plan dental benefits to adults with disabilities or blindness, age 18 and older, removed the sub-caps for enrollment of Demonstration Population I, and removed Demonstration Population II (high risk pregnant women) since changes to federal law rendered this group obsolete and it has not had individuals covered under this population since 2014.

- Amendment #13 – On October 31, 2017 (effective on November 1, 2017), CMS approved an extension that creates a new demonstration population, Targeted Adults, under which eligible beneficiaries receive state plan services. This new population is made of adults without dependent children, age 19 through 64 years of age, whose income is at zero percent of FPL. In addition, they must

meet at least one of three criteria; chronically homeless, involved in the justice system and in need of substance use and mental health treatment, or those who are just in need of substance use or mental health treatment. In addition, under this approval, the state has expenditure authority to restore full mental health benefits for Current Eligibles and remove the exclusion of Norplant as a covered benefit.

- Amendment #14 -This amendment would have terminated the EPSDT waiver of Section 1902(a)(43) for individuals ages 19 and 20 for all Title XIX populations affected by this waiver. The state withdrew this amendment.

- Amendment #15 - In February 2019, the state received the authority to provide comprehensive dental benefits to Targeted Adults who are receiving SUD treatment. In addition, the state received approval to provide state plan Medicaid coverage to Former Foster Care Youth who were ever enrolled in Medicaid in another state.

- Amendment #16 – In March 2019, the state received authority to provide full state plan benefits to adults without children who have incomes up to 95 percent of the FPL and the Current Eligible benefit package to adults with children who have incomes up to 95 percent of the FPL (together, these categories are known as the Adult Expansion Population) effective April 1, 2019. If the state determines that the state needs to close enrollment in this Medicaid eligibility group (MEG) due to budgetary restrictions, coverage will be closed and no applicants will be able to enroll in this MEG until enrollment re-opens. Beneficiaries in this category who have access to ESI coverage are required to enroll in that coverage to maintain Medicaid eligibility, and receive wraparound coverage. In addition, non-exempt Adult Expansion Population beneficiaries are required to complete community engagement requirements (or demonstrate good cause for failing to do so) each benefit year to be eligible for continued coverage. Lastly, this approval allowed the state to provide clinically managed residential withdrawal services to adult beneficiaries who reside in Salt Lake County.

- Amendment #17 – In November 2019, the state received the authority to provide intensive stabilization services (ISS) to Medicaid eligible children and youth under age 21 in state custody or those at risk of being placed in state custody who are experiencing significant emotional and/or behavioral challenges. The ISS includes state plan and home community based services and are provided during the first eight -weeks of the intensive program on a FFS basis using a daily bundled rate. The state uses this authority to demonstrate that providing these services will reduce Emergency Room (ER) utilization, psychiatric hospitalizations, and residential treatment services and length of stay as well as positively impact the child/youth's physical health in terms of comprehensive care.

CMS approved Utah's substance abuse disorder (SUD) evaluation design allowing the State to provide substance use disorder (SUD) residential treatment in an Institution for Mental Disease (IMD) for all Medicaid eligible individuals. This approval was effective October 16, 2019 and is effective through June 30, 2022. A copy of the approved evaluation design can be found in Attachment C.

iii) The Utah 1115 demonstration waiver has included numerous changes driven primarily by the desire to improve health care access, increase service availability to meet the needs of the various populations, and do so in a fiscally responsible way (e.g. frequently reducing beneficiary co-pays). Consistent with these primary goals, other efforts have been implemented to foster improvements in the health care delivery system. As a result of these frequent and numerous (and on-going) changes in the amendments in Utah, significant challenges to the evaluation have occurred. For example, the initial evaluation design for the 1115 SUD waiver included a DiD approach where substance abuse treatment in implementation counties would be compared to non-implementing comparison counties. However, due to the rapid and unexpected growth of SUD treatment services in newly established IMD's within the comparison counties, the anticipated window of data collection had to be decreased. As a result, the ability to establish an appropriate comparison group was greatly disrupted. This will require a revised analytical design for the SUD waiver moving forward.

iv) There are multiple population groups impacted by the demonstration.

Under the authority of the 1115 waiver demonstration, expenditures made by the state for the specific population groups identified below are approved through June 30, 2022 and are eligible for matched funding under the state's Medicaid state plan.

1. Current Eligibles. Expenditures for optional services not covered under Utah's state plan or beyond the state plan's service limitations and for cost-effective alternative services, to the extent those services are provided in compliance with the federal managed care regulations at 42 CFR 438 et seq.

2. Demonstration Population I. Expenditures to provide health services to non-disabled and non-elderly individuals age 19 through 64 with incomes above the Medicaid standard but at or below 95 percent of the federal poverty level (FPL) (effectively 100 percent with the five percent income disregard) who are not otherwise eligible for Medicaid, as described in the special terms and conditions (STC). This expenditure authority will end effective April 1, 2019.

3. Demonstration Population III. Expenditures for premium assistance related to providing 12 months of guaranteed eligibility to subsidize the employee's share of the costs of the insurance premium for employer sponsored health insurance to non-disabled and non-elderly low-income workers age 19 through 64 with incomes above the Medicaid standard but at or below 200 percent of the FPL, as well as their spouses and their children, age 19 through 26, who are enrolled in their parents' employer sponsored insurance (ESI) plan, who are not otherwise eligible for Medicaid, as described in the STCs.

4. Demonstration Population V. Expenditures for premium assistance related to providing up to a maximum of 18 months of eligibility to subsidize the employee's share of the costs of the Consolidated Omnibus Budget Reconciliation Act of 1986 (COBRA) premium for COBRA continuation of coverage to non-disabled and non-elderly low-income workers age 19 through 64 with incomes above the Medicaid

standard but at or below 200 percent of the FPL, as well as their spouses, who are not otherwise eligible for Medicaid, as described in the STCs.

5. Individuals who are blind or disabled. Expenditures for dental benefits for individuals who are blind or disabled and who are eligible for Medicaid, as described in the STCs.

6. Individuals who are aged. Expenditures for dental benefits for individuals who are age 65 and older, and are eligible for Medicaid, as described in the STCs.

7. Former Foster Care Youth from another State. Expenditures to extend eligibility for full Medicaid state plan benefits to former foster care youth who are defined as individuals under age 26, that were in foster care under the responsibility of a state other than Utah or tribe in such other state on the date of attaining 18 years of age or such higher age as the state has elected for termination of federal foster care assistance under title IV-E of the Act, were ever enrolled in Medicaid, and are now applying for Medicaid in Utah.

8. Targeted Adults. Expenditures to provide state plan coverage to certain individuals, age 19 through 64, without dependent children, who have incomes at zero percent of the FPL (effectively up to five percent with the five percent income disregard), as described in these STCs, who are not otherwise eligible for Medicaid. Expenditures to provide dental benefits for individuals in this expenditure population who are receiving substance use disorder (SUD) treatment.

9. Substance Use Disorder. Expenditures for otherwise covered services furnished to otherwise eligible individuals who are primarily receiving treatment and withdrawal management services for SUD who are short-term residents in facilities that meet the definition of an institution for mental disease (IMD).

10. Adult Expansion Population. As of January 1, 2020, expenditures to provide coverage to adults, ages 19 through 64, who are not Current Eligibles, and have household income at or below 133 percent of the FPL, as described in the STCs. Members of the Adult Expansion Population who are childless/non-custodial parents will receive state plan coverage, while members of the Adult Expansion Population who are custodial parents/caretaker relatives will receive the Current Eligibles benefit package, as specified in the STCs.

11. Mandatory Employer Sponsored Insurance. Expenditures to provide premium assistance and wrap around benefits to the Adult Expansion Population beneficiaries who are enrolled in ESI plans.

12. Clinically Managed Residential Withdrawal Pilot. Expenditures to provide clinically managed residential withdrawal services to adult Medicaid beneficiaries, age 18 and older, who reside in Salt Lake County, have a Physician or Licensed Practitioner of the Healing Arts determine the beneficiary demonstrates moderate withdrawal signs and symptoms, have a primary diagnosis of opioid use disorder (OUD) or another SUD, and require round-the- clock structure and support to complete withdrawal and increase the likelihood of continuing treatment and recovery.

13. Intensive Stabilization Services Program. Expenditures to provide an assessment and service package including state plan behavioral services and home and community based respite and non-medical transportation services reimbursed using a daily bundled rate during the first eight weeks of the 16-week intensive stabilization program for Medicaid eligible children/youth in state custody or at risk of being placed in state custody experiencing significant emotional and/or behavioral challenges.

Evaluation Questions and Hypotheses

The five evaluation hypotheses are:

1. The percentage of members who are referred and engage in treatment for SUDs will increase
2. The percentage of members who adhere to treatment of SUDs will increase
3. The rate of emergency department and inpatient visits will decrease
4. The percentage of members with SUD who experience care for comorbid conditions will increase
5. The demonstration will decrease the rate of overdose deaths due to opioids

Methodology

CMS approved the section 1115 demonstration evaluation design (see Attachment C) on October 16, 2019. The research conducted to evaluate the demonstration in this report complied with the approved evaluation design. The design methodology was based on the hypotheses to be tested, the type of outcome to be evaluated, and on the availability of data to appropriately address the hypotheses. These decisions were made in response to the theoretical relationships identified in the driver diagram included in the evaluation design and which helped identify the short-term, intermediate, and long-term outcomes to be measured. Additionally, the driver diagram considered potential mediating factors that may influence the ability of the waiver strategies to impact outcomes and confounding variables that may bias evaluation results if not controlled for.

The selected design was developed based on established guidance[3] specifically noting "a preferred approach would be to conduct difference-in-differences analysis (DiD) to compare trends for those affected by the SUD demonstration with beneficiaries not affected by the demonstration during the observation period due to the demonstration's geographic focus." Other sources identified in the literature supported both the strength and rigor of the DiD design. Indicating (DiD) have been shown to be good evaluation designs for intervention studies including Medicaid Demonstrations. [4]

In addition to utilizing Medicaid claims data to address the hypotheses in the waiver, the evaluator subcontracted with Qualtrics to purchase a Utah Medicaid panel of beneficiaries. The online survey focused on answering specific questions related to beneficiary access, utilization, and experience with

SUD services. Specific survey responses were used to answer research questions related to the primary waiver hypotheses. Survey response data were analyzed with descriptive statistics.

Evaluation Design

Difference-in-differences (DiD), a quasi-experimental before after intervention design, was used to compare the SUD residential treatment service expansion in the target group (Salt Lake and Utah Counties) with the comparison group (Davis, Weber, and Washington counties). Logistic regression was used to compare the differences between the groups before and after service expansion.

The independent evaluator contracted with an experienced national survey vendor to conduct a cross sectional survey of Medicaid beneficiaries in the spring of 2020. This approach will allow group-level outcome comparisons at different times to understand how a demonstration's effects change over time. The survey included standardized questions and composite question scales from the BRFSS, CAHPS® and CAHPS® Experience of Care and Health Outcomes (ECHO) Survey[5], which asks health plan enrollees about their experiences with health care services, including behavioral health care services. The questions have been validated for patients and family members with a wide range of service needs, including those with SUD. Specific ECHO Survey quality measures of patient experience include: getting treatment quickly and overall rating of counseling and treatment. The getting treatment quickly measure is also included in the core CAHPS Health Plan Survey, while the rating of counseling and treatment is a unique question from the ECHO Survey.

Evaluation Period

The time period before the expansion includes the year 2016 and the time period after the expansion includes the year 2018. The year 2017 was excluded from analysis as it was a partial implementation year (the waiver demonstration expansion began in November 2017). Data from 2019 was not used because comparison sites began service expansion beginning that year and no longer qualify as a comparison group. Consequently, for the purpose of this design, there is only one available year of comparison data for the difference-in-differences design. Table 1 shows the number of IMD providers implemented by year in each of the counties included in the study. There were five that started in 2017, three that started in 2018, and five in 2019.

Table 1. Number of New IMD Providers by Year

	2017	2018	2019
Salt Lake	4	2	0
Utah	1	1	3
Davis	0	0	1
Washington	0	0	1
Weber	0	0	0

The beneficiary survey was designed to be conducted in 2020, 2021, and 2023.

Target and Comparison Populations

The target population included any Medicaid beneficiary residing in a county that began provision of IMD residential facilities in 2018 (Salt Lake and Utah). The comparison population included any Medicaid beneficiary residing in a county that did not have IMD residential facilities during 2018 (Davis, Weber, and Washington). Table 2 below summarizes the target and comparison populations and those that have been diagnosed with SUD. The comparison sites began provision of IMD residential facilities in 2019 so the analysis can only look at 2018 for comparison (see Table 1 above).

Medicaid beneficiaries that moved or received services outside of their specified target or comparison counties were removed from the analysis. In addition, Medicaid beneficiaries in the Primary Care Network (PCN) program, or a part of the emergency only population were removed from the analysis due to limitations in their service coverage. Targeted Adult Medicaid beneficiaries were removed because that demonstration did not exist prior to the SUD demonstration. Graphs with and without these groups showed the same distributions which determined that the removal of these groups did not significantly change the characteristics of the population.

Table 2: Summary of Medicaid beneficiaries with a SUD diagnosis

Counties w/ IMD Expansion	**County Population**	**# of clients w/ SUD**	**Percentage**
Salt Lake	228,222	18,729	8.21%
Utah	111,997	5,239	4.68%
Counties w/ No Expansion			
Davis	51,361	3,005	5.85%
Washington	37,850	1,759	4.65%
Weber	59,886	5,154	8.61%

Evaluation Measures

The measures used in the SUD evaluation included nationally standardized data collection protocols such as Initiation and Engagement of Alcohol and Other Drug Dependence Treatment (NFQ #0004) and Continuity of Pharmacotherapy for OUD (NQF #3175). The specific measures and their modifications are listed in Table 3 below.

Table 3: Description of Measures of their Modifications

Measure Description	Steward	Numerator	Denominator	Modification
Initiation of alcohol and other drug dependence treatment	NQF #0004	Members who began initiation of treatment through an inpatient admission, outpatient visits, intensive outpatient encounter or partial hospitalization within 14 days of the index episode start date	Total members diagnosed with a new episode of alcohol or drug dependency during the first 10.5 months of the measurement year	
Engagement in alcohol and other drug dependence treatment	NQF #0004	Members with initiation of treatment and two or more inpatient admissions, outpatient visits, intensive outpatient encounters or partial hospitalizations with any alcohol or drug diagnosis within 30 days after the date of the initiation encounter	Total members diagnosed with a new episode of alcohol or drug dependency during the first 10.5 months of the measurement year	
Continuity of pharmacotherapy for OUD	NQF #3175	Members who have at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than seven days	Total members who had a diagnosis of OUD and at least one claim for an OUD medication	Evaluation period of one year instead of two
Any SUD Treatment	CMS Metric #6	Members w/ at least one SUD treatment service or pharmacy claim	Total Medicaid members	
Emergency Department Follow-up	NQF #2605	Members w/ a follow-up visit within 7 days and 30 days of emergency department visit	Total members w/ SUD diagnosis and an emergency department visit	
Access to preventive / ambulatory health services (AAP)	NCQA Metric #32	Members w/ at least one ambulatory or preventive care visit	Total members with SUD diagnosis and continual enrollment	
Inpatient stays for SUD per 1,000 Medicaid beneficiaries	CMS Metric #24	Members with inpatient visit for SUD	Total Medicaid members	Evaluation period of one year instead of monthly

CMS = Centers for Medicare and Medicaid Services. NQF = National Quality Forum, NCQA = National Committee for Quality Assurance

Due to the nature of the analysis looking at change over time, the same versions of these metrics must be used for every year for the results to be comparable over time. The versions of the metrics were

taken from those listed in the 1115 Substance Use Disorder Demonstrations: Technical Specifications for Monitoring Metrics Version 2.

The following table outlines which metrics measure outcomes related to each hypothesis.

Table 4. Outcome Measures for each Hypothesis

Hypothesis 1: Percent of members who are referred and engage in treatment for SUDs will increase	• Initiation and Engagement of Treatment
Hypothesis 2: Percent of members who adhere to treatment of SUDs will increase.	• Continuity of Pharmacotherapy • Any SUD treatment (treatment utilization)
Hypothesis 3: Rate of emergency department and inpatient visits will decrease.	• Follow up after Emergency Department visit of AOD • Inpatient Stays for SUD
Hypothesis 4: Percent of members with SUD who experience care for comorbid conditions will increase.	• Preventative health care/ambulatory visits
Hypothesis 5: Rate of overdose deaths due to opioids will decrease.	• Deaths due to opioids

Specific ECHO Survey quality measures of patient experience included in the beneficiary survey included: recognition of plan coverage for mental health and SUD services, availability of services, getting treatment quickly, overall rating of counseling and treatment, and patient rating of the helpfulness of the care received. Specific measures from the beneficiary survey are listed in Table 5 below.

Table 5: Description of Beneficiary Survey Measures

Evaluation Design Hypothesis	Beneficiary Survey Question
Hypothesis 1: Percent of members who are referred and engage in treatment for SUDs will increase	• Patient experience with care. Q30 – Does your plan cover MH, SUD, counseling, treatment? • Community knowledge of available treatment and services Q31 – Are there places in your community you can get help? Q32 – Did you or a member of your household need help?
Hypothesis 2: Percent of members who adhere to treatment of SUDs will increase.	• Patient experience with care Q33 – Able to get services as quickly as possible Q34 – Rate the care received Q35 – How helpful was the care received

Data Sources

Quantitative Analysis

Administrative data was provided by UDOH and include Utah Medicaid claims, procedure, drug, and diagnosis and eligibility information for beneficiaries. Data includes pre-demonstration data beginning January 2016 and extends through the current reporting period.

Beneficiary Survey

The beneficiary survey is an online survey consisting of 46 questions administered to a statewide cross-sectional sample of Medicaid beneficiaries. The survey was administered to a purchased panel by Qualtrics Inc., one of the foremost research panel aggregators in the world. This design will compare group-level outcomes at different times to understand how a demonstration's effects change over time. The survey questions are standardized questions and composite question scales from the BRFSS, CAHPS® and CAHPS® Experience of Care and Health Outcomes (ECHO) Survey, which asks health plan enrollees about their experiences with health care services, including behavioral health care services.

Survey data was collected from May 7 to June 2, 2020.

Analytic Methods

A DiD analysis studies the differential effect of a treatment on a target and comparison group[6]. It allows observational data to have the similar statistical power to an experimental study design. A DiD design compared SUD residential expansion counties with SUD residential services in non-expansion counties. The four assumptions of a DiD analysis are equivalency of population characteristics, parallel trends,

spillover effect, and common shock. The first three assumptions were tested using summary statistics and logistic regression models. However, the common shock assumption involves exogenous forces and is difficult to test. In discussion with the Utah DOH team no concerns about external factors were raised and so it is assumed that no major events unrelated to the Medicaid waiver impacted one group differently than the other.

The covariates included in the DiD model were age, race, gender, Hispanic, and diagnosis of alcohol SUD, opioid SUD, other SUD, and mental health. Means, standard deviations, and standardized mean differences were calculated for each covariate to test for equivalency of population characteristics. The equivalency of population characteristics compared the target and comparison groups for 2016, the target group for 2016 and 2018, and the comparison group for 2016 and 2018. Covariates with a standardized mean difference above 0.1 indicated inclusion in the DiD models.

Parallel trends assume that any trend in the outcome between target and comparison groups are the same prior to intervention. The interaction term between group and time was determined using a logistic regression model. A significant interaction term indicates a trend and the DiD analysis will be bias. The spillover assumption states that the comparison group has no measurable change in outcome at the time of implementation. This was tested using a logistic regression model for the comparison group. Causal effect is established when all DiD design assumptions are met. All metrics met these assumptions and were analyzed using DiD.

Descriptive analysis of beneficiary responses for this baseline survey will focus on patient experience of care and will be analyzed with descriptive measures.

Methodological Limitations

There are several limitations to the current study. Many of the metric specifications have changed throughout the years and not all the metrics were designed for the purpose of measuring change over time. For the purpose of this analysis, outcomes for each year were measured using the same version of the metric, even if the measure specifications changed. Two of the metrics needed modifications to work with the evaluation design. Since we were limited to one year of before and after intervention data we had to modify the continuity of pharmacotherapy metric to look at a one year time period rather than a two-year time period. This resulted in lower numbers of clients meeting the criteria for this metric and may not have allowed enough time to pass to detect a change in the metric. Additionally, we had to modify the metric for inpatient stays for SUD to an annual metric rather than a monthly metric in order to fit with the evaluation design.

Even though there were two available years of data we were only able to look at one year due to losing the comparison population in 2019. This report moved forward with the original design, however, for future reports the design will need to change to a single group longitudinal study in order to look at change in subsequent years of the demonstration. Systematic change can often take time to see results

particularly considering that IMD's were not all implemented at once and the number of beds has continued to increase throughout the duration of the demonstration. As such, one year of data may not have been enough time to detect significant changes in the analyses.

One explanation for the lack of significance in the results is possible unknown external factors that were not controlled for in the model. One potentially relevant factor may be implementation factors. When making system wide service changes, implementation factors can also have an influence on outcomes that can make it difficult to pinpoint if the results (or lack of results) may be due to implementation factors versus program factors. For instance, an intervention may indeed be effective, but if it is not implemented correctly, or if it takes a long time to implement, the results may not show an impact on outcomes or the impact may be delayed. It may be valuable to explore and examine potential process metrics or other potential confounding factors for future analyses if feasible.

Another limitation to being able to measure long term changes in Medicaid beneficiary satisfaction with SUD treatment services is the inability to link annual satisfaction surveys administered to those receiving treatment in publicly funded SUD programs. Utah, like most other states, sets benchmarks in publicly funded SUD treatment programs for consumer satisfaction with treatment services. However, there is great variance in the way local programs implement the Mental Health Statistics Improvement Program (MHSIP) which prevents accurate tracking of responses by the Medicaid eligible population.

Results

All measures met the assumptions, were analyzed with DiD, and the results are shown in the tables (as percentages) and figures (displayed as rates) below. However, no measures were found to be significant at the 0.05 level.

Hypothesis 1: Percent of members who are referred and engage in treatment for SUDs will increase.

Table 6: Distribution of Initiation of Alcohol and Other Drug Dependence Treatment

Year	Initiation of Treatment	Total Eligible Members	Percentage
2016	1,560	4,125	37.9%
2017	1,535	3,963	38.7%
2018	1,661	4,151	40.0%
2019	2,304	5,620	41.0%

Table 7: Distribution of Initiation of Alcohol and Other Drug Dependence Treatment by Group

Year	Group	Initiation of Treatment	Total Eligible Members	Percentage
2016				
	Target	1,080	2,847	37.9%
	Comparison	480	1,278	37.6%
2017				
	Target	1,097	2,761	39.7%
	Comparison	438	1,202	36.4%
2018				
	Target	1,192	2,971	40.1%
	Comparison	469	1,180	39.8%
2019				
	Target	1,557	3,904	39.9%
	Comparison	747	1,716	43.5%

Tables 6 and 7 above show the percent of initiation of alcohol and other drug dependence treatment increasing each year. However, the target group had an increase in initiation from 2016 to 2018 and a decrease in 2019 while the comparison group had a decrease in initiation in 2017 and an increase for 2018 and 2019. As shown below in Table 8, both target and comparison groups have an increase of 2.19% in initiation of treatment. In 2016 and 2018, the initiation of treatment was higher in the target group compared to the comparison group. Overall, there is a 0% increase in the difference of the differences for initiation in alcohol and other drug treatment. This difference was found to not be significant at the 0.05 level. Figure 1 shows the initiation change between groups from the pre-exposure period to the post-exposure period.

Table 8: Difference in Differences of Initiation of Alcohol and Other Drug Dependence Treatment

Variable	Target	Comparison	Difference
One-year initiation rate (2016)	37.93%	37.56%	0.38%
One-year initiation rate (2018)	40.12%	39.75%	0.38%
Change in one-year initiation rate	2.19%	2.19%	0%

Figure 1: Difference in Differences of Initiation of Alcohol and Other Drug Dependence Treatment

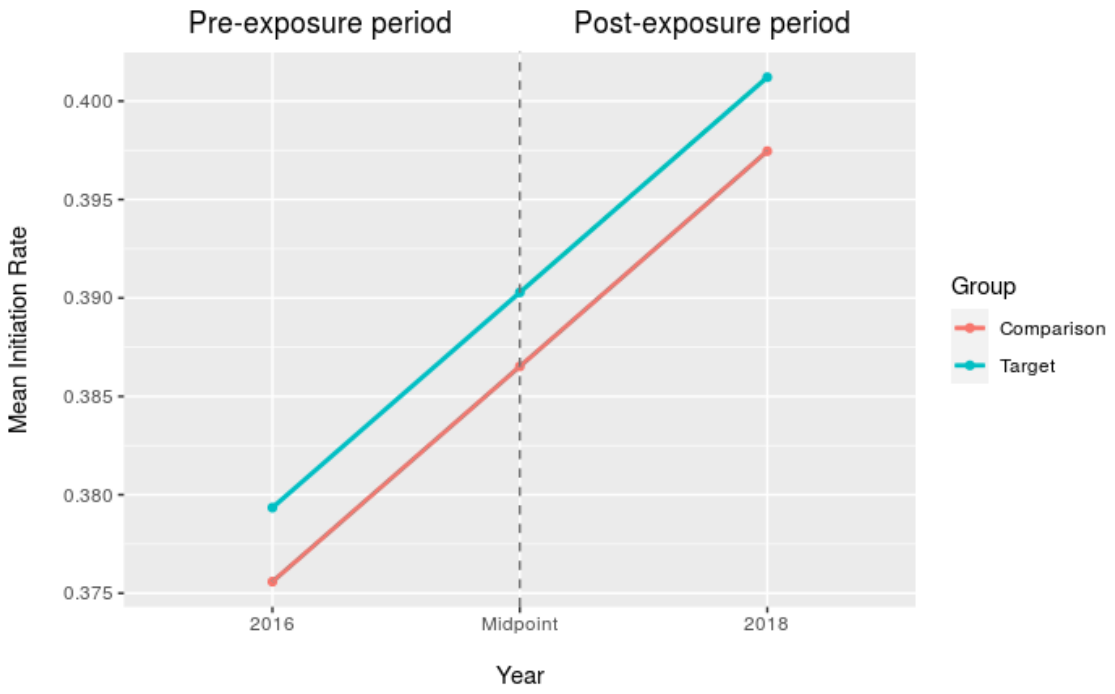


Table 9: Distribution of Engagement of Alcohol and Other Drug Dependence Treatment

Year	Engagement of Treatment	Total Eligible Members	Percentage
2016	323	4,125	7.83%
2017	292	3,963	7.37%
2018	403	4,151	9.71%
2019	677	5,620	12.05%

Table 10: Distribution of Engagement of Alcohol and Other Drug Dependence Treatment by Group

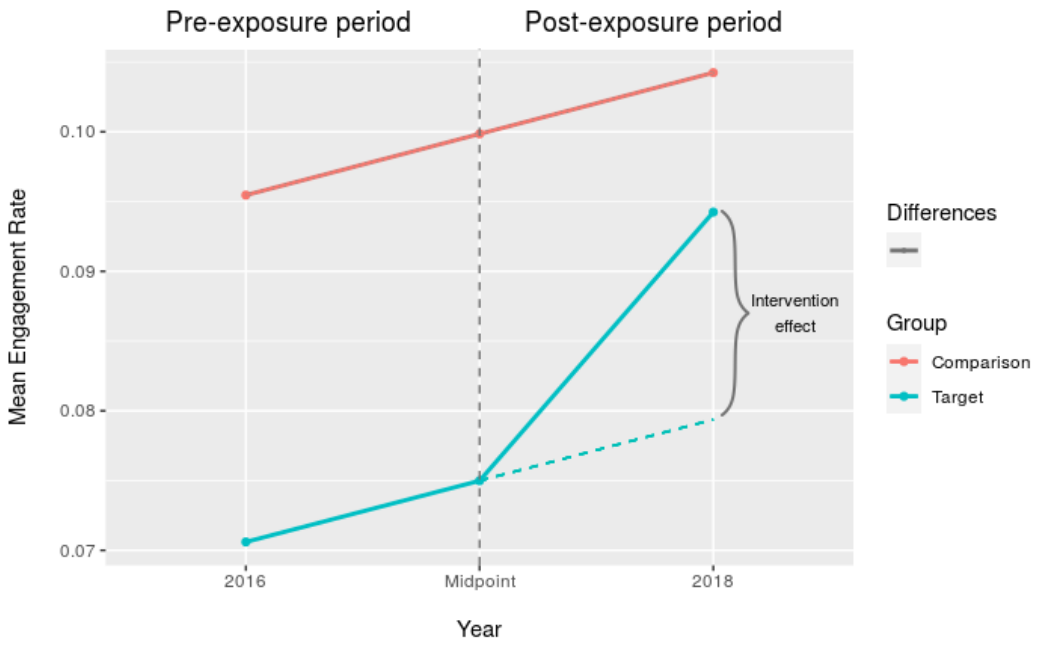
Year	Group	Engagement of Treatment	Total Eligible Members	Percentage
2016				
	Target	201	2,847	7.06%
	Comparison	122	,1278	9.55%
2017				
	Target	207	2,761	7.50%
	Comparison	85	1,202	7.07%
2018				
	Target	280	2,971	9.42%
	Comparison	231	1,761	10.42%
2019				
	Target	446	3,904	11.42%
	Comparison	231	1,716	13.46%

Tables 9 and 10 above show the percent of engagement of alcohol and other drug dependence treatment increasing each year. However, the comparison group had a decrease in engagement in 2017 and an increase for 2018 and 2019. As shown below in Table 11, both target and comparison have an increase in engagement of alcohol and other drug dependence treatment (2.36% and 0.88%, respectively). In 2016 and 2018, the engagement was higher in the comparison group compared to the target group. Overall, there is a 1.49% increase in the difference of the differences for engagement of alcohol and other drug dependence treatment in the target group compared to the comparison group. This difference was found to not be significant at the 0.05 level. Figure 2 shows the engagement change between groups from the pre-exposure period to the post-exposure period. In the post-exposure period, the dotted line for the target group represents the expected trend if there was no exposure and the solid lines represent the observed trends for each group.

Table 10: Difference in Differences of Engagement of Alcohol and Other Drug Dependence Treatment

Variable	Target	Comparison	Difference
One-year engagement rate (2016)	7.06%	9.55%	-2.49%
One-year engagement rate (2018)	9.42%	10.42%	-1%
Change in one-year engagement rate	2.36%	0.88%	1.49%

Figure 2: Difference in Differences of Engagement of Alcohol and Other Drug Dependence Treatment



Hypothesis 2: Percent of members who adhere to treatment of SUDs will increase.

Table 11: Distribution Continuity of Pharmacotherapy for OUD

Year	Continuous Pharmacotherapy	Eligible members with OUD Diagnosis and at least one OUD medication claim	Percentage
2016	441	724	60.7%
2017	455	757	60.1%
2018	458	885	51.7%
2019	602	1,237	48.7%

Table 12: Distribution Continuity of Pharmacotherapy for OUD by Group

Year	Group	Continuous Pharmacotherapy	Eligible members with OUD Diagnosis and at least one OUD medication claim	Percentage
2016				
	Target	359	593	60.5%
	Comparison	82	131	62.6%
2017				
	Target	369	601	61.4%
	Comparison	86	156	45.9%
2018				
	Target	369	691	53.4%
	Comparison	89	194	45.9%
2019				
	Target	487	960	50.7%
	Comparison	115	277	41.5%

Tables 11 and 12 above show the percent of continuity of pharmacotherapy decreasing each year. However, the target group had an increase in the continuity of pharmacotherapy in 2017 and a decrease

for 2018 and 2019. As shown below in Table 13 below, both target and comparison groups show a decrease in continuity of pharmacotherapy. (-7.24% and –16.72%, respectively). In 2016, the continuity of pharmacotherapy was higher in the comparison group compared to the target group. However, in 2018, the continuity of pharmacotherapy was higher in the target group compared to the comparison group. Overall, there is a 9.48% increase in the difference of the differences for continuity of pharmacotherapy in the target group compared to the comparison group. This difference was found to not be significant at the 0.05 level. Figure 3 below shows the continuity of pharmacotherapy change between groups from the pre-exposure period to the post-exposure period. In the post-exposure period, the dotted line for the target group represents the expected trend if there was no exposure and the solid lines represent the observed trends for each group.

Table 13: Difference in Differences of Continuity of Pharmacotherapy for OUD

Variable	Target	Comparison	Difference
One-year pharmacotherapy rate (2016)	60.24%	62.6%	**-1.95%**
One-year pharmacotherapy rate (2018)	53.4%	45.88%	**7.52%**
Change in one-year pharmacotherapy rate	**-7.24%**	**-16.72%**	**9.48%**

Figure 3: Difference in Differences of Continuity of Pharmacotherapy for OUD

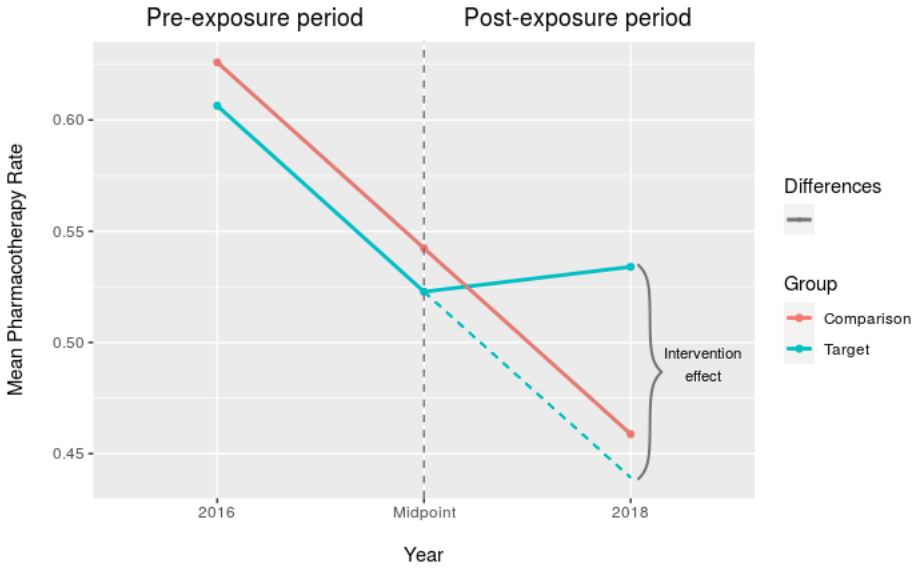


Table 14: Distribution of any SUD treatment service, facility claim, or pharmacy claim

Year	Any SUD Treatment	Total Eligible Members	Percentage
2016	6,549	260,943	2.51%
2017	6,235	249,423	2.50%
2018	6,061	242,433	2.50%
2019	6,294	242,077	2.60%

Table 15: Distribution of any SUD treatment service, facility claim, or pharmacy claim by group

Year	Group	Any SUD Treatment	Total Eligible Members	Percentage
2016				
	Target	4,635	183,208	2.53%
	Comparison	1,905	77,735	2.45%
2017				
	Target	4,286	175,636	2.44%
	Comparison	1,970	73,796	2.67%
2018				
	Target	4,168	170,106	2.45%
	Comparison	1,895	72,327	2.62%
2019				
	Target	4,214	169,901	2.48%
	Comparison	2,071	72,176	2.87%

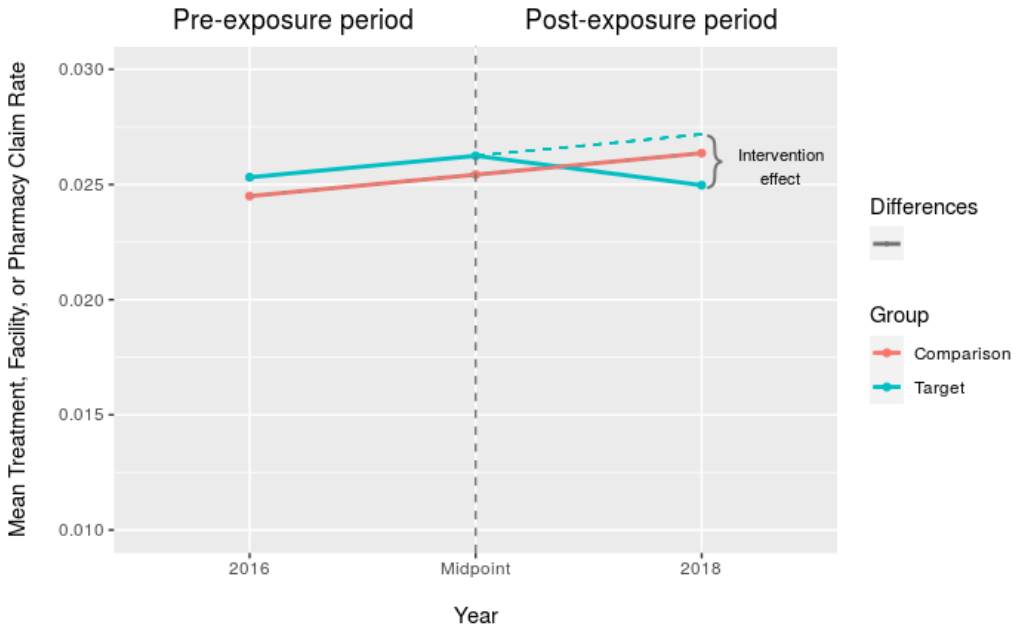
Tables 14 and 15 above show the percentage of any SUD treatment service, facility claim, or pharmacy claim decreasing in 2017 and increasing in 2019. However, the target group also had an increase in 2018 while the comparison group had an increase in every year except 2018. As shown in Table 16 below, the target group shows a decrease in any SUD treatment service, facility claim, or pharmacy claim (0.08%) and the comparison group shows an increase in any SUD treatment service, facility claim, or pharmacy claim (0.17%). In 2016, the SUD treatment service, facility claim, or pharmacy claims were higher in the

target group compared to the comparison group. However, in 2018, the SUD treatment service, facility claim, or pharmacy claims were higher in the comparison group compared to the target group. Overall, there is a 0.25% decrease in the difference of the differences for SUD treatment service, facility claim, or pharmacy claims in the target group compared to the comparison group. This difference was found to not be statistically significant at the 0.05 level. Figure 4 shows the SUD treatment service, facility claim, or pharmacy claim change between groups from the pre-exposure period to the post-exposure period. In the post-exposure period, the dotted line for the target group represents the expected trend if there was no exposure and the solid lines represent the observed trends for each group.

Table 16: Difference in Differences of Receiving any SUD treatment service, facility claim, or pharmacy claim

Variable	Target	Comparison	Difference
One-year admission rate (2016)	2.53%	2.45%	**0.08%**
One-year admission rate (2018)	2.45%	2.64%	**-0.17%**
Change in one-year admission rate	**-0.08%**	**0.17%**	**-0.25%**

Figure 4: Difference in Differences of Receiving any SUD treatment service, facility claim, or pharmacy claim



Hypothesis 3: Rate of emergency department and inpatient visits will decrease.

Table 17: Distribution of Emergency Department Follow-up within 7 Days

Year	Follow-up Within 7 Days	Total Eligible Members with an Emergency Department Visit	Percentage
2016	68	514	13.23%
2017	58	469	12.37%
2018	68	552	12.32%
2019	141	980	14.39%

Table 18: Distribution of Emergency Department Follow-up within 7 Days by Group

Year	Group	Follow-up Within 7 Days	Total Eligible Members with an Emergency Department Visit	Percentage
2016				
	Target	51	367	13.90%
	Comparison	17	147	11.56%
2017				
	Target	45	353	12.75%
	Comparison	13	116	11.21%
2018				
	Target	57	434	13.13%
	Comparison	11	118	9.32%
2019				
	Target	94	729	12.89%
	Comparison	47	251	18.73%

Tables 17 and 18 above show the percent of emergency department follow-up within 7 days decreasing each year except 2019. However, the target group had an increase in the emergency department follow-

up in 2018 and a decrease for 2019. As shown below in Table 19 below, both target and comparison groups show a decrease in emergency department follow-up within 7 days (-0.76% and –2.24%, respectively). In 2016 and 2018, the emergency department follow-up within 7 days was higher in the target group compared to the comparison group. Overall, there is a 1.48% increase in the difference of the differences for emergency department follow-up within 7 days in the target group compared to the comparison group. This difference was found to not be statistically significant at the 0.05 level. Figure 5 shows the emergency department follow up within 7 days change between groups from the pre-exposure period to the post-exposure period. In the post-exposure period, the dotted line for the target group represents the expected trend if there was no exposure and the solid lines represent the observed trends for each group.

Table 19: Difference in Differences of Emergency Department Follow-up within 7 Days

Variable	Target	Comparison	Difference
One-year follow-up rate (2016)	13.9%	11.56%	**2.33%**
One-year follow-up rate (2018)	13.13%	9.32%	**3.81%**
Change in one-year follow-up rate	**-0.76%**	**-2.24%**	**1.48%**

Figure 5: Difference in Differences of Emergency Department Follow-up within 7 Days

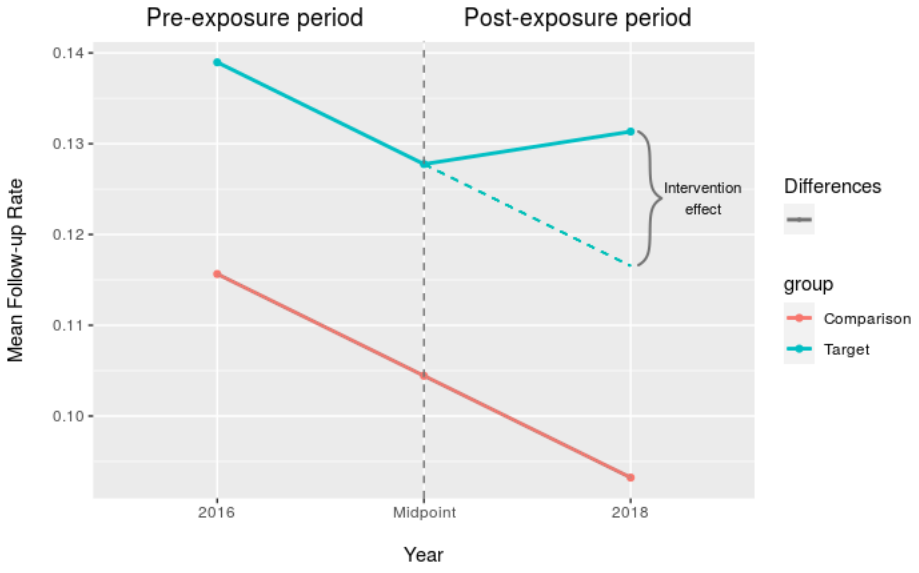


Table 20: Distribution of Emergency Department Follow-up within 30 Days

Year	Follow-up Within 30 Days	Total Eligible Members with an Emergency Department Visit	Percentage
2016	101	514	19.65%
2017	80	469	17.06%
2018	106	552	19.20%
2019	196	980	20.00%

Table 21: Distribution of Emergency Department Follow-up within 30 Days by Group

Year	Group	Follow-up Within 30 Days	Total Eligible Members with an Emergency Department Visit	Percentage
2016				
	Target	76	367	20.71%
	Comparison	25	147	17.01%
2017				
	Target	61	353	17.28%
	Comparison	19	116	16.38%
2018				
	Target	86	434	19.82%
	Comparison	20	118	16.95%
2019				
	Target	131	729	17.97%
	Comparison	65	251	25.90%

Tables 20 and 21 above show the percentage of emergency department follow-up for 30 days increasing each year except 2017. However, the target group also had a decrease in the emergency department follow-up in 2019. As shown below in Table 22 below, both target and comparison groups show a

decrease in emergency department follow-up within 30 days (-0.89% and –0.06%, respectively). In 2016 and 2018, the emergency department follow-up within 30 days was higher in the target group compared to the comparison group. Overall, there is a 0.84% decrease in the difference of the differences for emergency department follow-up within 30 days in the target group compared to the comparison group. This difference was found to not be statistically significant at the 0.05 level. Figure 6 shows the emergency department follow up within 30 days change between groups from the pre-exposure period to the post-exposure period. In the post-exposure period, the dotted line for the target group represents the expected trend if there was no exposure and the solid lines represent the observed trends for each group.

Table 22: Difference in Differences of Emergency Department Follow-up within 30 Days

Variable	Target	Comparison	Difference
One-year follow-up rate (2016)	20.71%	17.01%	**3.7%**
One-year follow-up rate (2018)	19.82%	16.95%	**2.87%**
Change in one-year follow-up rate	**-0.89%**	**-0.06%**	**-0.84%**

Figure 6: Difference in Differences of Emergency Department Follow-up within 30 Days

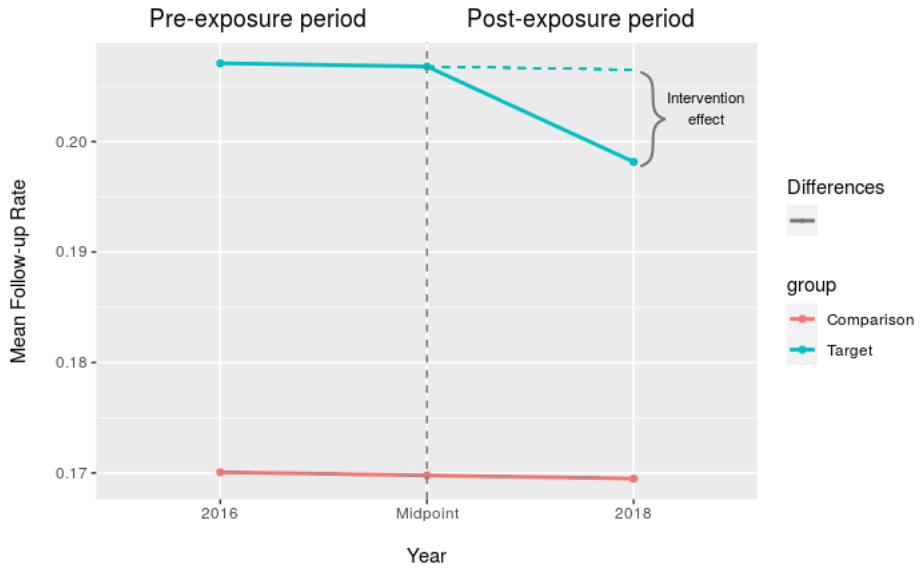


Table 23: Distribution of OUD Inpatient Stays

Year	SUD Inpatient Admission	Total Eligible Members	Percentage
2016	3,707	260,943	1,42%
2017	3,552	249,423	1.42%
2018	2,383	242,433	1.35%
2019	5,153	242,077	2.13%

Table 24: Distribution of OUD Inpatient Stays by Group

Year	Group	SUD Inpatient Admission	Total Eligible Members	Percentage
2016				
	Target	2,623	183,208	1.43%
	Comparison	1,084	77,735	1.39%
2017				
	Target	2,451	175,636	1.40%
	Comparison	1,101	73,796	1.49%
2018				
	Target	2,286	170,106	1.34%
	Comparison	997	72,327	1.38%
2019				
	Target	3,562	169,901	2.10%
	Comparison	1,591	72,176	2.20%

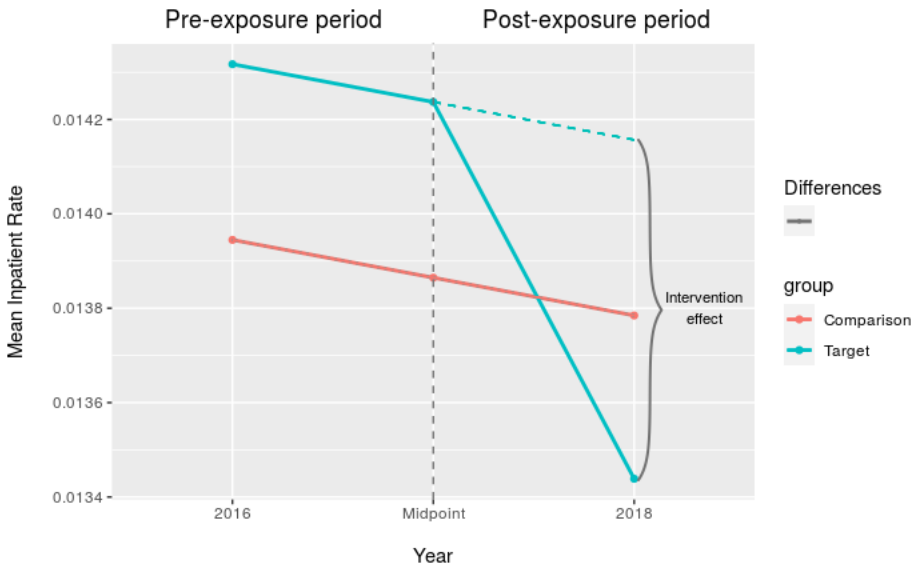
Tables 23 and 24 above show the percentage of inpatient admission for OUD decreasing from 2016 to 2018 and increasing for 2019. However, the target group had a decrease in the inpatient admission for OUD for each year except 2019 while the comparison group also shows an increase in 2017. As shown below in Table 25 below, both target and comparison groups show a decrease in inpatient admissions

for OUD (0.09% and 0.02%, respectively). In 2016, inpatient admission for OUD was higher in the target group compared to the comparison group. However, in 2018, the inpatient admission of OUD was higher in the comparison group compared to the target group. Overall, there is a 0.07% decrease in the difference of the differences for inpatient admission of OUD in the target group compared to the comparison group. This difference was found to not be statistically significant at the 0.05 level. Figure 7 below, shows inpatient admission for OUD change between groups from the pre-exposure period to the post-exposure period. In the post-exposure period, the dotted line for the target group represents the expected trend if there was no exposure and the solid lines represent the observed trends for each group.

Table 25: Difference in Differences of Inpatient Admission of OUD

Variable	Target	Comparison	Difference
One-year admission rate (2016)	1.43%	1.39%	**0.04%**
One-year admission rate (2018)	1.34%	1.38%	**-0.03%**
Change in one-year admission rate	**-0.09%**	**-0.02%**	**-0.07%**

Figure 7: Difference in Differences of Inpatient Admission of OUD



Hypothesis 4: Percent of members with SUD who experience care for comorbid conditions will increase.

Table 26: Distribution of Access to Preventive/Ambulatory Health Services (AAP)

Year	AAP	Total Eligible Members with SUD and Continual Enrollment	Percentage
2016	6,943	8,146	85.23%
2017	7,027	8,324	85.61%
2018	6,949	7,935	87.57%
2019	10,568	12,972	81.47%

Table 27: Distribution of Access to Preventive/Ambulatory Health Services (AAP) by Group

Year	Group	AAP	Total Eligible Members with SUD and Continual Enrollment	Percentage
2016				
	Target	4,852	5,719	84.84%
	Comparison	2,091	2,427	86.16%
2017				
	Target	4,818	5,656	85.18%
	Comparison	2,076	2,397	86.61%
2018				
	Target	4,885	5,597	87.28%
	Comparison	2,064	2,338	88.28%
2019				
	Target	7,322	9,074	80.69%
	Comparison	3,246	3,898	83.27%

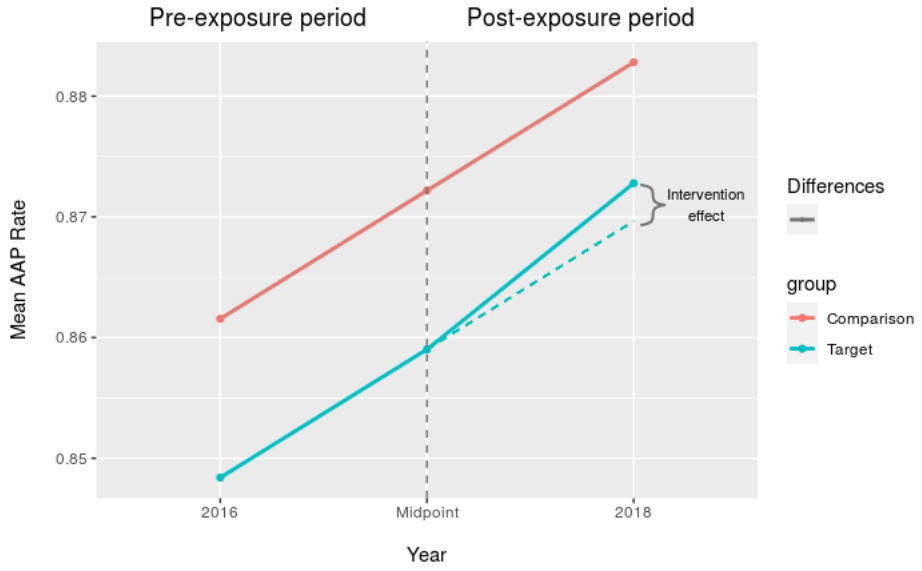
Tables 26 and 27 above show the percentage access to preventive / ambulatory health services (AAP) for OUD increasing for every year except 2019. As shown below in Table 28 below, both target and

comparison groups show an increase in AAP (2.44% and 2.12%, respectively). In 2016 and 2018, the AAP was higher in the comparison group compared to the target group. Overall, there is a 0.31% increase in the difference of the differences for AAP in the target group compared to the comparison group. This difference was found to not be significant at the 0.05 level. Figure 8 below, shows the AAP change between groups from the pre-exposure period to the post-exposure period. In the post-exposure period, the dotted line for the target group represents the expected trend if there was no exposure and the solid lines represent the observed trends for each group.

Table 28: Difference in Differences of Access to Preventive/Ambulatory Health Services

Variable	Target	Comparison	Difference
One-year access rate (2016)	84.84%	86.16%	**-1.32%**
One-year access rate (2018)	87.28%	88.28%	**-1%**
Change in one-year access rate	**2.44%**	**2.12%**	**0.31%**

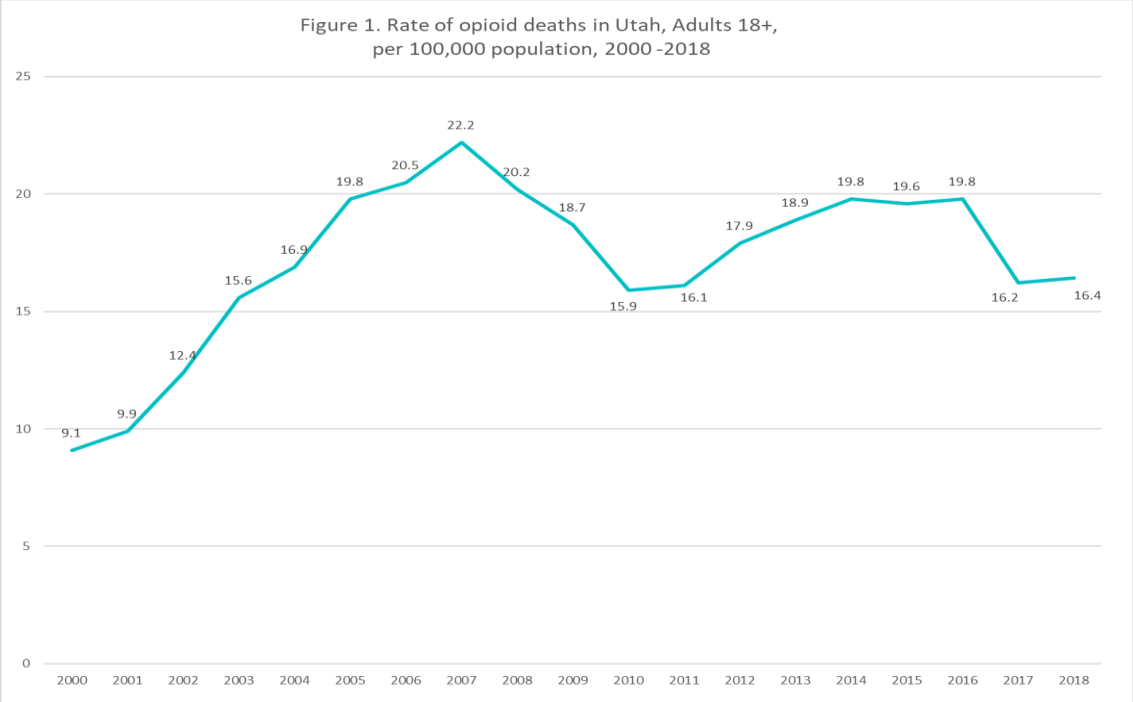
Figure 8: Difference in Differences of Access to Preventive/Ambulatory Health Services



Hypothesis 5: Rate of overdose deaths due to opioids will decrease.

Utah has experienced a sharp increase in opioid related deaths since 2000 [7]. Recent data suggests that the number of deaths due to opioids peaked initially in 2007, then showed a promising decreasing trend through 2010, before increasing dramatically once more from 2011 through 2017 (see Figure 9 below).

Figure 9: Rate of opioid deaths in Utah, Adults 18+ years, per 100,000 population, 2000-2018



DSAMH has statutory oversight of substance abuse and mental health treatment services statewide through local county authority programs. While some SUD services have been available to Medicaid members statewide, this waiver expands the continuum of care to include SUD residential treatment in Institution for Mental Disease (IMD) for eligible individuals. This adds a critical service to address the needs of Medicaid members.[8] Additionally, in response to the challenges related to opioid-related deaths, UDOH established an Opioid Fatality Review Committee (OFRC) in January 2018 to conduct in-depth reviews on select opioid deaths in the state. The purpose of a fatality review is to gather accurate data about events leading up to and surrounding an opioid-related death and make recommendations to prevent future fatalities.

Table 29: SUD-related overdose deaths among Medicaid beneficiaries.

Year	Overdose deaths	Rate of overdose deaths
2018	159	0.42
2019	161	0.42
2020	210	0.52

While opioid overdose deaths in the general population appears to have reached its high point and appears to be decreasing, the trend among Medicaid beneficiaries appears to be increasing, despite efforts to increase service quality and availability.

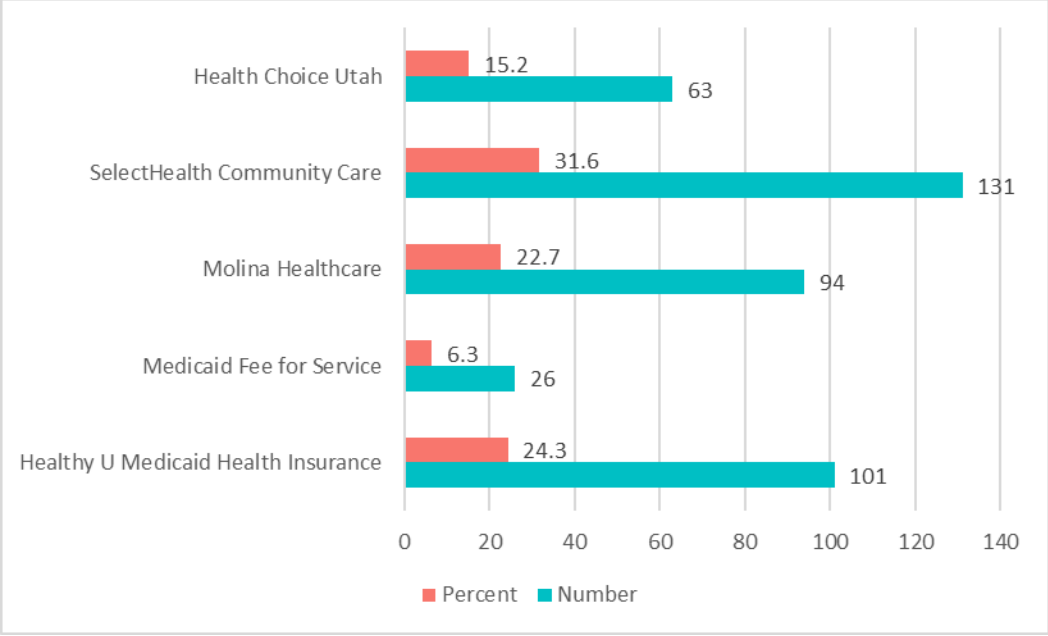
Hypothesis 1 and 2: Research questions answered from beneficiary survey.

Survey response

The statewide cross sectional survey of Medicaid beneficiaries had 415 completed surveys (see Attachment B for all responses). Respondents were 64% female and 36% male. The average age of respondents was 41.3 years and the median age was 34.0 years. The age range of respondents was 18 to 79 years of age. Eighty-six percent reported their race as White, 4 % were Asian, 3 % were Black or African American, 2 % were American Indian or Alaska Native, and 1 % were Native Hawaiian or Other Pacific Islander. Four percent were Other races. Sixteen percent identified as being Hispanic / Latino.

Survey respondents came from 21 of Utah's 29 Counties, with 80% from the urban areas of the state (Davis, Salt Lake, Utah, and Weber counties). Thirty-two percent of respondents were "Employed for wages", with 8 % "self-employed", 6.5 % were "out of work for 1 year or more", 7.5 % were "out of work for less than 1 year". Ten percent identified themselves as "a homemaker", 8 % as "a student", 6 % as "retired", and 22% "unable to work".

Figure 10: Medicaid plan of beneficiary survey respondents, 2020.



Beneficiary experience with care

The first key question focused on beneficiaries' recognition of the availability of mental health (MH) and substance abuse disorder (SUD) services in their community. When asked whether "there are places in your community you could go to get the help needed?" 69% (N=286) responded "yes", while 11% responded "no". Twenty percent reported "they did not know".

The next question focused on beneficiaries' need for mental health and/or substance abuse services. When asked "in the last 12 months, have you or a member of your household needed counseling, treatment, or medicine for drug or alcohol use?" 55% (N=226) said "yes".

Survey findings for beneficiaries reporting the need to get treatment quickly was positive. When asked "in the last 12 months, when you or a member of your household needed counseling, treatment, or medicine, how often were you or a family member able to see someone *as soon as needed*?" 61% (N=226) responded "usually" or "always". Twenty-seven percent responded "sometimes", with 12% reporting "never".

Next, respondents who indicated they or a household member had received counseling or treatment were asked to "rate all the counseling or treatment in the last 12 months from 0 to 10, where 0 is the worst counseling or treatment possible and 10 is the best counseling or treatment possible." The average rating was 6.43/10.

The last beneficiary SUD experience with care question asked "in the last 12 months, how much were you or a member of your household *helped by the counseling, treatment, or medicine*?" Sixty-two percent responded they were helped "a lot" or "somewhat". Twenty-seven percent reported being helped "a little", while 10 percent reported "not at all".

These beneficiary survey findings indicate that the majority of members recognize they have access to mental health and substance abuse services as part of their plan benefits and they know where to go for services, should the need exist. Those members who either experienced a need or who had a household member with a need for these services reported positive experiences with being able to get services quickly. They also rated the overall services that were received favorably.

Supplemental Metrics for Mid-Point Assessment

The purpose of the mid-point assessment of supplemental metrics is to help "CMS assess whether states are making sufficient progress towards meeting their demonstration milestones and monitoring metric targets". In order to complete this assessment, considerable collaboration took place between the independent evaluator and UDOH. For example, UDOH staff shared summary report narrative and process data outcomes for both monthly and annual data metrics used as part of the state's ongoing SUD waiver monitoring procedures. Specific documentation included the SUD Monitoring Workbook (V4) containing: planned metrics and metric report data as well as metric definitions, annual goals, and

overall demonstration targets. More specifically, to support the interim review of "critical SUD metrics" UDOH provided 3 years data (SFY 2018, 2019, and 2020) to the independent evaluation research team. This data included a combination of annual and monthly data for 21 identified SUD-related metrics (categorized into 5 milestone target content areas) as well as specifically identified annual and waiver outcome goals.

The independent evaluator undertook a systematic process to conduct the review, consisting of two components. First, 3 unbiased research staff participated in the review. Working independently and objectively, these staff examined the outcome data for each of the 21 metrics and assigned a rating for each one, by applying the evaluation criteria provided in the CMS guidance. Then once each metric was given a rating, the research staff member provided a composite rating for each of the 5 established milestone categories. Second, following the completion of the independent ratings, all research staff met and reviewed the ratings with additional discussion in order to reconcile any variation in the ratings. This process enabled research staff to establish group consensus on both individual metric and composite milestone rating scores (see Table 30 below). This approach offered a consistent systematic review based on established criteria and provides an assurance the evaluation process is impartial and fair.

Table 30: Assessment of risk associated with not meeting SUD milestones at mid-point.

	SUD Mid-Point Assessment of Critical Metrics	Risk status in achieving milestone		
		LOW	MED.	HIGH
Metric #	**Milestone 1. Access to critical levels of care for OUD and other SUDs.**	**X**		
7	Early Intervention	X		
8	Outpatient Services	X		
9	Intensive Outpatient and Partial Hospitalization Services	X		
10	Residential and Inpatient Services	X		
11	Withdrawal Management	X		
12	Medication-Assisted Treatment (MAT)	X		
22	Continuity of Pharmacotherapy for Opioid Use Disorder			X
	Milestone 2. Use of evidence-based, SUD-specific patient placement criteria.		**X**	
5	Medicaid Beneficiaries Treated in an IMD for SUD	X		
36	Average length of stay in IMDs			X
	Milestone 4. Sufficient provider capacity at each level of care.	**X**		
13	Provider availability	X		
14	Provider availability - MAT	X		
	Milestone 5. Implementation of comprehensive treatment and prevention strategies to address opioid abuse and OUD.			**X**
18	Use of Opioids at High Dosage in Persons Without Cancer (NQF #2940)	N/A		
21	Concurrent Use of Opioids and Benzodiazepines (NQF #3175)	X		
23	Emergency Department Utilization for SUD per 1,000 Medicaid Beneficiaries			X
27	Overdose death rate			X
	Milestone 6. Improved care coordination and transitions between levels of care.	**X**		
15	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment (NQF #0004)		X	
17(1)	Follow-up after Emergency Department Visits for Alcohol or Other Drug Dependence (NQF #2605) **AOD 7- Day follow- up**	X		
17(1)	Follow-up after Emergency Department Visits for Alcohol or Other Drug Dependence (NQF #2605) **AOD 30 - Day follow- up**	X		
17(2)	Follow-up after Emergency Department Visits for Mental Illness (NQF #2605) **MH 7 - Day Follow-up**	X		
17(2)	Follow-up after Emergency Department Visits for Mental Illness (NQF #2605) **MH 30 - Day Follow-up**	X		
25	Readmissions Among Beneficiaries with SUD		X	

There are no critical metrics identified for Milestone 3 (Use of nationally recognized, evidence-based SUD program standards to set residential treatment provider qualifications).

SUD Mid-Point Metric and Milestone Progress

Table 29 contains 21 metrics categorized within 5 milestone content target areas. The independent evaluators rated a total of 14 metrics (70%) as "low risk" of not being achieved by the end of waiver demonstration period. Only 2 metrics (10%) were rated "medium risk" of not being achieved, while 4 metrics (20%) were rated "high risk" of not being achieved. One metric (#18), was not given a rating at this time by the independent evaluator due to changes in the definition of the metric, which compromised this metric assessment. Specifically, during FY2018 the metric was defined as the "*rate per 1,000 beneficiaries* age 18 and older included in the denominator without cancer who received prescriptions for opioids *with a daily dosage greater than 120 morphine milligram equivalents (MME) for 90 consecutive days or longer*." However, the definition changed beginning in FY2019 to *" percentage of beneficiaries* age 18 and older who received prescriptions for opioids with an *average daily dosage greater than or equal to 90 morphine milligram equivalents (MME) over a period of 90 days or more."* For this metric, multiple changes occurred: the reporting measure changed from a beneficiary rate to a beneficiary percentage, the prescription daily dosage decreased from 120 MME to 90 MME, and the time period for numerator qualification changed from 90 *consecutive* days or longer to an average over 90 days or more. Additionally, the annual goal and targeted waiver outcome for this metric, was not adjusted to reflect the changing definition between FY2018 and 2019, further complicating an accurate assessment rating.

Given the positive findings that 70% of the individual metrics are rated "low risk" of not being achieved, the composite milestone ratings reflect a similar "low risk" of not being achieved. As noted in Table 29 the "low risk" rating was assigned to milestones 1, 4, and 6. Milestone 2 received a "medium risk" rating and milestone 5 was deemed to be "high risk" of not being achieved.

Several factors contributed to milestone 5 receiving the "high risk" rating. The first was a technical reason, the missing rating (metric #18) previously discussed which represented 25% of the metrics comprising milestone 5 [Implementation of comprehensive treatment and prevention strategies to address opioid abuse and opioid use deaths (OUD)]. The second was due to both metric #23 and #27 receiving "high risk" ratings based on data trends indicating the waiver targets are likely not to be met.

Milestone 2 was rated a "medium risk" of not being achieved since the mid-range rating is reflective of having one metric at low risk while one metric is at high risk of not being achieved.

Milestones 1, 4, and 6 were all given the "low risk" rating as a result of strong outcome data reflecting the state has *either* already achieved outcomes surpassing established goals or the 3-year trend indicates the goals are at "low risk" of not being achieved.

Other Findings

UDOH Implementation Plan Monitoring

UDOH has been proactive in its efforts to collaborate with the Utah Division of Substance Abuse and Mental Health (DSAMH) and SUD service providers throughout waiver planning and implementation. For example, to strengthen and ensure state-wide capacity to implement evidence-based SUD treatment and trainings on ASAM assessment, treatment planning, and motivational interviewing have been provided several times by DSAMH. To support the waiver changes, the state established a policy requiring prior authorization for clinically managed low-intensity residential services and included guidance for members enrolled in Pre-paid Mental Health Plan and traditional Fee-for-Service members. Further, contracts with the Pre-paid Mental Health Plans have been clarified to include the use of ASAM for placement criteria and the utilization review process. These and other implementation efforts by UDOH and collaborators at DSAMH and other SUD service providing entities began in the early stages of demonstration roll out and have continued throughout these initial couple of years. But even with these early efforts, SUD service providers continue to report additional demand for treatment slots which creates delays for those seeking treatment.

COVID – 19 adaptations

COVID-19 has impacted many aspects of the healthcare system, including SUD treatment services and programming. Two of the most important actions have been to quarantine beneficiaries before entering residential SUD treatment and to successfully transition outpatient individual and group therapeutic treatments from in-person to telehealth practice.

SUD Beneficiary Experience with Services

As previously described in the results section (SUD beneficiary experience with care) a beneficiary survey was conducted in the spring of 2020. Survey findings related to beneficiary understanding of the mental health and SUD service coverage provided, including service access availability, timeliness of services, and overall perceived quality of the services provided was encouraging. While beneficiary experience with care is not part of the SUD mid-point assessment of critical metrics per se, these findings do offer further evidence supporting the overall trend in positive SUD demonstration outcomes in Utah.

Conclusions

Overall, most of the outcome measures are trending in the hypothesized direction, however as of 2018, none of the difference-in-difference models were significant which means there was no detectable impact of the demonstration on the outcomes.

For Hypothesis 1, both Initiation and engagement of treatment had an increase in percentage over time as hypothesized, but there was no significant change. It is possible that the IMD expansion is not yet having an impact on this outcome or other external factors could have an influence. The same may be true for all the metrics.

For Hypothesis 2, Continuity of Pharmacotherapy had an increase in percentage over time in both groups but the difference was not significant. Continuity of pharmacotherapy for OUD has a decrease in both groups with a greater decrease in the comparison group. The difference in difference was not significant. For Any SUD treatment, there was a slight decrease in the target and a slight increase in the comparison but there were no significant changes.

For Hypothesis 3, Follow-up after ED had a decrease for 7 days and a decrease for 30 days with no significance. The rate for Inpatient stays for SUD had a small decrease that was not significant. The total number of inpatient stays decreased from 2016 to 2018 which is the desired direction but the total eligible population also decreased so the rates stayed similar in 2018 and were not significant. This could mean that the decrease was due more to the decrease in the number of eligible and that the IMD's had not yet been able to make an impact on the outcome in 2018.

For Hypothesis 4, preventative health care/ambulatory visits had an increase that was not significant. This may suggest, again, that the intervention is not yet having a detectable difference in the outcome because the demonstration policy hasn't been in place long enough. Bringing about population-based changes such as increasing preventive health services takes time. It is also critically important to both improving the health of individuals and reducing the overall costs of health care.

For Hypothesis 5, decrease the rate of overdose deaths due to opioids has not been observed in both the number of deaths and rate thus far since demonstration implementation. This is likely due to the complex and multifaceted nature of opioid overdoses. These include factors such as: lack of awareness/understanding of the health risks of opioid usage on the respiratory system, overprescribing of opioids for pain relief, potential opioid drug interactions with other prescribed medications, and or alcohol or other illicit drugs. In order to bring about the desired reduction in opioid deaths, a well-designed implementation strategy that is tailored to address each of these factors will be required.

For research questions related to Hypothesis 1 and 2, beneficiary experience with MH / SUD services appears to be quite positive. The vast majority of beneficiaries responding to the survey recognize there are specific services available in their community to address this specialized health care service, if needed. Of those members indicating they or a household member needed these services (in the previous 12 months) 61% agreed they were able to obtain care "as soon as needed". When asked to provide a rating of counseling or treatment received in the last 12 months the average rating was 6.43/10. Additionally, and perhaps the most important beneficiary finding was that respondents rated the care they received, with 62% found the counseling or treatment helped (somewhat or a lot).

Finally, supplemental monitoring metrics for this interim report were largely trending positively in the direction desired, indicating UDOH is likely on-track to achieve nearly all of their identified goals. Specifically, of the individual monitoring metrics, 14 were rated as "low risk" of not being achieved by the end of waiver demonstration period. Only 2 were rated "medium risk" of not being achieved, and 4 metrics were rated "high risk" of not being achieved.

In summary, although none of the waiver hypotheses demonstrated statistically significant change in the expected direction at mid-point in the demonstration, this does not mean significant progress with implementation of additional SUD services has not been achieved yet. On the contrary, there has been rapid expansion of new SUD services to many beneficiaries with significant needs. There has also been extensive programming instituted to strengthen and build a strong foundation statewide for the SUD treatment agencies and individual providers.

Interpretations, Policy Implications and Interactions with Other State Initiatives

Although there was no significant difference in the first year after the demonstration, change can be slow with systematic implementation of interventions. More time with the SUD treatment interventions will be needed in order to determine if the implementation of IMD's in the state are effective at improving the hypothesized outcomes. It can take a while for implementation to reach the level of fidelity where we would expect results. Treatment change can be slow when working with the high-risk SUD population. Bed space in IMD's is continuing to increase which will improve access and may make year to year changes more detectable in the data if they are indeed effective. There is a small nominal improvement in most of the metrics from 2016 to 2018, with some indication that the rates are continuing to improve into 2019. It may be promising that the rates are moving in the hypothesized direction, even if the difference is not yet significant.

Beneficiary survey findings generally indicate a positive patient experience accessing services, doing so in a timely manner, and giving notable ratings to both the quality and helpfulness of the services received. Despite this and the changes policy supporting expanded SUD benefits, demand for services continues to exceed treatment slots and bed availability in the State. While the collaboration between UDOH and DSAMH to strengthen the capacity of SUD treatment agencies and the professionals they employ has been key to the rapid roll out, ongoing long-term engagement between these entities and other SUD treatment agencies must continue to more fully realize the goals of the demonstration.

Lessons Learned and Recommendations

Several lessons have been learned to date. First, the Utah implementation of additional SUD services could have prevented design changes by beginning collaboration with evaluators earlier in the demonstration planning process. The original evaluation design (DiD) will have to be changed to a single

group longitudinal study design, because expansion of IMD facilities in the geographical location planned as a comparison site had a confounding effect on the design and analysis. The revised design will support examining change with appropriate controls in subsequent years of the demonstration. Systematic change can often take time to see results particularly considering that IMD's were not all implemented at once and the number of beds has continued to increase throughout the duration of the demonstration. As such, one year of data may not have been enough time to detect significant changes in the analyses.

Second, based on the rapid expansion and enrollment of beneficiaries in SUD services as well as the impressive monitoring outcomes achieved to date for many of the supplemental metrics, there appears to be a need to adjust some of the demonstration goals. For example, Milestone 1. "Access to critical levels of care for OUD and other SUDs" have some metrics (e.g. #7 – early intervention, #8 – outpatient services, and #10 residential and inpatient services) with overall demonstration target goals established with a "5% increase". This goal, given the progress to date appears to be too low as all three metrics have in three years doubled and in one case tripled the original goal. Similar outcomes were also achieved in a number of other milestones and metrics. On the other end of the spectrum, there may also be the need to adjust and or change other target goals as achieving them may be unrealistic. An example of this would be with metric #18 whose definition changed after the first year, but the overall target waiver goal was not adjusted. A specific detailed discussion of this was included in the Supplemental Metrics section of this report.

Third, the central tenet of SUD treatment focuses on the goal of individual client behavior change. Accomplishing this goal at the individual level is a significant challenge for the most effective therapists. This is due to multiple factors including: the addictive nature of SUD, the involuntary participation of many in SUD treatment due to justice-system involvement, and other barriers that negatively impact effective treatment such as lack of jobs and inadequate housing supports for those seeking treatment.

Given these learnings, one recommendation regarding implementation of waiver policies and programs would be to have a well-developed implementation logic model for the provision of evidence-based SUD services. The logic model would serve as the key driver of all implementation efforts that focus on the policy goal and program service delivery. The logic model would also serve as a reference document to guide program implementation and monitoring efforts. Specifically, the logic model would enumerate actionable items that would ensure implementation of evidence-based practices (e.g. implementation of ASAM patient placement criteria) to fidelity. The logic model would also guide service providers to utilize fidelity checklists and other efforts to ensure other evidence-based therapeutic practices were being used by clinical staff.

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3. SUD Evaluation Design TA 1: Substance Use Disorder (SUD) Section 1115 Demonstration Evaluation Design -- Technical Assistance March 6, 2019
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7. Utah's Opioid Crisis Consequence and Resource Assessment. (2017). Utah Department of Human Services, Division of Substance Abuse and Mental Health.
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Attachment A

A.1: Initiation in Alcohol and Other Drug Dependence Treatment Logistic Regression Results

Coefficient	Estimate	Std. Error	z-value	Pr(>|z|)
(Intercept)	-1.0597	0.1243	-8.5234	<0.0001
Group • 1 = target • 0 = comparison	-0.0149	0.0700	-0.2129	0.8314
Post • 1 = 2018 • 0 = 2016	0.0810	0.0835	0.9698	0.3322
DiD (interaction of Group and Post)	**0.0016**	**0.0994**	**0.0162**	**0.9870**
Gender • 1 = male • 0 = female	0.0987	0.0474	2.0817	0.0374
Race • 1 = white • 0 = other or unknown	-0.1527	0.0470	-3.2472	0.0012
Hispanic	0.0750	0.0720	1.0414	0.2977
Alcohol SUD	0.2408	0.0502	4.7971	<0.0001
Opioid SUD	0.2882	0.0488	5.9093	<0.0001
Other SUD	0.2745	0.0498	5.5090	<0.0001
Mental Health Diagnosis	-0.0107	0.0727	-0.1467	0.8834
Age	0.0049	0.0016	2.9905	0.0028

A.2: Engagement in Alcohol and Other Drug Dependence Treatment Logistic Regression Results

Coefficient	**Estimate**	**Std. Error**	**z-value**	**Pr(>|z|)**
(Intercept)	-0.8286	0.1983	-4.178	<0.001
Group • 1 = target • 0 = comparison	-0.3226	0.1218	-2.649	0.0081
Post • 1 = 2018 • 0 = 2016	0.2047	0.1370	1.494	0.1352
DiD	**0.1869**	**0.1680**	**1.112**	**0.2660**
Gender • 1 = male • 0 = female	0.0403	0.0825	0.488	0.6252
Race • 1 = white • 0 = other or unknown	-0.0175	0.0821	-0.213	0.8309
Hispanic	0.2059	0.1159	1.776	0.0758
Alcohol SUD	0.0928	0.0863	1.075	0.2821
Opioid SUD	0.3781	0.0836	4.521	<0.001
Other SUD	0.2623	0.0894	2.933	0.0034
Mental Health Diagnosis	-0.5177	0.1116	-4.637	<0.001
Age	-0.0353	0.0031	-11.355	<0.001

A.3: Continuity of Pharmacotherapy for OUD Logistic Regression Results

Coefficient	Estimate	Std. Error	z-value	Pr(>|z|)
(Intercept)	0.4272	0.2806	2.32	0.1280
Group • 1 = target • 0 = comparison	-0.0806	0.2054	0.15	0.6948
Post • 1 = 2018 • 0 = 2016	-0.6338	0.2208	8.24	0.0041
DiD	**0.3281**	**0.2491**	**1.73**	**0.1879**
Gender • 1 = male • 0 = female	-0.0111	0.1258	0.01	0.1879
Race • 1 = white • 0 = other or unknown	0.3120	0.1178	7.02	0.0081
Hispanic	-0.2855	0.1885	2.29	0.1299
Alcohol SUD	-0.2505	0.2121	2.73	0.0984
Other SUD	-1.0829	0.1239	76.39	<0.0001
Mental Health Diagnosis	-0.6169	0.1247	24.48	<0.0001
Age	0.0164	0.0049	11.19	0.0008

A.4: Any SUD Treatment Service, Facility Claim, or Pharmacy Claim Logistic Regression Results

Coefficient	Estimate	Std. Error	Wald	Pr(>|W|)

(Intercept)	-6.2971	0.05371	-117.25	<0.001
Group • 1 = target • 0 = comparison	0.1178	0.0453	2.60	0.0093
Post • 1 = 2018 • 0 = 2016	0.0216	0.0543	0.40	0.6903
Group*Post	**-0.0682**	**0.0650**	**-1.05**	**0.2939**
Gender • 1 = male • 0 = female	0.2058	0.0301	6.67	<0.001
Race • 1 = white • 0 = other or unknown	0.0656	0.0308	2.13	0.0330
Hispanic	-0.1826	0.0435	-4.20	<0.001
Alcohol SUD	6.7523	0.0618	109.28	<0.001
Opioid SUD	6.2182	0.0522	119.20	<0.001
Other SUD	6.4027	0.0501	127.87	<0.001
Mental Health Diagnosis	0.6231	0.0369	16.87	<0.001
Age	0.0051	0.0011	4.83	<0.001

A.5: Emergency Department Follow-up Within 7 Days Logistic Regression Results

Coefficient	**Estimate**	**Std. Error**	**z-value**	**Pr(>|z|)**
(Intercept)	-3.6150	0.5534	-6.5317	<0.0001
Group	0.0237	0.3196	0.0741	0.9409

• 1 = target • 0 = comparison				
Post • 1 = 2018 • 0 = 2016	-0.3896	0.4638	-0.8402	0.4008
DiD	**0.2829**	**0.5229**	**0.5411**	**0.5884**
Gender • 1 = male • 0 = female	0.0193	0.2166	0.0891	0.9290
Race • 1 = white • 0 = other or unknown	0.5823	0.2231	2.6107	0.0090
Hispanic	0.0936	0.4103	0.2280	0.8196
Opioid SUD	1.0966	0.2467	4.4460	<0.0001
Other SUD	0.0890	0.2412	0.3688	0.7123
Mental Health Diagnosis	0.5527	0.3347	1.6511	0.0987
Age	0.0145	0.0080	0.1898	0.0688

A.5: Emergency Department Follow-up Within 30 Days Logistic Regression Results

Coefficient	**Estimate**	**Std. Error**	**z-value**	**Pr(>|z|)**
(Intercept)	-3.5137	0.4809	-7.3069	<0.0001
Group • 1 = target • 0 = comparison	0.0567	0.2706	0.2097	0.8339

Post • 1 = 2018 • 0 = 2016	-0.1315	0.3633	-0.3619	0.7174
DiD	**0.0513**	**0.4165**	**0.1232**	**0.9019**
Gender • 1 = male • 0 = female	0.0795	0.1811	0.4389	0.6608
Race • 1 = white • 0 = other or unknown	0.2085	0.1804	1.1558	0.2478
Hispanic	0.2383	0.3405	0.6999	0.4840
Opioid SUD	0.8125	0.2184	3.7201	0.0002
Other SUD	0.1263	0.2025	0.6239	0.5327
Mental Health Diagnosis	0.9695	0.2973	3.2609	0.0011
Age	0.0208	0.0067	3.1187	0.0018

A.6: Inpatient Stays for SUD Logistic Regression Results

Coefficient	**Estimate**	**Std. Error**	**z-value**	**Pr(>|z|)**
(Intercept)	-6.6489	0.0605	-109.8601	<0.001
Group • 1 = target • 0 = comparison	-0.2685	0.0476	-5.6394	<0.001
Post • 1 = 2018 • 0 = 2016	-0.2057	0.0569	-3.6135	0.0003

DiD	**0.0487**	**0.0692**	**0.7043**	**0.4812**
Gender • 1 = male • 0 = female	-0.1345	0.0337	-3.9885	0.0001
Race • 1 = white • 0 = other or unknown	-0.1927	0.0331	-5.8279	<0.001
Hispanic	-0.1457	0.0515	-2.8298	0.0047
Alcohol SUD	3.5034	0.0420	83.3438	<0.001
Opioid SUD	2.8997	0.0380	76.2940	<0.001
Other SUD	3.2030	0.0360	88.8981	<0.001
Mental Health Diagnosis	0.9542	0.0377	25.2811	<0.001
Age	0.0293	0.0008	36.2006	<0.001

A.7: Access to Preventive/Ambulatory Health Services Logistic Regression Results

Coefficient	**Estimate**	**Std. Error**	**Wald**	**Pr(>|z|)**
(Intercept)	-0.7128	0.1282	30.897	<0.001
Group • 1 = target • 0 = comparison	-0.0812	0.0744	1.190	0.2753
Post • 1 = 2018 • 0 = 2016	0.1948	0.0904	4.640	0.0312
Group*Post	**-0.0570**	**0.1066**	**0.286**	**0.5925**
Gender	-0.3036	0.0535	32.171	<0.001

• 1 = male • 0 = female				
Race • 1 = white • 0 = other or unknown	0.3111	0.0513	36.824	<0.001
Hispanic	0.1018	0.0852	1.426	0.2324
Alcohol SUD	-0.1375	0.0673	4.172	0.0411
Opioid SUD	0.4573	0.0654	48.941	<0.001
Other SUD	-0.3126	0.0607	26.561	<0.001
Mental Health Diagnosis	1.8117	0.0513	1245.627	<0.001
Age	0.0315	0.0021	223.789	<0.001

Attachment B

2020 Utah Medicaid Beneficiary Survey

Start of Block: Default Question Block

QAge How old are you (in years)?

_____

Skip To: End of Block If Condition: How old are you (in years)? Is Less Than 18. Skip To: End of Block.

QReside In which state do you currently reside?

▼ Alabama (1) ... I do not reside in the United States (53)

Skip To: End of Block If 50 States, D.C. and Puerto Rico != Utah

QEnrolled Are you currently enrolled in Medicaid?

- ○ Yes (1)
- ○ No (2)

Skip To: End of Block If Are you currently enrolled in Medicaid? = No

Page Break

Q1 What is the name of your Medicaid medical plan?

- ○ Healthy U Medicaid Health Insurance (1)
- ○ Medicaid Fee for Service (2)
- ○ Molina Healthcare (3)
- ○ SelectHealth Community Care (4)
- ○ Health Choice Utah (5)

Q2 How long have you received health care through your medical plan?

- ○ Less than 6 months (1)
- ○ 6 months to 12 months (2)
- ○ More than 12 months (3)

Page Break

Q3BRFSS Prior to being enrolled in your current medical plan, did you have other health care coverage, including health insurance, prepaid plans such as HMO's or government plans such as Medicare, or Indian Health Service?

- ○ Yes (1)
- ○ No (2)

Skip To: Q4 If Prior to being enrolled in your current medical plan, did you have other health care coverage, in... = Yes

Skip To: Q5BRFSS If Prior to being enrolled in your current medical plan, did you have other health care coverage, in... = No

Q4 How long were you enrolled in that coverage?

- ○ Less than 6 months (1)
- ○ 6 months to 11 months (2)
- ○ 2 months to 23 months (3)
- ○ More than 24 months (4)

Q5BRFSS Was there a time before you were enrolled in your current medical plan when you needed to see a doctor but could not because of cost?

- ○ Yes (1)
- ○ No (2)

Q6CAHPS
Prior to being enrolled in your medical plan, how would you rate your overall physical health?

- ○ Excellent (1)
- ○ Very good (2)
- ○ Good (3)
- ○ Fair (4)
- ○ Poor (5)

Q7CAHPS
Prior to being enrolled in your medical plan, how would you rate your overall mental or emotional health?

- ○ Excellent (1)
- ○ Very good (2)
- ○ Good (3)
- ○ Fair (4)
- ○ Poor (5)

Page Break

Q8CAHPS Your Health Care in the Last 6 Months: These questions ask about your own health care. Do not include care you got when you stayed overnight in a hospital. Do not include the times you went for dental care visits.

In the last 6 months, did you have an illness, injury, or condition that needed care right away in a clinic, emergency room or doctor's office?

- ○ Yes (1)
- ○ No (2)

Skip To: Q9CAHPS If Your Health Care in the Last 6 Months: These questions ask about your own health care. Do not in... = Yes

Skip To: Q12CAHPS If Your Health Care in the Last 6 Months: These questions ask about your own health care. Do not in... = No

Q9CAHPS In the last 6 months, when you needed care right away, how often did you get care as soon as you needed it?

- Never (1)
- Sometimes (2)
- Usually (3)
- Always (4)

Q10ED When you needed care right away, did you go to an emergency room?

- Yes (1)
- No (2)

Skip To: Q11ED$ If When you needed care right away, did you go to an emergency room? = Yes
Skip To: Q12CAHPS If When you needed care right away, did you go to an emergency room? = No

Q11ED$ When you received medical treatment in the emergency room, were you required to pay a surcharge?

- Yes (1)
- No (2)

Q12CAHPS In the last 6 months, did you make any appointments for a check-up or routine care at a doctor's office or clinic?

- Yes (1)
- No (2)

Q13CAHPS In the last 6 months, not counting the times you went to an emergency room, how many times did you go to a doctor's office or clinic to get health care for yourself?

- ○ None (1)
- ○ 1 time (2)
- ○ 2 times (3)
- ○ 3 times (4)
- ○ 4 times (5)
- ○ 5-9 times (6)
- ○ 10 or more times (7)

Skip To: Q15CAHPS If In the last 6 months, not counting the times you went to an emergency room, how many times did yo... = None

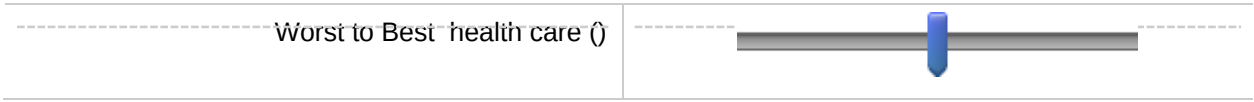
Q14CAHPS In the last 6 months, how often did you get an appointment for a check-up or routine care at a doctor's office or clinic as soon as you needed?

- ○ Never (1)
- ○ Sometimes (2)
- ○ Usually (3)
- ○ Always (4)

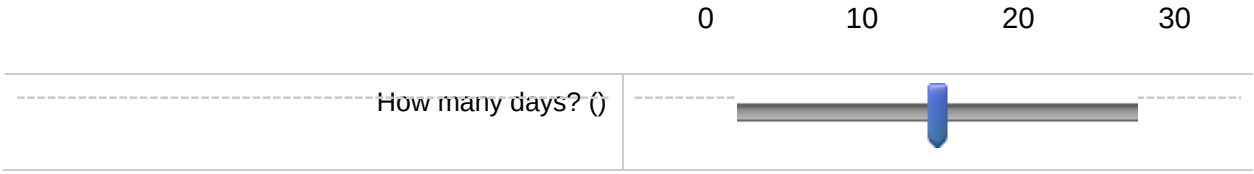
Q15CAHPS What number would you use to rate all your health care?

WORST POSSIBLE BEST POSSIBLE

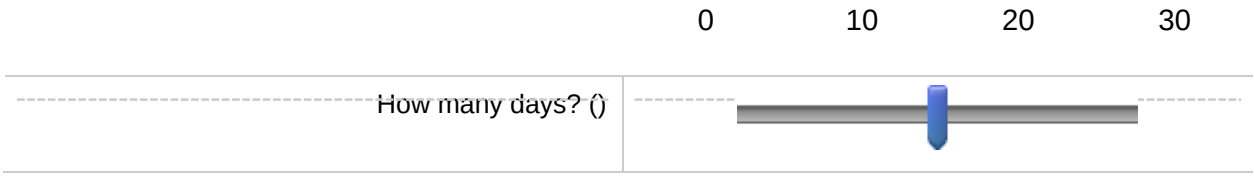
0 1 2 3 4 5 6 7 8 9 10



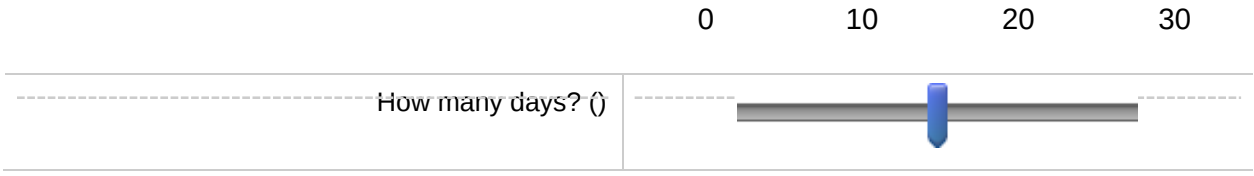
Q16BRFSS In thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?



Q17BRFSS In thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?



Q18BRFSS During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?



Page Break

Q19CAHPS Your Personal Doctor: This is someone you would see if you need a check-up, want advice about a health problem, or get sick or hurt.

Do you have a personal doctor?

- ○ Yes (1)
- ○ No (2)

Skip To: Q20CAHPS If Your Personal Doctor: This is someone you would see if you need a check-up, want advice about a h... = Yes

Skip To: Q26CAHPS If Your Personal Doctor: This is someone you would see if you need a check-up, want advice about a h... = No

Q20CAHPS In the last 6 months, how many times did you visit your personal doctor to get care for yourself?

- ○ None (1)
- ○ 1 time (2)
- ○ 2 times (3)
- ○ 3 times (4)
- ○ 4 times (5)
- ○ 5 to 9 times (6)
- ○ 10 or more times (7)

Q21CAHPS In the last 6 months, how often did your personal doctor explain things in a way that was easy to understand?

- ○ Never (1)
- ○ Sometimes (2)
- ○ Usually (3)
- ○ Always (4)

Q22CAHPS In the last 6 months, how often did your personal doctor listen carefully to you?

- ○ Never (1)
- ○ Sometimes (2)
- ○ Usually (3)
- ○ Always (4)

Q23CAPHS In the last 6 months, how often did your personal doctor show respect for what you had to say?

- ○ Never (1)
- ○ Sometimes (2)
- ○ Usually (3)
- ○ Always (4)

Q24CAHPS In the last 6 months, how often did your personal doctor spend enough time with you?

- ○ Never (1)
- ○ Sometimes (2)
- ○ Usually (3)
- ○ Always (4)

Q25CAHPS What number would you use to rate your personal doctor?

WORST POSSIBLE BEST POSSIBLE

0 1 2 3 4 5 6 7 8 9 10

Worst to Best doctor ()

Page Break

Q26CAHPS Getting Dental Care: The next set of questions ask about your dental care, including any orthodontic procedures.

In the last 6 months did you make any appointments to see a dentist?

- ○ Yes (1)
- ○ No (2)

Skip To: Q27CAHPS If Getting Dental Care: The next set of questions ask about your dental care, including any orthodon... = Yes

Skip To: Q30ECHO If Getting Dental Care: The next set of questions ask about your dental care, including any orthodon... = No

Q27CAHPS
In the last 6 months, how often was it easy to get the care or treatment you needed?

- Never (1)
- Sometimes (2)
- Usually (3)
- Always (4)
- My Medicaid health plan does not include dental care (5)

Q28CAHPS In the last 6 months, how often did you get an appointment to see a dentist as soon as you needed?

- Never (1)
- Sometimes (2)
- Usually (3)
- Always (4)

Q29CAHPS What number would you use to rate the dentist or orthodontist you saw most often in the last 6 months?

	WORST POSSIBLE									BEST POSSIBLE
	0	1	2	3	4	5	6	7	8	9	10
Worst to Best Dentist ()											

Page Break

Q30ECHO Your Health Plan: The next questions ask about your experience with other benefits available as part of your health care plan. For example, people can get counseling, treatment or medicine for many different reasons, such as:

- For feeling depressed, anxious, or “stressed out”
- Personal problems (like when a loved one dies or when there are problems at work)
- Family problems (like marriage problems or when parents and children have trouble getting along)
- Needing help with drug or alcohol use
- For mental or emotional illness

Are these health care services covered as part of your health care plan?

- ○ Yes (1)
- ○ No (2)
- ○ Don't know (3)

Q31ECHO If you felt depressed, needed assistance with drug or alcohol use, or mental or emotional illness are there places in your community you could go to get the help needed?

- ○ Yes (8)
- ○ No (9)
- ○ Don't know (10)

Q32ECHO In the last 12 months, have you or a member of your household needed counseling, treatment, or medicine for depression, drug or alcohol use, or mental or emotional illness?

- ○ Yes (8)
- ○ No (9)

Skip To: Q33ECHO If In the last 12 months, have you or a member of your household needed counseling, treatment, or me... = Yes

Skip To: Q36CAHPS If In the last 12 months, have you or a member of your household needed counseling, treatment, or me... = No

Q33ECHO In the last 12 months, when you or a member of your household needed counseling, treatment, or medicine , how often were you or a family member able to see someone as soon as needed?

- ○ Never (1)
- ○ Sometimes (2)
- ○ Usually (3)
- ○ Always (4)

Q34ECHO Using any number from 0 to 10, where 0 is the worst counseling or treatment possible and 10 is the best counseling or treatment possible, what number would you use to rate all the counseling or treatment in the last 12 months?

	WORST POSSIBLE									BEST POSSIBLE
	0	1	2	3	4	5	6	7	8	9	10
Worst to Best counseling or treatment ()											

Q35ECHO In the last 12 months, how much were you or a member of your household helped by the counseling, treatment, or medicine?

- ○ Not at all (1)
- ○ A little (2)
- ○ Somewhat (3)
- ○ A lot (4)

Page Break

Q36CAHPS The last few questions ask about you?

In general, how would you rate your overall physical health?

- ○ Excellent (1)
- ○ Very good (2)
- ○ Good (3)
- ○ Fair (4)
- ○ Poor (5)

Q37CAHPS
In general, how would you rate your overall mental or emotional health?

- ○ Excellent (1)
- ○ Very good (2)
- ○ Good (3)
- ○ Fair (4)
- ○ Poor (5)

Q38CAHPS Are you male or female?

- ○ Male (1)
- ○ Female (2)

Q39 What language do you mainly speak at home?

- ○ English (1)
- ○ Spanish (2)
- ○ Other (3) _____

Q40CAHPS What is the highest grade or level of school you have completed?

- ○ 8th grade or less (1)
- ○ Some high school, but did not graduate (2)
- ○ High school graduate or GED (3)
- ○ Some college or 2-year degree (4)
- ○ 4-year college graduate (5)
- ○ More than 4-year college degree (6)

Q41CAHPS Are you of Hispanic or Latino origin or descent?

- ○ Yes, Hispanic or Latino (1)
- ○ No, not Hispanic or Latino (2)

Q42CAHPS What is your race?

- ○ White (1)
- ○ Black or African American (2)
- ○ Asian (3)
- ○ Native Hawaiian or Other Pacific Islander (4)
- ○ American Indian or Alaska Native (5)
- ○ Other (6) _____

Q43 Which county do you live in?

▼ Beaver (1) ... Weber (29)

Q44BRFSS Are you currently. . ?

- ○ Employed for wages (1)
- ○ Self-employed (2)
- ○ Out of work for 1 year or more (3)
- ○ Out of work for less than 1 year (4)
- ○ A Homemaker (5)
- ○ A Student (6)
- ○ Retired (7)
- ○ Unable to work (8)

End of Block: Default Question Block

Medicaid Beneficiary Survey Frequency Tables

How old are you (in years)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.57	1	.2	.2	.2
	18.00	17	4.1	4.1	4.3
	19.00	9	2.2	2.2	6.5
	20.00	20	4.8	4.8	11.3
	21.00	17	4.1	4.1	15.4
	22.00	10	2.4	2.4	17.8
	23.00	5	1.2	1.2	19.0
	24.00	15	3.6	3.6	22.7
	25.00	11	2.7	2.7	25.3
	26.00	17	4.1	4.1	29.4
	27.00	7	1.7	1.7	31.1
	28.00	15	3.6	3.6	34.7
	29.00	10	2.4	2.4	37.1
	30.00	10	2.4	2.4	39.5
	31.00	9	2.2	2.2	41.7
	32.00	16	3.9	3.9	45.5
	33.00	14	3.4	3.4	48.9
	34.00	10	2.4	2.4	51.3
	35.00	11	2.7	2.7	54.0

	36.00	13	3.1	3.1	57.1
	37.00	13	3.1	3.1	60.2
	38.00	9	2.2	2.2	62.4
	39.00	7	1.7	1.7	64.1
	40.00	7	1.7	1.7	65.8
	41.00	12	2.9	2.9	68.7
	42.00	7	1.7	1.7	70.4
	43.00	5	1.2	1.2	71.6
	44.00	6	1.4	1.4	73.0
	45.00	5	1.2	1.2	74.2
	46.00	6	1.4	1.4	75.7
	47.00	7	1.7	1.7	77.3
	48.00	9	2.2	2.2	79.5
	49.00	8	1.9	1.9	81.4
	50.00	9	2.2	2.2	83.6
	51.00	7	1.7	1.7	85.3
	52.00	6	1.4	1.4	86.7
	53.00	4	1.0	1.0	87.7
	54.00	3	.7	.7	88.4
	55.00	2	.5	.5	88.9
	57.00	2	.5	.5	89.4
	58.00	3	.7	.7	90.1

	59.00	2	.5	.5	90.6
	60.00	5	1.2	1.2	91.8
	61.00	4	1.0	1.0	92.8
	62.00	1	.2	.2	93.0
	63.00	1	.2	.2	93.3
	64.00	4	1.0	1.0	94.2
	65.00	3	.7	.7	94.9
	66.00	2	.5	.5	95.4
	67.00	1	.2	.2	95.7
	68.00	2	.5	.5	96.1
	69.00	2	.5	.5	96.6
	70.00	2	.5	.5	97.1
	71.00	2	.5	.5	97.6
	72.00	4	1.0	1.0	98.6
	74.00	2	.5	.5	99.0
	75.00	2	.5	.5	99.5
	79.00	1	.2	.2	99.8
	1999.00	1	.2	.2	100.0
	Total	415	100.0	100.0	

State of respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Utah	415	100.0	100.0	100.0

Are you currently enrolled in Medicaid?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	415	100.0	100.0	100.0

What is the name of your Medicaid medical plan?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Healthy U Medicaid Health Insurance	101	24.3	24.3	24.3
	Medicaid Fee for Service	26	6.3	6.3	30.6
	Molina Healthcare	94	22.7	22.7	53.3
	SelectHealth Community Care	131	31.6	31.6	84.8
	Health Choice Utah	63	15.2	15.2	100.0
	Total	415	100.0	100.0	

How long have you received health care through your medical plan?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 6 months	100	24.1	24.1	24.1
	6 months to 12 months	102	24.6	24.6	48.7
	More than 12 months	213	51.3	51.3	100.0
	Total	415	100.0	100.0	

Prior to being enrolled in your current medical plan, did you have other health care coverage, including health insurance, prepaid plans such as HMO's or government plans such as Medicare, or Indian Health Service?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	179	43.1	43.1	43.1
	No	236	56.9	56.9	100.0
	Total	415	100.0	100.0	

How long were you enrolled in that coverage?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 6 months	13	3.1	7.3	7.3
	6 months to 11 months	28	6.7	15.6	22.9
	2 months to 23 months	32	7.7	17.9	40.8
	More than 24 months	106	25.5	59.2	100.0
	Total	179	43.1	100.0	
Missing	System	236	56.9		
Total		415	100.0		

Was there a time before you were enrolled in your current medical plan when you needed to see a doctor but could not because of cost?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	249	60.0	60.0	60.0
	No	166	40.0	40.0	100.0
	Total	415	100.0	100.0	

Prior to being enrolled in your medical plan, how would you rate your overall physical health?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	52	12.5	12.5	12.5
	Very good	85	20.5	20.5	33.0
	Good	139	33.5	33.5	66.5
	Fair	97	23.4	23.4	89.9
	Poor	42	10.1	10.1	100.0
	Total	415	100.0	100.0	

Prior to being enrolled in your medical plan, how would you rate your overall mental or emotional health?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	65	15.7	15.7	15.7
	Very good	64	15.4	15.4	31.1
	Good	111	26.7	26.7	57.8
	Fair	109	26.3	26.3	84.1
	Poor	66	15.9	15.9	100.0
	Total	415	100.0	100.0	

Your Health Care in the Last 6 Months: These questions ask about your own health care. Do not include care you got when you stayed overnight in a hospital. Do not include the times you went for dental care visits.

In the last 6 months, did you have an illness, injury, or condition that needed care right away in a clinic, emergency room or doctor's office?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	199	48.0	48.0	48.0
	No	216	52.0	52.0	100.0
	Total	415	100.0	100.0	

In the last 6 months, when you needed care right away, how often did you get care as soon as you needed it?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	10	2.4	5.0	5.0
	Sometimes	64	15.4	32.2	37.2
	Usually	63	15.2	31.7	68.8
	Always	62	14.9	31.2	100.0
	Total	199	48.0	100.0	
Missing	System	216	52.0		
Total		415	100.0		

When you needed care right away, did you go to an emergency room?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	141	34.0	70.9	70.9
	No	58	14.0	29.1	100.0
	Total	199	48.0	100.0	
Missing	System	216	52.0		
Total		415	100.0		

When you received medical treatment in the emergency room, were you required to pay a surcharge?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	41	9.9	29.1	29.1
	No	100	24.1	70.9	100.0
	Total	141	34.0	100.0	
Missing	System	274	66.0		
Total		415	100.0		

In the last 6 months, did you make any appointments for a check-up or routine care at a doctor's office or clinic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	285	68.7	68.7	68.7
	No	130	31.3	31.3	100.0
	Total	415	100.0	100.0	

In the last 6 months, not counting the times you went to an emergency room, how many times did you go to a doctor's office or clinic to get health care for yourself?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	107	25.8	25.8	25.8
	1 time	72	17.3	17.3	43.1
	2 times	78	18.8	18.8	61.9
	3 times	60	14.5	14.5	76.4
	4 times	25	6.0	6.0	82.4
	5-9 times	44	10.6	10.6	93.0
	10 or more times	29	7.0	7.0	100.0
	Total	415	100.0	100.0	

In the last 6 months, how often did you get an appointment for a check-up or routine care at a doctor's office or clinic as soon as you needed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	16	3.9	5.2	5.2
	Sometimes	113	27.2	36.7	41.9
	Usually	109	26.3	35.4	77.3
	Always	70	16.9	22.7	100.0
	Total	308	74.2	100.0	
Missing	System	107	25.8		
Total		415	100.0		

What number would you use to rate all your health care? - Worst to Best health care

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	3	.7	.7	.7
	1.00	3	.7	.7	1.4
	2.00	9	2.2	2.2	3.6
	3.00	11	2.7	2.7	6.3
	4.00	18	4.3	4.3	10.6
	5.00	53	12.8	12.8	23.4
	6.00	48	11.6	11.6	34.9
	7.00	63	15.2	15.2	50.1
	8.00	81	19.5	19.5	69.6
	9.00	60	14.5	14.5	84.1
	10.00	66	15.9	15.9	100.0
	Total	415	100.0	100.0	

In thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good? - How many days?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	56	13.5	13.5	13.5
	1.00	36	8.7	8.7	22.2
	2.00	27	6.5	6.5	28.7
	3.00	29	7.0	7.0	35.7
	4.00	24	5.8	5.8	41.4
	5.00	28	6.7	6.7	48.2
	6.00	17	4.1	4.1	52.3
	7.00	12	2.9	2.9	55.2
	8.00	9	2.2	2.2	57.3
	9.00	10	2.4	2.4	59.8
	10.00	23	5.5	5.5	65.3
	11.00	14	3.4	3.4	68.7
	12.00	7	1.7	1.7	70.4
	13.00	8	1.9	1.9	72.3
	14.00	6	1.4	1.4	73.7
	15.00	13	3.1	3.1	76.9
	16.00	6	1.4	1.4	78.3
	17.00	4	1.0	1.0	79.3

	18.00	1	.2	.2	79.5
	19.00	4	1.0	1.0	80.5
	20.00	12	2.9	2.9	83.4
	21.00	8	1.9	1.9	85.3
	22.00	4	1.0	1.0	86.3
	23.00	6	1.4	1.4	87.7
	24.00	4	1.0	1.0	88.7
	25.00	5	1.2	1.2	89.9
	26.00	6	1.4	1.4	91.3
	27.00	3	.7	.7	92.0
	28.00	3	.7	.7	92.8
	29.00	1	.2	.2	93.0
	30.00	29	7.0	7.0	100.0
	Total	415	100.0	100.0	

In thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good? - How many days?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	43	10.4	10.4	10.4
	1.00	23	5.5	5.5	15.9
	2.00	22	5.3	5.3	21.2
	3.00	15	3.6	3.6	24.8
	4.00	14	3.4	3.4	28.2
	5.00	21	5.1	5.1	33.3
	6.00	17	4.1	4.1	37.3
	7.00	13	3.1	3.1	40.5
	8.00	8	1.9	1.9	42.4
	9.00	7	1.7	1.7	44.1
	10.00	28	6.7	6.7	50.8
	11.00	7	1.7	1.7	52.5
	12.00	11	2.7	2.7	55.2
	13.00	8	1.9	1.9	57.1
	14.00	8	1.9	1.9	59.0
	15.00	17	4.1	4.1	63.1
	16.00	14	3.4	3.4	66.5
	17.00	8	1.9	1.9	68.4

	18.00	6	1.4	1.4	69.9
	19.00	5	1.2	1.2	71.1
	20.00	25	6.0	6.0	77.1
	21.00	12	2.9	2.9	80.0
	22.00	6	1.4	1.4	81.4
	23.00	3	.7	.7	82.2
	24.00	4	1.0	1.0	83.1
	25.00	17	4.1	4.1	87.2
	26.00	4	1.0	1.0	88.2
	27.00	5	1.2	1.2	89.4
	28.00	5	1.2	1.2	90.6
	29.00	1	.2	.2	90.8
	30.00	38	9.2	9.2	100.0
	Total	415	100.0	100.0	

During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation? - How many days?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	56	13.5	13.5	13.5
	1.00	35	8.4	8.4	21.9
	2.00	26	6.3	6.3	28.2
	3.00	17	4.1	4.1	32.3
	4.00	13	3.1	3.1	35.4
	5.00	15	3.6	3.6	39.0
	6.00	13	3.1	3.1	42.2
	7.00	11	2.7	2.7	44.8
	8.00	9	2.2	2.2	47.0
	9.00	7	1.7	1.7	48.7
	10.00	16	3.9	3.9	52.5
	11.00	9	2.2	2.2	54.7
	12.00	11	2.7	2.7	57.3
	13.00	6	1.4	1.4	58.8
	14.00	15	3.6	3.6	62.4
	15.00	18	4.3	4.3	66.7
	16.00	7	1.7	1.7	68.4
	17.00	5	1.2	1.2	69.6

	18.00	5	1.2	1.2	70.8
	19.00	4	1.0	1.0	71.8
	20.00	22	5.3	5.3	77.1
	21.00	15	3.6	3.6	80.7
	22.00	8	1.9	1.9	82.7
	23.00	10	2.4	2.4	85.1
	24.00	4	1.0	1.0	86.0
	25.00	8	1.9	1.9	88.0
	26.00	3	.7	.7	88.7
	27.00	2	.5	.5	89.2
	28.00	4	1.0	1.0	90.1
	29.00	1	.2	.2	90.4
	30.00	40	9.6	9.6	100.0
	Total	415	100.0	100.0	

Your Personal Doctor: This is someone you would see if you need a check-up, want advice about a health problem, or get sick or hurt.

Do you have a personal doctor?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	293	70.6	70.6	70.6
	No	122	29.4	29.4	100.0
	Total	415	100.0	100.0	

In the last 6 months, how many times did you visit your personal doctor to get care for yourself?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	36	8.7	12.3	12.3
	1 time	79	19.0	27.0	39.2
	2 times	65	15.7	22.2	61.4
	3 times	52	12.5	17.7	79.2
	4 times	22	5.3	7.5	86.7
	5 to 9 times	26	6.3	8.9	95.6
	10 or more times	13	3.1	4.4	100.0
	Total	293	70.6	100.0	
Missing	System	122	29.4		
Total		415	100.0		

In the last 6 months, how often did your personal doctor explain things in a way that was easy to understand?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	25	6.0	8.5	8.5
	Sometimes	35	8.4	11.9	20.5
	Usually	76	18.3	25.9	46.4
	Always	157	37.8	53.6	100.0
	Total	293	70.6	100.0	
Missing	System	122	29.4		
Total		415	100.0		

In the last 6 months, how often did your personal doctor listen carefully to you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	22	5.3	7.5	7.5
	Sometimes	38	9.2	13.0	20.5
	Usually	76	18.3	25.9	46.4
	Always	157	37.8	53.6	100.0
	Total	293	70.6	100.0	
Missing	System	122	29.4		
Total		415	100.0		

In the last 6 months, how often did your personal doctor show respect for what you had to say?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	23	5.5	7.8	7.8
	Sometimes	30	7.2	10.2	18.1
	Usually	71	17.1	24.2	42.3
	Always	169	40.7	57.7	100.0
	Total	293	70.6	100.0	
Missing	System	122	29.4		
Total		415	100.0		

In the last 6 months, how often did your personal doctor spend enough time with you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	20	4.8	6.8	6.8
	Sometimes	56	13.5	19.1	25.9
	Usually	93	22.4	31.7	57.7
	Always	124	29.9	42.3	100.0
	Total	293	70.6	100.0	
Missing	System	122	29.4		
Total		415	100.0		

What number would you use to rate your personal doctor? - Worst to Best doctor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	4	1.0	1.4	1.4
	1.00	4	1.0	1.4	2.7
	3.00	8	1.9	2.7	5.5
	4.00	12	2.9	4.1	9.6
	5.00	21	5.1	7.2	16.7
	6.00	8	1.9	2.7	19.5
	7.00	27	6.5	9.2	28.7
	8.00	36	8.7	12.3	41.0
	9.00	48	11.6	16.4	57.3
	10.00	125	30.1	42.7	100.0
	Total	293	70.6	100.0	
Missing	System	122	29.4		
Total		415	100.0		

Getting Dental Care: The next set of questions ask about your dental care, including any orthodontic procedures.

In the last 6 months did you make any appointments to see a dentist?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	164	39.5	39.5	39.5
	No	251	60.5	60.5	100.0
	Total	415	100.0	100.0	

In the last 6 months, how often was it easy to get the care or treatment you needed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	10	2.4	6.1	6.1
	Sometimes	29	7.0	17.7	23.8
	Usually	44	10.6	26.8	50.6
	Always	52	12.5	31.7	82.3
	My Medicaid health plan does not include dental care	29	7.0	17.7	100.0
	Total	164	39.5	100.0	
Missing	System	251	60.5		
Total		415	100.0		

In the last 6 months, how often did you get an appointment to see a dentist as soon as you needed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	16	3.9	9.8	9.8
	Sometimes	54	13.0	32.9	42.7
	Usually	40	9.6	24.4	67.1
	Always	54	13.0	32.9	100.0
	Total	164	39.5	100.0	
Missing	System	251	60.5		
Total		415	100.0		

What number would you use to rate the dentist or orthodontist you saw most often in the last 6 months? - Worst to Best Dentist

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	4	1.0	2.4	2.4
	1.00	2	.5	1.2	3.7
	2.00	3	.7	1.8	5.5
	3.00	8	1.9	4.9	10.4
	4.00	6	1.4	3.7	14.0
	5.00	9	2.2	5.5	19.5
	6.00	18	4.3	11.0	30.5
	7.00	17	4.1	10.4	40.9
	8.00	21	5.1	12.8	53.7
	9.00	26	6.3	15.9	69.5
	10.00	50	12.0	30.5	100.0
	Total	164	39.5	100.0	
Missing	System	251	60.5		
Total		415	100.0		

Your Health Plan: The next questions ask about your experience with other benefits available as part of your health care plan. For example, people can get counseling, treatment or medicine for many different reasons, such as:

- **For feeling depressed, anxious, or "stressed out"**
- **Personal problems (like when a loved one dies or when there are problems at work)**
- **Family problems (like marriage problems or when parents and children have trouble getting along)**
- **Needing help with drug or alcohol use**
- **For mental or emotional illness**

Are these health care services covered as part of your health care plan?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	227	54.7	79.9	79.9
	No	57	13.7	20.1	100.0
	Total	284	68.4	100.0	
Missing	System	131	31.6		
Total		415	100.0		

If you felt depressed, needed assistance with drug or alcohol use, or mental or emotional illness are there places in your community you could go to get the help needed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	286	68.9	68.9	68.9
	No	46	11.1	11.1	80.0
	Don't know	83	20.0	20.0	100.0
	Total	415	100.0	100.0	

In the last 12 months, have you or a member of your household needed counseling, treatment, or medicine for depression, drug or alcohol use, or mental or emotional illness?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	226	54.5	54.5	54.5
	No	189	45.5	45.5	100.0
	Total	415	100.0	100.0	

In the last 12 months, when you or a member of your household needed counseling, treatment, or medicine , how often were you or a family member able to see someone as soon as needed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	26	6.3	11.5	11.5
	Sometimes	62	14.9	27.4	38.9
	Usually	80	19.3	35.4	74.3
	Always	58	14.0	25.7	100.0
	Total	226	54.5	100.0	
Missing	System	189	45.5		
Total		415	100.0		

Using any number from 0 to 10, where 0 is the worst counseling or treatment possible and 10 is the best counseling or treatment possible, what number would you use to rate all the counseling or treatment in the last 12 months? - Worst to Best counseling or treatment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	8	1.9	3.5	3.5
	1.00	5	1.2	2.2	5.8
	2.00	15	3.6	6.6	12.4
	3.00	12	2.9	5.3	17.7
	4.00	19	4.6	8.4	26.1
	5.00	19	4.6	8.4	34.5
	6.00	21	5.1	9.3	43.8
	7.00	31	7.5	13.7	57.5
	8.00	32	7.7	14.2	71.7
	9.00	27	6.5	11.9	83.6
	10.00	37	8.9	16.4	100.0
	Total	226	54.5	100.0	
Missing	System	189	45.5		
Total		415	100.0		

In the last 12 months, how much were you or a member of your household helped by the counseling, treatment, or medicine?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	24	5.8	10.6	10.6
	A little	62	14.9	27.4	38.1
	Somewhat	76	18.3	33.6	71.7
	A lot	64	15.4	28.3	100.0
	Total	226	54.5	100.0	
Missing	System	189	45.5		
Total		415	100.0		

The last few questions ask about you?

In general, how would you rate your overall physical health?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	51	12.3	12.3	12.3
	Very good	87	21.0	21.0	33.3
	Good	136	32.8	32.8	66.0
	Fair	103	24.8	24.8	90.8
	Poor	38	9.2	9.2	100.0
	Total	415	100.0	100.0	

In general, how would you rate your overall mental or emotional health?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	50	12.0	12.0	12.0
	Very good	71	17.1	17.1	29.2
	Good	113	27.2	27.2	56.4
	Fair	129	31.1	31.1	87.5
	Poor	52	12.5	12.5	100.0
	Total	415	100.0	100.0	

Are you male or female?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	150	36.1	36.1	36.1
	Female	265	63.9	63.9	100.0
	Total	415	100.0	100.0	

What language do you mainly speak at home? - Selected Choice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	400	96.4	96.4	96.4
	Spanish	9	2.2	2.2	98.6
	Other	6	1.4	1.4	100.0
	Total	415	100.0	100.0	

What language do you mainly speak at home? - Other - Text

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		410	98.8	98.8	98.8
	Arabic	2	.5	.5	99.3
	Karen	1	.2	.2	99.5
	Vietnamese	2	.5	.5	100.0
	Total	415	100.0	100.0	

What is the highest grade or level of school you have completed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	8th grade or less	9	2.2	2.2	2.2
	Some high school, but did not graduate	31	7.5	7.5	9.6
	High school graduate or GED	143	34.5	34.5	44.1
	Some college or 2-year degree	152	36.6	36.6	80.7
	4-year college graduate	55	13.3	13.3	94.0
	More than 4-year college degree	25	6.0	6.0	100.0
	Total	415	100.0	100.0	

Are you of Hispanic or Latino origin or descent?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, Hispanic or Latino	64	15.4	15.5	15.5
	No, not Hispanic or Latino	349	84.1	84.5	100.0
	Total	413	99.5	100.0	
Missing	System	2	.5		
Total		415	100.0		

What is your race? - Selected Choice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	356	85.8	85.8	85.8
	Black or African American	13	3.1	3.1	88.9
	Asian	15	3.6	3.6	92.5
	Native Hawaiian or Other Pacific Islander	6	1.4	1.4	94.0
	American Indian or Alaska Native	8	1.9	1.9	95.9
	Other	17	4.1	4.1	100.0
	Total	415	100.0	100.0	

What is your race? - Other - Text

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		399	96.1	96.1	96.1
	American Chileno	1	.2	.2	96.4
	Black and white	2	.5	.5	96.9
	Egyptian	1	.2	.2	97.1
	Hidpanic	1	.2	.2	97.3
	hispanic	1	.2	.2	97.6
	Hispanic	4	1.0	1.0	98.6
	latino	1	.2	.2	98.8

	Latino	1	.2	.2	99.0
	Mexican	1	.2	.2	99.3
	Mixed	1	.2	.2	99.5
	Multi racial	1	.2	.2	99.8
	white,black,and native american	1	.2	.2	100.0
	Total	415	100.0	100.0	

Which county do you live in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Box Elder	7	1.7	1.7	1.7
	Cache	8	1.9	1.9	3.6
	Carbon	3	.7	.7	4.3
	Davis	28	6.7	6.8	11.1
	Duchesne	6	1.4	1.4	12.6
	Emery	1	.2	.2	12.8
	Iron	11	2.7	2.7	15.5
	Juab	2	.5	.5	15.9
	Millard	2	.5	.5	16.4
	Salt Lake	157	37.8	37.9	54.3
	San Juan	1	.2	.2	54.6
	Sanpete	5	1.2	1.2	55.8

	Sevier	3	.7	.7	56.5
	Summit	2	.5	.5	57.0
	Tooele	6	1.4	1.4	58.5
	Uintah	2	.5	.5	58.9
	Utah	101	24.3	24.4	83.3
	Wasatch	6	1.4	1.4	84.8
	Washington	13	3.1	3.1	87.9
	Weber	50	12.0	12.1	100.0
	Total	414	99.8	100.0	
Missing	System	1	.2		
Total		415	100.0		

Are you currently. . ?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed for wages	132	31.8	31.8	31.8
	Self-employed	34	8.2	8.2	40.0
	Out of work for 1 year or more	27	6.5	6.5	46.5
	Out of work for less than 1 year	31	7.5	7.5	54.0
	A Homemaker	40	9.6	9.6	63.6
	A Student	32	7.7	7.7	71.3
	Retired	26	6.3	6.3	77.6

	Unable to work	93	22.4	22.4	100.0
	Total	415	100.0	100.0	

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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good completes	415	100.0	100.0	100.0

Attachment C

CMS-approved Evaluation Design

UTAH 1115 PRIMARY CARE NETWORK DEMONSTRATION WAIVER

SUBSTANCE USE DISORDER EVALUATION DESIGN

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INTRODUCTION

In October 2017, the Utah Department of Health (UDOH), Division of Medicaid and Health Financing (DMHF) received a five-year extension to its 1115 Primary Care Network (PCN) Demonstration Waiver. This extension adds covered benefits and continues providing health coverage to eight vulnerable population groups, some of whom are not eligible for Medicaid under the state plan.

This proposal will both track the general performance of the 1115 waiver and evaluate demonstration impacts and outcomes. Results of the evaluation will be presented in a series of annual reports, as well as interim and final evaluation reports. This draft proposal identifies the general design and approach of the evaluation in response to the required Special Terms and Conditions (STC's).

A. GENERAL BACKGROUND INFORMATION

Utah's 1115 PCN Demonstration Waiver (hereinafter referred to as "Demonstration") is a statewide waiver that was originally approved on February 8, 2002 and implemented on July 1, 2002. Since that time, the Demonstration has been extended and amended several times to add additional benefits and Medical programs. Most recently, the Demonstration was amended and approved on October 31, 2017 with an approval period through June 30, 2022. The evaluation will cover the Demonstration approval period.

Waiver Population Groups
The Demonstration authorizes the State of Utah to administer the following medical programs and benefits:

- PCN Program (Demonstration Population I) - Provides a limited package of preventive and primary care benefits to adults age 19-64.
- Current Eligibles - Provides a slightly reduced benefit package for adults receiving Parent/Caretaker Relative (PCR) Medicaid.
- Utah's Premium Partnership Program (UPP) (Demonstration Populations III, V & VI) - Provides premium assistance to pay the individual's or family's share of monthly premium costs of employer sponsored insurance or COBRA.
- Targeted Adult Medicaid- Provides state plan Medicaid benefits to a targeted group of adults without dependent children.
- Former Foster Care Youth from Another State- Provides state plan Medicaid benefits to former foster care youth from another state up to age 26.
- Dental Benefits for Individuals who are Blind or Disabled- Provides dental benefits to individuals age 18 and older with blindness or disabilities.
- Substance Use Disorder (SUD) Residential Treatment- Allows the State to provide a broad continuum of care which includes SUD residential treatment in an Institution for Mental Disease (IMD) for all Medicaid eligible individuals.

This Evaluation Design will focus on the SUD component of the Demonstration, which provides a broad continuum of care for all Medicaid eligible individuals. This is an important Medicaid addition due to the significant impact substance use disorders have on the health and well-being of Utahans.

Prior to the approval of this demonstration, individuals who were receiving SUD residential treatment in an IMD were not eligible to receive Medicaid. SUD services provided in residential and inpatient treatment settings that qualified as an IMD, were not otherwise matchable expenditures under section 1903 of the Act. Individuals needing treatment waited months to receive residential treatment due to the low number of treatment beds available in smaller facilities. Prior to implementation of the demonstration, there were approximately 50 treatment beds available. Since implementation, approximately 490 additional treatment beds have been added Statewide. The State currently has seven SUD treatment facilities that meet the definition of a SUD IMD facility.

Substance Use Disorders in the United States

Behavioral health disorders, which include substance use and mental health disorders, affect millions of adolescents and adults in the United States and contribute heavily to the burden of disease.[1,2,3] Illicit drug use, including the misuse of prescription medications, affects the health and well-being of millions of Americans. Cardiovascular disease, stroke, cancer, infection with the human immunodeficiency virus (HIV), hepatitis, and lung disease can all be affected by drug use. Some of these effects occur when drugs are used at high doses or after prolonged use. However, other adverse effects can occur after only one or a few occasions of use.[4] Addressing the impact of substance use alone is estimated to cost Americans more than $600 billion each year.[5]

Reducing SUD and related problems is critical to Americans' mental and physical health, safety, and quality of life. SUDs occur when the recurrent use of alcohol or other drugs (or both) causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home. These disorders contribute heavily to the burden of disease in the United States. Excessive substance use and SUDs are costly to our nation due to lost productivity, health care, and crime. [6, 7, 8] Approximately 23.3 million people aged 12 or older in 2016 had SUDs in the past year, including 15.6 million people with an alcohol use disorder and 7.4 million people with an illicit drug use disorder. [9]

Among those dealing with SUDs, opioid misuse, overdose and addiction, occurs in only a subset of individuals prescribed opioid medications for pain relief. However, because many individuals take opioids, the number of Americans affected is significant. According to the Centers for Disease Control and Prevention (CDC), deaths due to prescription opioid pain medication overdose in the US have more than quadrupled from 1999 to 2011. [10] In addition to the increase in drug-related deaths, the rise in opioid prescribing has led to increases in the prevalence of opioid use disorder. [11] Other research has demonstrated that the so-called opioid epidemic has a disproportionate impact on Medicaid beneficiaries.

Medicaid beneficiaries are prescribed painkillers at twice the rate of non-Medicaid patients and are at three-to-six times the risk of prescription painkillers overdose.[12, 13] North Carolina found that while the Medicaid population represented approximately 20 percent of the overall state population, it accounted for one-third of drug overdose deaths, the majority of which were caused by prescription opioids. [14] One study from the state of Washington found that 45 percent of people who died from prescription opioid overdoses were Medicaid enrollees. [15]

Substance Use Disorders in Utah

According to the 2016 National Survey of Drug Use and Health, in Utah there were an estimated 134,764 adults in need of treatment for alcohol and/or drug dependence or abuse.[16] For youth in grades 6 through 12 in 2017 there were 11,804 in need of treatment. However, only 13,780 adults and 1,179 youth received SUD treatment services in FY 2017. [17] Of those in treatment, 46% received outpatient, 21% received intensive outpatient, 21% participated in detox, and 12% participated in residential treatment. Seventy-one percent of those in treatment were retained for 60 or more days. In 2017, Opioids were the top drug of choice at admission (32%). [18]

Utah has experienced a sharp increase in opioid related deaths since 2000. Recent data suggests that the number of deaths due to opioids peaked initially in 2007, then showed a promising decreasing trend through 2010, before increasing dramatically once more from 2011 through 2015. Emergency department encounters data over the same timeframe shows a steady increase through 2012, with a small decrease observed from 2012 to 2014. Males accounted for approximately 60% of opioid deaths in 2013, but the gap between males and females has shrunk so that by 2015 males accounted for only 54% of deaths. For emergency department encounters, the opposite has been true. In the past, females have traditionally accounted for more visits than males. However, similar to the death data, the gap between females and males has been closing. In 2014, the percentage of emergency department encounters for males and females was essentially even (50.3% vs. 49.7% for females and males, respectively). [19]

However, SUDs are preventable and treatable. The Utah State Division of Substance Abuse and Mental Health (DSAMH) has statutory oversight of substance abuse and mental health treatment services statewide through local county authority programs. SUD services are available to all Medicaid members statewide. A full continuum of SUD services becomes even more critical in an effort to address the needs of Medicaid members. [20]

B. EVALUATION QUESTIONS & HYPOTHESES

The primary goals of the waiver are to increase access, improve quality, and expand coverage to eligible Utahans. To accomplish these goals, the Demonstration includes several key activities including enrollment of new populations, quality improvement, and benefit additions or changes. This evaluation plan will describe how the University of Utah's Social Research Institute (SRI) will document the implementation of the key goals of the Demonstration, the changes associated with the waiver including the service outputs, and most importantly, the outcomes achieved over the course of the Demonstration.

Evaluation Purpose

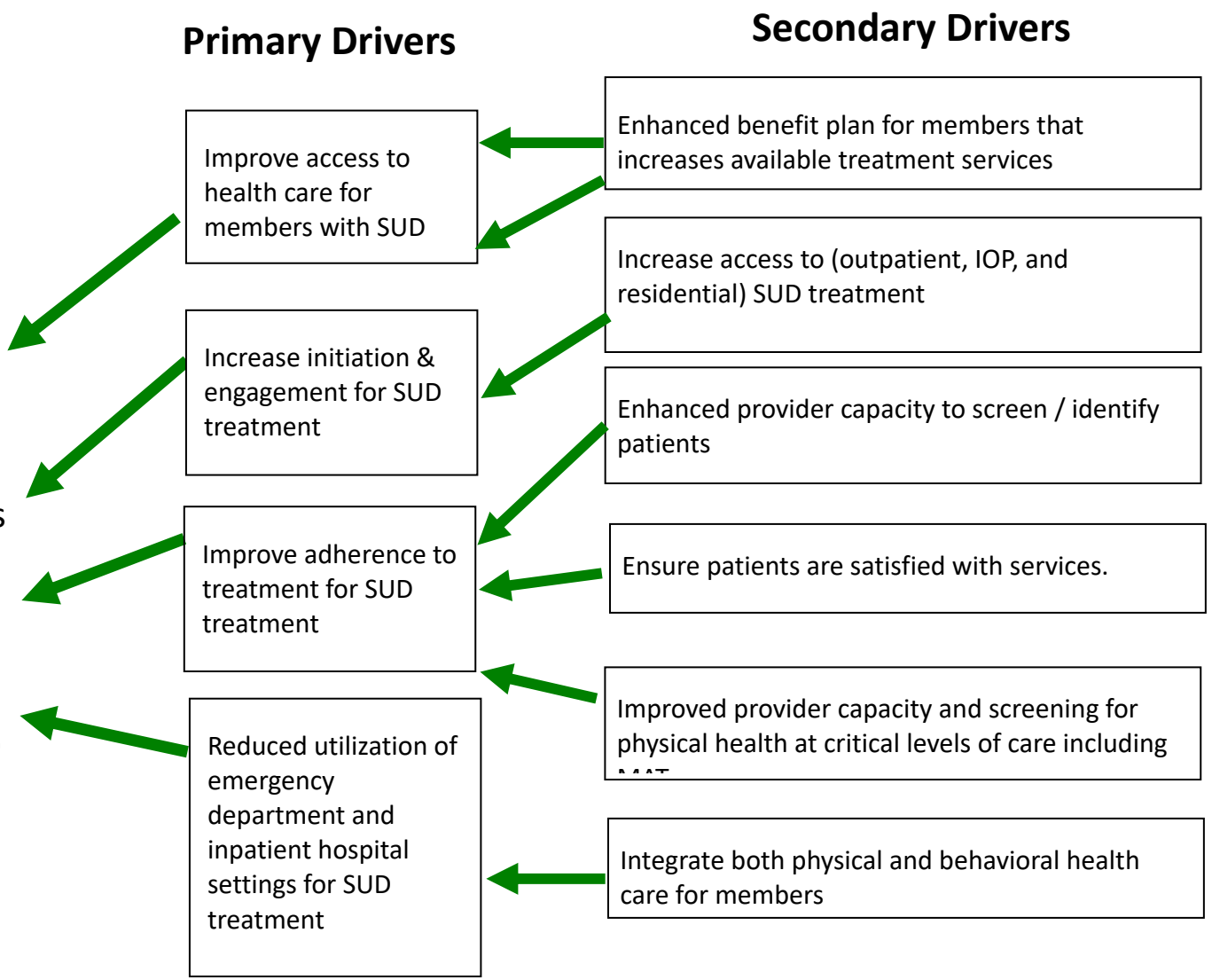
SRI will conduct an evaluation of the Utah 1115 PCN Demonstration Waiver by establishing research questions and a study design that is responsive to the hypotheses identified by UDOH. SRI will collaborate with UDOH and DSAMH to obtain the appropriate data to conduct the analysis needed to complete the required evaluation reports on an annual basis, and at each subsequent renewal or extension of the demonstration waiver. This includes an evaluation of the overall waiver and the SUD component. The SUD evaluation is addressed in this document.

Driver Diagram

Aim: 1115 Demonstration Waiver SUD treatment will improve access, utilization, and health for members

Outcome Measures:

1. Increased access to SUD treatment
2. Increased utilization of SUD treatment
3. Improved health outcomes in SUD members
4. Reduce opioid-related overdose deaths
5. Slow the rate of growth of total cost of care for SUD members

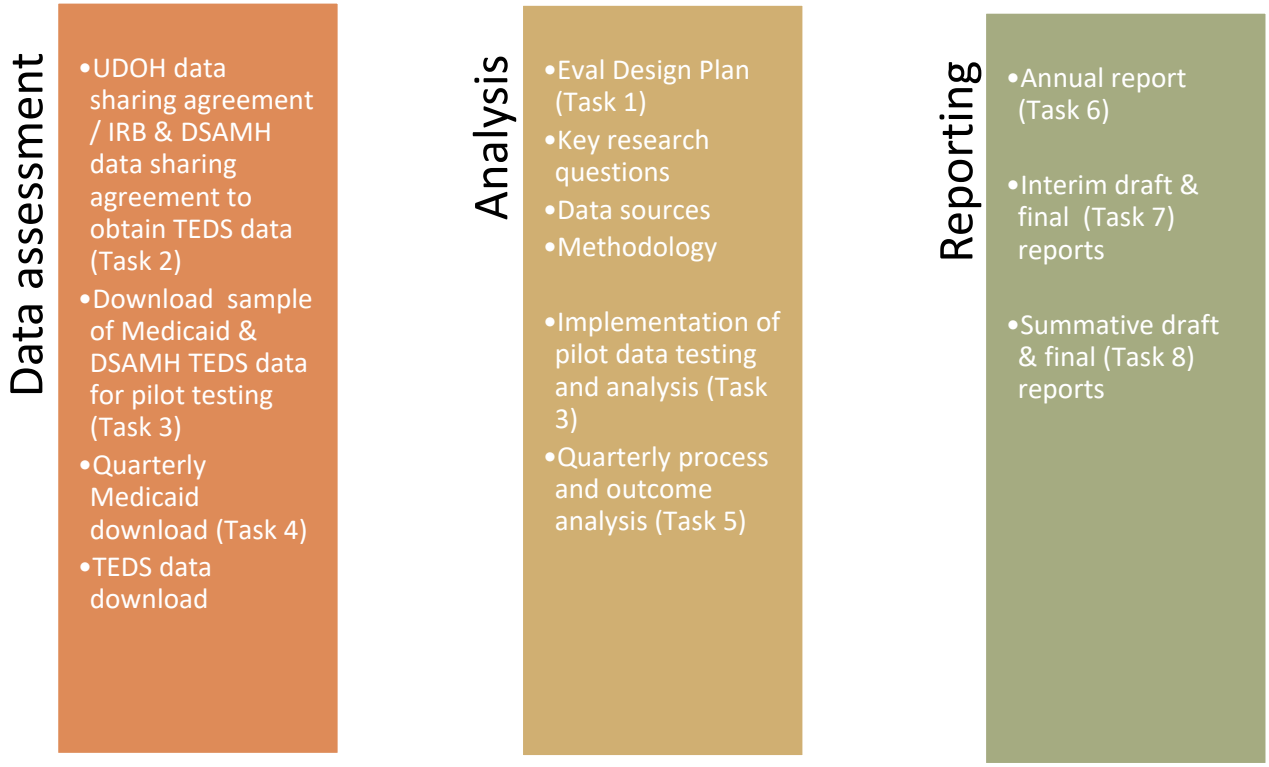


C. METHODOLOGY

Evaluation Approach

To evaluate the different components of the waiver demonstration, we envision three main phases of work: (1) data assessment and collection, (2) analysis, and (3) reporting. The last phase will include both reporting of waiver findings to UDOH in response to the STC's and also providing written summary reports for submission to the Centers for Medicare and Medicaid Services (CMS). The first key task—development of the evaluation design plan—appears at the top of Figure 1. This plan will specify the key research questions the evaluation will address for each demonstration component, as well as the primary data sources and methodologies that will be used. This plan will guide decision making at all levels of the study and drive the content of the reporting tasks.

Figure 1. Project vision



1. Evaluation Design

Due to the unique target population groups included in the Demonstration evaluation, a combination of design approaches will be implemented. First, for several of the SUD hypotheses demonstration components pre / post comparison will be conducted. Second, other SUD hypotheses will consist of a pre / post comparison where the target population will serve as its own control group. A time series design will be employed for most of the individual analysis using pre-Demonstration as a baseline and then using the first year as baseline where no pre-Demonstration data are available due to the nature of the individual target population. A quasi-experimental design (difference-in-difference, DiD) approach will be used to estimate the effect by comparing the SUD (IMD) residential treatment service expansion in Salt Lake and Utah Counties with other counties (Davis, Weber, and Washington). The use of both quantitative and qualitative data will be important to this design. Quantitative data will come from Utah Medicaid claims. Qualitative data will come from a SUD beneficiary survey.

The specific evaluation questions to be addressed are based on the following criteria:
1) Potential for improvement, consistent with the key goals of the Demonstration;
2) Potential for measurement, including (where possible and relevant) baseline measures that can help to isolate the effects of Demonstration initiatives and activities over time; and
3) Potential to coordinate with the UDOH's ongoing performance evaluation and monitoring efforts.
Once research questions are selected to address the Demonstration's major program goals and activities, specific variables and measures will then be identified to correspond to each research question. Finally, a process for identifying data sources that are most appropriate and efficient in answering each of the evaluation questions will be identified. The evaluation team will use all available data sources. The timing of data collection periods will vary depending on the data source, and on the specific Demonstration activity.

2. Target and Comparison Populations

The target population includes any Medicaid beneficiary with a substance abuse disorder (SUD) diagnosis. Several comparison population groups will be used in this evaluation. The first will be comprised of the target population, which will serve as its own comparison group longitudinally, where the research question will compare service utilization differences across the demonstration period. The second group that will be used as a comparison population for some of the SUD components will be members who previously received SUD treatment services in counties without access to an IMD. A difference-in-difference (DiD) approach will be used to estimate the effect by comparing the SUD (IMD) residential treatment service expansion in Salt Lake and Utah Counties with counties (Davis, Weber, and Washington) where there was no residential expansion. At the present time, these three counties have elected not to establish an IMD residential facility. Table 1 below summarizes the residential population and those that have received SUD treatment in the counties through publicly funded treatment programs. The source of these data is DSAMH Treatment Episode DataSet (TEDS). These five counties will be included in the DiD design comparison.

Table 1: Summary of target populations in SUD DiD design counties in Utah.

Counties w / IMD Expansion	County Population	# of clients served	Percent of Admissions in Outpatient / IOP/ Residential / Detox		
			2016	2017	2018
Salt Lake	1,152,633	7,497	36/21/10/33	35/19/13/33	30/17/17/36
Utah	622,213	1,229	29/29/27/15	29/29/28/14	33/27/21/18
Counties w / No Expansion					
Davis	351,713	1,548	55/31/14/0	58/29/13/0	75/19/6/0
Washington	171,700	596	44/35/21/0	48/31/21/0	53/28/19/0
Weber	256,359	1,757	81/14/5/0	77/18/5/0	73/22/5/0

The third comparison population will include patients in publicly funded treatment programs receiving substance services who complete annual MHSIP survey which will serve as a comparison group for the consumer survey that will be administered to SUD beneficiaries.

3. Evaluation Period

The SUD waiver evaluation components will use pre-demonstration data from January 2016 to October 2017 to understand trends in treatment services and for state-level benchmarking of treatment outcomes. The State is aware that many measures with an established measure steward require reporting according to calendar year. This includes:

- Initiation and Engagement of Alcohol and Other Drug Dependence Treatment;
- Continuity of Pharmacotherapy for OUD; and
- Follow-up after Emergency department visit for alcohol and other drug abuse or dependence

For these measures, the State will use a pre-post approach. Calendar year 2016 will serve as the pre-demonstration year. Calendar year 2017 will be reported and observed for trend, however it will be a partial-demonstration year due to the demonstration begin date of November 1, 2017. Calendar year 2018 will serve as the first full post-demonstration year.

The 1st year of the waiver will serve as the baseline using a post-only approach for some State-created measures as noted in Table 2 below. The post-only approach will be used due to the lack of a national benchmark in these measures that may inform the State on relevant performance. Data to be used for the evaluation will span the entire Demonstration period (11/1/2017 – 6/30/2022) for the targeted population groups and for the comparison groups identified.

4. Evaluation Measures

The measures to be used in the SUD evaluation include nationally standardized data collection protocols such as NFQ #0004, Initiation and Engagement of Alcohol and Other Drug Dependence Treatment, Continuity of Pharmacotherapy for OUD (NQF #3175), and qualitative data from a beneficiary survey

that focuses on health care satisfaction, access, and quality. The specific measures are listed in Table 2 below.

5. Data Sources

The State will use four data sources to conduct the evaluation plan. First, UDOH's Medicaid HIPAA transaction set consisting of all Utah claims and encounters data. Data from this source is available prior to the November 2017 waiver approval and throughout the demonstration. Second, the DSAMH TEDS Admission and Discharge record is an electronic client data file that includes data from all publicly funded SUD treatment service providers in Utah. This data file includes required standardized variables that are submitted to the Substance Abuse and Mental Health Administration (SAMHSA) for its State Outcomes Measurement and Management System (SOMMS) as well as variables that are required for the National Outcome Measures (NOMS). The file includes more than 100 variables ranging from most current diagnosis (ASAM levels), Drug Court Submissions, referral sources, waiting time to enter treatment, to criminogenic risk level. TEDS data is also available prior to the waiver and annually moving forward. Third, the State will conduct a SUD beneficiary survey annually. Fourth, the State's Vital Records dataset will be used to identify overdose deaths.

6. Analytic Methods

A combination of quantitative statistical methods will be used for the analysis. Specific measures will be utilized for each demonstration as detailed in Table 2. While the Demonstration seeks to increase service provision and promote quality care, observed changes may be attributed to the Demonstration itself and/or external factors, including other State- or national-level policy or market changes or trends. For each Demonstration activity, a conceptual framework will be developed depicting how specific Demonstration goals, tasks, activities, and outcomes are causally connected to serve as the basis for the evaluation methodology. Methods chosen will attempt to account for any known or possible external influences and their potential interactions with the Demonstration's goals and activities. The evaluation will seek to isolate the effects of the Demonstration on the observed outcomes in several ways:

First, the evaluation will incorporate baseline measures and account for trends for each of the selected variables included in the evaluation. Medicaid data for each of the targeted variables and measures will be analyzed annually so that outcome measures and variables can be monitored on a regular basis. The hypotheses in Table 2 involving the DiD design compare SUD residential expansion counties with SUD residential services in non-expansion counties.

Second, the evaluation will use known state benchmarks for publicly funded SUD treatment annually to measure Demonstration outcomes related to domains of consumer experience with treatment services. Specifically, those seven domains are: Satisfaction, Access, Quality, Participation, Outcomes, Social Connectedness, and Functioning.[21] These variables are collected by the DSAMH annually among publicly funded SUD service providers. This DSAMH data cannot be linked to specific Medicaid enrollees, therefore, the waiver evaluation will conduct its own SUD beneficiary survey. The Utah

MHSIP data collected during State fiscal year 2020-2022 will be used as a state benchmark for comparison to the SUD beneficiary survey results. Since the MHSIP survey has demonstrated modest correlations in magnitude in the predicted directions, with greater patient satisfaction being associated with lower symptoms and more positive outcomes,[22] the same questions will be used in the Demonstration survey. This data will be analyzed with descriptive statistics such as frequencies, percentages, and t-tests.

Table 2: Summary of Demonstration Populations, Hypotheses, Evaluation Questions, Data Sources, and Analytic Approaches.

Evaluation Question: Does the demonstration increase access to and utilization of SUD treatment services?						
Demonstration Goal: Increased rates of identification, initiation, and engagement in treatment for SUDs. **Evaluation Hypothesis: The demonstration will increase the percentage of members who are referred and engage in treatment for SUDs.**						
Driver	Measure Description	Steward	Numerator	Denominator	Evaluation Period	Analytic Approach /Target or Comparison Population
Primary Driver *(Increase the rates of initiation and engagement in treatment for SUDs)*	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment	NQF #0004	Initiation: number of patients who began initiation of treatment through an inpatient admission, outpatient visits, intensive outpatient encounter or partial hospitalization within 14 days of the index episode start date	Patients who were diagnosed with a new episode of alcohol or drug dependency during the first 10 and ½ months of the measurement year	Calendar years 2016(Pre) 2017(Interim) 2018-2022(Post)	**Descriptive statistics** (frequencies and percentages); Linear regression. **Comparison population**. SUD expansion (IMD) in Salt Lake and Utah Counties compared to Davis, Washington, and Weber Counties (DiD design). Control variables for age and gender will be used.
			Engagement: Initiation of treatment and two or more inpatient admissions, outpatient visits, intensive outpatient encounters or partial hospitalizations with any alcohol or drug diagnosis within 30 days after the date of the initiation encounter	Patients who were diagnosed with a new episode of alcohol or drug dependency during the first 10 and ½ months of the measurement year		

Secondary Drivers *(Enhance provider and plan capabilities to screen/identify patients for engagement and intervention; Improve community knowledge of available treatment and services)*	Community knowledge of available treatment and services	University of Utah / SRI	Beneficiary survey Adult SUD consumer satisfaction survey		State fiscal year 2020-2022	**Descriptive statistics** (Frequencies and percentages); t-test. **Target population**: SUD members. **Comparison population**. Patients in publicly funded programs receiving SUD services who complete annual MSHIP survey.
Demonstration Goal: Increased adherence to and retention in treatment for SUDs. **Evaluation Hypothesis: The demonstration will increase the percentage of members who adhere to treatment of SUDs.**						
Primary Drivers *(Increase the rates of initiation and engagement in treatment for OUD and SUDs; Improve adherence to treatment for SUDs)*	Continuity of Pharmacotherapy for OUD	NQF #3175	Number of members who have at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than seven days	Members who had a diagnosis of OUD and at least one claim for an OUD medication	Calendar years 2016(Pre) 2017(Interim) 2018-2022(Post)	**Descriptive statistics** (Frequencies and percentages); Linear regression. **Target population:** SUD members receiving MAT **Comparison population**. SUD expansion (IMD) in
	Percentage of members with a SUD diagnosis including those with OUD who used services per month	N/A	Number of members who receive a service during the measurement period by service type	Number of members	First year of waiver is baseline compared to years 2 through 5 of the waiver.	

Secondary Drivers *(Increase access to outpatient, intensive outpatient, and residential treatment for SUD; Improve care coordination and transitions between levels of care)*	Length of engagement in treatment	NBHQF Goal 1	Number of members completing 4th treatment session within 30 days	Number of members receiving treatment	First year of waiver is baseline compared to years 2 through 5 of the waiver.	Salt Lake and Utah Counties compared to Davis, Washington, and Weber Counties (DiD design). Control variables for age and gender will be used.
Secondary Driver *(Ensure patients are satisfied with services)*	Patient experience of care	University of Utah / SRI	Adult SUD beneficiary satisfaction survey		State fiscal year 2020-2022	**Descriptive statistics** (Frequencies and percentages); t-test. **Target population:** SUD members. **Comparison population**. Patients in publicly funded programs receiving SUD services who complete annual MSHIP survey.
Demonstration Goal: Reduced utilization of emergency department and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services. Evaluation Hypothesis: The demonstration will decrease the rate of emergency department and inpatient visits within the beneficiary population for SUD.						
Primary Drivers *(Reduced utilization of emergency department and inpatient hospital settings for SUD treatment)*	Follow-up after emergency department visit for alcohol and other drug abuse or dependence	NQF 2605	An outpatient visit, intensive outpatient encounter or partial hospitalization with any provider with a primary diagnosis of alcohol or other drug dependence within 7/30 days after emergency department discharge	Members treated and discharged from an emergency department with a primary diagnosis of alcohol or other drug dependence in the measurement year/1000 member months	Calendar years 2016(Pre) 2017(Interim) 2018-2022(Post)	**Descriptive statistics** (frequencies and percentages); Linear regression. **Target population**: SUD members with OUD diagnosis. **Comparison population** SUD expansion (IMD) in Salt Lake and Utah

	Inpatient admissions for SUD and specifically OUD	N/A	Number of members with an inpatient admission for SUD and specifically for OUD	Total number of members/1000 member months	First year of waiver is baseline compared to years 2 through 5 of the waiver.	Counties compared to Davis, Washington, and Weber Counties (DiD design). Control variables for age and gender will be used.
Evaluation Question: Do members receiving SUD services experience improved health outcomes?						
Demonstration Goal: Improved access to care for co-morbid physical health conditions commonly associated with SUD among members. **Evaluation Hypothesis: The demonstration will increase the percentage of members with SUD who experience care for comorbid conditions.**						
Primary Drivers *(Improve access to care for co-morbid physical health conditions among beneficiaries with SUD)*	Number of routine office visits by people with SUD	N/A	Number of members with an SUD diagnosis, and specifically those with OUD, who access physical health care.	Total number of members	First year of waiver is baseline compared to years 2 through 5 of the waiver.	**Descriptive statistics** (frequencies and percentages); Linear regression. **Target population**: SUD members with OUD diagnosis. **Comparison population** SUD expansion (IMD) in Salt Lake and Utah Counties compared to Davis, Washington, and Weber Counties (DiD design). Control variables for age and gender will be used.
Evaluation Question: Are rates of opioid-related overdose deaths impacted by the demonstration?						
Demonstration Goal: Reduction in overdose deaths, particularly those due to opioids. Evaluation Hypothesis: The demonstration will decrease the rate of overdose deaths due to opioids.						
Primary Driver *(Reduce opioid-related opioid overdose deaths)*	Rate of overdose deaths, specifically overdose deaths due to any opioid	UDOH	Number of overdose deaths per month and per year	Number of members/1000	First year of waiver is baseline compared to years 2 through 5 of the waiver.	**Descriptive statistics** (Frequencies and percentages); t-test. **Target population:** SUD members. **Comparison population**. State General Population.

D. METHODOLOGICAL LIMITATIONS

The first potential limitation is ensuring each individual analysis is based on unduplicated data. SRI staff will work closely with Utah Medicaid data personnel and DSAMH to ensure the data used for final analysis is as accurate as possible and that error in matching the TEDS Admission and Discharge data set to Medicaid claims data has been minimized to avoid duplication. There are also limitations of conducting a time series analysis without a comparison group. For example, data collected at different times are not mutually independent, which means a single chance event may affect all later data points. As a result, the true pattern or trend underlying time series data can be difficult to discern.

E. ATTACHMENTS

A. Independent Evaluator

The Social Research Institute (SRI) will conduct all activities related to this proposal to fulfill the evaluation requirements of Utah's 1115 PCN Waiver with specific emphasis on conducting data analysis to ensure timely reporting. SRI was established in 1982 as the research arm of the College of Social Work. Its goal is to be responsive to the needs of community, state, national and international service systems and the people these systems serve. Through collaborative efforts, SRI facilitates innovative research, training and demonstration projects. SRI provides technical assistance and research services in the following functional areas: conducting quantitative and qualitative research; designing and administering surveys; analyzing and reporting data analysis; designing and conducting needs assessments of public health and social service problems and service systems; planning and implementing service delivery programs; evaluating program and policy impacts; training in research methods and data analysis; providing technical assistance.

SRI staff are experienced in complying with state and federal laws regarding protecting human subjects and assuring confidentiality of data. SRI will complete the required IRB applications for this project including any data sharing agreements that may be necessary. SRI staff comply with generally accepted procedures to safeguard data by ensuring all data is stored on password protected and encrypted computers. Specifically, we use two-factor authentication (2FA) verification as an extra layer of security. All data collection and analysis SRI is responsible for will be based on the agreed upon data collection plan and in accordance with HIPAA-compliant data management systems available to University of Utah researchers.

Data Security and Storage

SRI will store UDOH's Medicaid (HIPPA transaction set) in the University's REDCap application. REDCap is a secure database with the ability to create web-accessible forms, continuous auditing, and a flexible reporting system. Controls within REDCap allow researchers to specify differential levels of data

access to individuals involved with a REDCap project, including restrictions to HIPAA-sensitive identifiers. REDCap is located on a secure, 21 CFR Part11 compliant server farm within the Center for High Performance Computing (CHPC) at University of Utah. Data are backed up every hour with the hourly backups being incorporated into the regular backup-recovery data process (nightly, weekly, and monthly), which includes off-site storage. Routine data recovery and disaster recovery plans are in place for all research data. During analysis, de - identified data may be maintained on University of Utah-encrypted computers or hard-drives in compliance with University policy.

Independent Evaluator Selection Process

SRI staff have contracted with the Utah Department of Human Services, Division of Child and Family Services (DCFS) to evaluation their IV-E waiver demonstration project for the past 4 years. Simultaneously, SRI also served as the independent evaluator for the State of Idaho's IV-E waiver demonstration for two years. Within the past year, key research staff from DCFS who were familiar with the work performed by SRI staff changed jobs and now work for UDOH Office of Health Care Statistics. As result, when UDOH was trying to locate an independent evaluator a referral was provided and several preliminary meetings and discussions were held. This led to SRI developing a proposal for UDOH to conduct the Demonstration evaluation.

The research team will consist of Rodney W. Hopkins, M.S., Research Assistant Professor, Kristen West, MPA., Senior Research Analyst, and Jennifer Zenger, BA, Project Administrator.

Mr. Hopkins in an Assistant Research Professor and has 25 years' experience in conducting program evaluations for local, state, and federal agencies. He has an M.S. and will be the project lead, with responsibility for evaluation design and implementation, data collection, and reporting. He will be .45 FTE.

Kristen West, MPA (.25 FTE) is a Senior Research Analyst with experience conducting multi-year program evaluations for DCFS and JJS. She has expertise with a variety of statistical software programs to analyze data including multi-level regression models, linear regression, and descriptive statistics (SPSS and R). She also has experience developing and data visualization dashboards. Jennifer Zenger (.05 FTE) is SRI's Project Administrator and has 25 years' experience in budgeting, accounts payable, and working with state and federal agencies. She will be responsible for contract setup, monitoring, and accounting services.

An interdepartmental consortium has been established between SRI and the University of Utah's Department of Economics and the Department of Family and Consumer Studies. The Department of Economics, Economic Evaluation Unit led by Department Chair, Norm Waitzman, Ph.D., (.03 FTE) a Health Economist who has extensive health care utilization and cost analysis experience will lead this effort. The other principal researcher is Jaewhan Kim, Ph.D. (.21 FTE) a Health Economist and Statistician with a broad background in health care utilization and cost analysis, statistical design and data analysis including cohort studies and cross-sectional studies. He currently co-directs the Health Economics Core, Center for Clinical & Transitional Science (CCTS) at the University of Utah School of Medicine. He has expertise in analyzing claims databases for health care utilization and costs and has

worked on multiple federal studies of health care utilization using diverse claims data such as Medicare, Medicare-SEER, Medicaid, MarketScan, PHARMetrics, University of Utah Health Plan's claims data and Utah's All Payers Claims Database (APCD). He was one of the original l developers of the APCD, published the first paper with Utah's APCD data, and has worked collaboratively with other researchers to successfully conduct more than 20 studies using the APCD. They will also be supported by a to-be-named Graduate Research Assistant (1.0 FTE).

Conflict of interest document attached.

B. Evaluation Budget

The initially proposed budget (3/2018) of projected costs for the 1115 Demonstration evaluation are detailed below. Costs include all personnel (salary + benefits), study related costs (mileage), and university indirect (reduced from 49.9% to 14.8% state rate). Year 1 budget begins April 1, 2018 and ends June 30, 2018. Year 2-5 are based on the state fiscal year. An additional 90-day period has also been included, during which SRI will complete the Year 5 Annual Report, Waiver Final Report, and SUD Final Report.

Proposed budget

Salaries	ABA	FTE	SALARY	BENEFITS	YEAR I	YEAR II	YEAR III	YEAR IV	YEAR V	90-DAY	
Faculty											
Matt Davis	$102,000	5%	$ 5,100	$ 2,059	$ 1,785	$ 7,283	$ 7,428	$ 7,577	$ 7,729	$ 1,971	
Rod Hopkins	$ 91,997	15%	$ 13,800	$ 5,877	$ 4,919	$ 20,170	$ 20,471	$ 20,880	$ 21,298	$ 5,431	
			$ 18,900	$ 7,936	$ 6,704	$ 27,453	$ 27,899	$ 28,457	$ 29,027	$ 7,402	
Staff											
Kristen West	$ 57,222	15%	$ 8,583	$ 3,433	$ 3,004	$ 12,257	$ 12,502	$ 12,752	$ 13,007	$ 3,318	
Jennifer Zenger	$ 85,435	5%	$ 4,272	$ 1,709	$ 1,495	$ 6,100	$ 6,222	$ 6,347	$ 6,473	$ 1,650	
			$ 12,855	$ 5,142	$ 4,499	$ 18,357	$ 18,724	$ 19,099	$ 19,481	$ 4,968	
Total Staff					$4,499	$18,357	$ 18,724	$ 19,099	$ 19,481	$ 4,968	
Total Faculty Salaries					$6,704	$27,453	$ 27,899	$ 28,457	$ 29,027	$ 7,402	
Total Fringe Benefits					added in above	added in above	added in above	added in above	added in above		
Travel (1 trip per month to UDOH & DSAMH)					$65	$250	$250	$250	$ 250	$ 65	
Total Direct					**$11,268**	**$46,060**	**$ 46,874**	**$ 47,806**	**$ 48,757**	**$ 12,435**	
Indirect (F&A) Cost				*14.80%*	**$1,668**	**$ 6,817**	**$ 6,937**	**$ 7,075**	**$ 7,216**	**$ 1,840**	
Grand Total					**$12,936**	**$52,877**	**$ 53,811**	**$ 54,881**	**$ 55,973**	**$ 14,275**	**$244,754**

Budget Narrative

Rodney Hopkins, M.S., Assistant Research Professor will be the lead on this project and will be responsible for day-to-day activities. He will work (.15 FTE) closely with UDOH and DSAMH staff to

ensure appropriate data is available to answer the research questions and execute the data analysis and reporting. Dr. Davis (.05 FTE) will bring his considerable experience with quantitative analysis to this project. Kristen West, MPA, Senior Research Analyst (.15 FTE) will assist with data analysis and reporting, including data visualization. Jennifer Zenger (.05 FT) is SRI's Project Administrator. She oversees contract monitoring and the budget.

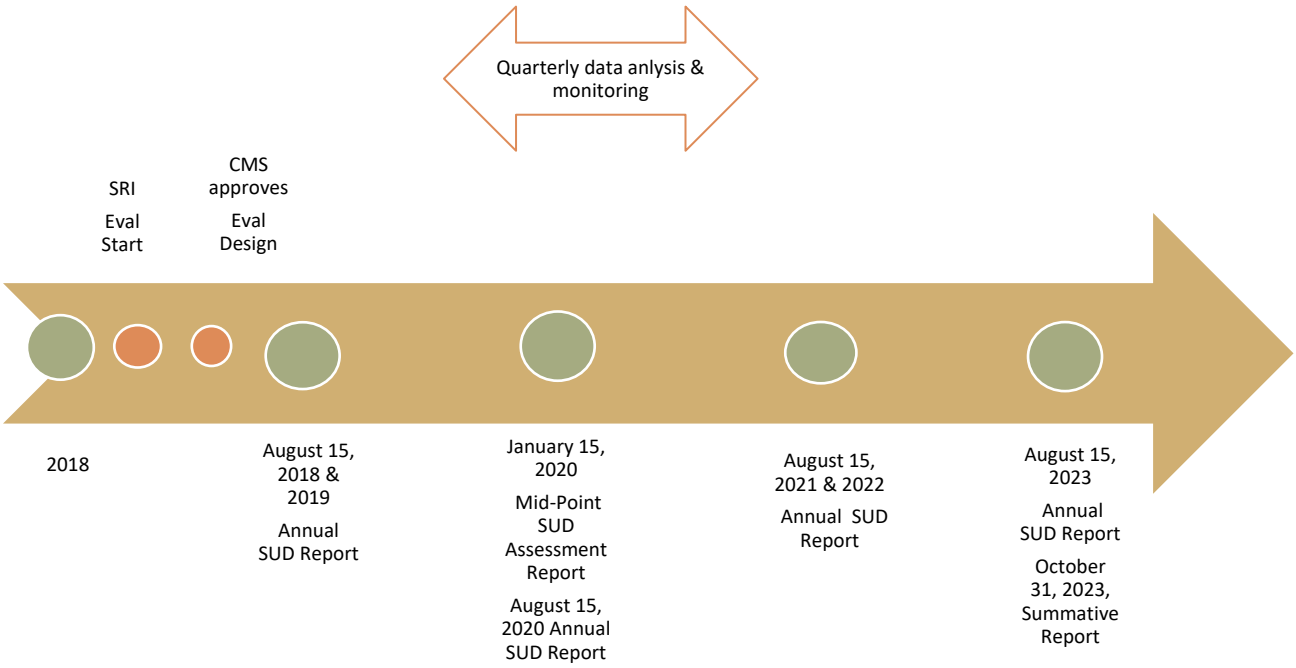
A strength this team brings to the project will be its ability to conduct a thorough and accurate data analysis and provide a professional report that will address each component of the waiver demonstration. Salaries calculated include a 2% increase as of July 1 of each year. University of Utah benefits are calculated at 40%. Year 1 is only a 6-month budget (April 1, 2018 – Sept. 30, 2018).

Local travel will be needed for SRI faculty and staff to attend meetings with UDOH and DSAMH staff. We anticipate one meeting per month.

UDOH state agency to state agency indirect costs calculated at 14.8%.

C. Timeline and Major Milestones

Figure 2. Waiver Evaluation Timeline



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Utah Section 1115 Primary Care Network (PCN) Demonstration: Independent Budget Neutrality Review

November 30, 2020

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EXECUTIVE SUMMARY

We are pleased to present the Utah Department of Health (DOH) with the results of our independent review of budget neutrality for Utah's section 1115 Primary Care Network (PCN) demonstration (waiver number 11-W-00145). The budget neutrality is specific to the Substance Use Disorder (SUD) costs not otherwise matchable and our findings are as follows:

- We have determined for the period of November 9, 2017 through June 30, 2018 (Demonstration Year 1 or DY1) that the DOH did not meet budget neutrality requirements.
- We have determined for the period of July 1, 2018 through June 30, 2019 (DY2) that the DOH did not meet budget neutrality requirements.
- We also have concerns regarding the ability of state to maintain budget neutrality in later demonstration years. Our biggest concern is with the significant increase in costs in April and May 2019 that may be driven by the implementation of Medicaid expansion. It is unclear to us whether the initial SUD IMD per capita limits considered a change in benefit plan or expansion of enrollment.
- The major risk factors to the state's ability to meet the budget neutrality requirement are increasing FFS costs paid for members while they are receiving treatment in a SUD Institution for Mental Disease (IMD). However, we do not expect that the trend in FFS costs will continue to outpace the trend 5% selected by the state and CMS in determining the budget neutrality limit. This may help improve the results over time.

Additional detail on our methodology and findings is presented in the following sections. To complete this analysis, we relied on data provided by the DOH. We understand that DOH will use the results presented in this letter for compliance with the waiver terms outlined by CMS in its approval letter dated October 31, 2017. It may not be appropriate for other purposes and any reliance on these results should include a complete copy of this report.

METHODOLOGY

Under the Special Terms and Conditions (STCs) for Utah's PCN Medicaid section 1115 demonstration program (referred to as the "demonstration"), the state may receive federal financial participation (FFP) for providing the continuum of services to treat opioid use disorders and other substance use disorders (referred to collectively as "SUDs" in this report) to Medicaid enrollees in an IMD. These are state plan services that would be eligible for reimbursement if not for the waiver.

Under the waiver, the state is eligible for FFP for the SUD services that will be provided in an IMD for these individuals, up to the SUD per capita cap. The per capita cap is defined in the waiver and presented in Table 1.

Table 1
State of Utah Department of Health
Section 1115 PCN Waiver Budget Neutrality Review
SUD Per Capita Caps

DY	Time Period	Per Capita Cap
DY1	11/9/2017 – 6/30/2018	$ 3,321.96
DY2	State Fiscal Year(SFY) 2019	$ 3,488.06
DY3	SFY 2020	$ 3,662.46
DY4	SFY 2021	$ 3,845.58
DY5	SFY 2022	$ 4,037.86

An independent evaluator must conduct an evaluation of the SUD Supplemental Budget Neutrality Test. This report documents our independent evaluation of the SUD Supplemental Budget Neutrality Test for November 9, 2017 through June 30, 2019 (DY1 and DY2). Table 2 presents the calculation of the budget neutrality test on a per member per month (PMPM) basis for DY1 and DY2 performed by the state as of September 10, 2020.

Table 2
State of Utah Department of Health

Section 1115 PCN Waiver Budget Neutrality Review Budget Neutrality Test		
DOH Estimate	**DY1**	**DY2**
Actual PMPM	$ 3,356.17	$ 3,529.59
Budget Neutrality Limit	$ 3,321.96	$ 3,488.06
Difference	$ (34.21)	$ (41.53)

The calculation presented in Table 2 and detailed in Exhibit 1 relies on CMS-64 reported data submitted by the DOH to CMS on a quarterly basis. We received a summary of the submitted CMS-64 reports specific to the SUD MEG that allowed us to verify the calculations performed by the DOH in Table 2 above and in Exhibit 1.

We reviewed these results for reasonableness by comparing the CMS-64 report data to additional membership and cost information provided by the DOH. For the membership information, we relied on a list of member IDs and member months with SUD IMD stays in the demonstration year. This data was provided by the DOH on September 25, 2020. For the cost information, we compared the CMS-64 report data by line to:

- Pharmacy rebate information: We reviewed pharmacy rebates provided by the DOH on September 28, 2020 for members who had a SUD IMD stay in that month.
- Dental expenditures: We reviewed dental premium expenses and fee-for-service (FFS) dental service payments for members who had a SUD IMD stay in that month.
- Prepaid Mental Health Plan (PMHP) expenditures: We reviewed PMHP premiums for Medicaid members enrolled in a PMHP in the same month as the IMD SUD stay.
- Accountable Care Organization (ACO) Premiums: We reviewed ACO premiums for Medicaid members enrolled in an ACO in the same month as the IMD SUD stay.
- Additional FFS Claims: We also reviewed all other FFS claims, beyond the FFS dental, paid by the state on behalf of members in the same month as their SUD IMD stay.

As described above, we reviewed all claims and premiums from the month a member was enrolled in the SUD IMD. It is our understanding that the DOH methodology varied slightly in that it looked at premiums from the same month, but claims only from the same dates of services as the IMD stay. This leads to slightly different results, particularly for pharmacy claims. However, we generally agree with the results and understand that the methodology used by the DOH is consistent with that used for developing the budget neutrality per capita cap.

KEY FINDINGS

As noted in Table 2, we observed that Utah did not meet budget neutrality requirements in DY1 or DY2. Based on discussions with the DOH, we expect that the key driver in this result is the length of stay members stay in the IMD. We expect that over time the trend used in the per capita budget neutrality limit (5%) will outpace utilization and unit cost trends associated with other costs associated with services provided to members in the same month they were enrolled in an IMD. However, the following are risks or considerations to the state in being able to meet its budget neutrality limits in the future:

- As the number of enrollees changes, the expected acuity of those individuals may deviate from the benchmark. This may be part of the reason why we see significant IMD SUD stay utilization increases and increasing costs beginning in April 2019. Utah expanded Medicaid effective April 1, 2019 and former PCN members transitioned to the expansion population at that time.
- As Medicaid expansion moves to managed care, we expect some of the elevated utilization of IMD SUD stays from April and May 2019 may be replaced with an average Medicaid premium payments to the ACOs. This may help the DOH meet budget neutrality requirements beginning in SFY 2020.
- COVID-19 may increase substance use disorder cases and increase behavioral health needs. The enrollment risk here is mitigated by the per capita cap limit. However, there is risk that the same members may use more behavioral health or other services than they would have before.
- State directed payments are included in the ACO rates. The state directed payments are set based on a total available funding pool which is not directly impacted by members in IMDs. To the extent the funding for state

directed payments changes, the state may be arbitrarily more or less likely to meet the budget neutrality test. We recommend future budget neutrality tests exclude state directed payments from the testing limit and calculated costs. However, the impact is small compared to the total costs included in the budget neutrality demonstration.

LIMITATIONS AND STATEMENT OF QUALIFICATION

The attached efficiency analysis and quality review results are intended for the use by DOH. Any user of the data must possess a certain level of expertise in actuarial science and health care modeling so as not to misinterpret the data presented.

Milliman makes no representations or warranties regarding the contents of this presentation to third parties. Similarly, third parties are instructed that they are to place no reliance upon this analysis prepared for DOH by Milliman that would result in the creation of any duty or liability under any theory of law by Milliman or its employees to third parties. The terms of Milliman's contract with DOH signed on March 21, 2017 apply to this analysis and its use. Other parties receiving this report must rely upon their own experts in drawing conclusions about the data underlying the cost summary, and the comparisons of relative budget neutrality targets.

Results presented here represent a historical summary of past experience. Future experience will vary from these results for many reasons, potentially including differences in population health status, unit cost levels, delivery systems, random variation, or other factors.

This analysis has relied extensively on data provided by DOH. The data included claims and encounters for dental, medical, and behavioral health benefits. Milliman has reviewed this data for reasonableness, but has not performed an independent audit. Adjustments may be necessary if the data is inaccurate or incomplete.

Models used in the preparation of our analysis were applied consistently with their intended use.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. The authors of this report are all members of the American Academy of Actuaries and meet the qualification standards for performing this analysis.