DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
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State Demonstrations Group

September 1, 2022

Jennifer Strohecker
Director
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Dear Ms. Strohecker:

The Centers for Medicare & Medicaid Services (CMS) completed its review of the Serious Mental Illness (SMI), Aged Dental (AD), and Intensive Stabilization Service (ISS) Evaluation Designs for Utah's section 1115 demonstration, formerly known as the "Primary Care Network" (Project Nos: 11-W-00145/8 and 21-W-00054/8), for the approval period that ended on June 30, 2022. While the demonstration has since been exntended, and is currently called the "Medicaid Reform 1115 Demonstration," these Evaluation Designs—as were required by the Primary Care Network Special Terms and Conditions (STCs), specifically, STC #134—pertain solely to the prior demonstration approval period. CMS has determined that the SMI Evaluation Design, which was submitted on June 14, 2021 and revised on May 9, 2022, the AD Evaluation Design, which was submitted on August 13, 2020 and revised on March 3, 2022, and the ISS Evaluation Design, which was submitted on August 13, 2020 and revised on March 3, 2022, meet the requirements set forth in the STCs and CMS's evaluation design guidance, and therefore, approves the state's aforenamed three Evaluation Designs.

In accordance with 42 CFR § 431.424, the approved Evaluation Designs may now be posted to the state's Medicaid website within thirty days. CMS will also post the approved Evaluation Designs as standalone documents, separate from the STCs, on Medicaid.gov.

Per the state's STCs, the demonstration's Summative Evaluation Report for the approval period of November 1, 2017 through June 30, 2022 must include the evaluations of the SMI, AD, and ISS components, consistent with these approved Evaluation Designs. The Summative Evaluation Report is due to CMS within eighteen months of the end of the demonstration's abovementioned approval period, that is, no later than December 31, 2023. In accordance with 42 CFR § 431.428 and the STCs, we look forward to receiving updates on evaluation activities for both the prior and ongoing demonstration approval periods in the state's Medicaid Reform 1115 Demonstration Monitoring Reports.

We appreciate our continued partnership with Utah on the Medicaid Reform 1115 Demonstration. If you have any questions, please contact your CMS demonstration team.

Sincerely,

Danielle Daly -S

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Date: 2022.09.01 09:59:07 -04'00'

Danielle Daly
Director
Division of Demonstration
Monitoring and Evaluation

cc: Mandy Strom, State Monitoring Lead, CMS Medicaid and CHIP Operations Group

UTAH 1115 PRIMARY CARE NETWORK DEMONSTRATION WAIVER

EVALUATION DESIGN

Serious Mental Illness in an IMD

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INTRODUCTION

Utah's 1115 PCN Demonstration Waiver (hereinafter referred to as "Demonstration") is a statewide waiver that was originally approved and implemented in 2002. Since that time, the Demonstration has been extended and amended multiple times to add additional benefits and Medical programs. During the 2020 General Legislative Session, House Bill 219 "Mental Health Amendments" was passed, which directed the Utah Department of Health to seek Medicaid approval to offer a program and qualify for reimbursement of mental health services that are provided in an Institution for Mental Diseases (IMD). Conditions for approval of the waiver included the facility having more than 16 beds, and individuals who receive mental health services for a period of more than 15 days in a calendar month.

Other aspects of the demonstration allowed the state to provide high quality, clinically appropriate treatment to beneficiaries who were severely mentally ill (SMI) and to support state efforts to enhance provider capacity, improve the availability of Medication Assisted Treatment (MAT) and improve access to a continuum of SMI evidence-based services at varied levels of intensity. The following design evaluation will focus specifically on the components of this new waiver amendment.

A. GENERAL BACKGROUND INFORMATION

Serious mental illness (SMI)[1] refers to individuals 18 or older, who currently or at any time during the past year have had a diagnosable mental, behavioral, or emotional disorder. Schizophrenia, bipolar illness, and major depressive disorder are the diagnoses most commonly associated with SMI, but people with one or more other disorders may also fit the definition. The diagnoses also require the condition to be of sufficient duration to meet diagnostic criteria specified by the American Psychiatric Association and that has resulted in functional impairment that substantially interferes with or limits one or more major life activities. Major life activities include basic daily living skills (e.g. eating, bathing, dressing); instrumental living skills (e.g., maintaining a household, managing money, getting around the community, taking prescribed medication); and functioning in social, family, and vocational / educational contexts.

In the U.S. about 1 in 25 adults has an SMI in a given year. In 2016, 4.2 percent of U.S. adults age 18 or older (an estimated 10.4 million adults) had an SMI in the past year. This estimate includes new and existing cases of SMI. The percentage of SMI in the past year also varies across age groups, with those 50 and older (2.7 percent) having lower rates than those aged 18 to 25 (5.9 percent) or those aged 26 to 49 (5.3 percent).[2] The lower prevalence in older adults may be impacted by the increased risk of earlier death among people with SMI.

Nearly three-quarters of adults with SMI are diagnosed with two or more mental health diagnoses and (25.4 percent) have a substance use disorder. Approximately one in six (16.1 percent) misused opioids in the past year. Adults with SMI and substance use disorders "show more severe symptoms of mental illness, more frequent hospitalizations, more frequent relapses, and a poorer course of illness than patients with a single diagnosis, as well as higher rates of violence, suicide, and homelessness". [3]

Nationally, relatively few adults with SMI receive effective treatments. Treatments that are demonstrated to be effective for SMI usually include some combination of prescription medications and other supports. These supports can include services such as inpatient treatment, respite care, assertive community treatment, coordinated specialty care, psychotherapy, and supported employment. About two-thirds of adults with SMI (64.8 percent, an estimated 6.7 million adults) [4] reported receiving mental health treatment in 2016. Most treatment is offered in

outpatient settings, with only 7.6 percent (an estimated 789,000 adults) [5] receiving inpatient mental health treatment/counseling in the previous year. Only a third (32.6 percent, 2.2 million adults) [6] of those who get treatment receive medications only, with no psychosocial or psychotherapeutic services.

Effective treatment models exist, but are not widely available. States report annually on the implementation of select evidence-based practices (EBPs) in their systems. EBPs are practices that are based on rigorous research that has demonstrated effectiveness in achieving the outcomes that the practices were designed to achieve. State mental health systems often serve those with mental health conditions, including SMI who are Medicaid eligible and whose conditions require levels of care not paid for by private insurance. The percentage of the population who have access to these EBPs remains low and varies widely across states.[7]

Further, most states report insufficient psychiatric crisis response capacity as well as insufficient numbers of inpatient psychiatric hospital beds. In many areas, bed shortages have led to long delays in gaining access to treatment and an increase in individuals waiting for competency restoration services needed to restore competency to participate in legal proceedings.[8] A report by the National Association of State Mental Health Program Directors Research Institute (NASMHPD) found that most states (35 of the 46 who responded) have shortages of psychiatric hospital beds. The configuration of available beds and the number of beds per 100,000 population varies substantially across states, but few states report they have adequate numbers of inpatient beds to meet needs.[9]

Table 1: Adults receiving treatment in Utah public behavioral health system, 2019.

SFY2019 # receiving services in Utah public behavioral health system	Qualified as SMI
36,326 adults	52.4 %

In Utah similar challenges and barriers have been present for a number of years. Table 1 shows a high percentage of those who qualify with an SMI diagnosis. There also continues to be a low number of available beds and a high census in psychiatric units. There are a total of 4 hospitals in the state with 365 inpatient psychiatric beds (IMD). However, prior to the waiver, these beds did not qualify for federal financial participation (FFP). Also, for managed care plans, up to 15 day stays in IMDs were permissible, but this was often problematic due to the challenge of balancing quality care to meet patient treatment needs while navigating the rules associated with payment procedures. Additionally, fee-for-service (FFS) beneficiaries did not have access to these services. Finally, prior rules did not allow coverage in facilities with more than 16 beds.

The SMI program will break down these barriers by providing beneficiaries access to the full range of covered Medicaid services, including SMI treatment services. SMI services will range in intensity from short-term acute care in inpatient settings to ongoing chronic care in cost-effective community-based settings. The state will focus its efforts on the key goal of ensuring quality care in both psychiatric hospitals and residential settings. Part of this requires all facilities be licensed or approved as meeting requirements for licensing established by the agency and by following written policies and practice standards. The state will also establish oversight and auditing processes as well as utilization review procedures. The state's plan also seeks to improve care coordination and care for co-occurring physical and behavioral health conditions. Specifically, the state seeks to achieve a statewide average length of stay of no more than 30 days in IMD treatment settings for beneficiaries receiving coverage through the program.

The population group eligible are individuals age 21-64, approved for full Medicaid benefits under the Utah State Plan who receive treatment for a SMI as short-term residents in facilities that meet the definition of an IMD. Specific services eligible through this waiver are listed in Table 2 below.

Table 2: Summary of services included in waiver demonstration

State Plan
Crisis Stabilization Services
Mobile Crisis Outreach Team (MCOT)
Assertive Community Treatment
Psychiatric Diagnostic Evaluation
Mental Health Assessment
Psychological Testing
Psychotherapy
ASAM LOC 1.0 - 4.0
Therapeutic Behavioral Services
Pharmacologic Management
Psychosocial Rehabilitative Services
Services Provided in Intensive Outpatient Treatment
Peer Support Services
Inpatient Psychiatric Services
Treatment Provided in Residential Treatment Programs

Other goals focus on increasing access to a full continuum of mental health care including crisis stabilization services. Earlier identification, as well as earlier engagement in treatment and increased integration of behavioral health care in non-specialty care settings, such as schools and primary care practices, are also important priorities that have been established. The state has also initiated efforts to ensure a comprehensive array of crisis and support-related services are available. These include: a statewide mental health crisis line, expanding mobile crisis outreach teams statewide, increasing access to crisis receiving centers, expanding assertive community treatment teams, and stabilization and mobile response triage systems.

The state's plan for waiver implementation is guided by a series of milestones that are directly related to the primary hypotheses included in the SMI demonstration waiver. These milestones are:

1. Ensuring quality of care in psychiatric hospitals and residential settings.
2. Improving care coordination and transitions to community-based care.
3. Increasing access to continuum of care including crisis stabilization services.
4. Earlier identification and engagement in treatment through increased integration.

CMS approved the state's section 1115 SMI/SED demonstration amendment on December 16, 2020 for a demonstration period from January 1, 2021 through June 30, 2022.

CMS requires a comprehensive cost analysis to demonstrate financial impacts of the waiver. To comply with this the Utah Department of Health (UDOH) contracts with a separate independent contractor to conduct their cost analysis components on various waiver demonstrations.

B. EVALUATION QUESTIONS & HYPOTHESES

The state has identified five primary hypotheses for the demonstration waiver. These include:

1. Reduced utilization and lengths of stay in emergency departments (EDs) among beneficiaries with SMI while awaiting mental health treatment in specialized settings;

2. Reduced preventable readmissions to acute care hospitals and residential settings

3. Improved availability of crisis stabilization services including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs, psychiatric hospitals, and residential treatment settings throughout the state;

4. Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI, including through increased integration of primary and behavioral health care; and

5. Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities.

This evaluation design will describe how the University of Utah's Social Research Institute (SRI) and the Department of Economics will evaluate the implementation of this waiver amendment. The individual logic models that follow (Figures 1-5) illustrate the relationship between the five demonstration goals and the demonstration activities of the waiver amendment component. Based on CMS guidance[10] for the evaluation of 1115 waivers for adults with SMI, the logic models below contain components to help clarify connections and causal pathways. They are as follows: key actions, short-term outcomes, long-term outcomes as well as moderating factors and contextual variables.

Figure 1. SMI Logic Model 1

- Goal 1: Reduced utilization and lengths of stay in emergency departments among Medicaid beneficiaries with SMI while awaiting mental health treatment in specialized settings;

	Moderating Factors - Client willingness to participate in treatment - Fidelity to implementation of evidence-based crisis and mental health services	
Key Actions	**Short-term Outcomes**	**Long-Term Outcomes**
Expand early intervention services	Clients get treatment before they need intensive emergency departments or residential treatment	Reduced utilization and lengths of stay in emergency departments among beneficiaries with SMI while awaiting mental health
Expand availability of spectrum of mental health care services, including: therapy, rehabilitation,	Increased availability of lower levels of treatment will decrease the need for use of emergency departments and intensive patient care.	

pharmacological management, and residential treatment		treatment in specialized settings
Increase availability of IMD beds across the state	Increased IMD bed capacity will reduce lengths of stay in emergency departments	
Mental health crisis line	Clients have an always available first point of contact other than the emergency department	
Mobile crisis outreach teams available statewide Mobile response triage systems and crisis receiving center availability	Crisis services can reach patients sooner, screen and triage clients in crisis into more appropriate levels of care so use of emergency department is avoided or reduced, and time spent in the ED is reduced for patients who go there.	
	Contextual Variables	
	- Availability of multiple-levels of community-based treatment services - Availability of social support systems - Extent and severity beneficiary mental health needs in relation to availability of services / resources	

Figure 2. SMI Logic Model 2

- Goal 2: Reduced preventable readmissions to acute care hospitals and residential settings

	Moderating Factors	
	- Client willingness to participate in treatment - Fidelity to implementation of evidence-based crisis and mental health services	
Key Actions	**Short-term Outcomes**	**Long-Term Outcomes**
Require follow-up of all clients discharged from acute care	Patients are connected to community resources, reducing the probability of readmission	Reduced preventable readmissions to acute care hospitals and residential settings
Expand availability of virtual visits (telehealth)	Patients can get care where they live and do not need to travel	
Expand community-based mental health and social support services	Increased availability of a spectrum of community-based care will reduce the need for higher level (intensive) care. Adequate social supports will help clients maintain community-based treatments.	
	Contextual Variables	
	- Availability of multiple-levels of community-based treatment services - Availability of social support systems - Extent and severity beneficiary mental health needs in relation to availability of services / resources	

Figure 3. SMI Logic Model 3

- Goal 3: Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs, psychiatric hospitals, and residential treatment settings throughout the state.

	Moderating Factors	
	- Client willingness to participate in treatment - Fidelity to implementation of evidence-based crisis and mental health services	
Key Actions	**Short-term Outcomes**	**Long-Term Outcomes**
Expand early intervention services	Clients get treatment before they need intensive emergency departments or residential treatment	Individuals with SMI will be screened earlier and have access to appropriate levels of mental health treatment in specialized settings. Improved availability of crisis services and intensive outpatient or short-term residential treatment
Expand availability of spectrum of mental health care services, including: therapy, rehabilitation, pharmacological management, and residential treatment	Increased availability of crisis stabilization services will ensure access to comprehensive mental health services	
Increase availability of IMD beds across the state	Increased IMD bed capacity will reduce lengths of stay in emergency departments	
Mental health crisis line	Clients have an always available first point of contact other than the emergency department	
Mobile crisis outreach teams available statewide Mobile response triage systems and crisis receiving center availability	Crisis services can reach patients sooner, screen and triage clients in crisis into more appropriate levels of care so use of emergency department is avoided or reduced, and time spent in the ED is reduced for patients who go there.	
	Contextual Variables	
	- Availability of multiple-levels of community-based treatment services - Availability of social support systems - Extent and severity beneficiary mental health needs in relation to availability of services / resources	

Figure 4. SMI Logic Model 4

- Goal 4: Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI including through increased integration of primary and behavioral health care;

	Moderating Factors
	- Provider availability for care integration - Political will for regulatory change

	- Electronic health record exchange and interoperability	
Key Actions	**Short-term Outcomes**	**Long-Term Outcomes**
Change regulatory environment for better integration of physical and behavioral health	Clients will be able to receive integrated care physical and behavioral health, with all involved providers able to bill for services	Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI including through increased integration of primary and behavioral health care; overall improved care coordination and continuity of care
Organize physical and mental health providers within a community to share records for patients	Care will be better coordinated across the continuum of care, and clients will receive better continuity of care	
	Contextual Variables	
	- Political environment - Availability of community-based services and integrated primary and behavioral health care statewide	

Figure 5. SMI Logic Model 5

- Goal 5: Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities

	Moderating Factors	
	- Provider availability for care integration - Political will for regulatory change - Improved quality of care will contribute to better treatment service outcomes	
Key Actions	**Short-term Outcomes**	**Long-Term Outcomes**
Expand continuum of mental health care statewide to ensure those with SMI have access to multiple levels of care	Clients will be able to receive care for both physical and mental health at a single clinic, with all involved providers able to bill for services	Improved access to best practice care coordination for those with SMI. Improved care coordination and continuity of care between emergency departments, psychiatric hospitals, residential treatment facilities and community-based mental health providers
Ensure expanded behavioral health services meet the highest standards of care	Care will be better coordinated across the continuum of care, service providers will adhere to appropriate standards (e.g. licensure, accreditation) and clients will receive better quality care	
	Contextual Variables	
	- Political environment - Timely implementation of crisis services (e.g. MCOT, stabilization, mobile response triage, and receiving centers)	

The independent evaluator has integrated the state-established milestones together with the primary waiver hypotheses. Table 3 below provides details of waiver hypothesis, research questions, outcome and process measures, data sources, and analytic methods.

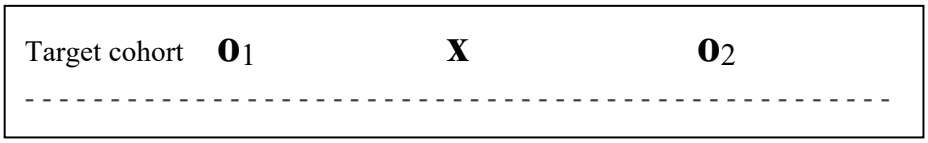
C. METHODOLOGY

1. Evaluation Design

As a result of the state's plan for implementing mental health and crisis intervention services, a mixed method evaluation design is planned. This is due to a roll out of services in select geographical areas, with other areas to follow at a later date. For example, Mobile Crisis Outreach Teams (MCOT) began operation in the four most densely populated urban counties in 2020 with other rural/frontier areas to begin operating these MCOT services later in FY21. Stabilization and Mobile Response (SMR) services operate in similar areas with plans in place to expand to other areas with a staggered roll out. Finally, Crisis Receiving Centers are few and have limited treatment capacity. However, there are plans to increase availability to more of the population. As a result, a cohort design will be used.

A systematic review indicates a cohort study is a strong observational study design that supports causal inference.[11,12] In a prospective cohort study data is collected in chronological order with data collected at one point (O_1) compared to data collected later (O_2) which helps distinguish between cause and effect. This design uses the observation from the implementation in the target cohort before and after the introduction of newly implemented mental health programs across the different geographical areas of the state. Figure 6 below diagrams the data collection points (0) and intervention (X).

Figure 6. Cohort design for SMI waiver implementation.



The quantitative portion of the evaluation will include member-level data from Utah Medicaid (claims, enrollment, and pharmacy data) matched with the Utah Department of Human Services (DHS) client data. This data includes all federally required demographic and treatment data on clients admitted into any publicly funded treatment facilities. The mental health data is called the Mental Health Event File (MHE). Providers submit the data through a secure website into the SAMHIS (Substance Abuse Mental Health Information System) database. The data submitted satisfies outpatient behavioral health reporting requirements. The qualitative portion of the evaluation will require collection of data from stakeholders through key informant interviews. The evaluator will obtain all Medicaid data for quantitative analysis via secure file transfer methods. DHS staff will perform the matching procedures between the Medicaid data and DHS MHE data. The data will then be organized as staged data in a relational database structure that will enable tracking Medicaid members and their outcomes over time and across data sources.

Considering the characteristics (e.g. distribution) of the outcomes and multiple measures of the outcomes of the same subjects over time, generalized estimating equations (GEEs) will be used to evaluate the effects of the SMI. The GEE approach will evaluate any changes or trends of the outcomes over time from the baseline line (i.e. pre-demonstration). GEEs are flexible for different types of outcomes (e.g. continuous, binary and counts) and does

not require a pre-intervention parallel trend assumption like Difference-in-Difference (DiD). Also, this approach does not require the linear trend of outcomes over time like interrupted time series (ITS). As GEE is flexible in terms of distribution (e.g. gamma, normal) and link function (e.g. log) depending on type of outcome measures, it can appropriately accommodate skewed data such as healthcare cost and utilization. It also accounts for the correlated nature of the outcomes of subjects over time (e.g. working correlation), and time-varying covariates can be controlled for in the model. In this analysis, we will test several different types of correlation structures (e.g. unstructured correlation) and find a structure that best fits the data. The outcomes will be aggregated over quarterly intervals. Subjects who were enrolled for all 3 months of a quarter will be included in the analysis. Initially, an unstructured covariance matrix will be assumed here to avoid imposing specific assumptions concerning distribution of the random effects. We will adjust for relevant factors that could affect the outcomes.

$$L(Y_{it}) = X'_{it}\,\beta$$

, where L is a link function, i represents subjects, t indicates time (e.g. quarter), β is a k by 1 vector of regression coefficients including β_0, and X'_{it} indicates an n by k matrix with covariates. This X'_{it} includes baseline factors of subjects, time dummies and potentially the number of COVID cases (per 100,000) or percent positivity by Salt Lake Region/Eastern Region vs. Northern Region/Southwest Region) in every quarter. The coefficients of the time indicator variables will be the main interest of the regressions. If 6 quarters before the implementation (July 1, 2019 through December 30, 2020) is not available from Medicaid data, the evaluation will consider 6 quarters after the implementation only.

ITS is not considered in this evaluation due to lack of number of outcome measures before and after intervention to estimate casual effects of the intervention. In this demonstration, we will have 6 quarters before and 6 quarters after the intervention and ITS may therefore not be useful due to lack of a statistical power. However, if more outcome measures (e.g. 24 quarters before and 24 quarters after the intervention) are available ITS will be considered in the future.

Covariates included in the regressions are 1) demographic factors, 2) physical health conditions, and 3) prior mental health residential before SMI implementation. Demographic factors include age, gender, race/ethnicity, marital status, years of education, household income, employment status, housing status, tobacco use, veteran status, and total number in family. If some of the variables have many missing values (i.e. more than 20% of subjects), they will be excluded. Physical health conditions will be identified by ICD-10 codes available from the CMS Chronic Condition Warehouse (https://www2.ccwdata.org/web/guest/condition-categories). Physical health includes presence of asthma, cancer, chronic kidney disease, obstructive pulmonary disease, diabetes, hypertension, hyperlipidemia, rheumatoid arthritis and osteoarthritis. If the number of subjects with some physical health conditions is too small, we will exclude these conditions in the regressions. We will also consider calculating the Elixhauser comorbidity index to investigate if it fits better than the presence of the above physical conditions in the regressions. Some of the patients could be exposed to prior mental health residential and will control this factor as binary (Yes/No) that could affect the outcomes following SIM implementation. If we have a small sample size for the analysis, controlling too many covariates will reduce a statistical power. Therefore, we will consider only several critical covariates to be controlled in the regressions.

2. Target Populations

The target population for this design are adults 21-64 years of age. Because controls are not available for this evaluation, the cohort design (pre- and post-implementation) with the intervention group will be utilized. All beneficiaries receiving services through this amendment must meet medical necessity criteria. Thus, there are no

controls who can be comparable to the implementation group. Also, since many western states have SMI waivers[13], it will be difficult to find a reasonable comparison state.

3. Evaluation Period

The waiver demonstration period is January 1, 2021 through June 30, 2022. Utah Medicaid claims data will be used during this period as well as two years prior (2019-20) to waiver implementation. The Mental Health Event (MHE) data elements will include the period of July 1, 2019 through June 30, 2022 since that will provide pre-waiver implementation mental health service data for both Medicaid beneficiaries, as well as those who are not Medicaid eligible, but are receiving mental health services through the same publicly funded mental health providers

4. Evaluation Measures

The evaluator will calculate values for each proposed measure using data from Medicaid claims data. Standard metrics from the National Quality Forum (NFQ) or Healthcare Effectiveness Data and Information Set (HEDIS) will be used whenever possible, and published definitions from the metric stewards will be used to create the metrics. For example, measures with binary outcomes such as whether or not the member received any services from an Institution for Mental Disease (IMD), are calculated by determining who was eligible for the measure based on the published definition (the denominator) and then calculating whether eligible members met the criteria for the measure within a given timeframe (the numerator).

Measures with non-binary outcomes, such as the number of visits of a specific type, are calculated by determining who was eligible for the measure (the denominator) and calculating a total for each eligible member (the numerator). A value is calculated for each individual for each month or quarter depending on appropriateness, so that measures are available at the person level. Results are aggregated to calculate outcome measures for Medicaid members as a whole and for specific subgroups of Medicaid members as needed. Not all outcome and process measures are designed to be measured in a rate or percentage with numerators and denominators. Measures with numerators and denominators are defined in Table 3 below.

As an example, some of the measures to be used in the evaluation include nationally standardized data collection protocols such as NFQ #0496, #3313, #0576, #2605, and #3205. Metrics will be updated using updated specifications from CMS, if needed. Other quantitative data will come from Medicaid claims data, and the state's Mental Health Event (MHE) file which includes standardized federally required demographic and treatment data on clients admitted into any publicly funded treatment facilities. Qualitative data will be collected via key informant interviews with mental health treatment providers, representatives from the Utah Department of Health, Division of Substance Abuse and Mental Health, as well as from managed care programs. Additionally, several process measures will be used to evaluate the implementation of the SMI program which will provide broader context to understanding the impact of the waiver throughout the state. These measures are included in Table 3 and are from the annual SMI Availability Assessment.

Concurrently with the quantitative evaluation measures, the design will include the collection of qualitative data that include: 1) a systemic collection of documents from organizations involved in the SMI demonstration implementation and, 2) interviews with key stakeholders. These data sources will answer specific waiver hypotheses and research questions in order to understand more precisely the overall effectiveness of the waiver. For example, it will be critical to understand how specific components of the demonstration plan have

been implemented, the fidelity to the implementation plan, the timing of implementation, and an understanding how widespread implementation dosage may be throughout the state. This information could contribute to an enhanced understanding of the quantitative data. For example, as cited previously there were a few demonstration components that were delayed. Understanding this may help interpret and account for quantitative results that may be unclear.

Through the systematic document review of publicly available documents, meeting minutes, progress reports and websites the evaluation team will track the demonstration waiver, any pivots, and/or challenges in order to develop a full narrative and timeline of events, including key contextual factors. Where needed the evaluator will collaborate with UDOH, DSAMH, and others to identify and access relevant documents. The evaluation team will conduct key stakeholder interviews with a variety of individuals who were involved in a variety of capacities related to the demonstration from design to implementation. Further, interviews will represent state-level and local community service delivery (e.g. IMD's, community-based MH service providers). Once the stakeholder interviews are underway, the evaluator will generate a master list of potential key informants using a snowball sampling process until saturation is achieved. There will only be 1 round of qualitative data collection (e.g. documents and stakeholder interviews)

Interviews will be recorded and transcribed. Qualitative data will be organized for analysis using a codebook to guide the systematic tagging of concepts, themes, and topics from the interviews. The evaluation team will review and revise the key qualitative findings until consensus is achieved. Codes will be applied to each transcript and will be independently reviewed for quality and consistency. Once all transcripts are coded team members will analyze the coded concepts, themes, and topics and write summaries of what was learned. After aggregating what is learned on a specific topic across each type of interview, a final topic summary will be written. Independent follow-up reviews will then lead to clarifying differences in interpretation until all issues are resolved and suitable for inclusion in a report.

The results of the qualitative assessment can also be used to inform decisions about progress and if, or where changes might be needed. Finally, key informant interviews may be used to identify demonstration programs and interventions that were perceived to be most effective as well as understanding barriers and facilitators for success.

5. Data Sources

The State will use three data sources to conduct the evaluation plan. First, UDOH's Medicaid HIPAA transaction data set consisting of all member-level claims and encounters. Data from this source has proven to be consistently reliable for the evaluation and regular data checks are performed by SRI research analysts and compared to UDOH monitoring data for accuracy. The second is the MHE data file (see MHE data elements in Appendix), which is an electronic client data file that includes data from all publicly funded mental health treatment service providers in Utah. This is a high-quality data file that includes an accuracy / completeness check for each data element.

The third data set will be the Utah SMR system (see SMR data elements in Appendix). This will provide detailed descriptive analysis of program participants receiving crises support and mobile response including qualitative service and case outcomes from families and participants. The MHE and SMR data sets will be linked by DHS staff based on a priority matching system that begins with Medicaid ID and utilizes other demographic data elements including gender and age to improve the likelihood of a match.

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 3. 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 quarterly so that outcome measures and variables can be monitored on a regular basis.

The analysis will be based on building a predictive model to determine if the intervention hypothesis that those receiving an array of mental health crisis services, mental health treatment services, and appropriate community-based follow-up achieve the predicted improvements in health outcomes.

Additionally, specific sensitivity analyses will be conducted to inform the effect of study design on impact estimates. First, the evaluator will re-estimate key impacts of the revised cohort design in order to determine whether this approach—the GEEs with dummy variable—substantively influence the impact estimates. Second, given that regression models are being employed, the evaluator will test the sensitivity of key impact estimates to different modeling choices such as functional form. If a high degree of sensitivity is found, then an explanation will be required that informs the credibility of the estimates.

Finally, the inclusion of a falsification test may help increase confidence in the cohort design by providing evidence that the design isolates the impact of the SMI waiver activities from other factors that might affect key outcomes. This will be done by selecting an outcome measure that would not be expected to change due to the demonstration and then estimate that impact of the demonstration using the cohort design on that outcome. For example, preventive dental service utilization could be used as a placebo outcome since it is not likely to be affected by the demonstration.

Table 3: Summary of Hypothesis, Research Questions, Outcome Measures, Populations, Data Sources, and Analytic Approaches – Severely Mentally Ill Services in an IMD

Comparison Strategy	Outcome or Process Measure	Measure	Steward	Data Source	Analytic Approach
Hypothesis 1: The demonstration will be associated with reduced utilization and lengths of stay in emergency departments among beneficiaries with SMI while awaiting mental health treatment in specialized settings.					
Research Question 1: Will the demonstration reduce emergency department utilization and lengths of stay in hospitals and other residential treatment settings?					
Cohort	Outcome	Length of stay in ED. National Quality Forum (NQF #0496) Median time from ED arrival to time of ED departure for those discharged from ED. It is a CMS Hospital Outpatient Quality Reporting (HOQR) Program measure.	NQF	ED Throughput measure of CMS HOQR program.	Descriptive statistics and GEE: Continuous variable statement comparing time in ED from pre-waiver implementation (7/1/2019) to end of waiver demonstration (6/30/2022).
Cohort	Outcome	Number of all-cause ED visits per 1,000 beneficiary-months among adult beneficiaries with SMI Definition: N = # of ED visits by SMI diagnosed beneficiaries / D= # ED visits by Medicaid beneficiaries N = # of ED visits by SMI diagnosed beneficiaries / D= # of Medicaid beneficiaries	UDOH	Monitoring metric	Descriptive statistics and GEE: from pre-waiver implementation (7/1/2019) to end of waiver demonstration (6/30/2022).
Research Question 1.1: Do psychiatric hospitals and residential treatment settings implement beneficiary screenings for co-morbid physical health conditions and SUDs and demonstrate the capacity to address co-morbid health conditions during short-term stays?					
Pre-post waiver	Process	Percent of beneficiaries admitted to psychiatric inpatient or residential treatment facilities who are screened for comorbid physical health conditions and, if indicated, offered an intervention for the condition during the hospital stay. Definition: N = % admitted who are screened / D= % admitted N = % admitted who have comorbid conditions and are treated / D= % admitted and screened but not treated	SRI	Medicaid claims	Descriptive statistics /pre – post waiver implementation

Hypothesis 2: The demonstration will be associated with reduced readmissions to acute care hospitals and residential settings.					
Research Question 2: Did the demonstration decrease readmissions to acute care hospitals and residential settings for those with SMI?					
Pre-post waiver	Outcome	All-cause 30-day unplanned readmission following psychiatric hospitalization Definition: N= # readmitted within 30 days with SMI diagnosis / D= # admitted	CMS	Medicaid claims	Descriptive statistics /GEE
Research Question 2.1:					
NA	Process	What demonstration activities or components were most effective in reducing readmissions to hospitals and residential settings?	SRI	Qualitative interviews - with key informants	Identification of demonstration activities that were effective in reducing readmissions, using qualitative analysis to identify themes.
Research Question 2.2: Was a housing assessment process developed for individuals transitioning from inpatient settings to the community to coordinate housing services?					
NA	Process	What demonstration activities or components were most effective in ensuring care coordination and transition to improved housing?	SRI	Qualitative interviews with key informants	Identification of demonstration activities that were effective in supporting improved care coordination / transition using qualitative analysis to identify themes.
Hypothesis 3: The demonstration will be associated with improved availability of crisis stabilization services, including through call centers, mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs, psychiatric hospitals, and residential treatment settings.					
Research Question 3: Will the demonstration increase mental health service utilization, including increasing the number of beneficiaries being treated for SMI in and IMD?					
Comparison Strategy	**Outcome or Process Measure**	**Measure**	**Steward**	**Data Source**	**Analytic Approach**

Compare to baseline	Outcome	Mental health services utilization – inpatient
		
		Definition:
		N= # using (and # of total uses) of inpatient treatment /
		D= # of SMI Medicaid beneficiaries
			UDOH	Medicaid claims	Descriptive statistics/GEE will be used.

Compare to baseline	Outcome	Mental health services utilization – outpatient
		
		Definition:
		N= # using (and # of total uses) of outpatient treatment /
		D= # of SMI Medicaid beneficiaries
			UDOH	Medicaid claims	Descriptive statistics/GEE will be used.

Compare to baseline	Outcome	Mental health services utilization – telehealth
		
		Definition:
		N= # using (and # of total uses) of telehealth /
		D= # of SMI Medicaid beneficiaries
			UDOH	Medicaid claims	Descriptive statistics/GEE will be used.

Compare to baseline	Outcome	Mental health services utilization – any services
		
		Definition:
		N= # using (and # of total uses) of any services /
		D= # of SMI Medicaid beneficiaries
			UDOH	Medicaid claims	Descriptive statistics/GEE will be used.

Compare to baseline	Outcome	Mental health services utilization – beneficiaries treated in IMD for SMI Definition: N = % treated for SMI in IMD / D= % treated fro SMI	UDOH	Medicaid claims	Descriptive statistics/GEE will be used.
Compare to baseline	Process	Count of beneficiaries with SMI (monthly)	UDOH	Medicaid claims	Descriptive statistics
Compare to baseline	Process	Count of beneficiaries with SMI (annually)	UDOH	Medicaid claims	Descriptive statistics
Pre-post waiver	Process	Follow-Up Care for Adult Medicaid Beneficiaries Who are Newly Prescribed an Antipsychotic Medication (NQF # 3313) Definition: N = % of beneficiaries with newly prescribed antipsychotic med. participating in follow up visit within 28 days / D= % of beneficiaries with a newly prescribed antipsychotic med.	CMS	Medicaid claims	Descriptive statistics – pre-post modeling

Hypothesis 3.1: The demonstration will be associated with increased access to a continuum of care including crisis stabilization services.					
Research Question 3.1: Did the availability of crisis stabilization services increase?					
Compare to baseline	Process	Change in call centers, mobile crisis units, and intensive outpatient treatment Definition: N= # of new crisis stabilization services (e.g. call centers, mobile crisis units, and intensive outpatient treatment / D= # of crisis stabilization services (e.g. call centers, mobile crisis units, and intensive outpatient treatment)	CMS/ UDOH	SMI Availability Assessment	Descriptive statistics
Research Question 3.2: Did the availability of intensive outpatient services and partial hospitalizations increase?					
Compare to baseline	Outcome	Mental health services utilization – IOP / partial hospitalization	UDOH		Descriptive statistics/GEE will be used.
Research Question 3.3: Did the availability of crisis stabilization services increase during short-term stays in psychiatric hospitals, residential treatment facilities, general hospital psychiatric units, and community-based settings?					

Compare to baseline	Outcome	Number of members with SMI who use crisis services, by type of service
		
		Definition:
		N= # using (and # of total uses) of call centers /
		D= # of SMI Medicaid beneficiaries
		
		N= # using (and # of total uses) of mobile crisis units /
		D= # of SMI Medicaid beneficiaries
		
		Definition:
		N= # using (and # of total uses) of intensive outpatient treatment /
		D= # of SMI Medicaid beneficiaries
			None	Claims	Descriptive statistics/GEE will be used.

Hypothesis 4: The demonstration will be associated with improved access to community-based services to address chronic mental health care needs of beneficiaries with SMI through increased integration of primary and behavioral health care.					
Research Question 4.1: Did the demonstration increase access to physical and mental health care at a single location?					

Baseline assessment	Process	Number of Federally Qualified Health Centers (FQHC) that offer behavioral health services
		Definition:
		N = # new FQHCs with BH /
		D=total # FQHCs with BH
			CMS / UDOH	SMI Availability Assessment	Descriptive statistics

Research Question 4.2: Was the demonstration associated with improved access for SMI beneficiaries to the specific types of community-based services that they need?					
Pre-post waiver	Process	Number of community-based behavioral health service providers (e.g. outpatient treatment, housing support, supported employment, care transition etc.)	CMS / UDOH	SMI Availability Assessment	Descriptive statistics
Hypothesis 5: The demonstration will be associated with improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities.					
Research Question 5.1 Was the demonstration associated with improved care coordination?					
Pre-post waiver	Process	% of patients 21+ with an MH-related ED visit who had a follow-up visit with a primary MH diagnosis with any provider within 7 and 30 days of discharge (NQF #2605) Definition: N = % MH diagnosis in ED having follow-up visit within 7 and 30 days / D= % MH diagnosis in ED discharged without follow-up	CMS	Medicaid claims	Descriptive statistics
Pre-post waiver	Outcome	Medication continuation following discharge from inpatient psychiatric facility (NQF #3205) Definition: N = % discharged with Rx / D= % discharged	CMS	Medicaid claims	Descriptive statistics/GEE will be used.
NA	Process	Demonstration activities identified as most effective for improving care coordination, such as new care coordination programs or activities or activities that improved data sharing.	SRI	Interviews with IP/residential and OP provider staff, and state staff	Qualitative analysis to identify themes associated with the effectiveness of demonstration activities
Research Question 5.2 Was the demonstration associated with improved continuity of care after discharge from inpatient or residential care? (Milestone 2. Utah SMI Implementation Plan)					
Pre-post waiver	Process	% of discharges for adults aged 18+, hospitalized for selected MH, who had a follow-up visit with an MH provider (NQF # 0576) Definition: N = % with MH provider / D= % discharged	CMS	Claims	Descriptive statistics
Pre-post waiver	Process	% of beneficiaries discharged from acute psychiatric care in hospitals or residential facilities who have supported housing	DSAMH None	DSAMH – MHE data file	Descriptive statistics

		Definition: N = % discharged with supported housing / D= % discharged			
NA	Process	Demonstration activities identified as most effecting in improving continuity of care.	SRI	Key informant interviews with providers/staff, and state staff	Qualitative analysis to identify themes related to effectiveness of demonstration activities.
Hypothesis 5.3: The demonstration will be associated with ensuring quality of care in psychiatric hospitals and other residential settings (Milestone 1. Utah SMI Implementation Plan)					
Research Question 5.3.1: Will state hospitals and other residential settings that provide mental health treatment, be licensed by nationally accredited entities prior to being eligible for FFP?					
Pre-post waiver	Process	Do hospitals qualify as an IMD and achieve accreditation?	UDOH / DSAMH	SMI availability assessment	Descriptive statistics
Pre-post waiver	Process	Do residential treatment providers qualify as an IMD and achieve accreditation?	UDOH / DSAMH	SMI availability assessment	Descriptive statistics
Research Question 5.3.2: Was an oversight and auditing process established to ensure psychiatric hospitals and other residential treatment settings are following state licensure or certification requirements as well as a national accrediting entity's accreditation requirements?					
NA	Process	How was the oversight and auditing process established and implemented?	SRI	Qualitative interviews with key informants regarding policy and protocols established	Descriptive statistics Qualitative assessment
Research Question 5.3.3: Was a utilization review entity employed to ensure beneficiaries have access to the appropriate levels and types of care and to provide oversight to ensure lengths of stay are limited to what is medically necessary and only those who have a clinical need to receive treatment in psychiatric hospitals and residential treatment settings are receiving treatment in those facilities?					
NA	Process	How was the utilization review conducted? What were the findings?	SRI	Qualitative interviews with key informants. Documentation review.	Descriptive statistics. Qualitative assessment
Research Question 5.3.4: Do psychiatric hospitals and residential treatment settings meet federal program integrity requirements and establish a state-based risk assessment screening of all newly enrolled providers, as well as revalidation of existing providers to ensure all providers are following integrity protocols to safeguard against fraudulent billing?					
Pre-post waiver	Outcome	Percent of existing providers with risk assessment protocols. Definition: N = % MH providers with protocols / D= % MH providers	SRI	Qualitative interviews with key informants regarding policy and	Descriptive statistics /pre – post waiver

		Percent of new providers with risk assessment protocols. Definition: N = % new MH providers with protocols / D= % new MH providers		protocols established	

NQF – National Quality Forum, **HOQR-Hospital Outpatient Quality Reporting**
N= numerator / D= denominator

D. METHODOLOGICAL LIMITATIONS

There are potentially several limitations for the independent evaluation. The first challenge will be to try to understand and isolate the impacts related to the ongoing COVID-19 Public Health Epidemic (PHE). The COVID-19 pandemic also presented real impacts in relation to the SMI waiver implementation. Specifically, since some of the crisis-related services were implemented in 2020 under different practice policies due to service implementation delays and shutdowns associated with the changing nature of the pandemic, crisis-service delivery varied between the early implementation locations and those beginning after January 1, 2021. In addition to the service differences the lock-down associated with the pandemic may have also impacted the number of participants when crisis services began (even though this took place prior to the waiver granting eligibility). Given this, it is expected that there will be increases in health care and behavioral health utilization as well as an increase in telehealth services (previously documented in the 2021 Utah PCN Interim Evaluation Report (*under CMS review*).

Specific techniques to account for this were listed in the revised evaluation design (see Evaluation Design above) and include examining positivity rates by region on a quarterly basis throughout 2020, since SMR pilot implementation data were collected during early-stage operations prior to the beginning of the pandemic impacts in Utah. Additionally, to better understand and mitigate these potential effects, the evaluation team will develop a timeline of critical contextual factors/events that relate to demonstration milestone timelines and actual implementation. This information will be used to inform our methodology to more precisely isolate effects from the demonstration.

A related and important contextual factor which the evaluation design must consider simultaneously alongside the direct impact of the demonstration is the impact of Medicaid expansion which began January 1, 2020. Even though the expansion began one year prior to the SMI waiver, the expansion has likely significantly impacted the number of Medicaid enrollees, and impacted those receiving behavioral health treatment during part of the time period designed for inclusion in the evaluation (see discussion of this in Methodology above). From an evaluation standpoint, this proximity in timing between expansion and SMI implementation, will require taking steps to try to mitigate the effects of these policy changes. One approach to address this would be to compare changes in utilization for non-behavioral health treatment in order to tease out the relative impacts of Medicaid expansion (which affects both behavioral and physical health care) and the SMI waiver. While there are likely to be spillover effects from one to the other, this approach will provide a first approximation to the understanding the relative impacts.

A second challenge is the absence of a direct comparison group which limits the capacity of the evaluation to absolutely determine whether the demonstration caused the observed changes in outcomes and to assess what the outcomes would have been in the absence of the demonstration. The evaluator will leverage existing data sources where possible (e.g., MHE, national benchmarks) to act as comparisons and/or benchmarks. These are outlined in Table 3. In cases where we are unable to identify appropriate benchmarks, we will work with CMS to identify national Medicaid benchmarks.

A third known limitation that impacts Medicaid waiver-involved populations is “churn”, the movement of beneficiaries between conditions where they are eligible to being ineligible. However, churn may have been less of a concern the last couple of years since all Medicaid beneficiaries are continuously enrolled until the end of the COVID public health emergency (PHE). As the state resumes normal operations post-PHE, it is expected

that many beneficiaries may lose the benefit of continuous coverage. This may contribute to an increase in beneficiaries cycling between coverage and being uninsured due to changes in coverage eligibility or administrative barriers etc.

Another factor that may be a limitation is the unequal penetration of waiver implementation in different geographic regions based on the roll out of the various interventions. Although data was collected by DHS throughout the implementation of crisis-related services, the number of participants in the geographical areas varies significantly (between the urban and rural areas). As a result, a source of potential bias could be due to loss of participants over time. Another related challenge has to do with the changing nature of the array of crisis-related services over time, beginning with the early initial implementation areas. Some of the changes were based on the delay in ramping up all aspects of the interventions to comply with high fidelity implementation. Other changes took place as a result of DHS utilizing its own continuous quality improvement (CQI) system to guide early implementation. This included utilizing feedback received from both consumers and DHS staff to adapt the intervention delivery so that improvements were made in referrals and connecting people to available community resources. To help control for potentially unequal program penetration, the use of a timeline of critical contextual factors/events that relate to demonstration implementation similar to the approach used to address potential COVID-related impacts discussed above will also be utilized here.

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.

Independent Evaluator Selection Process

SRI staff have contracted with the Utah Department of Human Services, Division of Child and Family Services (DCFS) to evaluate 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 a 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, Larissa Shuppy, MStat, Biostatistician, and Jorge Arciniegas, MSBA, Research Analyst.

Mr. Hopkins (.17 FTE) is 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.

Kristen West, MPA (.06 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. Larissa Shuppy, MStat (.15) is a Biostatistician and has worked on Medicaid evaluation for a year and has experience with large database analysis for DHS.

Jorge Arciniegas (.185 FTE) is a Research Analyst with experience conducting program evaluations and other multi-year research studies in a variety of contexts. He has experience with statistical software programs such as SPSS and R, data visualization programs such as Tableau and Domo, and has extensive experience in survey design, maintenance, and implementation.

An interdepartmental consortium has been established between SRI and the University of Utah's Department of Economics. The Department of Economics, Economic Evaluation Unit led by Department Chair, Norm Waitzman, Ph.D., 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. (.18 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.

B. Draft Evaluation Budget

Total Budget Detail Worksheet Summary					
			1/1/2021	to	2/28/2023
Personnel					
Name	**Title/Position**	**Ave Dist. on Contract**	**Requested Salary(a)**	**Requested Fringe Benefits(b)**	**Cost**
Rodney Hopkins	Principal Investigator	17%	$36,951.87	$12,563.64	$49,515.51
Kristen West	Senior Research Analyst	6%	$8,821.35	$5,469.24	$14,290.59
Jorge Arciniegas	Research Analyst	18%	$16,800.33	$10,416.20	$27,216.53
Larissa Shuppy	Biostatistician I	15%	$17,662.57	$10,950.79	$28,613.36
Philip Osteen	SRI Director	1%	$2,660.04	$904.42	$3,564.46
TBN	Financial Admin Support	1%	$1,980.28	$1,227.77	$3,208.05
Norm Waitzman	Health Economist	5%	$20,848.91	$7,088.63	$27,937.54
Jaewhan Kim	Health Economist and Statistician	18%	$63,582.83	$21,618.16	$85,200.99
		TOTAL	$169,308.18	$70,238.85	**$239,547.03**
Total Requested Costs					
	Project Year				**Cost**
	Year 1				$65,331.01
	Year 2				$87,108.01
	Year 3				$87,108.01
				Total Direct Costs	**$239,547.03**
	Project Year				**Cost**
	Year 1				$9,668.99
	Year 2				$12,891.99
	Year 3				$12,891.99
			Indirect Costs (F&A)(c)	**14.8%**	**$35,452.97**
		PROJECT TOTAL COSTS	**$275,000**		

a. Amount shown reflects a merit increase of 3% effective every July 1 for University of Utah faculty and staff.

b. Fringe benefit rates(non-negotiated) are: 34% for faculty, 62% for staff, and 10% for research assistants per the University of Utah HR Benefits Department.

c. The University of Utah has approved Facilities and Administrative (F&A) cost rates negotiated with the cognizant federal agency, the Department of Health and Human Services (DHHS) per DHHS agreement dated 02/04/2016.

C. Timeline and Major Milestones

Data Analysis Periods	Semi-annual Updates	Interim Report	Summative Report
1/2021 – 6/2021	June 30, 2021	June 30, 2021	
1/2022 – 6/2022	June 30, 2022		June 30, 2022 (draft)
			Feb. 28, 2023 (final)

D. References

1. Federal Register, Vol 58, No. 96. May 20, 1993, pg. 29425.

2. Center for Behavioral Health Statistics and Quality (CBHSQ). (2017a). 2016 national survey on drug use and health: Detailed tables. (NSDUH 2016, Table 8.5A). Rockville, MD: Substance Abuse and Mental Health Services Administration.

3. Bellack, A. S., Bennett, M. E., Gearon, J. S., Brown, C. H., & Yang, Y. (2006). A randomized clinical trial of a new behavioral treatment for drug abuse in people with severe and persistent mental illness. Archives of General Psychiatry, 63(4), 426-432.

4. Center for Behavioral Health Statistics and Quality (CBHSQ). (2017e). 2016 national survey on drug use and health: Detailed tables. (NSDUH 2016, Table 8.33 A, B). Rockville, MD: Substance Abuse and Mental Health Services Administration.

5. Center for Behavioral Health Statistics and Quality (CBHSQ). (2017f). 2016 national survey on drug use and health: Detailed tables. (NSDUH 2016, Table 8.42 A, B). Rockville, MD: Substance Abuse and Mental Health Services Administration.

6. Center for Behavioral Health Statistics and Quality (CBHSQ). (2017g). 2016 national survey on drug use and health: Detailed tables. (NSDUH 2016, Table 8.40 B). Rockville, MD: Substance Abuse and Mental Health Services Administration.

7. Interdepartmental Serious Mental Illness Coordinating Committee. The Way Forward; Federal Action for a System That Works for All People Living with SMI and SED and Their Families and Caregivers. December 2017.

8. National Association of State Mental Health Program Directors (NASMHPD). (2017a). Forensic patients in state psychiatric hospitals: 1999-2016. Alexandria, Virginia: NASMHPD. Retrieved from https://www.nasmhpd.org/sites/default/files/TACPaper.10.Forensic-Patients-in-State- Hospitals_508C.pdf.

9. National Association of State Mental Health Program Directors (NASMHPD). (2017b). Trend in psychiatric inpatient capacity, United States and each state, 1970 to 2014. Falls Church, VA: NRI. Retrieved from https://www.nri-inc.org/our-work/nri-reports/trends-in-psychiatric-inpatient-capacity-united-states-and-each-state-1970-to-2014.

10. CMS Appendix A: Goals, Research Questions, and Analytic Approaches for Evaluating Section 1115 Serious Mental Illness/Serious Emotional Disturbance Demonstrations.

11. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. BMJ 2009;339: b2535.

12. Mann, CJ. Observational research methods. Research design II: cohort, cross sectional, and case-control studies. Emergency Medicine Journal, http://dx.doi.org/10.1136/emj.20.1.54.

13. Western states with SMI or related mental health waivers include: Colorado, Idaho, Washington, Oregon, and Wyoming. (https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/index.html, accessed June 11, 2021).

Mental Health Data Definitions
FY 2021
Effective July 1, 2020

Division of Substance Abuse and Mental Health

CHANGE LOG

DATE	AUTHOR	VERSION	NOTES
4/2/2020	Kimberlie Raymond	2.1	Added Telehealth to location field.
4/3/2019	Kimberlie Raymond	2.0	Added a Nonbinary option to gender to identify client's gender.
8/14/2018	Kimberlie Raymond	1.7.6	Updated field 58 Referral Discharge to align with Admit Referral Source.
3/13/2018	Kimberlie Raymond	1.7.5	Updated the admit referral source. Updated "Living Arrangement "unknown" code.
3/28/2017	Ryan Carrier	1.7.4	Updated for FY2018. Aligned MHE race and ethnicity codes with specs from Substance Use specs. Updated Tobacco Use notes to cover nicotine products including e-cigarettes/vaping. Provided specificity to Compelled notes.
07/01/2016	Sandra Cerchiari	1.7.3	Undated for FY2017. Added unknown value for compelled into treatment field.
11/16/2015	Sandra Cerchiari	1.7.2	Added new data elements for court ordered treatment and risk level, effective January 1, 2016.
5/26/2015	Sandra Cerchiari	1.7	Updated for FY2016, changed the DSM/ICD-10 code length, added free text field for comments, changed referral source to event level instead of at admission, and changed the required update times for referral source and employment to every 3 months.
6/20/2014	Sandra Cerchiari	1.6.6	Updated to FY2015 and change to the Severity Level data element changing SPMI to SMI.
7/10/2013	Sandra Cerchiari	1.6.5	Added new employment code and made changes to the notes for education and funding source.
7/5/2013	Sandra Cerchiari	1.6.4	Added code values to funding source and updated notes.
4/25/2013	Sandra Cerchiari	1.6.3	Updated specs for FY2014. Added unknowns on Number of Arrests and remove unknowns on assessment/jail.
10/9/2012	Sandra Cerchiari	1.6.2	Add Medicaid ID #.
7/6/12	Sandra Cerchiari	1.6.1	Added new variables for Education field to conform to spec from feds on Client Level Data submission.
3/26/12	Sandra Cerchiari	1.6	Updated Specs for FY2013. Added Tobacco Use, additional location codes and EBP's and included file sort processing rules in the narrative.
12/14/2011	Sandra Wissa	1.5.2	Change requirements for SSN, change school question to meet NOMS. Added a more descriptive note for Veteran Status and Legal Status.
8/18/2011	Sandra Wissa	1.5.1	Added additional location codes to be used starting August data submissions (July data).
8/9/11	Sandra Wissa	1.5	Updated Specs for FY2012. Deleted the "other" category in Living Arrangements effective January 1, 2012.
5/31/2011	Sandra Wissa	1.4.9	Fixed errors on discharge information.
5/12/2011	Dori Wintle	1.4.8	Added information to system transaction type notes and revised discharge record section.
4/28/2011	Dori Wintle, Sandra Wissa	1.4.7	Modified Inpatient Definition, revised EventDuration value notes.
10/20/2010	Dori Wintle, Casey Loveland	1.4.6	Added new location_code and sys_trans_type_cd fields. These new fields will be added for the data submitted February (January 2011 data).
4/22/2010	Dori Wintle, Casey Loveland	1.4.5	Updated specs for FY2011. Added Criminal Justice Indicator. Add additional clarification on Inpatient Treatment Day definition.
3/29/2010	Dori Wintle, Casey Loveland	1.4.4.2	Updated State Service Type Code section per discussion with Data Managers. Added note to event duration field regarding the handling of records with an event duration of zero '0'.
3/23/2010	Dori Wintle	1.4.4.1	Updated State Service Type Code section.
3/19/2010	Dori Wintle, Casey Loveland	1.4.4	Added the State Service Type Code descriptions back into the specification. Removed Service Code/Modifier and State Service Type codes crosswalk tables and replaced with a note directing the reader to the SAMHIS website to view/download the latest codes. Cleaned up the footnotes for the Field Definitions Supplement table.
1/21/2010	Casey Loveland	1.4.3.1	Updated code descriptions for provider service codes 90846, 90847, 90849.
11/2/2009	Casey Loveland, Dori Wintle	1.4.3	Updated Provider Service code (CPT) attachment tables. Added new table with provider service codes sorted by Mandated Service Category. Added table with State Service codes and their descriptions.
9/9/2009	Casey Loveland	1.4.2	Removed Unknown percentage on AXIS I Diag I Date field since this field does not have an unknown value. Updated CPT Codes. There are now 2 versions of the table. One sorted by Provider Service Code and one Sorted by State Service Type.
7/16/2009	Casey Loveland, Dori Wintle	1.4.1	Updated note for GAF. Make changes to the draft service codes specification (attachment A). Updated SSN note.
7/08/2009	Casey Loveland	1.4	Replace the use of service type codes with CPT/HCPCS codes. Add service code modifier and provider ID. Removed "Type of Event and Definitions" narrative section.
6/22/2009	Casey Loveland, Dori Wintle	1.3.2	Removed service codes 172 and 180. Added emergency indicator (field 66).
6/8/2009	Casey Loveland, Dori Wintle	1.3.1	Updated Unknown percentage calculation description. Unknown percentages are now errors instead of warnings. Update Funding Source code values. Added Subcontracting Patient Services section. Remove service type code 70. Fixed
3/23/2009	Casey Loveland	1.3	First spec version for FY2010. Remove "2.7 Unfunded Appropriation" funding source (field 64). Fixed field references in the table for discharge records.
1/27/2009	Casey Loveland	1.2.2	Updated notes in file format table for Legal Status (field 8), Veteran Status (field 19), GAF Score (field 26) and Living Arrangement (field 55).
9/8/2008	Casey Loveland	1.2.1	Updated for deploy to website.
9/3/2008	Dori Wintle	1.2	Added definition for Foster Home living arrangement, added definition for client served
6/2/2008	Casey Loveland	1.1	Remove disability fields.

5/8/2008	Casey Loveland, Dori Wintle	1.0	FY2009 chgs: Added new race code: "Two or more races". Changed "other" race code description to "Other single race".
04/02/2008	Casey Loveland	.10	Added new SSN validation rules.
01/02/2008	Casey Loveland	.09	Added detailed validation for service type codes (see File Format Table). Fix page numbering. Add text for Age validation.
02/01/2007	Dori Wintle	.08	Suspended codes 21 and 22 until further notice. Removed adult from Residential Support Day description as this code can be used for both youth and adult. Changed description on code 23 to include all assessments or evaluations (except crisis which should be code 180). Changed description to reflect more of the Medicaid description. Removed 2007 new/change highlighting for FY2008. Added new funding source. (2.7 Unfunded Appropriation)

01/09/2007	Sandra Wissa	.07	Updated Living Arrangement Definitions as follows: added Crisis Residence and Children/Youth Residential Treatment Facility and removed Other and collapsed with or without support into one category Private Residence. Updated footnotes changing 16-State Project to Uniform Reporting System. Added rule for Length of Stay calculation.
09/15/2006	Casey Loveland	.06	Added note section about submitting data for multiple providers. Updated GAF valid data range to be 0-99.
08/24/2006	Casey Loveland, Dori Wintle, Brad Loveland	.05	Event dates must fall between the client's birth date and the discharge date. Updated Discharge Rows section to state that discharge rows are not included when calculating % of unknowns.
08/17/2006	Casey Loveland, Dori Wintle	.04	Added detailed description for Marital Status to include descriptions of each code value. Descriptions were adopted from TEDS specification.
08/9/2006	Casey Loveland, Dori Wintle, Brad Loveland	.03	Make Format field definitions more accurate. Update definition for record no and discharge date to not force record no as a required field. Re-word all instances of discharge record definitions to include the validation of non-required fields.
07/19/2006	Casey Loveland, Dori Wintle, August Lehman, Brad Loveland	.02	Rewrote text block describing discharge records with new discharge row description.
07/12/2006	Casey Loveland, Dori Wintle, Brad Loveland	.01	Added this revision block. Changed HLCI to SAMHIS_CLIENT_ID. Added note about how rows with discharge dates will be handled differently than rows without discharge dates. Added additional information about Unknown % calculation validations.

Event or Services Minimum Data Set

An event is characterized as:

- A transaction between a staff member of a mental health organization and a client in which a significant activity occurs;
- A significant action by a staff member on behalf of a client, i.e., interviewing a collateral, providing various kinds of adjunctive services, and many case management activities;
- Other actions by staff that facilitate the provision of services to or on behalf of clients, i.e., activities that support the continued operation of the organization.

Client Served

- A client served is defined as an individual who receives any event of service or services with an event date that is within the current fiscal year.

Service Code, State Service Type, and Mandated Service Cross Reference Table

An up-to-date Service Code/State Service Type/Mandated Service cross reference table can be viewed and downloaded from the SAMHIS Website. (https://samhis.hs.utah.gov/samhis/

State Service Type Definitions

ASSESSMENT

Mental health services provided to clients on an hourly basis, on an individual or group basis, and usually in a clinic setting. Services such as screening, assessment, testing, crisis intervention, outreach, and psychiatric treatment can be included. Outpatient services may be diagnostic, therapeutic, or adjunctive. Assessment Services data elements are exempt from unknowns when submitting to SAMHIS.

22 Diagnosis and Assessment:

The face to face assessment or evaluation used to determine the existence, nature, and extent of a mental illness or disorder for the purpose of identifying the consumer's need for mental health services. This code may be used in conjunction with treatment planning given that criteria for assessment or evaluation are met.

TESTING

24 Diagnosis & Assessment: Testing

Testing is not routine but a special clinical test administered to a particular patient for a diagnostic or treatment purpose. Various psychometric tests are administered face-to-face. Also recorded is time spent reporting test feedback to the patient or family members. This service does not typically result in assigning client diagnosis.

THERAPY

30 Treatment: Individual

Face-to-face clinical treatment of an individual patient or collateral.

35 Individual Therapeutic Behavioral Services

Face-to-face clinical treatment of an individual patient or collateral.

40 Treatment: Family

Face-to-face clinical treatment of a group of recipients who are related as family members or spouses, or couples living together as married.

50 Treatment: Group

Face-to-face clinical treatment in the same session of two or more unrelated patients. It may also include cases where the group is composed of two or more families or couples.

MEDICATION MANAGEMENT

61 TREATMENT: MEDICATION MGT: MD

Prescription, administration, observation, evaluation, alteration, continuance, or termination of a patient's neuroleptic or other medication by a physician.

62 TREATMENT: MEDICATION MGT: NURSE

Administration, observation, and evaluation of a patient's medication by a nurse under a physician's direction, which may include recommendations for prescriptions, alterations, continuance, and termination of medication. It may include LPNs under RN supervision.

PSYCHOSOCIAL REHABILITATION

80 REHABILITATION

Activities and services intended to train or retrain a patient to function within the limits his or her original or residual disability. Rehabilitation events are most often provided in relation to a treatment plan and may be delivered to the recipient individually or as a group member. There are four categories of rehabilitation: vocational, recreational, skill building, and other.

90 SOCIAL/PHYSICAL

Activities to rehabilitate social interaction skills and physical mobility through supervised recreational activity.

100 SKILL BUILDING

Skill training in activities of daily living (e.g., personal grooming, eating) or instrumental activities of daily living (e.g., shopping, managing money, managing personal possessions, house work, simple meal preparation, use of public transportation).

110 OTHER

Other training or skill-building activities not mentioned above. Activities that do not involve training or skill building should be classified as personal care.

CASE MANAGEMENT

120 Care-Giving/ Daily Living Activities

Life support activities and services provided to meet the client's needs for food, shelter, and safety. Personal care activities include assistance provided to the patient in the performance of activities of daily living; providing meals, shelter, or a bed; protective oversight; or transportation.

130 Case Management

A process by which persons with serious mental illness (as per Seriously and Persistently Mentally Ill scale) are helped to acquire the various services they need and want. Case managers fulfill the following critical, individualized functions: 1) Connecting with consumers in their natural environment (e.g., outreach, engagement, or patient assessment); 2) comprehensive service planning with and for a patient for a wide range of services, entitlements, and assistance; 3) linking consumers with services and resources (e.g., brokering, coordinating, or advocating for the range of services needed); 4) linking family members with services; 5) monitoring service provision and patient's response to treatment; and 6) advocating for consumer rights.

PEER SUPPORT

140 Peer Support services

Services performed by a Certified Peer Support Specialist.

RESPITE

150 Respite

Temporary care for the client for the purpose of providing time away and relief to the caregiver. This care may be provided in the client's home or other setting. This was formally under the Family Support program code.

INPATIENT

170 Inpatient Treatment Day

Inpatient treatment is a 24-hour period or any portion of the day during which a patient is in the financial responsibility of that program. Center staff need not be present at all times, but the center has financial responsibility for the patient either directly or by contract. The Event Duration can be no more than "1" for one day. Every day a client receives this service; a separate event with that date must be recorded.

RESIDENTIAL

171 RESIDENTIAL TREATMENT DAY

This program provides 24-hour intensive psychosocial treatment and other supportive mental health services in an overnight group residential setting and requires 24-hour awake supervision. The purpose is to prevent inpatient care and to help transition people from inpatient care to the community. The program is under the direct administrative control (i.e., financial and clinical) of the Center or is contracted. Center or contracted staff stay overnight in the residence. This program has a high level of structure. Data are reported in bed days for individual clients in the event file. The Event Duration can be no more than "1" for one day. Every day a client receives this service; a separate event with that date must be recorded.

173 RESIDENTIAL SUPPORT DAY

This housing and treatment program provides 24-hour care and support in an overnight group residential setting. These programs are not required to provide 24-hour awake supervision. Structure is provided to help maintain the client in the community with a range of services such as meals, laundry, and housekeeping to maintain current level of functioning and/or teach clients independent living skills. This program is also intended to prevent inpatient care. The program is under the financial and clinical control of the Center and may be contracted. Housing may be transitional or permanent, depending on the internal guidelines of the Center, and the skill development portion of the program is delivered by the on-site staff. Medication coverage may be obtained in the outpatient clinic. This program has a moderate level of structure. Group homes and therapeutic foster homes would fit in this category. The Event Duration can be no more than "1" for one day. Every day a client receives this service; a separate event with that date must be recorded.

SUPPORTED HOUSING

174 SUPPORTED HOUSING

The intent of this program is to provide treatment and support in a building or apartment to help maintain the client in the community and/or to teach client independent living skills. Treatment- based housing programs provide two different levels of treatment and support: moderate contact (minimum one contact per week) and low contact (minimum one contact per month). The program is under the financial and clinical control of the Center. Length of stay ranges from transitional to permanent housing, depending on the internal guidelines of the center. This program has a low level of structure. The Event Duration can be no more than "1" for one day. Every day a client receives this service; a separate event with that date must be recorded. Programs financed with Low Income Housing Tax Credits may or may not require treatment and support onsite.

SOME KEY DIFFERENCES IN STAFFING, STRUCTURE, AND PURPOSE (RESIDENTIAL AND HOUSING):

Program Element	Staffing	Level of Structure	Purpose
Residential Treatment	24-hour awake	High	Prevent hospitalization, transition clients from hospital to community
Residential support	Less than 24-hour	Moderate	Maintain clients in community, teach independent living skills
Housing/in - home skills	No necessary on-site	Low	Maintain client in community with minimal support, teach independent living skills.

Housing/In-Home Skills was added to better reflect financial and clinical efforts of the CMHC serving clients Housing/In-Homes Skills needs. Residential support has been updated to better coincide with licensure requirements. There is little difference between the past and current recommended residential treatment definition. Only the 24-hour awake staff requirement is new. Service Definitions 3-2-01/CPEAR

EMERGENCY INDICATOR

(FIELD 67 EMERGENCY_IND)

This indicator should be set to yes when an hourly service is provided on an immediate or unscheduled basis and deals with a psychological emergency of a patient. These activities are available on a 24-hour basis, including during regular work hours. Routine informational calls handled by crisis staff are not to be reported as crisis/emergency only those calls involving counseling. This activity should also not be confused with a crisis intervention approach, which may span several sessions and be reported as one of the scheduled outpatient activities. Examples of behaviors targeted by crisis/emergency services are suicide attempts, violent family fights, panic attacks, uncontrollable behavior, and other behaviors that are a threat to self or others. Emergency services may include telephone counseling and referral services. Face-to-face assessments or evaluations for crisis should also be included here.

PARTIAL DAY AND OUTPATIENT

Calculated by the division based on the following: Service codes (except for initial contact codes and 124, H2016 w/170) amounting to 3 or more hours for a day will be counted as a Partial Day and days where services amount to less than 3 hours will be classified as Outpatient Service. Bed day service codes (124, H2016 w/170) are counted as a full day.

FIELD DEFINITIONS SUPPLEMENT[1]

(REFER TO SECTIONS ON CODES/ALLOWED VALUES AND NOTES
in the Mental Health Combined File Format for most definitions)

Employment Definition: Uniform Reporting System (FY2006)

16-State Categories	UPMHS Categories	Definitions
Employed (Competitive)		-Work performed on a full or part-time basis for which an individual is compensated in accordance with the Fair Labor Standards Act; or person is in the military.
	Full-time	-Gainful employment of 35 or more hours per week.
	Part-time	-Gainful employment of less than 35 hours per week.
Supported/Transitional	Supported	-Work performed on a full-time or part-time basis for which an individual is compensated in accordance with the FLSA and works with professional support. It may include mental health or non-mental health support. Supported work is not time-limited. Employment is competitive.
	Transitional	-Transitional employment is competitive and similar to supported employment except that employment is time limited.
Unemployed	Not employed full- or part-time	-A person who has been laid off, fired, or is temporarily not working. Unemployed is to be reported only when the individual is seeking gainful employment.
Not in labor force[2]	Homemaker	
	Student	
	Retired	
	Unemployed	Not seeking employment
	Disabled—Not Employed	
Unknown	Unknown	

[1] The URS definitions should be used as further clarification of abbreviated definitions in the Client File Specifications.

[2] Persons should only be placed in "Not in labor force" if they do not fit in employed, supported/transitional, unemployed, or if they are "Not in labor force" because they are a student.

LIVING ARRANGEMENT DEFINITION: UNIFORM REPORT SYSTEM (FY2006)

Independent: Individual lives alone or with others without supervision / private residence.

24 Hour Adult Residential Care -- Crisis Residence: A residential (24 hours/day) stabilization program that delivers services for acute symptom reduction and restores clients to a pre-crisis level of functioning. These programs are time limited for persons until they achieve stabilization. Crisis residences serve persons experiencing rapid or sudden deterioration of social and personal conditions such that they are clinically at risk of hospitalization but may be treated in this alternative setting (DSAMH determines adult based on the age of the reported client).

24 Hour Children / Youth Residential Care – Crisis Residential Facility: Children and Youth Residential Treatment Facilities (RTF's) provide fully integrated mental health treatment services to seriously emotionally disturbed children and youth. An organization, not licensed as a psychiatric hospital, whose primary purpose is the provision of individually planned programs of mental health treatment services in conjunction with residential care for children and youth. The services are provided in facilities that are certified by state or federal agencies or through a national accrediting agency (DSAMH determines child / youth based on the age of the reported client).

Foster Home: Foster Home: Individual resides in a Foster Home. A Foster Home is a home that is licensed by a County or State Department to provide foster care to children, adolescents, and/or adults. This includes Therapeutic Foster Care Facilities. Therapeutic Foster Care is a service that provides treatment for troubled children within private homes of trained families.

Institutional Setting: Individual resides in an institutional care facility with care provided on a 24 hour, 7 day a week basis. This level of care may include a Skilled Nursing/Intermediate Care Facility, Nursing Homes, Institutes of Mental Disease (IMD), Inpatient Psychiatric Hospital, Psychiatric Health Facility (PHF), Veterans Affairs Hospital, or State Hospital.

Jail/ Correctional Facility: Individual resides in a Jail and/or Correctional facility with care provided on a 24 hour, 7 day a week basis. This level of care may include a Jail, Correctional Facility, Detention Centers, Prison, Youth Authority Facility, Juvenile Hall, Boot Camp, or Boys Ranch.

Homeless: A person should be counted in the "Homeless" category if he/she was reported homeless at their most recent (last) assessment during the reporting period (or at discharge for patients discharged during the year). The “last” Assessment could occur at Admission, Discharge, or at some point during treatment. A person is considered homeless if he/she lacks a fixed, regular, and adequate nighttime residence and/or his/her primary nighttime residency is:

a) A supervised publicly or privately operated shelter designed to provide temporary living accommodations,
b) An institution that provides a temporary residence for individuals intended to be institutionalized, or
c) A public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings (e.g., on the street).

Unavailable: Information on an individual’s residence is not available.

Diagnosis Codes:

Services between July 1, 2016 – October 1, 2016: DiagA1- DiagB3 are for Axis I and Axis II diagnosis codes or ICD 10 codes. All codes will be checked to see if they comply with the accepted DSM IV or the ICD 10 format by event date. Codes not conforming to the approved format will be rejected. There is room for up to ten diagnoses with DiagA1 filled out first followed by DiagA2 until there are no more Axis I diagnoses or DiagA10 is filled out and then for Axis II start with DiagB1 through DiagB3. For ICD-10 there can be up to 13 diagnoses.

Services after October 1, 2016: DiagA1 - DiagB3 are to be used for ICD 10 codes only. All codes will be checked to see if they comply with the accepted ICD-10 format by event date. Codes not conforming to the approved format will be rejected. There is room for 13 ICD-10 diagnoses. The date corresponding to each diagnosis is the last date the diagnosis was updated.

Enrolled In Education:

All clients should be asked "At any time IN THE LAST 3 MONTHS, has this person attended school or college? *Include only nursery or preschool, kindergarten, elementary school, home school, and schooling which lead to a high school diploma, a college degree or other formal certification or license."* This will allow the Division to more fully comply with National Outcome Measures. Code 1 for Yes, 2 for No, and 97 for Unknown. In the future this field will include program types.

Atypical Medication Used:

Code 1 for Yes if the client was prescribed one or more of these atypical medications from the list at http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm094303.htm during the month. Code 2 for No atypical medication was prescribed during the month and 97 for Unknown.

Event Date Rule:

- Event Dates must fall within the current fiscal year. Event dates should include time where available.
- Event dates must fall between the client's birth date and discharge date.

Length of Stay:

Calculated from the date of admission to the most recent event of service, when a discontinuation or discharge date is received for this (unique) admission.

Age Validation:

Client's age is calculated for each event row and cannot be greater than 100.

Sub-contracting Patient Services:

When a Community Mental Health Center (CMHC) sub-contracts any patient services, it is the responsibility of the CMHC to collect necessary documentation from any subcontracted provider necessary to maintain Mental Health Event data reporting to the Division.

RECORD NUMBER RULE:

Record number field is now required to be unique for a given provider and client ID on admit/event rows. Duplicate record numbers will produce an error. On discharge rows it can be left blank. If supplied on discharge records it will be validated.

CLIENT NAME VALIDATION RULES:

Use Legal Names

MHE file will have fields for the following parts of a name:

- Last name
- First name
- Middle name

Names can be entered in either upper case, lower case, or a mix. Spaces: Allowed in first and middle names. NOT allowed in last names.

Example: *Mc Donald* *should be entered as* *McDonald*
De La Cruz *should be entered as* *DeLaCruz*

Example: Le Ann Mary Ann Mc Cartney
Can be entered as:
First: Le Ann
Middle: Mary Ann
Last: McCartney

Hyphens: Allowed in first, middle, and last names. It is the only allowable punctuation character allowed.
Examples:
(last name) Smith-Jones should be entered as *Smith-Jones*

(first name) Jo-Ann	*should be entered as*	*Jo-Ann*
(last name) O'Rilley	*should be entered as*	*ORilley*
(last name) St. James	*should be entered as*	*StJames*
(first name) D'Ann	*should be entered as*	*DAnn or D Ann*

Numeric characters: Not allowed in any name

First name is an initial: The initial can be entered in the first name field but no periods.

Middle name: If there is no middle name or it is not available, leave blank. Supply the full legal middle name where possible and the middle initial if that is all that is available. Periods are not allowed.

Second name: Enter the second name in the middle name field
Example: *J. Edgar Hoover*
First name: J (no period)
Middle name: Edgar Last
Name: Hoover

Enter legal names rather than nicknames
Example: "Bill" should be entered as William
"Bob" should be entered as Robert
"C.J." should be entered as Carlos as a first name and James as the middle name

Titles, Prefixes, Suffixes: not allowed

Naming rules synopsis:

Character	Last Name	First and Middle Names
Alpha Characters	Allowed	Allowed
Hyphen	Allowed	Allowed
Spaces	Not Allowed	Allowed
Apostrophe	Not allowed	Not allowed
Numeric Characters	Not allowed	Not allowed

CSV File Generation Guidelines

1. All files should be submitted without a header row.
2. It is recommended that fields **NOT** contain extra spaces for padding. For example, if a field allows 11 digits but the code values only use 3 digits then 3 digits is an acceptable width for the field. Adding the spaces only increases the size of the file and slows down uploading and processing of files.
3. Non-required fields must either be blank or contain a valid value.
4. Commas are not allowed within the data in any field. (Commas are column delimiters.)
5. Do not use quotes in any fields.
6. Do not insert blank lines between rows of data.

Discharge Rows

There are two types of records in an MHE file: admit/event and discharge. Discharge data is to be submitted separately from event, admission, diagnosis, and demographic information.
All records with a date in field 57 are considered discharge records.
Discharge records require that you provide data in the following fields: 2, 7, 57, 58, 59, 68, and 71.
All other fields should be left blank. If data is supplied in any other field on a discharge record then that data is validated, but ignored.
Do not put discharge dates on rows with valid admit/event data since that data will not be loaded.
Only one discharge record will be accepted per client per admission in a given file. Files with multiple discharge records for the same client / admission will fail to load. Discharge dates cannot fall before any event dates for a given client and admission.

** This check is to make sure that valid admit/event data is not lost.*

NOMS Values Reporting

T1 NOMS values will be taken from the first admit/event record of the reporting period (state fiscal year) and T2 NOMS values will be taken from the last date of service (most recent event record) within the reporting period.

PERCENT (%) UNKNOWN VALIDATIONS

The Client-side Validation Application will check for "unknown" values for fields identified in the *Mental Health Events File Format* table below with a value in the 'Unknown %' column.

Only the most recent event row for each client in the file will be used to calculate the unknown percentages. Event rows will be sorted by client and then by event date to determine the most recent event row for each client.

Discharge rows, assessment services, and services provided with the location code of "prison/correctional facility" are not included in the % of unknown calculations.

Files with unknown percentages over the acceptable limit will cause the file to error out. Processing of a file with unacceptable unknown percentage(s) will require SAMHIS Administrator assistance to override the error.

File Processing Sort Rules MH Event Rows

Sorting as follows with subsequent sort rules applying within the 'parent' sort rule.

- System Trans Type (Delete, Add and then Change)
  - MH Provider ID (numeric ascending)
    - client ID (provider's) (alphanumeric ascending)
      - admit date (chronological)
        - event date (chronological)

MH Discharge Rows

All discharge rows are not processed until all event records in the file have either been processed successfully or were canceled. Same sort order rules apply for discharge rows (where applicable).

Sorting as follows with subsequent sort rules applying within the 'parent' sort rule.

- System Trans Type (Delete, Add and then Change)
  - MH Provider ID (numeric ascending)
    - client ID (provider's) (alphanumeric ascending)
      - admit date (chronological)
        - discharge date (chronological)

Field	Field Name	Description	Codes/Allowed Values	Format	% Unknown	Required*	Notes
1	ProviderEvent RecordI DNo	Provider event record ID number	String value that uniquely identifies a client event for the provider.	string (50)		Yes	Key field. Use a unique ID for every event record, that can be used to identify the same unique event record in your system. All admit/event records require fields 1,2 and 7. Duplicate record numbers will produce a file submission error. This field can be left blank on discharge records. If data is provided in this field on a discharge record then that data is validated.
2	ClientID	Client Identifier	Mapped value from MHO. (Unique client identifier)	string (15)		Yes	Key field. Client ID to be unique within the MHO and unique to each client admitted or readmitted to that MHO. It must not be reassigned to another client. Mapping must be consistent across quarters. All records require fields 2 and 7.
3	FirstName	Client's full legal first name	Only characters specified in MH Data Definitions.	string (25)		Yes	See MH Data Definitions document for name validation rules.
4	LastName	Client's full legal last name	Only characters specified in MH Data Definitions.	string (30)		Yes	See MH Data Definitions document for name validation rules.
5	MiddleName	Client's full legal middle name	Only characters specified in MH Data Definitions.	string (25)		No	See MH Data Definitions document for name validation rules. If client does not have a middle name leave blank.
6	SSN	Social Security Number	000-00-0000 = Unknown 999-99-9999 = None	string (11) NNN-NN-NNNN		No	Missing SSN updated at six-month review. SSA modified the SSN assignment rules June 25, 2011 and SSNs are assigned randomly using all available numbers except those starting 000, 666, 900-999. We will also do not allow 123-45-6789 or 099-99-9999. Valid SSNs cannot be utilized by more than 1 client.
7	DateAdm	Date of most recent client admission	date	string (10) MM/DD/Y YYY		Yes	Key field. Note: All records require fields 2 and 7 regardless if they are an event or a discharge record only.
8	LegalSta	Legal Status	Y = Civilly Committed N = Not Civilly Committed F = Forensic commitment -State Hosp only 97 = Unknown	string (2)	10%	Yes	This required variable is to be updated at the 6-month case review. All adult and youth commitments and youth NDFF commitments are to be reported here.
9	Gender	Gender	1=Male 2=Female 3=Nonbinary	Number (1)		Yes NOMS	
10	DateBir	Date of birth	Legal date	string (10) MM/DD/YYYY		Yes NOMS	Note: 4-character year
11	Hispanic	Hispanic or Latino origin	Y = Yes N = No 97 = Unknown	string (2)	10%	Yes NOMS	
12	Race	Race	1 = Alaskan Native 2 = American Indian 3 = Asian 4 = Native Hawaiian or Other Pacific Islander 5 = Black/African American 6 = White 7 = Unknown 8 = Two or more races 0 = Other single race	number (2)	10%	Yes NOMS	Indicates the client's race. If you don't distinguish between American Indian and Alaska Native, code both as American Indian. Clients of Hispanic ethnicity are typically coded as "White" in the racial category. Alaska Native: (Aleut, Eskimo, Indian) Origins in any of the original people of Alaska. American Indian: (Other than Alaska Native) Origins in any of the original people of North American and South America (including Central America) and who maintain cultural identification through tribal affiliation or community attachment. Asian: Origins in any of the original people of the Far East, the Indian subcontinent, Southeast Asia, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Philippine Islands, Thailand, Vietnam. Native Hawaiian or Other Pacific Islander: Origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. Black or African American: Origins in any of the black racial groups of Africa. White: Origins in any of the original people of Europe, North Africa or the Middle East.

							Two or more races: Use this code when your system collects multiple races and does not have a way to designate a primary race. Other single race: Use this category for instance in which the client is not classified in any other category or whose origin group, because of area custom is regarded as a racial class distinct from the above categories. (DO NOT use this category for clients indicating multiple races.)
13	Marital	Marital status	1 = Never married 2 = Now married 3 = Separated 4 = Divorced 5 = Widowed 97 = Unknown	number (2)	10%	Yes	Never Married: Includes those whose only marriage was annulled. Married: Includes those living together as married. Separated: Includes those separated legally or otherwise absent from spouse because of marital discord.
14	Education	Completed years of education	0-25 (GED = 12) 40 = Nursery School, Pre-school (including Head Start) 41 = Kindergarten 42 = Self-contained Special Education Class (no equivalent grade level) 43 = Vocational School 97 = Unknown	number (2)	10%	Yes	If more than 25 years of education completed use "25". Vocational school includes business, technical, secretarial, trade, or correspondence courses which are not counted as regular school enrollment and are not for recreation or adult education classes.
15	Enrolled in Education	At any time IN THE LAST 3 MONTHS, has this person attended school or college?	1 = Yes 2 = No 97 = Unknown	number (3)	10%	Yes NOMS	This required variable is to be updated at the 6-month case review or when a change is indicated. All clients should be asked "At any time IN THE LAST 3 MONTHS, has this person attended school or college? *Include only nursery or preschool, kindergarten, elementary school, home school, and schooling which leads to a high school diploma. a college degree or other formal certification or license."*
16	Income	Gross monthly household income at admission	Actual gross monthly household income to the nearest dollar. 0 = None 97 = Unknown	number (6)	20%	Yes	Total of all legal monthly income for the household in which the client lives and is legally a part of. For adolescent clients, include parents'/guardians' income. Do not use commas, decimals, or dollar signs ($). For example, $100.00 should be "100", not "100.00" or "10000".
17	RefSrce	Source of referral	1 = Individual/Self 2 = Family or friend 3 = Alcohol/Drug Abuse Care Provider 4 = Mental Health Provider 5 = Other Health Care Provider 6 = School 7 = Employer/EAP 8 = Division of Workforce Services 9 = DCFS 10 = DSPD 11 = Justice Referral 12=Clergy 13 = Other Community Referral 97 = Unknown	number (2)	10%	Yes	This required variable is no longer only collected at admission and needs to be updated no less than every 90 days. **Note:** When a client is compelled to be in treatment by the justice system (MH Court, Probation, Parole, etc.), this should be updated to code "11." After the mandatory treatment is completed, the code should be changed to another code.
18	FamSize	Total number in family who live at home	1-96 = Number of persons 97 = Unknown	number (2)	10%	Yes	Client must be included in count, which means this number must be 1 or greater.
19	Veteran	Veteran status (Have you ever or are you currently serving in the military?)	Y =Yes N = No 97 = Unknown	string (2)	10%	Yes	This required variable is to be updated at the 6-month case review. (Have you ever or are you currently serving in the military?)

20	Language	What language needs to be spoken during therapy? (admission only)	00 = English 01 = American sign language 02 = Arabic 03 = Bosnian 04 = Cambodian 05 = Chinese 06 = Croatian 07 = Farsi 08 = French 09 = Greek 10 = German 11 = Italian 12 = Japanese 13 = Kurdish 14 = Laotian 15 = Native American: Navajo 16 = Native American: Ute 17 = Russian 18 = Samoan 19 = Serbian 20 = Somali 21 = Spanish 22 = Swahili 23 = Tibetan 24 = Tongan 25 = Vietnamese 26 = Zulu 27 = Other (Specify in next question) 97 = Unknown	string (2)	10%	Yes	
21	Languag2	If the response was 27 above, please write the "other" language that needs to be spoken during therapy	----------	string (20)		No	If code 27 is chosen in field 20 this field must be filled out.
22	PrvTxAny	Previous mental health treatment of any kind	Y = Yes N = No 97 = Unknown	string (2)	10%	Yes	
23	PrvTxUSH	Previous mental health treatment at the Utah State Hospital	Y = Yes N = No 97 = Unknown	string (2)	10%	Yes	
24	PrvTxMHO	Previous mental health treatment at this mental health center	Y = Yes N = No 97 = Unknown	string (2)	10%	Yes	
25	ExpPaymt	Expected principal payment source as reported by staff.	1 = Provider to pay most cost 2 = Personal resources 3 = Commercial health insurance 4 = Service contract 5 = Medicare (Title XVIII) 6 = Medicaid (Title XIX) 7 = Veterans Administration 8 = CHAMPUS 9 = Workers compensation 10 = Other public resources 11 = Other private resources 97 = Unknown	number (2)	10%	Yes	Expected principal payment source is defined as the source expected to pay the highest percent of the cost. This should now be reported by staff, as is done for substance abuse clients. Funding sources are too different at present to combine with Division of Substance Abuse.
26	GAF	GAF score	0-99	number (2)		No	See DSM IV Axis V for definitions. GAF should be re-evaluated at each treatment plan review or as needed to support the current level of care
27	Severity	Severity level (SED or SMI)	Y = Yes (SED or SMI) N = No (not SED or SMI) 97 = Unknown	string (2)	5%	Yes	This required variable is to be updated at the 6-month case review. Specify if client meets the criteria for either SED or SMI (SPMI is a subset of SMI), depending on age.

28	DiagA1	Axis I or ICD 10 Diagnosis 1	DSM IV or ICD 10 Code	string (10)	5%	Yes	Submit most current diagnosis. Each quarter we require a current and complete list of all diagnoses that are being treated; up to 10 on Axis I or a total of 13 for ICD 10 codes. Leave subsequent fields blank if there are no subsequent diagnoses.
29	DiagA1_Date	Date DiagA1 was given		string (10) MM/DD/YYYY		Yes	
30	DiagA2	Axis I or ICD 10 Diagnosis 2	DSM IV or ICD 10 Code	string (10)		No	
31	DiagA2_Date	Date DiagA2 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
32	DiagA3	Axis I or ICD 10 Diagnosis 3	DSM IV or ICD 10 Code	string (10)		No	
33	DiagA3_Date	Date DiagA3 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
34	DiagA4	Axis I or ICD 10 Diagnosis 4	DSM IV or ICD 10 Code	string (10)		No	
35	DiagA4_Date	Date DiagA4 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
36	DiagA5	Axis I or ICD 10 Diagnosis 5	DSM IV or ICD 10 Code	string (10)		No	
37	DiagA5_Date	Dage DiagA5 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
38	DiagA6	Axis I or ICD 10 Diagnosis 6	DSM IV or ICD 10 Code	string (10)		No	
39	DiagA6_Date	Date DiagA6 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
40	DiagA7	Axis I or ICD 10 Diagnosis 7	DSM IV or ICD 10 Code	string (10)		No	
41	DiagA7_Date	Date DiagA7 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
42	DiagA8	Axis I or ICD 10 Diagnosis 8	DSM IV or ICD 10 Code	string (10)		No	
43	DiagA8_Date	Date DiagA8 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
44	DiagA9	Axis I or ICD 10 Diagnosis 9	DSM IV or ICD 10 Code	string (10)		No	
45	DiagA9_Date	Date DiagA9 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
46	DiagA10	Axis I or ICD 10 Diagnosis 10	DSM IV or ICD 10 Code	string (10)		No	
47	DiagA10_Date	Dage DiagA10 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
48	DiagB1	Axis II Diagnosis 1 or ICD 10 Diagnosis 11	DSM IV or ICD 10 Code	string (10)		No	Submit most current diagnosis. Each quarter we require a current and complete list of all diagnoses that are being treated up to 3 on Axis II or additional ICD 10 codes. Leave subsequent fields blank if no subsequent diagnoses.
49	DiagB1_Date	Date DiagB1 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
50	DiagB2	Axis II Diagnosis 2 or ICD 10 Diagnosis 12	DSM IV or ICD 10 Code	string (10)		No	
51	DiagB2_Date	Date DiagB2 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
52	DiagB3	Axis II Diagnosis 3 or ICD 10 Diagnosis 13	DSM IV or ICD 10 Code	string (10)		No	
53	DiagB3_Date	Date DiagB3 was given		string (10) MM/DD/YYYY		No	A date is required if there is a corresponding diagnosis.
54	Employmt	Employment status (Code only one. Items are listed in priority. If more than one is checked, code only highest priority. This information may be collected by staff, intake workers, or clinicians at admission. However, only clinicians may report the data at each 6-month evaluation.)	1 = Employed full time (35 hrs or more) 2 = Employed part time (less than 35 hrs) 3 = Supported/Transitional Employment 4 = Homemaker 5 = Student 6 = Retired 7 = Unemployed, seeking work 8 = Unemployed, NOT seeking work 9 = Disabled, not in labor force 10 = Ages 0-5 97 = Unknown	number (2)	10%	Yes NOMS	Both supported and transitional employment involve the common element of support. However, transitional employment is time limited whereas supported employment is not. Both may include either MH or non-MH sponsorship. This required variable is to be updated at least every 90 days.

55	LivingAr	Living arrangement This information may be collected by staff, intake workers, or clinicians at admission. However, only clinicians may report the data at each 6-month evaluation.)	1 = On the street or in a homeless shelter 2 = Private Residence - Independent 3 = Private Residence - Dependent 4 = Jail or correctional facility 5 = Institutional setting (NH, IMD, psych. IP, VA, state hospital) 6 = 24-hour residential care 7 = Adult or child foster home 8 = Unknown	number (2)	10%	Yes NOMS	Private Residence - Independent = Individual lives alone or with others without supervision. Private Residence - Dependent = Individual is living with parents, relatives, or guardians. This required variable is to be updated at the 6-month case review.
56	County	County of residence at admission	001 = Beaver 003 = Box Elder 005 = Cache 007 = Carbon 009 = Daggett 011 = Davis 013 = Duchesne 015 = Emery 017 = Garfield 019 = Grand 021 = Iron 023 = Juab 025 = Kane 027 = Millard 029 = Morgan 031 = Piute 033 = Rich 035 = Salt Lake 037 = San Juan 039 = Sanpete 041 = Sevier 043 = Summit 045 = Tooele 047 = Uintah 049 = Utah 051 = Wasatch 053 = Washington 055 = Wayne 057 = Weber 097 = Unknown	string (3)	10%	Yes	
57	DateDisc	Date of discontinuation or discharge	Legal date	string (10) MM/DD/YYYY		No	If the Discharge/discontinuance date field is provided then only fields 2, 7, 58, 59, 68, and 71 are required. Discharge/discontinuance dates must fall on or after the most recent event date for the client and admission.
58	RefDisc	Referral at discontinuation or discharge	0 = Not yet discharged/discontinued 1 = Individual/Self 2 = Family or friend 3 = Alcohol/Drug Abuse Care Provider 4 = Mental Health Provider 5 = Other Health Care Provider 6 = School 7 = Employer/EAP 8 = Division of Workforce Services 9 = DCFS 10 = DSPD 11 = Justice Referral 12 = Clergy 13 = Other Community Referral 14 = Deceased 15 = Dropped out of treatment/Administrative Discharge 16 = Not referred (see notes to 1 and 2) 97 = Unknown			Yes, this field is now required. If client is not discharged code "0".	*Code self* as “not referred” (16) and *family or friend* as “not referred” (16). **If a discharge or discontinuation date is present in field 57, "0" cannot be used in this field.**
59	TxComplt	Treatment completion at discontinuation	1 = Completed/substantially completed 2 = Mostly completed 3 = Only partially completed 4 = Mostly not completed 5 = Does not apply (Evaluation only)	number (1)		No	This field must be filled out if field 57 is supplied and left blank if no discharge date (field 57) is available.

60	AtypicalMed	Atypical Medication Used	1 = Yes 2 = No 97 = Unknown	string (11)	20%	Yes	Was an atypical medication(Clozapine, Quetiapine, Olanzonpine, Risperdone or Ziprasidone) prescribed at least once during the quarter?
61	EventDateTime	Date and time of event	Any legal date and time	string (19) MM/DD/YYYY hh:mm:ss		Yes	For every service given to a client a new record must be generated with a date. Event dates must fall within the current fiscal year **and be between the client's birth date and discharge date.** If your system doesn't track time for events then specify 00:00:00 for the time part. Be sure to put a single space between the date and time.
62	Service Code	Service being provided	*(See notes)*	string(15)		Yes	A list of the Service Codes can be viewed/downloaded from the SAMHIS Website. (https://www.dsamh.dhs.utah.gov/samhis)
63	Service Code Modifier	Modifier for service code	*(See notes)*	string(10)		No *(see notes)*	A list of the Service Codes can be viewed/downloaded from the SAMHIS Website. (https://www.dsamh.dhs.utah.gov/samhis) *Leave blank when service code does not have a modifier.*
64	EventDuration	Duration of event in either days or hours (see notes)	Number of hours or days	string (6) NNN. NN		Yes	Value is in either days or hours depending on the Service Type of the event. Hours may be expressed as decimal fractions (e.g., one hour and 45 minutes = 1.75). Days may not be reported in decimals. No more than one day may be reported for each event per day. For service codes 124, 170, H2016 this field cannot be greater than 1.00 otherwise this field cannot be greater than 16.00. Events with a duration of 0 (zero) will not be saved into the database, because these events are not billable services.
65	FundingSrc	Funding source	1 = Medicaid 2 = Non-Medicaid 3 = Unfunded 4 = Medicaid, but service not covered by Medicaid 5 = Underfunded, has funding but it does not cover all services.	number (1)		Yes	Medicaid funding is determined retroactively. **Code 1** if client is on the Medicaid monthly eligibility list for the month services were received. **Code 2** if client has other non-medicaid funding source [i.e. personal resources (full cost of services), private insurance, medicare, or service contract, etc.]. **Code 3** if client has no other funding source (unfunded 2.7, other county funds, and does not meet the definition of codes 1, 2, 4, or 5). **Code 4** if the client is on the Medicaid monthly eligibility list but the service provided is not covered by Medicaid. **Code 5** if the client has a type of funding (i.e., personal resources, insurance, medicare, other service contract, etc.) but the service provided is not covered.
66	SAMHIS Client ID	Unique ID specified by the SAMHIS system		string (10)		No	SAMHIS Client ID should be included or left blank until available
67	emergency_ind	Emergency Indicator	Y = Yes N = No	string(2)		Yes	As of FY2010 this field replaces service code 180 for reporting of emergency hours.
68	ProviderId	Provider Identifier	State assigned MH Provider ID	string(15)		Yes	Key Field. This is your state assigned provider ID. IDs are always at least 2 characters in length.
69	criminal_justice_nbr	Number of Arrests	0-96=Number of Arrests 97=Unknown	number (2)	10%	Y es NO MS	This item is intended to capture the number of times the client was arrested for any cause during the preceding 30 days. Any formal arrest is to be counted regardless of whether incarceration or conviction resulted and regardless of the status of the arrest proceedings at the time of admission. This required variable is to be updated at the 6-month case review.

70	location_cd	location code	01 – Pharmacy 02 - Telehealth 03 - School 04 - Homeless Shelter 05 - Indian Health Service Free-standing Facility 06 - Indian Health Service Provider-based Facility 07 - Tribal 638 Free-standing Facility 08 - Tribal 638 Provider-based Facility 09 - Prison/Correctional Facility 11 - Office 12 - Home 13 - Assisted Living Facility 14 -Group Home 15 - Mobile Unit 16 - Temporary Lodging 17 - Walk-in Retail Health Clinic 20 - Urgent Care Facility 21 - Inpatient Hospital 22 - Outpatient Hospital 23 - Emergency Room - Hospital 24 - Ambulatory Surgical Center 25 - Birthing Center 26 - Military Treatment Facility 31 - Skilled Nursing Facility 32 - Nursing Facility 33 - Custodial Care Facility 34 -Hospice 41 - Ambulance - Land 42 - Ambulance - Air or Water 49 - Independent Clinic 50 - Federally Qualified Health Center 51 - Inpatient Psychiatric Facility 52 - Psychiatric Facility Partial Hospitalization 53 - Community Mental Health Center 54 - Intermediate Care Facility/Mentally Retarded 55 - Residential Substance Abuse Treatment 56 - Psychiatric Residential Treatment Center 57 - Non-residential Substance Abuse Treatment 60 - Mass Immunization Center 61 - Comprehensive Inpatient Rehabilitation 62 - Comprehensive Outpatient Rehabilitation 65 - End Stage Renal Disease Treatment Facility 71 - State or Local Public Health Clinic 72 - Rural Health Clinic 81 - Independent Laboratory 98 - Not collected 99 - Other Unlisted Facility	number (2)		Yes	Data elements on client services with the location code of 09 - Prison/Correctional Facility is exempt from unknowns.

71	sys_trans_type_cd	System Transaction Type Code	A - Add D - Delete C - Change	string(1)		Yes	Add is for adding new rows. Delete is for removing event and admission data from SAMHIS. Submit a delete row in conjunction with an Add row to fix a key field that has changed. Change is for updating an existing row with new updated information for an existing admission/event. Change(update) cannot be used to fix a key field change. For Add and Change system transaction type codes all required fields must be supplied with valid data in each field. Only difference will be that a change record will error out if an existing admission/event record is not already found for the given key admission fields and event record. Change records should be sent anytime one of the data elements in the spec. are modified. To Delete records all admission key fields and the record number (recordno) must be supplied. The rest of the fields can be filled-in or left blank. To delete an admission all event records for the given admission must be deleted. * Remember that every row must have the correct number of commas. * Files are sorted and processed as follows: Discharge rows are filtered out of the file (to be processed later). Remaining data is sorted by: system transaction type (D,A,C), provider ID, client ID, admit date, event date. All Delete rows are processed first, then Add rows and finally change rows. *Discharge rows are not processed until all admission/event rows have been processed successfully or canceled.*
72	tobacco_use	Tobacco Use	1 = Never Smoked/Vaped 2 = Former Smoker/E-Cig User 3 = Current Some Day Smoker/E-Cig Use 4 = Current Everyday Smoker/E-Cig User 6 = Use Smokeless Tobacco Only (In last 30 days) 97 = Current Status Unknown 98 = Not Applicable 99 = Former Nicotine Status Unknown.	number (2)	10%	Yes	This field is used to track the nicotine (both cigarettes, including e-cigarettes and smokeless tobacco products) usage of treatment clients. If clients use both cigarettes/vaping and smokeless tobacco only keep track of the frequency of cigarette/vaping use. If they only use smokeless nicotine then use the corresponding code. Current Some Day Smoker/E-Cig User - Occasional user This required variable is to be updated at the 6-month case review, when a change is indicated and at discharge.
73	EBP1	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		Yes	Submit the EBP code(s) that corresponds with this service as listed in their treatment plan and reported when provided to fidelity.
74	EBP2	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
75	EBP3	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
76	EBP4	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
77	EBP5	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
78	EBP6	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
79	EBP7	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
80	EBP8	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
81	EBP9	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
82	EBP10	Evidence Based Practice	See Code List available on the SAMHIS website.	number (3)		No	
83	medicaid_id Medicaid Number	Clients Medicaid ID	Clients Medicaid ID Number 97=Unknown 98=Not Applicable	string (10)		Yes	The client's Medicaid number. Field must be either 2 (Unknown / NA) or 10 characters in length
84	Provider_note	Comment Field		Text (50)		No	Comment field for provider use. Cannot contain single or double quotes. Cannot contain commas.
85	Compelled	Criminal court compelled for treatment indicator.	1 = Yes 2 = No 97 = Unknown 98 = Not collected	number (2)	10%	Yes	This required variable is to indicate if a client has been court compelled for treatment by a criminal court. Compelled includes; Plea in Abeyance (Including Drug Court) Diversion Programs Criminal Court Order Release from jail condition Sentence Probation/Parole Condition (including DORA).

							This variable needs to be updated anytime it changes or at least every 90 days.
86	Justice Risk Level	Criminogenic risk level.	1 = Low risk 2 = Not low risk (moderate/high risk) 97 = Unknown 98 = Not collected	number (2)	10%	Yes	Criminogenic risk level as determined by the validated tool approved in your Justice Certification Plan. This variable indicates whether the criminogenic risk level for the client (Compelled) is Low or Not Low risk.

*** Fields marked as required must be submitted except when submitting a discharge record. (See the note on field # 57.)**

Stabilization and Mobile Response Mobile Crisis Outreach Team

File Format and Definitions

FY2021

Effective

Department of Human Services

Created 6/12/2018

Change Log

DATE	AUTHOR	VERSION	NOTES
3/31/2020	Kristin Swenson	1.0	Combined SMR/MCOT

Introduction

This data specification is for information gathered by Local Mental Health Authorities contracted by Department of Human Services to provide regional administration for the Stabilization and Mobile Response (SMR) program. The data specification is also for information gathered by Local Mental Health Authorities who are providing Mobile Crisis Outreach Team (MCOT) services. Comma-separated values (CSV) files, containing all records from the previous month, will be transferred from the regional administrator (SMR) or from Local Authorities (MCOT) to Division of Substance Abuse and Mental Health on the 15th day of each

CSV FILE GENERATION GUIDELINES

1. All files should be submitted without a header row.
2. Non-required fields must either be blank or contain a valid value.
3. Commas are not allowed within the data in any field. (Commas are column delimiters.)
4. Do not use quotation marks in any fields.
5. Do not insert blank lines between rows of data.

FILE PROCESSING SORT RULES

Sort as follows with subsequent sort rules applying within the 'parent' sort rule:

-Sy_trans_type_cd (Delete, Add and then Change)

-ProviderID (numeric ascending)

-SMR_ClientID (alphanumeric ascending)

-Provider_ClientID (alphanumeric ascending)

-EventDate (descending)

FILENAME PROTOCOL

Uploaded filenames will be formatted to identify the service (SMRMCOT), followed by the mental health provider ID, followed by the fiscal year and quarter, followed by upload, followed by the daily sequence (upload attempt number for the given separators. The file name format is

A filename example for a first file sent from Davis Behavioral Health during January of 2020 is SMRMCOT_03_2020Q3_20200105_01.csv.

Upload will only be allowed only if a filename is valid. At this time, only Davis Behavioral Health Southwest Behavioral Health (08) may submit SMR data. All providers with MCOT

DEFINITIONS

Identified Client

SMR--Calls to the SMR phone line may be made by parents, caregivers or other concerned adults. SMR callers must identify a child, age 21 or younger, as the identified client who interventi

MCOT--Identified Client for MCOT may include anyone in crisis across the lifespan that receives services from MCOT.

EVENT

SMR--An SMR event is a transaction between a staff member, or contracted provider, of an SRM regional administrative agency and the identified SMR client or identified client's caregiver(s). Every call to the SMR phone line is an event, as is every mobile response, stabilization and post-stabilization contact associated with the SMR program.

MCOT--Event for MCOT entails either a mobile crisis response from a team including a licensed mental health clinician and a peer support specialist or equivalent, or a stabilization service that is offered for a minimum of 60 days post-crisis.

RESOLUTION

At the end of each SMR event, the staff member or contracted provider will code the event as resolved or unresolved. Events coded as resolved indicate that no further action is anticipated by the SMR team. Unresolved events are open cases in which Mobile Response teams are deployed, referrals are made to Stabilization services or Stabilization services are on-going.

Phase of Engagement

- Triage (SMR only)—any phone call made to the SMR line about an identified client not yet referred to either Mobile Response or Stabilization services or about a previously identified client who was coded as Resolved at the last event.
- Mobile Response—SMR: any open-case event related to an identified client after the identified client received a triage code initiating a Mobile Response service (i.e., Emergent crisis, Urgent response or Routine response) and prior to any Stabilization events.
  MCOT: any MCOT service provided as a crisis response.[1]
- Stabilization (SMR only)—any open-case event in which the identified client has been referred to Stabilization services but has not yet entered the Post-Stabilization phase.

[1] MCOT events are always coded as occurring during the Mobile Response phase.

- Post-Stabilization—SMR: any open-case event after the first event in which the identified client receives a code of Post-Stabilization and before a subsequent event is marked as resolved.

  MCOT: any post-crisis stabilization services.

EMERGENCY INDICATOR

This indicator should be set to yes when a service is provided on an immediate or unscheduled basis and deals with a psychological emergency of a patient. Routine informational calls handled by crisis staff are not to be reported as crisis/emergency. Examples of behaviors targeted by crisis/emergency services are suicide attempts, violent family fights, panic attacks, uncontrollable behavior and other behaviors that are a threat to self or others.

CLIENT NAME VALIDATION RULES:

Same as DSMH mental health spec FY2020

Use legal names rather than nicknames

SMR file will have fields for the following parts of a name:

- Last name
- First name
- Middle name

NAMES CAN BE ENTERED IN EITHER UPPER CASE, LOWER CASE, OR A MIX.

SPACES: ALLOWED IN FIRST AND MIDDLE NAMES. NOT ALLOWED IN LAST

NAMES.

Example: Mc Donald should be entered as McDonald D La Cruz should be entered as DeLaCruz

Example: Le Ann Mary Ann Mc Cartney
Can be entered as:
First: Le Ann
Middle: Mary
Ann Last:
McCartney

Hyphens: Allowed in first, middle, and last names. The hyphen is only allowable punctuation character allowed.

Examples:		
(last name) Smith-Jones	*should be entered as*	*Smith-Jones*
(first name) Jo-Ann	*should be entered as*	*Jo-Ann*
(last name) O'Rilley	*should be entered as*	*ORilley*
(last name) St. James	*should be entered as*	*StJames*

(first name) D'Ann should be entered as Dann or D Ann

Numeric characters: Not allowed in any names

First name is an initial: The initial can be entered in the first name filed but no periods.

Middle name: If there is no middle name or it is not available, leave blank. Supply the full legal middle name where possible and the middle initial if that is all that is available. Periods are not allowed.

Second name: Enter the second name in the middle name filed

Example: J. Edgar Hover
First name: J (no period) Middle name: Edgar Last name: Hoover

Titles, Prefixes, Suffixes: not allowed

Naming rules synopsis:

Character	Last Name	First and Middle Names
Alpha characters	Allowed	Allowed
Hyphens	Allowed	Allowed
Spaces	Allowed	Not allowed
Apostrophe	Not allowed	Not allowed
Numeric characters	Not allowed	Not allowed

Required for SMR or MCOT Only	Field	Field Name	Description	Codes/Allowed Values	Format	Required	Notes
	1	SMR_Flag	Identifies the service recipient as an SMR client (if Yes) or an MCOT client (if no)	Y=Yes N=No	string(2)	Yes	
SMR ONLY	2	SMR_ClientID	Client identifier unique to SMR services	String	varchar(15)	No	Required if (1)SMR_Flag=Y(es) Client ID to be unique within SMR services. It must not be reassigned to another SMR client.
MCOT ONLY	3	Provider_ClientID	Client identifier unique to service provider	String	varchar(15)	No	Required if (1)SMR_Flag=N(o)
	4	Service_event_ID	Provider event record ID number	String value that uniquely identifies a client event for the provider.	string(50)	Yes	Use a unique ID for every event record.
	5	FirstName	First name of the individual who is the focus of the intervention.	Only characters specified in MH Data Definitions	string(25)	Yes	See client name validation rules.
	6	LastName	Last name of the individual who is the focus of the intervention.	Only characters specified in MH Data Definitions	string(30)	Yes	See client name validation rules.
	7	MiddleName	Middle name of the individual who is the focus of the	Only characters specified in MH Data Definitions	string(25)	No	See client name validation rules.

	8	SSN	Social Security Number of the Individual who is the focus of the intervention.	000-00-0000=Unknown 999-99-9999=None	string(11) NNN-NN-NNN	No	Required only if (16)Stage_of_Engagment>2 Or if (1)SMR_Flag=N(o) Valid SSNs include all but 123-45-6789 or 099-99-9999. Valid SSNs cannot be utilized by more than 1 client.
	9	Gender	Gender of the individual who is the focus of the intervention.	1=Male 2=Female 3=Non-binary	number(1)	Yes	
	10	DOB	Date of birth of the individual who is the focus of the intervention.	Legal date	string(10) MM/DD/YYY Y	Yes	
	11	County	County of residence at time of initial call	001=Beaver 003=Box Elder 005=Cache 007=Carbon 009=Daggett 011=Davis 013=Duchesne 015=Emery 017=Garfield 019=Grand 021=Iron 023=Juab 025=Kane 027=Millard 029=Morgan 031=Piute 033=Rich 035=Salt Lake 037=San Juan 039=Sanpete 041=Sevier 043=Summit 045=Tooele 047=Uintah 049=Utah 051=Wasatch 053=Washington 055=Wayne 057=Weber 097=Unknown	string(3)	No	Required only if (16) Stage_of_Engagment=1 or if SMR(1)=N(o)

	12	Race	Race of the individual who is the focus of the intervention.	01=Alaskan Native 02=American Indian 03=Asian 04=Native Hawaiian or Other Pacific Islander 05=Black/African American 06=Whi te 07=Unk nown 08=Two or more races 00=Other single race	number(2)	No	Required only if (16) Stage_of_Engagment>1
	13	Hispanic	Hispanic or Latino origin of the individual who is the focus of the intervention.	Y=Yes N=No 97=Unknown	string(2)	No	Required only if (16)Stage_of_Engagment>1
	14	Language	Preferred language of the family who is the focus of the intervention.	00-English 01=American sign language 02=Arabic 03=Bosnian 04=Cambodian 05=Chinese 06=Croatian 07=Farsi 08=French 09=Greek 10=German 11=Italian 12=Japanese 13-Kurdish 14=Laotian 15=Native American: Navajo	string(2)	No	Required only if (16) Stage_of_Engagment>1

				16=Native American: Ute 17=Russian 18=Samoan 19=Serbian 20=Somali 21=Spanish 22=Swahili 23=Tibetan 24=Tongan 25=Vietnamese 26=Zulu 27=Other 97=Unknown			
	15	Insurance	Medical insurance category of the individual who is the focus of the intervention.	01=Private insurance 03=Medicare 04=Medicaid 06=Other 07=Unknown 08=None 09=CHIP	number(2)	No	Required only if (16) Stage_of_Engagment>1
	16	Stage_of_Engagement	Phase of SMR engagement when service provided	01=Triage 02=Mobile crisis outreach 03=Stabilization 04=Follow up	number(2)	Yes	If (1)SMR_Flag=N(o), Stage_of_Engagement(16) must =2 or 4
SMR ONLY	17	Resolved	At the end of the event, was the case closed (resolved=Yes) or were further actions expected (resolved=No)?	Y=Yes N=No	string(2)	No	Required only if (1)SMR_Flag=Y(es)
SMR ONLY	18	Triage_Assessment	Emergency, Emergent crisis, Urgent response, Routine response, Stabilization only, Information only, blank	01=911 emergency 02=Emergent crisis 03=Urgent response 04=Routine response 05=Stabilization only 06=Information only 98=Not Applicable	number(2)	No	Required only if (16) Stage_of_Engagment=1

	19	ProviderID	Provider Identifier (DSAMH Facility Identifier or other created for contractors)	State assigned MH Provider ID	string(15)	Yes	Identifies the provider of the service using the state assigned provider ID. IDs are always at least 2 characters in length.
	20	EventDateTime	Date and time of service	Legal date and time	string(19) MM/DD/YYYY hh:mm:ss	Yes	
	21	EventDuration	Duration of service in hours	Number of hours	Number(6,2) 00NN.NN	Yes	Hours may be expressed as decimal fractions (i.e., one hour and 45 minutes=1.75), rounding to the nearest quarter of an hour.
MCOT ONLY	22	ResponseTimeToDestination	Elapsed time from request to arrival at destination	Numbers	Number(6,2) 00NN.NN	No	Required only if (1) SMR_Flag=N(o) and (16) Stage_of_engagement =2 Hours may be expressed as decimal fractions (i.e., one hour and 40 minutes=1.75), rounding to the nearest quarter of an hour.
	23	Setting	Setting in or through which service was provided	01=Phone 02=Client's home 03=In office 04=In community 05=Other	number(2)	Yes	
	24	Emergency Indicator	Emergency Indicator	Y=Yes N=No 97=Unknown	string(2)	Yes	See Emergency Indicator description under Definitions.
	25	Initiator_of_episode	person who made the initial call for SMR or Source of call-out for MCOT	01 = Parent 02 = Child 03 = Other family member or friend 04 = Physician or medical facility 05 = Social or community agency	number(2)	No	Required only (1) SMR_Flag = Y(es) and (16) Stage_of_Engagment=1 Or if (1)SMR_Flag=N(o) and (16) Stage_of_Engagement=2

				06 = Educational system 07 = Courts, law enforcement, correction agency 08 = Private psychiatric/mental health program 09 = Public psychiatric/mental health program 10 = Clergy 11 = Private practice mental health professional 12= Stabilization worker 13=Utah Crisis Line 14=Dispatch/911 15 = Other persons or organizations 97 = Unknown 98= Not Applicable			
SMR ONLY	26	UFACET_completed	Was the UFACET completed during this service?	Y=Yes N=No	string(2)	No	Required only if Stage_of_Engagment=3
SMR ONLY	27	Outcome_assessment_completed	Was the Outcome assessment completed during this service?	Y=Yes N=No	string(2)	No	Required only if Stage_of_Engagment=3
	28	Remained_at_home	At the end of the service, where was the individual?	01=At home 02=Hospital/ER 03=Residential 04=Detention/Jail 05=Emergency shelter/Homeless shelter 06=Other family 07=Foster/Proctor placement 08=Individual went missing 09=Other 10=Access center/23 hour crisis bed/receiving center	number(2)	No	Required if (1)SMR_Flag=Y(es) And Stage_of_Engagement>1 and Setting >1 Or if (1)SMR_flag=N(o) and Stage_of_Engagement=2

				11=Detox (outside of ER) 12=Remained in place			
SMR ONLY	29	Law_enforcement_involved	Between end previous service (if applicable) and the end of current service, what was the interaction with law enforcement?	01=No law enforcement was involvement 02=Law enforcement was involved but no charges are filed 03=Law enforcement was involved and charges were filed 04=Family doesn't know if law enforcement was involved or not	number(2)	No	Required if (1)SMR_Flag=Y(es) And Stage_of_Engagement>1 and Setting >1
SMR ONLY	30	Perception_of_alternative	"If you had not called us, what do you think the most likely result would have been?"	01=Remain at home 02=Call law enforcement 03=Hospital/ER 04=Detention/Jail 05=Emergency Shelter/Crisis Center06=Foster or proctor home 07=Youth run away 08=Youth stay with other family member 09=Seek information in another way 27=Other 98=Not applicable	number(2)	No	Required if (1)SMR_Flag=Y(es) And Stage_of_Engagement>1 and Setting >1
SMR ONLY	31	Peception_of_alternative2	If answer to Perception_of_Alternativee was 27 please answer response	----------	string(30)	No	Required if (30)Perception_of_Alternative=27 (other)
SMR ONLY	32	Outcome_ladder_present	Item score from outcome assessment	1 through 10 =item score	number(2)	No	Required only if (1) SMR_flag=Y(es) and (27)Outcome_assessment_completed=Y (Yes)
SMR ONLY	33	Outcome_ladder_future	Item score from outcome assessment	1 through 10 =item score	number(2)	No	Required only if (1) SMR_flag=Y(es) and (27)Outcome_assessment_completed=Y (Yes)

	34	sy_trans_type_cd	System Transaction Type Code	A-Add D-Delete C-Change	string(1)	Yes	

SMI Demonstration Cost Analysis

Utah Department of Health (UDOH) will conduct a cost analysis of the Serious Mental Illness (SMI) Demonstration that became effective in January 2021. The cost analysis will provide an objective measure of this important demonstration outcome. UDOH will include cost analysis reports as part of the final evaluation reports.

Costs

UDOH will conduct three levels of cost analyses

Level of analysis	Type of costs	Data components (source)
Total costs	Total costs	Claims and managed care capitation payments (Data Warehouse)[1]
	Total federal costs	Federal Financial Participation (FFP) for total costs[2]
SMI cost drivers	SMI -IMD	Claims and encounters[3] with IMD procedure code with SMI diagnosis (Data Warehouse)[4]
	SMI -other	Claims and encounters with SMI diagnosis and/or procedure code (Data Warehouse)
	Non- SMI	Claims and encounters without SMI diagnosis or procedure code (Data Warehouse)
Type of source of care cost drivers	Outpatient costs – non ED	Outpatient hospital claims and encounters as defined by T-MSIS OT specifications, excluding ED (Data Warehouse)
	Outpatient costs – ED	ED claims and encounters (Data Warehouse)
	Inpatient costs	Inpatient hospital claims and encounters as defined by T-MSIS IP specifications (Data Warehouse)
	Pharmacy costs	Pharmacy claims and encounters as defined by T-MSIS RX specifications (Data Warehouse)
	Long-term care costs	Long-term claims and encounters as defined by T-MSIS LT specifications (Data Warehouse)

Population of interest

UDOH will identify beneficiaries based on claims and encounters with a SMI diagnosis and/or procedure code. The SMI diagnosis and procedure codes will be identified using the standardized definition of SMI defined in *Appendix E, Medicaid Section 1115 Serious Mental*

[1] UDOH will not include administrative costs. There has not been a staff hiring nor has there been a vendor added for the exclusive purpose of servicing the SMI demonstration

[2] State and program-specific FFP will be used including those expenses eligible for enhanced federal share.

[3] UDOH will use the managed care payment amount to assign costs to encounters paid by managed care entities.

[4] SMI-IMD services were not paid by UDOH in the pre-demonstration period. SMI-IMD costs will not exist in the pre-demonstration period of this cost analysis.

Illness and Serious Emotional Disturbance Demonstrations: Technical Specifications for Monitoring Metrics.

Scope

Utah will use two pre-demonstration years beginning January 2019 and ending December 2020. Utah's SMI demonstration was approved for December 16, 2020, but was not implemented until January 1, 2021. Utah's SMI demonstration is approved through June 30, 2022.

Challenges

Utah does not have a valid comparison population for this analysis. Utah's SMI demonstration was implemented state-wide on the same date to all state plan populations and three 1115 demonstration populations. Utah will not be able to provide a comparison population in order to complete the preferred difference-in-difference analysis.

Method

UDOH will conduct an interrupted time series analysis to estimate the linear effects of the SMI demonstration. Utah will use the model provided in the SMI/SED and SUD Evaluation Design Guidance: Appendix C.

$$Costs = \beta 0 + \beta 1*TIME + \beta 2*POST + \beta 3*(TIME*POST) + Bi* CONTROLS + \varepsilon$$

Where:

TIME is a count variable that starts with the first quarter pre-demonstration period data and ends with the last quarter of post-demonstration period data.

POST is the indicator variable that equals 1 if the month occurred on or after demonstration start date.

CONTROLS are covariates as follows:

Control	**Possible Values**
Age	Beneficiary's age (in years) on the first day of the month.
Gender	Male/Female
Race	White; Asian/Pacific Islander; American Indian/Alaskan Native; Black; or Other/missing.
Dual Medicare-Medicaid enrollment	Yes/No
Delivery system	Managed care plan or fee-for-service

UDOH will conduct both a logit model for estimating zero-cost months and a generalized linear model [GLM] for estimating non-zero cost months. The GLM model will use log costs to account for costs that are not normally distributed.

Deliverable

The interrupted time series results will be presented in the format suggested within the technical assistance. Additionally, UDOH will provide the marginal effects and standard error terms.

Interrupted Time Series results	Total costs	Total federal costs	SUD-IMD	SUD-other	Non-SUD	Outpatient non-ED	Outpatient ED	Inpatient	Pharmacy	Long-term care
Logit										
Demonstration period										
Time (continuous)										
Demonstration period * time (continuous)										
Covariates										
Constant										
GLM										
Demonstration period										
Time (continuous)										
Demonstration period * time (continuous)										
Covariates										
Constant										

UTAH 1115 PRIMARY CARE NETWORK DEMONSTRATION WAIVER

EVALUATION DESIGN

AGED DENTAL

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INTRODUCTION

Utah's 1115 PCN Demonstration Waiver (hereinafter referred to as "Demonstration") is a statewide waiver that was originally approved and implemented in 2002. Since that time, the Demonstration has been extended and amended multiple times to add additional benefits and Medical programs. This proposal will evaluate the impacts and outcomes of the newly approved amendment component to provide porcelain and porcelain-to-metal crowns as a dental benefit to Medicaid eligible individuals 65 years and older. The findings of the evaluation will be presented in a series of reports.

A. GENERAL BACKGROUND INFORMATION

This Demonstration waiver amendment was requested due to the Utah State Legislature passing Senate Bill 11 "Medicaid Dental Coverage Amendments" during the 2019 General Session. The specific components of the amendment include:

- Providing state plan dental benefits to those 65 years and older, and
- Extending the specific benefit coverage to include porcelain and porcelain-to-metal crowns.

Oral Health Impacts on General Health Conditions

Oral disease, such as dental caries, periodontal disease, tooth loss, oral lesions, oropharyngeal cancers, and orodental trauma, is a serious public-health problem. Its impact on individuals and communities in terms of pain and suffering, impairment of function and reduced quality of life, is considerable. Globally, the greatest burden of oral diseases lies in disadvantaged and poor populations. Oral disease is the fourth most expensive disease to treat[1]. There are numerous studies indicating that improved oral health is correlated with improved physical health.

Impacts of Dental Care and Oral Health Improvement among the Aged

Adults age 65 and older commonly experience a variety of dental health issues. These often affect an individual's quality of life and contribute directly to serious diseases. As a result, maintaining good dental health is critical to the elderly who may experience declining health as they age. According to the American Dental Association[2], aged individuals experience an increase in tooth decay, with approximately 50% showing serious dental decay in both tooth crowns and roots. Additionally, periodontal disease is the most frequent dental condition found in the aged. Approximately, 68 % experience gingivitis and bone loss due to chronic inflammation. Other common conditions associated with aging include tooth loss, dry mouth and oral cancer. Preventing these conditions can be achieved by routine daily oral care and access to professional dental services.

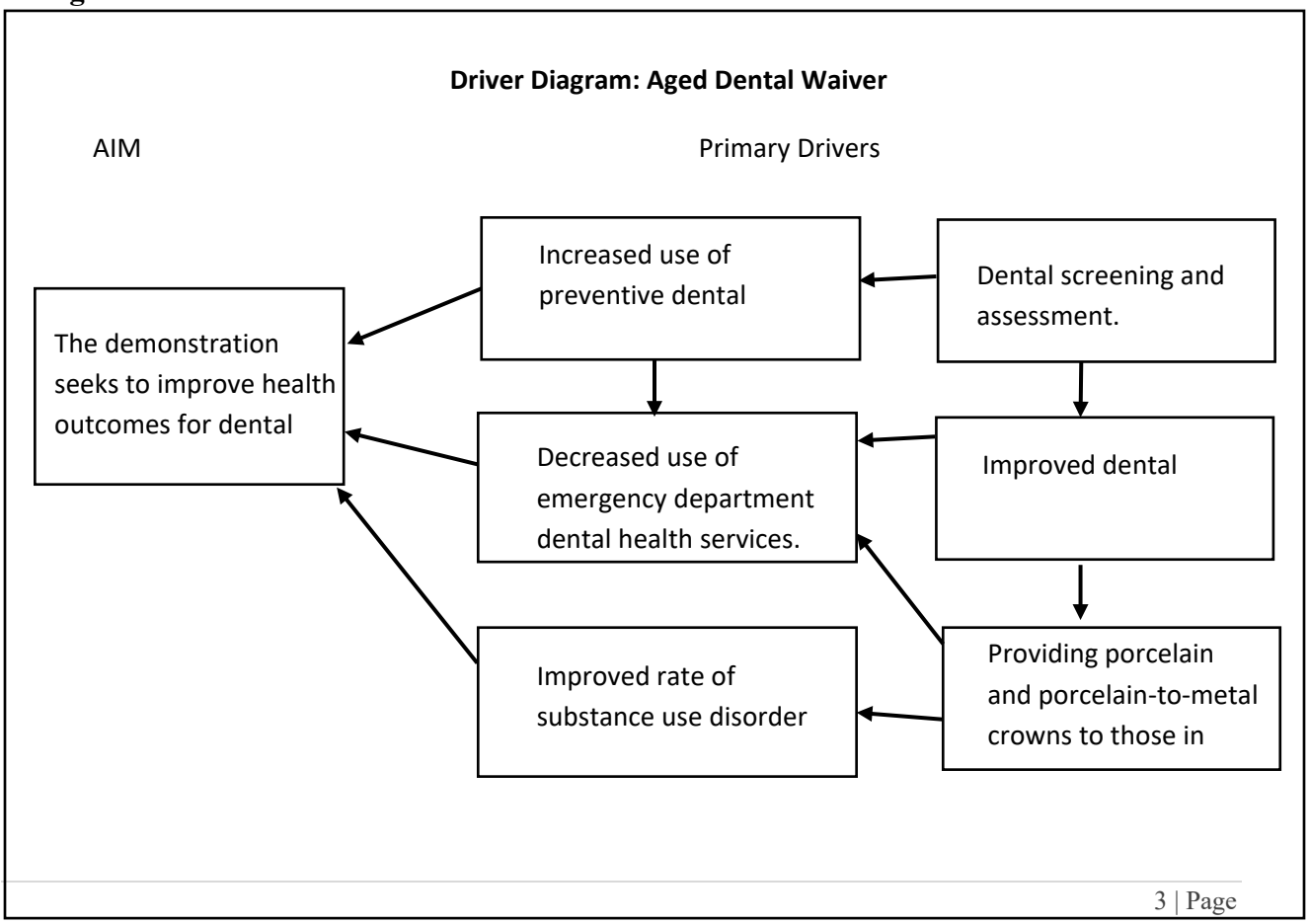
Finally, the University of Utah's School of Dentistry (SOD) has also demonstrated that providing comprehensive dental care (including crowns) can positively enhance a number of physical, emotional, and social health outcomes [3] of patients.

B. EVALUATION QUESTIONS & HYPOTHESES

The primary objective of the amendment is to improve the health of beneficiaries impacted by this policy change by ensuring they receive dental health services focused on preventive dental care, which will lead to a reduction in the need for emergency dental services. The waiver demonstration also provides porcelain crowns and porcelain-to-metal crowns when needed to beneficiaries and Targeted Adult members receiving substance use disorder treatment. The rationale for this latter component is based on a pilot study conducted by the University of Utah School of Dentistry demonstrating that significant improvements in oral health care are associated with improved SUD treatment outcomes.

Evaluation questions and hypotheses will examine total dental services provided to the aged population, with a focused analysis on preventive services as well as services including the provision of porcelain crowns and porcelain-to-metal-crowns. The driver diagram that follows (Figure 1) illustrates how the waiver amendment components will improve the dental health of beneficiaries. Table 1 then provides the details of specific waiver hypotheses, research questions, outcome measures, populations involved, data sources, and analytic methods. All adjustments and clarifications have been included to align the policy goals, hypotheses, research questions, and measures (changes addressing specific CMS recommendations have been highlighted in red).

Figure 1.



C. METHODOLOGY

1. Evaluation Design

The evaluation will consist of a cohort design focused on the Aged dental-benefit eligible population and will only use post-implementation data to compare outcomes over time.

Considering the characteristics (e.g. distribution) of the outcomes and multiple measures of the outcomes of the same subjects over time, the generalized estimating equations (GEEs) will be used. The outcomes will be aggregated over quarterly intervals. An unstructured covariance matrix will be assumed to avoid imposing specific assumptions concerning distribution of the random effects. We will adjust for relevant factors (baseline/time-invariant factors including a dual eligible status, and time-varying factors including number of COVID cases) that could affect the outcomes.

$$L(Y_{it}) = X'_{it}\,\beta$$

, where L is a link function, i represents subjects, t indicates time (i.e. quarter), β is a k by 1 vector of regression coefficients including β_0, and X'_{it} indicates a n by k matrix with covariates. X'_{it} includes baseline/time-varying factors of subjects, a dummy variable for the dual eligible subjects, time dummies, and number of COVID cases (per 100,000) in every quarter.

2. Target and Comparison Populations

Two population groups will be used in this design. The first will consist of a pre-intervention group of Medicaid beneficiaries 63-64 years of age (e.g. just below age 65) who received emergency dental services in the emergency room (not a covered service) prior to the implementation of the waiver, when dental care became a covered service. Those Medicaid eligible members 65 years of age and older who are eligible to receive routine dental care and crowns, if necessary will comprise the comparison group. The second distinct population group of interest will consist of benefit – eligible Targeted Adults participating in SUD treatment services and which are a part of the previously approved 1115 SUD waiver.

Evaluation Period

The waiver evaluation period will be effective March 1, 2020 and will end June 30, 2022. UDOH began implementation of the waiver on March 1, 2020.

Evaluation Measures

The quantitative measures to be used include Medicaid claims and the Treatment Episode Data Set (TEDS) as well as scale items from the 1115 Aged Dental Survey (see Attachment). This 20-item survey consists of three components: 1) the Oral Health Impact Profile (OHIP-14), 2) a brief quality of life (QOL) scale and 3) CAHPS® Dental Plan Survey ratings of (posttest only) dentists, dental care, dental service access, and overall dental plan. This survey will be administered to a sample of Medicaid beneficiaries receiving dental services at the University of Utah School of Dentistry clinics in a pretest (during the clinical visit where the comprehensive assessment is conducted) and posttest format (at the conclusion of treatment services). Based on preliminary data, it is expected that there will be approximately 5,000 eligible beneficiaries. It is estimated that a sample of approximately 10% would be required, however, given the impacts of COVID-19 and a delayed implementation, the established goal is to obtain 750 surveys (15% sample). These will only be collected at SOD clinics. The SOD operates 8 clinics located across 3 of the highest populated counties in Utah (e.g. 6 in Salt Lake, 1 in Weber, and 1 in Washington). The SOD also has a Network of Affiliated Providers that provide dental services throughout the state. Legislatively the SOD and these affiliated clinics have been designated the sole provider of the dental services associated with this waiver.

The dental survey includes the Oral Health Impact Profile (OHIP) which was developed as a comprehensive measure of self-reported dysfunction, discomfort and disability attributed to oral conditions.[4,5] Conceptually, it is based on model Patrick and Bergner[6] developed and is concerned with impairment and three functional status dimensions (social, psychological and physical) which are part of Locker's model[7] of oral health and include seven quality of life dimensions. Multiple studies indicate strong alpha scores ranging from 0.80 to 0.90, including studies on the aged. There were also modest relationships between OHIP scores and clinical variables such as missing teeth, decayed teeth, and periodontal disease. The shortened, 14-item version (OHIP-14) has also been validated and is proposed for this evaluation. Key informant interviews will also be conducted with on campus SOD staff, SOD community-based clinics, and SOD-affiliate dental service providers statewide.

3. Data Sources

Data sources to be used in this design will include several. First, UDOH's Medicaid (HIPPA transaction set) consisting of a cleaned set of all Utah claims data spanning the evaluation period.

The second data set that will be used for comparison purposes previously discussed will be the Division Substance Abuse and Mental Health (DSAMH) Treatment Episode Data Set (TEDS). This data set includes SUD process and outcome measures for all individuals receiving treatment services statewide. DSAMH will conduct the linking of the TEDS data with Medicaid data so that treatment outcomes of interest to the dental component of the waiver can be analyzed. The final data source will be the 1115 Waiver Dental Survey which will be conducted by the School of Dentistry personnel using electronic notepads. The survey results will be linked to the beneficiaries Medicaid ID. Specific elements to be collected will include: the 20-item Aged Dental Survey which includes the Oral Health Impact Profile

(OHIP-14) survey, a brief quality of life (QOL) scale and 4 CAHPS® Dental Plan Survey rating questions (posttest only). The survey will be administered in a pre and posttest format.

4. Analytic Methods

A combination of quantitative and qualitative statistical methods will be used for the analysis. For the Medicaid claims data, the GEEs model will utilize a correlation analysis. The statistical procedure for the Aged Dental Survey will be a paired T-test, which is a robust analysis. The qualitative statistical methods will include key informant interviews with appropriate School of Dentistry staff. A sample of potential key informant interview questions are included in Table 1 and Table 2 below, including a projected number of interviews by various clinic locations.

In order to address potential confounding effects related to COVID-19 impacts, the state will control for incidence and mortality at the county level where dental services are provided. Specifically, the University of Utah Dental School operates 8 clinics located across 3 of the highest populated counties in Utah (e.g. Salt Lake, Weber, and Washington). Additionally, there are Affiliated Network Providers offering Medicaid-eligible dental services in 15 other counties statewide. Of the 29 counties in Utah, residents in 18 counties (62%) have access to Medicaid approved dental service providers.

Additionally, to help strengthen the analysis and inform the validity of the study design on impact estimates, a sensitivity analyses will be conducted. First, the evaluator will re-estimate key impacts of the design in order to determine whether this approach—using the pre-intervention group (as a reference group) and GEEs with dummy variable—substantively influence the impact estimates. Second, since that regression models are being employed, the evaluator will test the sensitivity of key impact estimates to different modeling choices such as functional form. If a high degree of sensitivity is found, then an explanation will be required that informs the credibility of the estimates.

Finally, the inclusion of a falsification test is recommended to help increase confidence in the design by providing evidence that the design isolates the impact of the dental waiver activities from other factors that might affect key outcomes. This will be done by selecting an outcome measure that would not be expected to change due to the demonstration and then estimate that impact of the demonstration using the comparison design on that outcome. For example, the annual Utah rate of adults with a preventive care visit per 1,000 could be used as a placebo outcome since it is not likely to be affected by this dental demonstration.

Specific design approach, data measures, target populations, and analysis procedures utilized are summarized in Table 1 below.

Table 1: Summary of Hypothesis, Research Questions, Outcome Measures, Populations, Data Sources, and Analytic Approaches.

Aged Dental

Hypothesis 1. Aged individuals will have increased utilization of preventive dental services.				
Research Question	**Outcome measures used to address the research question**	**Sample or population subgroups to be compared**	**Data Sources**	**Analytic Methods**
Will the waiver increase the number of aged individuals receiving preventive dental services?	Annual rate of individuals with a preventive dental care visit per 1,000	Medicaid enrolled individuals 65+ years of age	Medicaid claims data	Cohort design comparing post-implementation service utilization. GEE analysis.
What were the per capita costs of preventive dental services among the aged beneficiaries?	Average monthly cost of preventive dental care.	Medicaid enrolled individuals 65+ years of age	Medicaid claims	Cohort design comparing post-implementation service utilization. GEE analysis.
Will the waiver increase the number of aged individuals receiving any dental services?	Annual rate of individuals with any dental services per 1,000	Medicaid enrolled individuals 65+ years of age	Medicaid claims	Cohort design comparing post-implementation service utilization. GEE analysis.
Subsidiary Questions:				

What impacts will the addition of porcelain crowns to dental services have on preventive dental services?	Average cost of preventive dental care for those receiving porcelain crowns.	Medicaid enrolled individuals 65+ years of age	Medicaid claims	Cohort design comparing post-implementation service utilization. GEE analysis.
What were the per capita costs of porcelain crowns to the dental services among aged beneficiaries?	Per capita cost of porcelain crowns	Medicaid enrolled individuals 65+ years of age	Medicaid claims	Cohort design comparing post-implementation service utilization. GEE analysis.
Hypothesis 2. Aged individuals will have decreased utilization of emergency dental services.				
Will the waiver decrease the number of aged individuals receiving emergency department dental services?	Annual rate of individuals with emergency department dental services per 1,000	Medicaid enrolled individuals 65+ years of age with emergency department dental care.	Medicaid claims	Cohort design comparing post-implementation service utilization. GEE analysis.
What were the per capita costs of emergency department dental services?	Per capita costs of emergency department dental services	Medicaid enrolled individuals 65+ years of age with emergency department dental care.	Medicaid claims	Cohort design comparing post-implementation service utilization. GEE analysis.
Hypothesis 3. Aged individuals, including targeted adults, will experience improved health.				

Will the waiver increase the health of beneficiaries receiving dental care services?	Self-rated oral health function and quality of life.	Sample of Medicaid enrolled individuals 65+ years of age receiving routine dental care and porcelain crowns at University of Utah School of Dentistry	Aged Dental Survey, with OHIP-14, quality of life scale, and CAHPS Dental ratings	Pretest – posttest design with Paired T-test analysis of Aged Dental Survey.
What impacts will the addition of porcelain crowns to the dental services have on the aged beneficiaries?	Self-rated oral health function and quality of life. Satisfaction with dental health services (posttest only)	Medicaid enrolled individuals 65+ years of age receiving routine dental care and porcelain crowns at University of Utah School of Dentistry	Aged Dental Survey, with OHIP-14, quality of life scale, and CAHPS Dental ratings	Descriptive statistics.
Will the waiver improve SUD treatment outcomes for targeted adult beneficiaries?	Length of stay, reduction in SUD use, and treatment completion	Medicaid enrolled individuals 65+ years of age receiving routine dental care and porcelain crowns at University of Utah School of Dentistry who are also participating in SUD treatment	Treatment Episode Data Set (TEDS)	Cohort design comparing post-implementation service utilization. GEE analysis. Descriptive statistics.
What did SUD treatment providers do to encourage beneficiaries to receive eligible dental health services?	Process measure	N/A	Qualitative key informant interviews with SUD treatment providers (see Table 2)	Qualitative analysis

What procedures and processes did the School of Dentistry (SOD) implement to enhance the relationship with SUD treatment providers?	Process measure	N/A	Qualitative key informant interviews with School of Dentistry staff (see Table 2)	Qualitative analysis
Subsidiary Questions:				
What procedures did the School of Dentistry (SOD) implement to encourage beneficiaries to seek dental services through outpatient clinics?	Process measure	N/A	Qualitative key informant interviews with School of Dentistry staff (see Table 2)	Qualitative analysis
What procedures did the SOD affiliate providers do encourage beneficiaries to seek dental services?	Process measure	N/A	Qualitative key informant interviews with SOD affiliate dental service providers (see Table 2)	Qualitative analysis

Table 2: Summary of same key informant interview methods and sample topics / questions

Number of interviews	Individuals interviewed	Interview topics / questions
5	U of U School of Dentistry (SOD) – Administration and Clinic Managers	Waiver impacts / Service system impacts. What procedures and processes did the School of Dentistry (SOD) implement to encourage referrals by publicly funded SUD treatment programs to the SOD? How have those processes changed over time? What would you do differently to improve the referral system? How has the waiver impacted dental services overall and how did the COVID-19 pandemic impact dental services on campus and in community clinics?
15 (3 at each site)	U of U SOD – off-campus clinics Clinic Managers (Greenwood, South Main, St. George, Ogden, and Rose Park)	Waiver impacts / Service impacts. What procedures and processes did your clinic implement to encourage referrals from the community? How have those processes changed over time? What would you do differently to improve the way you provide dental services to the aged population? What are the key considerations you need to address in serving the aged population? How has the waiver impacted dental services overall and how did the COVID-19 pandemic impact dental services at you community clinics?
5	Clinic Managers at SUD clinics that are referring patients for dental services	Waiver impacts. How important is dental service availability to the patients you serve? What impacts are the impacts of dental service availability among your case load? How could the referral system be improved?
40	Dentists and Clinic Managers at U of U SOD affiliate service providers statewide	Waiver impacts / Service impacts. How has increased access to dental services among the aged population impacted your services? What adjustments have you had to make to provide increased dental services to the aged population? What changes have you made over time to improve the services you provide? What additional improvements / adjustments are needed?

D. METHODOLOGICAL LIMITATIONS

SRI staff and researchers from the University of Utah Economics Department will work closely with Utah Medicaid data personnel and Utah Department of Health, the School of Dentistry, and the State Division of Substance Abuse and Mental Health (DSAMH) to ensure the data used for final analysis is as accurate as possible and that errors have been minimized to ensure accurate ID matching between databases.

There were several delays in service implementation due to COVID-19 restrictions which prevented access to dental clinics for routine emergency services. As a result, beneficiary access may have been limited. Costs associated with dental care may have also been impacted due to additional personal protective equipment (PPE) requirements. The COVID-19 pandemic also presented impacts in relation to ISS waiver implementation. Specifically, many dental procedures were not considered essential for a time during changing lock-down periods through the pandemic. This not only delayed access but also delayed and postponed the scheduled course of dental treatment services for some cases requiring more extensive and perhaps acute care. As a result, lower numbers of participants have received services. This may have negative impacts on the implementation of the 1115 Waiver Dental Survey, which was not administered as a baseline measure to date.

Delays were also observed in behavioral health care services (therapeutic treatment facilities, emergency departments, psychiatric hospitals, and residential treatment facilities) due to impacts of the pandemic through temporary closures, service disruptions, or having to adjust quickly to the use of telemedicine.

E. ATTACHMENTS

A. Independent Evaluator

The Social Research Institute (SRI) will conduct all proposed activities in order to fulfill the evaluation requirements of Utah's 1115 PCN Waiver, with specific emphasis on 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.

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, Larissa Shuppy, MStat, Biostatistician, and Jorge Arciniegas, MSBA, Senior Research Analyst.

Mr. Hopkins (.15 FTE) 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 (.05 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. Larissa Shuppy, MStat (.07) is a Biostatistician and has worked on Medicaid evaluation for a year and has experience with large database analysis for DHS.

Jorge Arciniegas, MSBA (.25 FTE) is a Senior Research Analyst with experience conducting program evaluations and other multi-year research studies in a variety of contexts. He has experience with statistical software programs such as SPSS and R, data visualization programs such as Tableau and Domo, and has extensive experience in survey design, maintenance, and implementation.

An interdepartmental consortium has been established between SRI and the University of Utah's Department of Economics. 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.

B. Draft Evaluation Budget

Total Budget Detail Worksheet Summary					
			1/1/2021	to	2/28/2023
Personnel					
Name	**Title/Position**	**Ave Dist. on Contract**	**Requested Salary(a)**	**Requested Fringe Benefits(b)**	**Cost**
Rodney Hopkins	Principal Investigator	4%	$9,261.88	$3,149.04	$12,410.92
Kristen West	Senior Research Analyst	2%	$2,541.84	$1,575.94	$4,117.78
Jorge Archiniegas	Research Analyst	9%	$8,850.45	$5,487.28	$14,337.73
Larrisa Shuppy	Biostatistician I	3%	$3,723.93	$2,308.83	$6,032.76
Philip Osteen	SRI Director	1%	$2,660.04	$904.42	$3,564.46
TBN	Financial Admin Support	1%	$1,365.00	$846.30	$2,211.30
Norm Waitzman	Health Economist	0%	$0.00	$0.00	$0.00
Jaewhan Kim	Health Economist and Statistician	4%	$13,449.89	$4,572.96	$18,022.85
		TOTAL	$41,853.03	$18,844.77	**$60,697.80**
Total Requested Costs					
Project Year					**Cost**
Year 1					$4,939.02
Year 2					$31,718.85
Year 3					$24,039.93
				Total Direct Costs	**$60,697.80**
Project Year					**Cost**
Year 1					$730.97
Year 2					$4,694.39
Year 3					$3,557.91
		Indirect Costs (F&A)(c)		**14.8%**	**$8,983.27**
PROJECT TOTAL COSTS		**$69,681**			

a. Amount shown reflects a merit increase of 3% effective every July 1 for University of Utah faculty and staff.

b. Fringe benefit rates(non-negotiated) are: 34% for faculty, 62% for staff, and 10% for research assistants per the University of Utah HR Benefits Department.

c. The University of Utah has approved Facilities and Administrative (F&A) cost rates negotiated with the cognizant federal agency, the Department of Health and Human Services (DHHS) per DHHS agreement dated 02/04/2016.

C. Timeline and Major Milestones

Data Analysis Periods	Semi-annual Updates	Interim Report	Summative Report
1/2021 – 6/2021	June 30, 2021	June 30, 2021	
7/2021 – 12/2021	January 30, 2022		
1/2022 – 6/2022	June 30, 2022		January, 30, 2023 (draft)
			June 30, 2023 (final)

APPENDIX
DRAFT 1115 WAIVER AGED DENTAL SURVEY

Start of Block: Section 1: Oral Health Impact Profile (OHIP -14)

Q1 What is the name of your dental plan?

- ○ Premier Access
- ○ MCNA Dental
- ○ U of U School of Dentistry
- ○ Other _____

Q2 Your Regular Dentist: This is a dentist you would go to for check-ups and cleanings or when you have a cavity or tooth pain. Do you have a regular dentist?

- ○ Yes
- ○ No

Q3 This section of the survey, asks you to choose the answer that most closely reflects your feelings about your teeth or mouth. **In the last 3 months** . . . .

	Never	Often	Sometimes	Always
Have you had trouble pronouncing any words because of problems with your teeth or mouth?	○	○	○	○
Have you felt that your sense of taste has worsened because of problems with your teeth or mouth?	○	○	○	○
Have you had painful aching in your mouth?	○	○	○	○
Have you found it uncomfortable to eat any food because of problems with your teeth or mouth?	○	○	○	○
Have you been self-conscious because of your teeth or mouth?	○	○	○	○
Have you felt tense because of problems with your teeth or mouth?	○	○	○	○

Has your diet been unsatisfactory because of problems with your teeth or mouth?	○	○	○	○
Have you had to interrupt meals because of problems with your teeth or mouth?	○	○	○	○
Have you found it difficult to relax because of problems with your teeth or mouth?	○	○	○	○
Have you been a bit embarrassed because of problems with your teeth or mouth?	○	○	○	○
Have you been a bit irritable with other people because of problems with your teeth or mouth?	○	○	○	○

Have you had difficulty in doing your usual jobs because of problems with your teeth or mouth?	○	○	○	○
Have you felt that life, in general, was less satisfying because of problems with your teeth or mouth?	○	○	○	○
Have you been totally unable to function because of problems with your teeth or mouth?	○	○	○	○

Q4 In the last 12 months, did you go to a dentist's office or clinic for care?

○ Yes

○ No

Skip To: Q5 If In the last 12 months, did you go to a dentist's office or clinic for care? = Yes
Skip To: Q6 If In the last 12 months, did you go to a dentist's office or clinic for care? = No

Q5 Using any number from 0 to 10, where 0 is the worst dentist possible and 10 is the best dentist possible, what number would you use to rate your experiences with your dentist?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Q6 About You: The next questions ask about your oral health? In general, how would you rate the overall condition of your teeth and gums?

- Excellent
- Very good
- Good
- Fair
- Poor

End of Block: Section 1: Oral Health Impact Profile (OHIP -14)

Start of Block: Section 2: Quality of Life

Q7 The next few questions focus on dental pain and your overall oral health.

	Every day	Most days	Some days	Never
How often do you use over-the-counter drugs to manage dental pain?	○	○	○	○
How often do you use prescription drugs to manage dental pain?	○	○	○	○
How often do you use illicit substances to manage dental pain?	○	○	○	○

Q8 How often has the condition of your teeth or mouth kept you from acquiring the job (or career) you wanted?

- ☐ Always
- ☐ Most of the time
- ☐ Sometimes
- ☐ Rarely

Q9 How often has the condition of your teeth or mouth kept you from forming or developing a relationship?

- ☐ Always
- ☐ Most of the time
- ☐ Sometimes
- ☐ Rarely

Q10 How often has the condition of your teeth or mouth affected how you felt about yourself (self-esteem)?

- ☐ Always
- ☐ Most of the time
- ☐ Sometimes
- ☐ Rarely

Q11 How often has the condition of your teeth or mouth kept you from enjoying food the way you wanted?

- ☐ Always
- ☐ Most of the time
- ☐ Sometimes
- ☐ Rarely

End of Block: Section 2: Quality of Life

Start of Block: Block 3

Q12 What is your age? (nearest year - fill in numerical response)

Q13 Are you male or female?

- ○ Male
- ○ Female

Q14 What language do you mainly speak at home?

- ○ English
- ○ Spanish
- ○ Other _____

Q15 What is the highest grade or level of school you have completed?

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

Q16 Are you of Hispanic or Latino origin or descent?

- ○ Yes, Hispanic or Latino
- ○ No, not Hispanic or Latino

End of Block: Block 3

Start of Block: Section 3: POST-TEST ONLY - Dental Member Satisfaction (CAHPS)

The final few questions of the survey ask about your experiences with the dental services you have received.

Q17 Using any number from 0 to 10, where 0 is the worst dentist possible and 10 is the best dentist possible, what number would you use to rate your experiences with your dentist?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

Q18 Using any number from 0 to 10, where 0 is the worst dental care possible and 10 is the best dental care, what number would you use to rate your experiences with the dental care you received in the last 12 months?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

Q19 Using any number from 0 to 10, where 0 is extremely difficult and 10 is extremely easy, what number would you use to rate how easy it was for you to find a dentist?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

Q20 Using any number from 0 to 10, where 0 is the worst dental plan possible and 10 is the best dental plan possible, what number would you use to rate your experience with your dental plan?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

End of Block: Section 3: POST-TEST ONLY - Dental Member Satisfaction (CAHPS)

C. References

1. Petersen, P.E. (2018). World health organization global policy for improvement of oral health. International Dental Journal (2018) 58, 115-121. doi:10.1922/IDJ_1930Petersen07
2. http://www.ada.org/en/member-center/oral-health-topics/aging-and-dental-health
3. Hanson, G.R., McMillan, S., Mower, K., Bruett, C. T., Duarte, L., Koduri, S., Pinzon, L., Warthen, M., Smith, K., Meeks, H., & Trump, B. (2019). Comprehensive oral care improves treatment outcomes in male and female patients with high-severity and chronic substance use disorders. Journal of the American Dental Association. (In press).
4. Slade GD, Spencer AJ. Development and evaluation of the oral health impact profile. Community Dental Health 1994; 11:3-11.
5. Tugwell P, Bennett KJ, Sackett D, et al. Relative risks, benefits and costs of intervention. In Warren KS, Mahmoud AAF (editors) Tropical and geographic medicine. New York: McGraw Hill; 1985; p. 1097-113.
6. Patrick DL, Bergner M. Measurement of health status in the 1990s. Ann Health 1990; 11:165-83.
7. Locker D. Measuring oral health: a conceptual framework. Community Dental Health 1988; 5:5-13.

UTAH 1115 PRIMARY CARE NETWORK DEMONSTRATION WAIVER

EVALUATION DESIGN

Intensive Stabilization Services

Prepared by: Jorge Arciniegas, MSBA
Rodney W. Hopkins, M.S.
Larissa Shuppy, MStat
Kristen West, MPA
Jaewhan Kim, Ph.D.
Norm Waitzman, Ph.D.

Social Research Institute
College of Social Work
THE UNIVERSITY OF UTAH

INTRODUCTION

Utah's 1115 PCN Demonstration Waiver (hereinafter referred to as "Demonstration") is a statewide waiver that was originally approved and implemented in 2002. Since that time, the Demonstration has been extended and amended multiple times to add additional benefits and Medical programs. This proposal will evaluate the impacts and outcomes of Utah's Intensive Stabilization Services (ISS) Medicaid enrolled Children/Youth program. The following design evaluation will focus specifically on the components of this new waiver amendment.

A. GENERAL BACKGROUND INFORMATION

The state has implemented Stabilization and Mobile Response (SMR) as a component of the Department of Human Services (DHS) System of Care which seeks to ensure youth with acute needs are able to remain in their homes, schools and communities without the need for residential or out-of-home services. The SMR provides crisis response, including mobile response, and stabilization services (the ISS component) which will operate through the end of the current waiver period (from November 2019 – June 2022). Approval to implement was received in November 2019 and implementation began on July 1st, 2020. Components of the amendment include a range of services to children and youth in state custody or those at risk of being placed in state custody and their families. The program consists of a specific set of state plan and home and community-based services. These services are designed to support a customized service approach to keep families together while effectively helping children with emotional and/or behavioral needs thrive in their homes, schools, and communities. The system seeks to engage with high risk families sooner to proactively break cycles and reduce utilization of the emergency department, police for behavioral, developmental, and mental health challenges, and reduce referrals to out-of-home services. Some of the expected outcomes for this tailored approach should result in reduced visits to the emergency room, psychiatric hospitalizations, and residential treatment services.

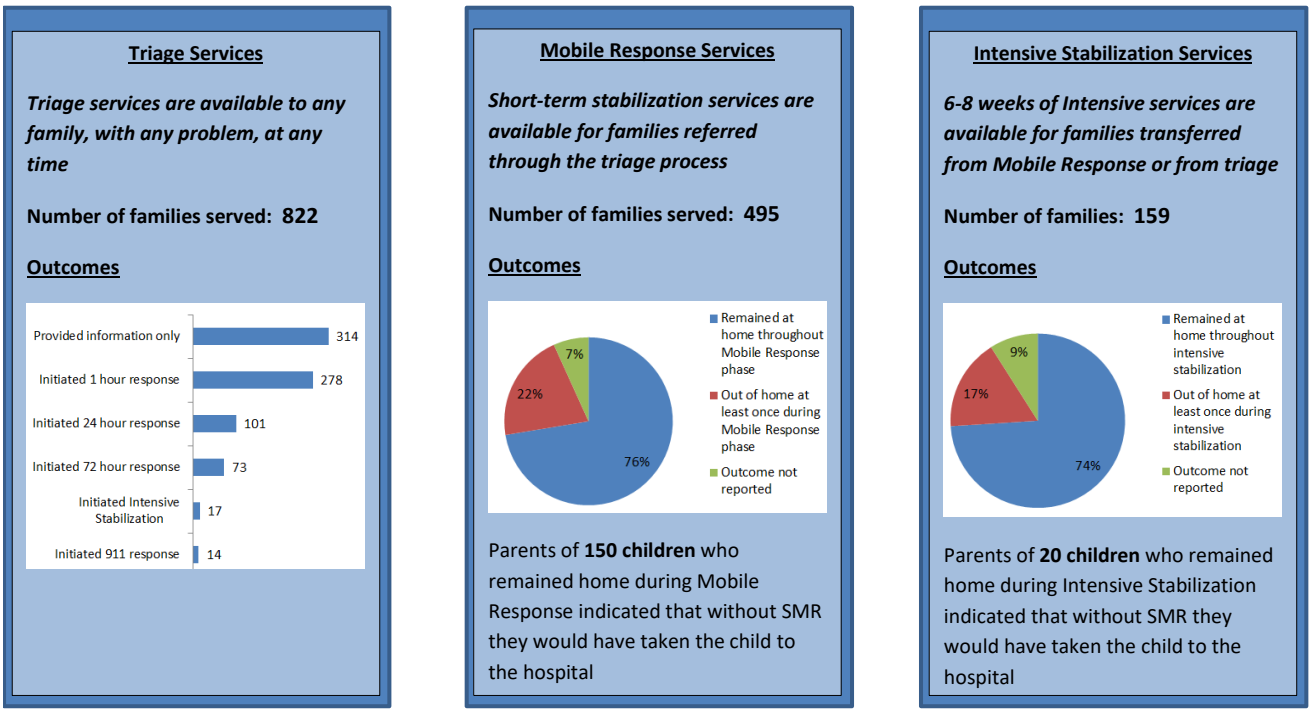
The initial phase (Phone and Triage) consists of telephone consultation where crisis workers provide family support, distress coaching, problem solving, and referral services or information (see schematic in Figure 1 below). If needed, mobile response services may be deployed. The second phase, referred to as Mobile Response, seeks to de-escalate the crisis or existing challenge. A risk assessment is offered as well as a referral to the appropriate (and least restrictive) level of care. Mobile response services provide immediate stabilization by establishing a safety plan, behavior planning, parent/family coaching, and respite care, if needed. The third phase, referred to as Stabilization, is the intervention approved by the ISS waiver and provides a needs-based assessment, with up to 8 weeks of intensive home and community-based stabilization services, and up to 8 weeks of additional follow-up.

Figure 1.

Stabilization and Mobile Response (SMR) Outcome Data

FY 2019 data from Utah's Northern Region

(Box Elder, Cache, Davis, Rich, Morgan and Weber Counties)



There was overlap between Mobile Response and Intensive Stabilization outcomes, in total 155 children were diverted from Emergency Departments or Hospitals in the Northern Region. Similarly, 76% of children in either Mobile Response or Intensive Stabilization avoided interactions with law enforcement. Parents of 54 of those children reported that without SRM, they would have called law enforcement to address the crisis.

The ISS program is described in CMSs Special Terms and Conditions (STCs) # 71 as follows: "this program provides ISS to Medicaid enrolled 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. It is intended to support Utah's System of Care, which is a customized service approach to keep families safely together while effectively helping children with emotional and/or behavioral health needs thrive in their homes, schools, and communities." Additional details regarding eligibility, target group, and needs-based criteria were set forth in STC #73

Eligibility. Medicaid enrolled children/youth under age 21, whose eligibility is derived from the state plan, and are experiencing significant emotional and/or behavioral challenges while in state custody or are at risk of being placed in state custody.

a. **Target Group.** The ISS program is available to Medicaid enrolled child/youth under age 21, who meet the following needs-based criteria that would otherwise be allowable under a 1915 (i) state plan amendment (SPA).

b. **Needs-Based Criteria.** The Medicaid enrolled child/youth is assessed using the ISS Utah Family and Children Engagement Tool (UFACET) evaluation. The Medicaid enrolled child/youth must have a rating of at least "2" or higher indicating the need for assistance with at least one of the following significant emotional and/or behavioral challenges that impair the child's ability to focus and control impulsive behaviors that affect their ability to control or regulate emotions to the point where it interferes with their daily lives and relationships and negatively affects performance at school, work and/or home: short attention span, impulsiveness, aggression, self-injurious behaviors, risk of harm to others, fighting withdrawal, excessive fear or anxiety, hostility, irritability uncooperative, oppositional, and non-compliant with rules or authority figures.

And the child/youth must also meet at least one of the following risk factors:

i. A history of receiving services, or at risk of receiving services, from one or more DHS agencies (child welfare, juvenile justice, service for people with disabilities, mental health or substance abuse, and/or the courts). At risk of receiving services may include one or more of the following:
   (1) The child has juvenile court charges;
   (2) The child has been on probation previously;
   (3) The child/family has an open child protection investigation;
   (4) The child is in the process of eligibility determination for disability services;
   (5) The child has received inpatient psychiatric services and/or has been referred to the Pediatric program at the Utah State Hospital; or
   (6) The child has a mental health condition or substance abuse history.

ii. At risk of being placed into the custody of a state agency, which includes one of the following:
   (1) The child is on probation or has sufficient juvenile court charges that the judge is considering placement with the Department for community placement or secure care;
   (2) The child/family has an open in-home services case with the Division of Child and Family Services based on a finding of dependency, or a child protection investigation, and placement of the child(ren) in protective custody is being recommended;
   (3) The child has been in custody previously under similar circumstances;
   (4) The child is in the process of eligibility determination for disability services and the family is struggling to provide care for them;
   (5) The child has a serious mental health condition or substance use history and the family is struggling to continue care for them;
   (6) The child has experienced significant disorders post adoption; or
   (7) The child has experienced multiple failed private placements.

iii. At risk of reverting back to a higher level of care due to behavioral or emotional concerns;
iv. Has been involved in the Juvenile Competency process;
v. Has been frequently utilizing hospital emergency services to manage behavioral, developmental, and/or mental health challenges; or
vi. Has been referred to the DHS High Level Staffing Committee.

Table 1 below lists a summary of services that are included.

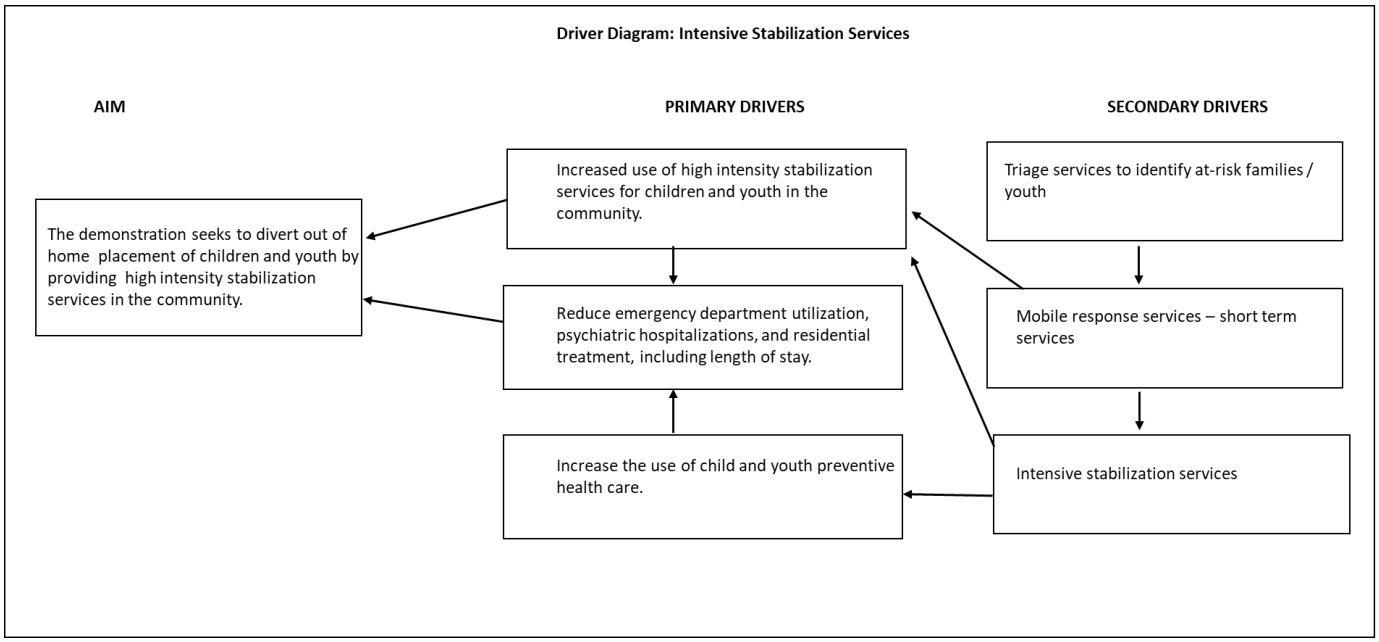
Table 1: Summary of services included in waiver demonstration

Bundled Crisis Stabilization Services	State Plan or Non-State Plan Services
Psychiatric Diagnostic Evaluation	State Plan Service
Mental Health Assessment by a Non-Mental Health Therapist	State Plan Service
Psychotherapy with Patient and/or Family Member	State Plan Service
Family Psychotherapy with Patient Present and Family Member Psychotherapy without Patient Present	State Plan Service
Group Psychotherapy and Multiple Family Group Psychotherapy	State Plan Service
Psychotherapy for Crisis	State Plan Service
Psychotherapy with Evaluation and Management (E/M) Services	State Plan Service
Therapeutic Behavioral Services	State Plan Service
Psychosocial Rehabilitative Services	State Plan Service
Peer Support Services	State Plan Service
Case/Care Management	State Plan Service
Non-emergency medical transportation	State Plan Service
Non-medical transportation	Currently Not Covered in State Plan
Respite	Currently Not Covered in State Plan

B. EVALUATION QUESTIONS & HYPOTHESES

The primary goal of the ISS waiver is to ensure that state plan and home community-based services (listed above in Table 1) are provided to youth with acute behavioral and mental health care needs so they can remain in their homes, schools and communities without the need for residential or out-of-home services. The secondary goal of the waiver is to demonstrate that providing these services will decrease Emergency Room (ER) utilization, psychiatric hospitalizations, and residential treatment services, as well reduce the length of stay in these services. Additionally, the other services provided aim to positively impact the child/youth's physical health in terms of comprehensive care. In doing so, the waiver amendment will keep children and youth who are at risk in the community from being placed in state custody and being removed from their families, schools and communities. Further, the waiver will also help children in custody return to their families or become independent more quickly. This is illustrated in the driver diagram below. This evaluation design will describe how the University of Utah's Social Research Institute (SRI) and Department of Economics will evaluate the implementation of these waiver amendments. The driver diagram that follows illustrates the relationship between the outcomes and activities of the waiver amendment component. Table 3

provides details of waiver hypothesis, research questions, outcome measures, populations involved, data sources, and analytic methods.



C. METHODOLOGY

1. Evaluation Design

Considering the characteristics (e.g. distribution) of the outcomes and multiple measures of the outcomes of the same subjects over time, generalized estimating equations (GEEs) will be used to evaluate the effects of the ISS. GEEs are flexible for different types of outcomes (e.g. continuous, binary and counts) and will be appropriate to evaluate the impact of the ISS implementation. The outcomes will be aggregated over quarterly intervals. Two groups (Target cohort and Earlier cohort) will be controlled in the regression with a dummy variable as the earlier cohort as a reference group. If the two groups are different in the baseline characteristics (e.g. age, % of female/male), the inverse probability weight will be calculated to balance the baseline characteristics of the two groups. Then, this calculated weight for individuals will be applied to GEEs, generating a weighted generalized estimating equations (GEEs). Interaction effects between baseline covariates and the group dummy variable (Target cohort vs. Earlier cohort) will be examined to investigate potential effect modification. An unstructured covariance matrix will be assumed here to avoid imposing specific assumptions concerning distribution of the random effects. We will adjust for relevant factors (including number of COVID cases) that could affect the outcomes.

$$L(Y_{it}) = X'_{it}\,\beta$$

, where L is a link function, i represents subjects, t indicates time (e.g. quarter), β is a k by 1 vector of regression coefficients including β_0, and X'_{it} indicates a n by k matrix with covariates. This X'_{it} includes baseline factors of subjects, a dummy variable for the Target cohort (vs. the Earlier cohort), time dummies, and

number of COVID cases (per 100,000) or percent positivity by Salt Lake Region/Eastern Region vs. Northern Region/Southwest Region) in every quarter.

2. Target and Comparison Populations

The target population that has been identified for this design are children or youth in state custody or those at risk of being placed in state custody. Specifically, this will include Medicaid enrolled children under the age of 21 who are recipients of services, or at risk of receiving services, from two or more Utah Department of Human Service (DHS) agencies. These individuals are experiencing a significant variety of health challenges, including meeting at least one of the following:

- At risk of being placed into the custody of a state agency.
- Behavioral or emotional concerns that prevent the child/youth from returning home or to a permanent community-based placement OR place the child/youth at risk of reverting back to a higher level of care.
- Has been involved in the Juvenile Competency process.
- Has been referred to the DHS High Level Staffing Committee.

3. Evaluation Period

The evaluation period will include the approved waiver period of November 2019 to June 2022. The 1115 waiver amendment authorizing ISS was approved in November 2019, however, implementation (benefit eligibility) of ISS under the waiver began July 1, 2020. However, DHS began implementation of the SMR in the fall of 2019 for all clients, regardless of Medicaid eligibility (see DHS preliminary data in Figure 1 above) in the Northern Region (6 counties) and followed with implementation in the Southwest Region (5 counties) beginning in January 2020. Salt Lake County followed in the fall of 2020 with the Eastern Region beginning with 2 counties (Carbon and Emery) in early 2021 with 2 (Grand and San Juan) implementations delayed to early 2022. Western Region (4 counties) implementation is to-be-determined.

4. Evaluation Measures

Multiple performance measures have been identified for this waiver evaluation. First, it is anticipated that the waiver will *increase* supportive child/youth intervention service utilization. Outcome evaluation measures proposed here focus on waiver approved stabilization and state plan and home and community-based services including: diagnostic and mental health assessment, patient, family, and group psychotherapy, crisis therapy, psychosocial rehabilitative, and case management services. It is anticipated that Medicaid expenditures for these services will increase in support of the first waiver objective.

Second, this increased capacity to serve children and youth with more intensive community-based services should lead to a reduction in levels of more expensive behavioral health services such as crisis mental health visits to the emergency room and psychiatric hospitalizations, as well as residential treatment services. Evaluation measures for this objective anticipate a reduction of emergency department utilization, psychiatric hospitalizations, and residential treatment services, including reducing the length of stay. Standardized measures that will be used include recognized (CMS's Core Measures) child and adult core set measures listed in Table 2 below and discussed in section 5 Data Sources that follow.

Additionally, several process measures will be used to evaluate the implementation of the ISS program which will provide broader context to understanding the impact of the waiver throughout the state. These process questions/measures are included in Table 3.

5. Data Sources

Data sources to be used in this design will include UDOH's Medicaid claims data, and specifically consisting of select measures from CMS's Behavioral Health Core Set and Child Health Care Quality Measures, including those variables listed in Table 2 below. The second data set will include de-identified, but linked data from DHS participants in the Utah SMR system (see SMR data elements in Appendix E). This will provide detailed descriptive data on program service provision. Specifically, this data will include quantitative service and case outcomes from families and participants. Qualitative data will be collected by in-depth interviews with DHS SMR program and case managers.

Table 2: Summary of standard measures (variables to be measured) for Utah ISS evaluation.

NQF #	CMS Core Set	Measure Steward	Measure Name	Data Collection Method
0108	Child	NCQA	Follow-Up Care for Children Prescribed Attention-Deficit/Hyperactivity Disorder (ADHD) Medication (ADD-CH)	Administrative
0418*/ 0418e *	Child	CMS	Screening for Depression and Follow-Up Plan: Ages 12 to 17 (CDF-CH)	Administrative
0418*/ 0418e *	Adult	CMS	Screening for Depression and Follow-Up Plan: Age 18 and Older (CDF-AD)	Administrative
0576	Child	NCQA	Follow-Up After Hospitalization for Mental Illness: Ages 6 to 17 (FUH-CH)	Administrative
0576	Adult	NCQA	Follow-Up After Hospitalization for Mental Illness: Age 18 and Older (FUH-AD)	Administrative
2801	Child	NCQA	Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics (APP-CH)	Administrative
3488	Adult	NCQA	Follow-Up After Emergency Department Visit for Alcohol and Other Drug Abuse or Dependence (FUA-AD)	Administrative
3489	Adult	NCQA	Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)	Administrative
0004	Adult	NCQA	Initiation and Engagement of Alcohol and Other Drug Abuse or Dependence Treatment (IET-AD)	Administrative
NA	Child	CMS	Percentage of Eligibles Who Received Preventive Dental Services (PDENT-CH)	Administrative (CMS - 416)

6. Analytic Methods

A combination of quantitative and qualitative statistical methods will be used for the analysis. Specific measures utilized for each hypothesis are detailed in Table 3. Medicaid claims data and DHS SMR case data for each participant will be analyzed by the targeted variables annually. The comparison group will be created

via the cohort analysis comparing ISS implementation by region and over time to isolate effects of the waiver implementation. The analysis will be based on building a predictive model to determine if the intervention hypothesis is statistically significant in predicting the probability that children and youth will remain at home and receive needed services through community resources or be placed in care or continue to receive high-cost services. Since early-stage implementation varied, appropriate variables will be used that will accurately assess outcomes. The table below outlines the time period for each evaluation measure. For example, to answer the question, “Will the waiver increase follow-up after hospitalization from mental illness for children and those under 21?”, FUH-AD will be measured using the CMS Core Set measures NQF 0576 during the 8- week follow-up period. Other measures will be evaluated over the entire 16-week period.

Table 3: Summary of Hypothesis, Research Questions, Outcome Measures, Populations, Data Sources, and Analytic Approaches - Intensive Stabilization Services

Hypothesis 1. The demonstration waiver will increase utilization of high intensity crisis stabilization services.				
Research Question	**Outcome measures used to address the research question**	**Sample or population subgroups to be compared**	**Data Sources**	**Analytic Methods**
Will the waiver increase depression screening and follow up planning?	CMS Core Set measures NQF 0418 – 0418e	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
Will the waiver increase follow-up care for children prescribed ADHD medication?	CMS Core Set measures NQF 0108	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
Will the waiver increase the use psychosocial care for children and Adolescents on Antipsychotics (APP-CH)	CMS Core Set measures NQF 2801	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
Will the waiver increase follow-up after hospitalization after mental illness for children and those under 21 (FUH-AD)	CMS Core Set measures NQF 0576	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups 8 weeks follow up period
Will the waiver increase follow-up after emergency department visit for Alcohol and Other Drug Abuse or Dependence (FUA-AD)	CMS Core Set measures NQF 3488	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups 8 weeks follow up period
Will the waiver increase follow-up after emergency department visit for mental illness (FUM-AD)	CMS Core Set measures NQF 3489	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups 8 weeks follow up period
Will the waiver increase the percent	Process	At-risk youth population	DWS – ISS data	Descriptive statistics Over entire 16-week period

of at-risk youth to remain at home?		Cohort group		
How do ISS services vary between initial 8-week period and (up to 8) follow-up period?	Process	At-risk youth population Cohort group	DWS – ISS data	Descriptive statistics Over entire 16-week period
How did the waiver increase the efficiency of referrals to community-based services?	Process	DWS key informants	Qualitative interviews	In-depth interview with ISS case worker / key leaders Over entire 16-week period
Hypothesis 2. The demonstration waiver will decrease the utilization of behavioral health services in the ED, psychiatric hospitals, and residential treatment services.				
Will the waiver reduce the number of ED visits for behavioral health issues?	Number of ED visits for behavioral health services. Average cost of ED behavioral health services.	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
Will the waiver reduce the number of psychiatric hospitalizations?	Number of psychiatric hospitalizations.	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
Will the waiver reduce the length of stay in psychiatric hospitals?	Number of days in psychiatric hospitalizations.	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
Will the waiver reduce the length of stay in residential treatment?	Number of days in residential treatment.	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
How did the waiver contribute to shifting service delivery to community-based services?	Process	DWS key informants	Qualitative interviews (see Table 4)	In-depth interview with ISS case worker / key leaders Over entire 16-week period
Hypothesis 3. The demonstration waiver will increase preventive health and dental health care services.				
Will the waiver increase the number of child and adolescent's well-care visits (preventive health care services) provided?	Number of individuals with a preventive care visit. NQF 1516	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period

Will the waiver increase the number of preventive dental care services provided?	Number of individuals with a preventive dental care visit. (PDENT-CH) CMS-416	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
How did the SMR model and case management facilitate the increased use of preventive health and dental care services?	Process	DWS key informants	Qualitative interviews (see Table 4)	In-depth interview with ISS case worker / key leaders Over entire 16-week period
Hypothesis 4. The demonstration waiver will increase the availability of transportation and support services.				
Did the waiver successfully increase the availability of non-emergency medical transportation?	Increased utilization of NEMT	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
Did the waiver successfully increase the availability of non-medical transportation?	Increased utilization of non-medical transportation	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period
Did the waiver increase the number of respite care services provided?	Increased number of families with a respite care service?	At-risk youth population Cohort group	Medicaid claims	Multi-variate regression analysis comparing cohort groups Over entire 16-week period

Table 4: Summary of key informant interview methods and sample topics / questions

Number of interviews	Individuals interviewed	Interview topics / questions
6 in each region	Crisis workers, mobile response team members,	Waiver impacts / How did the waiver contribute to shifting service delivery to community-based services?
3 – 4 service providers in each region / 1 statewide provider	Case workers / case managers / community-based service providers	Waiver impacts – service delivery / Please describe the various types of community-based services that were used. Which service (s) were used the most in your region? Did these community-based services change over time? Why or why not?
3 - 4 service providers in each region / 1 statewide provider	Case workers / case managers / home-based service providers	Waiver impacts – service delivery / Please describe the specific home-based services that were used. Which service(s) were used the most in your region? Did these home-based services change over time? Why or why not?

4 in each region	Case workers / case mangers	Waiver components / What factors contributed to the success of the 6-8-week intensive service vs. 6-8 week follow- up services?
2 in each region 2 state staff	State and Region ISS leadership	Waiver impacts / What changes were made during early implementation that contributed to the success of the waiver? What evidence do you have that suggests these changes were needed?
2 in each region 2 state staff	State and Region ISS leadership	Waiver impacts / What are the most positive outcomes of the waiver to-date? What challenges or drawbacks have you dealt with in waiver implementation and how have those been resolved?

D. METHODOLOGICAL LIMITATIONS

There are potentially several limitations for the independent evaluation. First, the rollout of this intervention began in the Northern Region of Utah and then expanded to the Southwest Region. Although data was collected by DHS throughout the pilot implementation, the number of participants in these two geographical areas was much lower than the numbers anticipated in the target areas. As a result, a source of potential bias that may enter into this cohort study could be due to loss of participants over time. With a high-risk population this may be a challenge, although preliminary data from the initial implementation suggests a high percent of participants are accounted for. A general rule of thumb requires that the loss to follow-up rate does not exceed 20% of the sample [1]. Another challenge has to do with the changing nature of the intervention over time, beginning with the initial pilot implementation in the Northern Region. Some of the changes were based on the delay in ramping up all aspects of the intervention to comply with high fidelity implementation. Other changes took place as a result of DHS utilizing its own continuous quality improvement (CQI) system to guide early implementation. This included utilizing feedback received from both consumers and DHS staff to adapt the intervention delivery so that improvements were made in referrals and connecting families in need to available community resources. Given that some of these modifications occurred in real-time prior to ISS waiver authorization, documenting and quantifying the nature and scope of these changes will be conducted retrospectively.

The COVID-19 pandemic also presents impacts in relation to the ISS waiver implementation. Specific techniques to account for this were listed in the revised evaluation design (see Evaluation Design above) and include examining positivity rates by region on a quarterly basis throughout 2020, since SMR pilot implementation data were collected during early-stage operations prior to the beginning of the pandemic impacts in Utah.

Due to the lock-down associated with the pandemic, lower numbers of participants began receiving services. The SMR service delivery system experienced delays as new policies and practices were put in place to respond to the conditions created by COVID-19. Similarly, the broader health care system, including behavioral health care services (therapeutic treatment facilities, emergency departments, psychiatric hospitals, and residential treatment facilities) were all impacted by the pandemic by either temporary closures, service disruptions, or having to adjust quickly to the use of telemedicine. In addition to the decreased service utilization there were also obvious important cost implications associated with these changes.

Additionally, specific sensitivity analyses will be conducted to inform the effect of study design on impact estimates. First, the evaluator will re-estimate key impacts of the revised cohort design in order to determine whether this approach—using the target cohort and earlier cohort (as a reference group) and GEEs with dummy variable—substantively influence the impact estimates. Second, given that regression models are being employed, the evaluator will test the sensitivity of key impact estimates to different modeling choices such as functional form. If a high degree of sensitivity is found, then an explanation will be required that informs the credibility of the estimates.

Finally, the inclusion of a falsification test may help increase confidence in the cohort design by providing evidence that the design isolates the impact of the ISS activities from other factors that might affect key outcomes. This will be done by selecting an outcome measure that would not be expected to change due to the demonstration and then estimate that impact of the demonstration using the cohort design on that outcome. For example, preventive dental service utilization could be used as a placebo outcome since it is not likely to be affected by the demonstration.

D. 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.

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, Larissa Shuppy, MStat, Biostatistician, and Jorge Arciniegas, MSBA, Senior Research Analyst.

Mr. Hopkins (.14 FTE) 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 (.03 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. Larissa Shuppy, MStat (.07) is a Biostatistician and has worked on Medicaid evaluation for a year and has experience with large database analysis for DHS.

Jorge Arciniegas, MSBA (.25 FTE) is a Senior Research Analyst with experience conducting program evaluations and other multi-year research studies in a variety of contexts. He has experience with statistical software programs such as R, conducting statistical analyses across projects utilizing various descriptive and predictive methods such as regression, survival analysis, natural language processing, and other machine learning methods.

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., 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. (.04 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.

B. Draft Evaluation Budget

Total Budget Detail Worksheet Summary					
			7/1/2021	to	2/28/2023
Personnel					
Name	**Title/Position**	**Ave Dist. on Contract**	**Requested Salary(a)**	**Requested Fringe Benefits(b)**	**Cost**
Rodney Hopkins	Principal Investigator	17%	$27,968	$9,509	$37,477
Jorge Archiniegas	Senior Research Analyst	14%	$13,876	$8,603	$22,479
Larrisa Shuppy	Biostatistician I	10%	$9,117	$5,652	$14,769
Kristen West	Senior Research Analyst	2%	$2,291	$1,420	$3,711
Norm Waitzman	Health Economist	4%	$11,909	$4,049	$15,958
Jaewhan Kim	Health Economist and Statistician	8%	$24,059	$8,180	$32,239
		TOTAL	$89,220	$37,413	**$126,633**
Travel					
	Project Year				**Cost**
	SFY22				$1,029
	SFY23				$1,258
				TOTAL	**$2,287**
	Project Year				**Cost**
	SFY22				$49,532
	SFY23				$79,388
				Total Direct Costs	**$128,920**
	Project Year				**Cost**
	SFY22				$7,331
	SFY23				$11,749
		Indirect Costs (F&A)(c)		**14.8%**	**$19,080**
PROJECT TOTAL COSTS $148,000					

a. Amount shown reflects a merit increase of 3% effective every July 1 for University of Utah faculty and staff.
b. Fringe benefit rates(non-negotiated) are: 34% for faculty, 62% for staff, and 10% for research assistants per the University of Utah HR Benefits Department.
c. The University of Utah has approved Facilities and Administrative (F&A) cost rates negotiated with the cognizant federal agency, the Department of Health and Human Services (DHHS) per DHHS agreement dated 12/16/21.

C. Timeline and Major Milestones

Data Analysis Periods	Semi-annual Updates	Interim Report	Summative Report
1/2021 – 6/2021	June 30, 2021	June 30, 2021	
7/2021 – 12/2021	January 30, 2022		
1/2022 – 6/2022	June 30, 2022		January, 30, 2023 (draft)
			June 30, 2023 (final)

D. References

1. J Conato, N Shah, RI Horwitz. Randomized, controlled trials, observational studies, and the hierarchy of research design. N Engl J Med, 2000.

E. Stabilization and Mobile Response/Mobile Crisis Outreach Team Data File Format and Definitions

Stabilization and Mobile Response

Mobile Crisis Outreach Team

File Format and Definitions

FY2021

Effective 7/1/2020

Department of Human Services

Created 6/12/2018

Change Log

DATE	AUTHOR	VERSION	NOTES
3/31/2020	Kristin Swenson	1.0	Combined SMR/MCOT

Introduction

This data specification is for information gathered by Local Mental Health Authorities contracted by Department of Human Services to provide regional administration for the Stabilization and Mobile Response (SMR) program. The data specification is also for information gathered by Local Mental Health Authorities who are providing Mobile Crisis Outreach Team (MCOT) services. Comma-separated values (CSV) files, containing all records from the previous month, will be transferred from the regional administrator (SMR) or from Local Authorities (MCOT) to Division of Substance Abuse and Mental Health on the 15th day of each month.

CSV File Generation Guidelines

1. All files should be submitted without a header row.

2. Non-required fields must either be blank or contain a valid value.

3. Commas are not allowed within the data in any field. (Commas are column delimiters.)

4. Do not use quotation marks in any fields.

5. Do not insert blank lines between rows of data.

File Processing Sort Rules

Sort as follows with subsequent sort rules applying within the 'parent' sort rule:

-Sy_trans_type_cd (Delete, Add and then Change)

-ProviderID (numeric ascending)

-SMR_ClientID (alphanumeric ascending)

-Provider_ClientID (alphanumeric ascending)

-EventDate (descending)

Filename Protocol

Uploaded filenames will be formatted to identify the service (SMRMCOT), followed by the two digit mental health provider ID, followed by the fiscal year and quarter, followed by the year and date of the upload, followed by the daily sequence (upload attempt number for the given date), with underscore separators. The file name format is SMRMCOT_*NN_YYYYQQ_YYYMMDD_01.CSV.* A filename example for a first file sent from Davis Behavioral Health during January of 2020 is SMRMCOT_03_2020Q3_20200105_01.csv.

Upload will only be allowed only if a filename is valid. At this time, only Davis Behavioral Health (03) and Southwest Behavioral Health (08) may submit SMR data. All providers with MCOT services may submit MCOT data.

Definitions

Identified Client

SMR--Calls to the SMR phone line may be made by parents, caregivers or other concerned adults. SMR callers must identify a child, age 21 or younger, as the identified client who is the focus of the intervention.

MCOT--Identified Client for MCOT may include anyone in crisis across the lifespan that receives services from MCOT.

Event

SMR--An SMR event is a transaction between a staff member, or contracted provider, of an SRM regional administrative agency and the identified SMR client or identified client's caregiver(s). Every call to the SMR phone line is an event, as is every mobile response, stabilization and post-stabilization contact associated with the SMR program.

MCOT--Event for MCOT entails either a mobile crisis response from a team including a licensed mental health clinician and a peer support specialist or equivalent, or a stabilization service that is offered for a minimum of 60 days post-crisis.

Resolution

At the end of each SMR event, the staff member or contracted provider will code the event as resolved or unresolved. Events coded as resolved indicate that no further action is anticipated by the SMR team. Unresolved events are open cases in which Mobile Response teams are deployed, referrals are made to Stabilization services or Stabilization services are on-going.

Phase of Engagement

- Triage (SMR only)—any phone call made to the SMR line about an identified client not yet referred to either Mobile Response or Stabilization services or about a previously identified client who was coded as Resolved at the last event.
- Mobile Response—SMR: any open-case event related to an identified client after the identified client received a triage code initiating a Mobile Response service (i.e., Emergent crisis, Urgent response or Routine response) and prior to any Stabilization events.
  MCOT: any MCOT service provided as a crisis response.[1]
- Stabilization (SMR only)—any open-case event in which the identified client has been referred to Stabilization services but has not yet entered the Post-Stabilization phase.

[1] MCOT events are always coded as occurring during the Mobile Response phase.

- Post-Stabilization—SMR: any open-case event after the first event in which the identified client receives a code of Post-Stabilization and before a subsequent event is marked as resolved.

  MCOT: any post-crisis stabilization services.

Emergency Indicator

This indicator should be set to yes when a service is provided on an immediate or unscheduled basis and deals with a psychological emergency of a patient. Routine informational calls handled by crisis staff are not to be reported as crisis/emergency. Examples of behaviors targeted by crisis/emergency services are suicide attempts, violent family fights, panic attacks, uncontrollable behavior and other behaviors that are a threat to self or others.

Client Name Validation Rules:

Same as DSMH mental health spec FY2020

Use legal names rather than nicknames

SMR file will have fields for the following parts of a name:

- Last name
- First name
- Middle name

Names can be entered in either upper case, lower case, or a mix.

Spaces: Allowed in first and middle names. NOT allowed in last names.

Example:	*Mc Donald*	*should be entered as*	*McDonald*
	D La Cruz	*should be entered as*	*DeLaCruz*

Example: Le Ann Mary Ann Mc Cartney

Can be entered as:
First: Le Ann
Middle: Mary Ann
Last: McCartney

Hyphens: Allowed in first, middle, and last names. The hyphen is only allowable punctuation character allowed.

Examples:		
(last name) Smith-Jones	*should be entered as*	*Smith-Jones*
(first name) Jo-Ann	*should be entered as*	*Jo-Ann*
(last name) O'Rilley	*should be entered as*	*ORilley*
(last name) St. James	*should be entered as*	*StJames*

(first name) D'Ann should be entered as Dann or D Ann

Numeric characters: Not allowed in any names

First name is an initial: The initial can be entered in the first name filed but no periods.

Middle name: If there is no middle name or it is not available, leave blank. Supply the full legal middle name where possible and the middle initial if that is all that is available. Periods are not allowed.

Second name: Enter the second name in the middle name filed

Example: J. Edgar Hover
First name: J (no period)
Middle name: Edgar
Last name: Hoover

Titles, Prefixes, Suffixes: not allowed

Naming rules synopsis:

Character	Last Name	First and Middle Names
Alpha characters	Allowed	Allowed
Hyphens	Allowed	Allowed
Spaces	Allowed	Not allowed
Apostrophe	Not allowed	Not allowed
Numeric characters	Not allowed	Not allowed

Required for SMR or MCOT Only	Field	Field Name	Description	Codes/Allowed Values	Format	Required	Notes
	1	SMR_Flag	Identifies the service recipient as an SMR client (if Yes) or an MCOT client (if no)	Y=Yes N=No	string(2)	Yes	
SMR ONLY	2	SMR_ClientID	Client identifier unique to SMR services	String	varchar(15)	No	Required if (1)SMR_Flag=Y(es) Client ID to be unique within SMR services. It must not be reassigned to another SMR client.
MCOT ONLY	3	Provider_ClientID	Client identifier unique to service provider	String	varchar(15)	No	Required if (1)SMR_Flag=N(o)
	4	Service_event_ID	Provider event record ID number	String value that uniquely identifies a client event for the provider.	string(50)	Yes	Use a unique ID for every event record.
	5	FirstName	First name of the individual who is the focus of the intervention.	Only characters specified in MH Data Definitions	string(25)	Yes	See client name validation rules.
	6	LastName	Last name of the individual who is the focus of the intervention.	Only characters specified in MH Data Definitions	string(30)	Yes	See client name validation rules.
	7	MiddleName	Middle name of the individual who is the focus of the	Only characters specified in MH Data Definitions	string(25)	No	See client name validation rules.

			intervention.				
	8	SSN	Social Security Number of the Individual who is the focus of the intervention.	000-00-0000=Unknown 999-99-9999=None	string(11) NNN-NN-NNN	No	Required only if (16)Stage_of_Engagment>2 Or if (1)SMR_Flag=N(o) Valid SSNs include all but 123-45-6789 or 099-99-9999. Valid SSNs cannot be utilized by more than 1 client.
	9	Gender	Gender of the individual who is the focus of the intervention.	1=Male 2=Female 3=Non-binary	number(1)	Yes	
	10	DOB	Date of birth of the individual who is the focus of the intervention.	Legal date	string(10) MM/DD/YYYY	Yes	

	11	**County**	**County of residence at time of initial call**	**001=Beaver** **003=Box Elder** **005=Cache** **007=Carbon** **009=Daggett** **011=Davis** **013=Duchesne** **015=Emery** **017=Garfield** **019=Grand** **021=Iron** **023=Juab** **025=Kane** **027=Millard** **029=Morgan** **031=Piute** **033=Rich** **035=Salt Lake** **037=San Juan** **039=Sanpete** **041=Sevier** **043=Summit** **045=Tooele** **047=Uintah** **049=Utah** **051=Wasatch** **053=Washington** **055=Wayne** **057=Weber** **097=Unknown**	**string(3)**	**No**	**Required only if (16) Stage_of_Engagment=1** **or if SMR(1)=N(o)**

	12	**Race**	**Race of the individual who is the focus of the intervention.**	**01=Alaskan Native 02=American Indian 03=Asian 04=Native Hawaiian or Other Pacific Islander 05=Black/African American 06=White 07=Unknown 08=Two or more races 00=Other single race**	**number(2)**	**No**	**Required only if (16) Stage_of_Engagment>1**
	13	**Hispanic**	**Hispanic or Latino origin of the individual who is the focus of the intervention.**	**Y=Yes N=No 97=Unknown**	**string(2)**	**No**	**Required only if (16)Stage_of_Engagment>1**

	14	**Language**	**Preferred language of the family who is the focus of the intervention.**	**00-English** **01=American sign language** **02=Arabic** **03=Bosnian** **04=Cambodian** **05=Chinese** **06=Croatian** **07=Farsi** **08=French** **09=Greek** **10=German** **11=Italian** **12=Japanese** **13=Kurdish** **14=Laotian** **15=Native American: Navajo** **16=Native American: Ute** **17=Russian** **18=Samoan** **19=Serbian** **20=Somali** **21=Spanish** **22=Swahili** **23=Tibetan** **24=Tongan** **25=Vietnamese** **26=Zulu** **27=Other** **97=Unknown**	**string(2)**	**No**	**Required only if (16) Stage_of_Engagment>1**

	15	Insurance	Medical insurance category of the individual who is the focus of the intervention.	01=Private insurance 03=Medicare 04=Medicaid 06=Other 07=Unknown 08=None 09=CHIP	number(2)	No	Required only if (16) Stage_of_Engagment>1
	16	Stage_of_Engagement	Phase of SMR engagement when service provided	01=Triage 02=Mobile crisis outreach 03=Stabilization 04=Follow up	number(2)	Yes	If (1)SMR_Flag=N(o), Stage_of_Engagement(16) must =2 or 4
SMR ONLY	17	Resolved	At the end of the event, was the case closed (resolved=Yes) or were further actions expected (resolved=No)?	Y=Yes N=No	string(2)	No	Required only if (1)SMR_Flag=Y(es)
SMR ONLY	18	Triage_Assessment	Emergency, Emergent crisis, Urgent response, Routine response, Stabilization only, Information only, blank	01=911 emergency 02=Emergent crisis 03=Urgent response 04=Routine response 05=Stabilization only 06=Information only 98=Not Applicable	number(2)	No	Required only if (16) Stage_of_Engagment=1
	19	ProviderID	Provider Identifier (DSAMH Facility Identifier or other created for contractors)	State assigned MH Provider ID	string(15)	Yes	Identifies the provider of the service using the state assigned provider ID. IDs are always at least 2 characters in length.
	20	EventDateTime	Date and time of service	Legal date and time	string(19) MM/DD/YYYY hh:mm:ss	Yes	

	21	**EventDuration**	**Duration of service in hours**	**Number of hours**	**Number(6,2)** **00NN.NN**	**Yes**	Hours may be expressed as decimal fractions (i.e., one hour and 45 minutes=1.75), rounding to the nearest quarter of an hour.
MCOT ONLY	**22**	**ResponseTimeToDestination**	**Elapsed time from request to arrival at destination**	**Numbers**	**Number(6,2)** **00NN.NN**	**No**	**Required only if (1) SMR_Flag=N(o) and (16) Stage_of_engagement =2** Hours may be expressed as decimal fractions (i.e., one hour and 40 minutes=1.75), rounding to the nearest quarter of an hour.
	23	**Setting**	**Setting in or through which service was provided**	**01=Phone** **02=Client's home** **03=In office** **04=In community** **05=Other**	**number(2)**	**Yes**	
	24	**Emergency Indicator**	**Emergency Indicator**	**Y=Yes** **N=No** **97=Unknown**	**string(2)**	**Yes**	**See Emergency Indicator description under Definitions.**

	25	Initiator_of_episode	person who made the initial call for SMR or Source of call-out for MCOT	01 = Parent 02 = Child 03 = Other family member or friend 04 = Physician or medical facility 05 = Social or community agency 06 = Educational system 07 = Courts, law enforcement, correction agency 08 = Private psychiatric/mental health program 09 = Public psychiatric/mental health program 10 = Clergy 11 = Private practice mental health professional 12= Stabilization worker 13=Utah Crisis Line 14=Dispatch/911 15 = Other persons or organizations 97 = Unknown 98= Not Applicable	number(2)	No	Required only (1) SMR_Flag = Y(es) and (16) Stage_of_Engagment=1 Or if (1)SMR_Flag=N(o) and (16) Stage_of_Engagement=2
SMR ONLY	26	UFACET_completed	Was the UFACET completed during this service?	Y=Yes N=No	string(2)	No	Required only if Stage_of_Engagment=3
SMR ONLY	27	Outcome_assessment_completed	Was the Outcome assessment completed during this service?	Y=Yes N=No	string(2)	No	Required only if Stage_of_Engagment=3

	28	Remained_at_home	At the end of the service, where was the individual?	01=At home 02=Hospital/ER 03=Residential 04=Detention/Jail 05=Emergency shelter/Homeless shelter 06=Other family 07=Foster/Proctor placement 08=Individual went missing 09=Other 10=Access center/23 hour crisis bed/receiving center 11=Detox (outside of ER) 12=Remained in place	number(2)	No	Required if (1)SMR_Flag=Y(es) And Stage_of_Engagement>1 and Setting >1 Or if (1)SMR_flag=N(o) and Stage_of_Engagement=2
SMR ONLY	29	Law_enforcement_involved	Between end previous service (if applicable) and the end of current service, what was the interaction with law enforcement?	01=No law enforcement was involvement 02=Law enforcement was involved but no charges are filed 03=Law enforcement was involved and charges were filed 04=Family doesn't know if law enforcement was involved or not	number(2)	No	Required if (1)SMR_Flag=Y(es) And Stage_of_Engagement>1 and Setting >1

SMR ONLY	30	Perception_of_alternative	"If you had not called us, what do you think the most likely result would have been? "	01=Remain at home 02=Call law enforcement 03=Hospital/ER 04=Detention/Jail 05=Emergency Shelter/Crisis Center06=Foster or proctor home 07=Youth run away 08=Youth stay with other family member 09=Seek information in another way 27=Other 98=Not applicable	number(2)	No	Required if (1)SMR_Flag=Y(es) And Stage_of_Engagement>1 and Setting >1
SMR ONLY	31	Peception_of_alternative2	If answer to Perception_of_Alternative was 27 please answer response	----------	string(30)	No	Required if (30)Perception_of_Alternative=27 (other)
SMR ONLY	32	Outcome_ladder_present	Item score from outcome assessment	1 through 10 =item score	number(2)	No	Required only if (1) SMR_flag=Y(es) and (27)Outcome_assessment_completed=Y (Yes)
SMR ONLY	33	Outcome_ladder_future	Item score from outcome assessment	1 through 10 =item score	number(2)	No	Required only if (1) SMR_flag=Y(es) and (27)Outcome_assessment_completed=Y (Yes)
	34	sy_trans_type_cd	System Transaction Type Code	A-Add D-Delete C-Change	string(1)	Yes	