Vermont Health Care Innovation Project

Vermont Medicaid Pathway

Alternative Payment Models Final Report

Payment Reform Options for Designated and Specialized Service Agencies

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Executive Summary

Background

The Agency of Human Services (AHS), in collaboration with the Agency of Administration (AOA), launched the Medicaid Pathway (MP) in the fall of 2015. The Medicaid Pathway resulted from a requirement, described in Section 12 of Act 113 of 2016, for AHS to create a process for payment and delivery system reform for Medicaid providers and services. Burns and Associates, Inc. (B&A) was engaged to serve as a technical advisor on a sub-component to the MP project focused on development and evaluation of alternative payment models specific to the designated agency and specialized service agencies (DAs and SSAs).

Key Findings

1. The rates produced in the model are roughly equivalent to what would have been paid under various scenarios in a baseline SFY15 time period and therefore, are a good starting point for discussions about alternative payment models.
2. The development of these rates required resource-intensive data cleaning and tolerance for a lack of systematically collected data.
3. Original data collection through a cost report or survey would be advantageous because it would provide the opportunity to improve reliability of rates produced under future payment models. In addition, at minimum, standardization of existing data would improve reliability of rates and importantly, more closely resemble the data commonly used by actuaries to model medical benefit capitation rates should that alternative rate model be chosen.
4. AHS has more than one option with regard to the phasing-in of alternative payment models. For example, AHS could reform the financial management and reimbursement of the DA and SSA system—and improve data collection--through adoption of a Prospective Payment System (PPS) model. Adoption of the PPS would not preclude future transition to a population-based, capitated agreement and in fact, would improve the data upon which future capitation rates would be built.

Policy Options for Alternative Payment Designs

1. The primary avenue for the expansion of a provider-led, risk-based capitation agreement would be to create an enhanced benefit of services for some set of defined “eligible” beneficiaries covering all levels of care and eligible provider classes for the eligible mental health and/or substance use disorder and/or developmental disability populations. This is consistent with the Substance Use Disorder (SUD) Demonstration framework.

2. Time-limited enhanced federal revenue could be raised to support care coordination related activities for non-SUD beneficiaries through expansion of the federal Health Home program to include the additional populations (i.e., the program already supports beneficiaries receiving SUD treatment).

3. If an enhanced match rate is not available in the future, expansion of the health homes to additional populations beyond SUD would require new revenue upon which a standard match rate would be applied and/or re-assignment of existing revenue for similar services to a standardized health home model expansion.

4. The following activities would support the transition to a population-based capitation agreement, particularly for the DA and SSA network:
    a. Development of risk adjustment strategy unique to the defined eligible populations. The starting point would be to use the cohorts developed by the DAs which included stratifying patients by age, diagnosis and use of residential services.
    b. Standardization of the financial, utilization and outcomes data across departments for these populations and provider classes covered.
    c. Standardization of the reimbursement and billing guidelines for the DAs and SSAs across departments.
    d. Shadow testing a value-based risk model like with the Vermont Medicaid Shared Savings Program (VMSSP).

5. In lieu of implementing a shadow capitation program as suggested in 4.d., AHS could instead implement a moderate risk alternative payment system which includes a value-based component.
    a. For example, development of a PPS2 approach consistent with the federal demonstration program for certified community behavioral health centers (CCBHCs) would represent progress in reforming the system of payments currently used for DAs and SSAs consistent with the goals of the MP.
    b. The rates for each DA and cohort could be computed using a State-maintained rate model, as with the case of hospitals, or alternatively--and as is consistent with the federal CCBHC demonstration—through provider submission of audited, tailored cost reports and/or raw source data through the electronic financial reporting system (known as “eFIN”) annually for determination of cost-based rates.
    c. Submission of cost reports is the most administratively simple way to implement the PPS2 and is consistent with the parallel federal model.
    d. This approach works best if there are limited exclusions, thereby reducing the need for monitoring other revenue streams and/or maintaining a separate master grant and/or global budget process.
    e. This PPS2 model also sets forth a potential way to risk stratify these patient populations into similar spending categories under future capitated payment models. These cohorts should undergo some consolidation before finalizing in light of sample size or anticipated changes to financing, utilization or case-mix.
    f. The State would need to designate a lead department to manage rate setting activities including, but not limited to, re-design processes for billing and data collection; determining a process for inflationary or other adjustments to annual rates; and developing a process for review of provider requests for changes in scope of service or other adjustments to annual rates.
    g. The State could choose to phase in the new payment model among providers but it would require maintaining two systems for similar providers simultaneously.

6. Given the fragility of the providers in the Vermont DA/SSA system, their reliance on AHS as their primary source of revenue, and the swelling demand for services, it is likely that increased investment would be required to support fully realizing the benefits of any payment reform on care delivery and quality of care.
    a. Investments such as those for better care coordination, a reliable annual increase, and improvements in compensation would make adoption of any alternative payment model more successful in the long term.
    b. No matter what alternative model is adopted (if any), there is a need to improve the value-based components of the current DA and SSA payment system such that AHS can better measure the impact of any financing or policy decisions.

Ongoing Challenges

There is uncertainty among stakeholders as to the right balance of capacity for overlapping services between community providers and traditional medical providers. A key area of uncertainty is how best to achieve primary and mental health integration. Another challenge is how best to coordinate and finance emergency mental health crisis services. Ensuring cost-effective access to residential services is another unique challenge whereby there are federal restrictions on Medicaid funding but growing demand. As with all areas of health care, how to expand financing and payment to cover new or emerging technologies or therapies continues to be a challenge. Expansion of applied behavioral analysis (ABA) therapy is an example.

Another notable challenge is how best to introduce an alternative payment system that does not add, but truly consolidates financing and reimbursement functions for AHS and providers. The extent to which populations, covered services, funding sources and/or programs are included or excluded from any new alternative payment model will influence administratively complexity for both AHS and providers. Said another way, the more exceptions to what is included in the alternative model, the more need for separate programmatic, operations and financing for distinct populations, covered services, funding sources and/or programs. Similarly, if a pilot or demonstration for a subset of providers is chosen, for at least the short term, two distinct reimbursement systems will need to run simultaneously for different providers depending on their participation although presumably, this need would decrease over time as other providers transition to the new model.

Limitations

There are a number of limitations to the analysis and findings presented in the final report. The most important is the lack of a uniform source of data upon which to model payment alternatives. This lack of data presents challenges in terms of the completeness of findings presented as well as the construction of reliable rate models. Another important limitation is that at the time of drafting this final report, there were a number of funding sources and programs identified as potential exclusions from the model; any exclusions to an alternative payment system creates a unique set of challenges in terms of establishing clear differentiations between what is considered to be included in the alternative model and what is not; depending on what ultimately is excluded, there is at least moderate risk of either under- or over-estimating rates of the alternative model should it not be easy to identify from a common data source.

1. Background and Organization of Final Report

Section 12 of Act 113 of the Acts of 2016 required that the Agency of Human Services (AHS), in consultation with the Director of Health Care Reform and affected providers, to create a process for payment and delivery system reform for Medicaid providers and services. The process was intended to address all Medicaid payments and providers outside the All-Payer Model (APM); for more information on the APM, see http://gmcboard.vermont.gov/tags/all-payer. Its focus was to the extent practicable, assess the feasibility of incorporation into the All-Payer Model and/or other existing payment and delivery system reform initiatives.

The AHS, in collaboration with the Agency of Administration (AOA), launched the Medicaid Pathway (also referred to as MP throughout this document) in the fall of 2015. The goal of the MP was to examine ways to move away from traditional fee-for-service payment models consistent with the All-Payer Model (APM). The MP systematically reviewed payment models and delivery system values identified in Vermont's Model of Care (MOC) across AHS. For more information on the MOC, refer to Page 8 of the "Request for Feedback" released by AHS on September 16, 2016 at http://dvha.vermont.gov/global-commitment-to-health/vt-mh-sat-ds-medicaid-pathway-information-gathering-9.16.16.pdf. The process identified ways to refine State and local operations to better support the integration of physical health, long-term services and supports, mental health, developmental disabilities, substance use disorder treatment, and children's service providers.

The MP process was built on the principle of cultivating provider-led reforms and emphasizes public-private partnerships through intensive dialogue with providers, consumers and consumer advocates, and other stakeholders. The premise was that, through payment and delivery system reform, the State could enable Medicaid providers to better serve Vermonters by providing higher quality, more efficient care that is better integrated into the broader health system.

As a technical advisor on a sub-component to the Medicaid Pathway project, Burns & Associates (B&A) was tasked with developing a flexible, data-driven, rate model to assist the State in its assessment of options for alternative, value-based payment designs for mental health, developmental disabilities and substance use disorder services provided at the designated agencies (DAs), specialized services agencies (SSAs) and, potentially, substance use disorder (SUD) preferred providers. The support for our work was paid under a contract for technical advisory services with the Department of Health Access (DVHA) supported by the federal State Innovation Model grant.

Another contractor, Pacific Health Policy Group (PHPG), was responsible for helping facilitate discussions between the State and stakeholders related to the scope of covered services and entities to be included in the B&A rate models. Similarly, there was a separate multi-stakeholder working group, supported by Bailit Health Purchasing, whose role it was to define the quality and reporting framework that would support the payment. The former work informed the specifications of the model and feasibility of alternative approaches. Incorporating the latter into any payment model alternative chosen will be an essential step in linking payment to value and achieving the goals of the MP.

In this report, B&A presents the findings of our models based on those parameters but does not include a discussion of the process and/or rationale for arriving at those parameters. Refer to the AHS Report to the Legislature on MP from December 30, 2016 for an in-depth discussion of that process and the covered services and entities included or excluded in the B&A rate models. This report is located at http://legislature.vermont.gov/assets/Legislative-Reports/Act-113-Sec-12-Medicaid-Pathway-Report-12-30-16.pdf.

1.1 Objectives

Upon consultation with the MP project team, the following objectives were created to guide the B&A MP project:

1) To identify what data sources are available to use in setting alternative payment rates for these providers;
2) To assess the strengths and weaknesses of those data;
3) To build a model capable of estimating the total baseline revenue and costs for each provider under a number of different financial or program exclusion scenarios;
4) To build a model capable of projecting the impact of different financial assumptions on a provider's revenues and costs; and
5) To analyze model findings, summarize alternatives and impact.

1.2 Audience

This report is written for policy makers with interest in payment reform among Vermont's DA/SSA network. The report focuses on the technicalities and impact of alternative reimbursement models and, therefore, is intended for staff working on the financial or reimbursement operations and policy-making. Specifically, the findings and recommendations of this report would be useful to staff or future contractors seeking to:

- Consolidate AHS reimbursement of designated agency and specialized service agencies financing across multiple departmental funding sources and program requirements;
- Choose a replacement to existing financing and reimbursement;
- Select design elements related to the alternative model chosen; and/or
- Understand challenges, possible solutions and potential unintended consequences.

1.3 Organization of Document

This report focuses on the approach and results of modeling three alternative payment models for DAs and SSAs: global budgets, monthly prospective payments and capitation. The report concludes with a discussion of key findings and recommendations. The key findings and recommendations are summarized, along with a brief history of the project, in the executive summary that precedes the payment model discussion.

For each payment model evaluated, the report has a separate section to describe:

1) An overview of the model
2) A description of the data analysis
3) A summary of key findings
4) A discussion of advantages and disadvantages
5) A series of recommendations if adopted

There are a series of technical appendices referred to in each section. These appendices contain granular details of the methodologies used to evaluate each payment alternative modeled and are meant to help replicate findings or serve as the starting point for rate implementation projects should the State or contractors seek to do so in the future.

1.4 Peer Groups

The goal of grouping different providers into peer groups is to ensure that analysis of costs and payments are comparable among different classes of providers in terms of their size, covered services, and population served. To maximize comparability among providers in the DA/SSA network, B&A created three peer groups. All but one designated agency, Upper Valley Services (UVS) were grouped together in the first peer group. The providers in the first peer group, referred to as Designated Agencies—although as noted, excluding UVS--generally provide a wider range of services to a more diverse population.

The remaining provider types—all the specialized service agencies plus UVS—provide only one service type to a targeted, often very complex, patient population. These provider types were split into two peer groups depending on their focus. Two SSAs were grouped together as mental health focused: Pathways and NFI. The remaining eight, who focus on developmental disabilities, were grouped together. Given that the primary focus of the MP work was shifted onto the DAs prior to completion of all analytics and surveys, the report findings are weighted more heavily toward this peer group compared to others.

These peer groups are summarized in Exhibits 1.1, 1.2 and 1.3.

1.5 Stakeholder Engagement

Multiple drafts of the global budget template were developed in addition to multiple financial model scenarios and supporting packages. These materials, while in development, were presented to both sub-groups and to the State-only and Multi-stakeholder monthly meetings during June-December 2016. A version of this template was included in the “Request for Feedback” process conducted in the Fall of 2016. A summary of meetings attended can be found in Appendix 1.

Exhibit 1.1 Peer Group 1

Entity Abbreviation	Entity Name
HC	Howard Center
UCS	United Counseling Service
NCSS	Northwestern Counseling & Support Services
RMHS	Rutland Mental Health Services
NKHS	Northeast Kingdom Human Services
CSAC	Counseling Service of Addison County
WCMHS	Washington County Mental Health Services
LCMH	Lamoille County Mental Health
CMC	Clara Martin Center
HCRS	Health Care & Rehab Srv of SE Vermont

Exhibit 1.2 Peer Group 2

Entity Abbreviation	Entity Name
NFI	Northeastern Family Institute
PV	Pathways Vermont

Exhibit 1.3 Peer Group 3

Entity Abbreviation	Entity Name
PCC	Parent Child Center
LSI	Lincoln Street, Inc.
SSTA	SSTA Transportation
UVS	Upper Valley Services, Inc.
SAS	Green Mountain Support Services, Inc.
SCC	DMH_DAIL SCC
FF	Families First in Southern Vermont, Inc.
CVS	Champlain Community Services, Inc.

1.6 Supporting Materials

As part of the engagement, B&A developed a set of customized reports, generated for each peer group, for the purpose of developing analyses pertinent to the States' needs. The reports were developed, revised and generated in varying form during the life of the engagement. The final set of reports for each peer group appears within the appendices included with this document. The data relevant to each of the peer groups appears under the following headings: Appendix 2A – Peer Group 1: Designated Agencies; Appendix 2B – Peer Group 2: Mental Health Special Service Agencies; and Appendix 2C – Peer Group 3: Developmental Service Agencies. For a listing of each entity included within each peer group, refer to Exhibits 1.1, 1.2 and 1.3.

Each of Appendices contains identical report series and provides information related to the period State Fiscal Year (SFY) 2015 (July 1, 2014 through June 30, 2015). The list below describes the contents and utility of each report. The concepts and analysis of these reporting packets are discussed in Sections 3-6. All tables presented in the final report are excerpts from this standardized package; a full set of tables included in this document are also contained in an accompanying excel file titled "Final Report Supporting Tables 06-19-2017".

Reference Table: Scenario Exclusions & Costing Methodology
The information presented in this reference table provides an outline of the data excluded and the criteria utilized to identify the records to exclude. In addition, the methodology utilized to determine the costs for all reports is defined in this reference table.

Reference Table: Provider/Entity List
This reference table displays the entirety of unique entities that provided services to individuals within the claims[1] data identified uniquely by entity Tax Identification number and Medicaid Identification number. Additional data includes entity name, exclusion flag, geographic region and peer grouping.

Reference Table: Financial Data Submitted from Providers
This reference table denotes, by all entities in all peer groups reported on, the independent financial information obtained from the entity for the period beginning July 1, 2012 through June 30, 2015 (SFY13 – SFY15). Individual data obtained included Audited Financials containing the Profit and Loss Statement "P&L Statement"; response to a survey distributed to obtain charge data "Survey (Charges)"; and schedules in support of the Audited Financials detailing the State of Vermont Grants and Contracts "Grants/Contracts Sched.". It is noteworthy that the latter two items, "Survey/(Charges)" and "Grants/Contracts Sched.", only apply to the Designated Agencies denoted within the table.

Summary
This table displays the overall totals for the extracted data set, with exclusions, arrayed by the funding source.

Report 1.0: Comparison of Reported Revenue & Claims/MSR Data for SFY 2015
This report provides a comparison between the data received from the agency Audited Financial statements as compared to the claims data. Data is displayed in Total (all data), Bundled (data included in the modeling process), and Other (data excluded from the modeling process).

[1] "Claims" refers to both the administrative claims data and the MSR data combined.

Report 2.0: SFY15 Unique Beneficiaries & Beneficiary Months by Provider with Statistics
The table provides summary information from the claims data displaying the Average Annual payments to entities per Unique Beneficiary[2] and by Beneficiary Month[3].

Chart 2.0: Overall Average Payments for AHS Bundled Revenue
This chart provides a visual display of the data calculated within Report 2.0.

Report 2.1: Total SFY 2015 PPS2 Monthly Visits by Service Cohort & Age
Information in this report details the number of Visit Months (or Beneficiary Months) incurred during the period by each individual entity. Data is aggregated by Cohort and Age with the separate reporting of Visit Months within outlier threshold[4] and Visit Months *above* the Outlier Threshold.

Report 2.2: Total SFY 2015 Charges and Costs by Service Cohort & Age
Information in this report details Charges, Calculated Estimated Costs, Estimated Rate, and Outlier Payments for services incurred during the period. Data is aggregated by entity, Cohort and Age.

Report 2.3: Total SFY 2015 PPS2 Calculated Rates & Outlier Pool Totals
This report displays the summary results of Report 2.2 in tabular format with separate tables by Age and Outlier status. Calculated Rates and Outlier Pool[5] payments are displayed.

Chart 2.3: PPS2 Baseline Monthly Visit Rate for SFY 2015
This chart provides a visual display of the data calculated within Report 2.3.

Report 2.4: Comparison of PPS2 Payments to Actual, SFY 2015
This report displays the variance between the Actual Payments for the period and the Estimated Payments modeled within Report 2.2. Variance is shown in terms of the Estimated Payments less the Actual Payments.

Report 3.0: SFY 2015 Beneficiary Month Statistics by Service Cohort & Age
The information presented in the tables for this report show the summary data resulting from the determination of the Outlier Threshold. Data is presented in Total, by Age and by Cohort. The tables include the resulting calculations for Outlier Thresholds determined by two, three and four standard deviations from the mean (2SD, 3SD & 4SD).

Report 4.0: Selected Ratios for SFY 2013 - 2015 as Reported on Financial Statements
This report shows the resultant Cost-to-Charge Ratio (CCR) and Cost-to-Revenue Ratio (CRR) determined from the information obtained from the individual entities. Amounts are displayed for all periods available for SFY13 through SFY15, including the 3-Year Average and 3-Year Median. Information is presented by entity and Cohort; however, additional values representing the Average and Weighed Average are also displayed.

[2] Unique Beneficiaries are the count of all individuals that were provided a reimbursed service within the claims data.
[3] Beneficiary Month is the aggregate count of the months in which each individual received at least one reimbursed service within the claims data.
[4] For the purposes of the reports discussed within this document, the Outlier Threshold is determined by utilizing three (3) standard deviations from the mean for the population.
[5] Amounts for the Outlier Pool are aggregated totals only.

Report 5.0: Overall Utilization & Statistics by Agency
This report displays the totals by entity for: Unique Beneficiaries, Actual Eligible Member Months, Number of 30-day Episodes, Visits, Units, Charges, Estimated Costs and Payments. Various statistics are included within subsequent tables.

Chart 5.0: Comparison of Payments & Costs
These charts provide a visual display of the various information/statistics reported within Report 5.0.

Report 5.1-5.14: Utilization Statistics (by Age & Cohort)
Reports 5.1 through 5.14 display information identical to that presented in Report 5.0. However, data has been accumulated and reported for each of the individual Age-Cohort combinations throughout this series of Reports.

Report 6.0: Utilization Data by Procedure Code
This report displays the total Units, Charges, Costs and Payments arrayed by individual Procedure Code available within the claims data.

2. Review of Data to Use in Setting Alternative Payment Rates

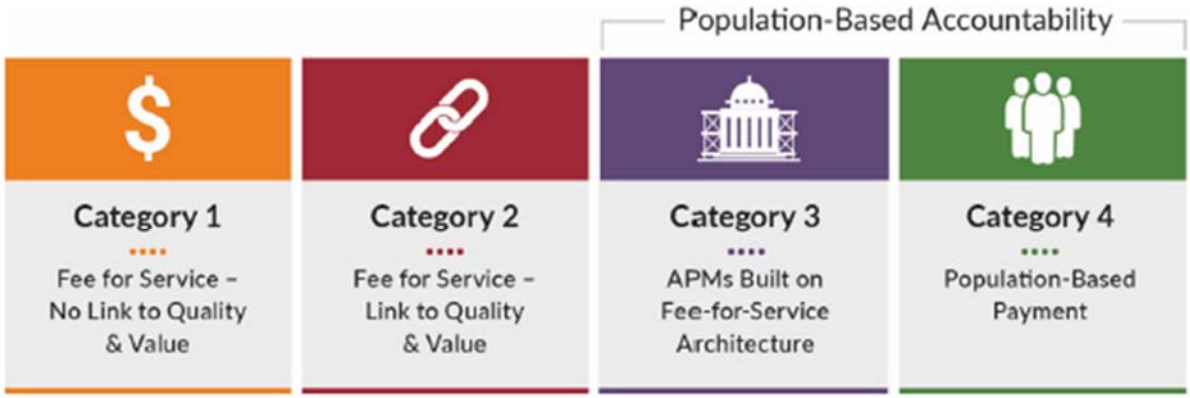
2.1 Overview

The current financing system is decentralized such that programmatic, budgeting, and reimbursement are spread across almost every AHS Department. A key goal of the project was to assess the feasibility of consolidating as many of the financing and reimbursement functions to improve incentives and strengthen the link between payment and quality. An alternative system would be intended to replace the current financing system and reimbursement process for designated agencies and specialized service agencies.

Three payment models were contemplated in this process. The models reviewed were identified from similar models in other States or those under being piloted as part of federal demonstrations. The Heath Care Payment Learning and Action Network's (HCP LAN) series of white papers on alternative payment models provides a framework for understanding alternative payment arrangements.[6] Each model has a set of strengths and weaknesses including the level of financial risk. B&A evaluated the following three models:

- A Global Budget System
- A Prospective Payment System (PPS)
- A Population-based Capitation System

Exhibit 2.1 HCP LAN Alternative Payment Model (APM) Framework



Source: Alternative Payment Model (APM) Framework and Progress Tracking Work Group

The general consensus among health policy experts, as reflected in the HCPLAN white papers, is that population-based payments with a strong link to health outcomes across the continuum of care are highly desirable. At the same time, however, it is well established that there are key factors like organization of systems and information sharing, which must be in place to make those models like capitation, feasible for providers. The framework therefore, describes incremental categories of models

[6] The Health Care Payment and Learning & Action Network (HCP LAN). Accelerating and Aligning Population-based Payment Models: Financial Benchmarking. 2016. https://hcp-lan.org/groups/pbp/fb-final-whitepaper/.

which confer less risk but build the capacity of a system to evolve to a capitated alternative payment model. The All-Payer Model for example, is a Category Four Payment Model.

There are a handful of key rate setting principles in play regardless of which alternative model is considered. Multiple sources of data are necessary to redesign financing and reimbursement systems. Any model adopted will rely in some part on the following data:

1) Enrollment Data, i.e., who is eligible for benefits on a monthly basis
2) Utilization Data, i.e., who sought what types of services
3) Financial Transaction Data, i.e., expenditure data
4) Audited Financial Data, i.e., to derive an objective measure of payment adequacy
5) Outcomes and Performance Data, i.e., in order to measure investments, ensure high quality care and create positive incentives that reward value

2.2 Review

In the first phase of the engagement, B&A explored the feasibility of using different sources in the rate models. Throughout the discussion about each model and carried through to the recommendations section are discussions related to the advantages and disadvantages of each approach with regard to these key elements of rate setting.

For each source of data below, the following tasks were conducted:

1) Reviewed any existing data documentation.
2) Reviewed any existing billing and/or program manuals.
3) Identified a minimum data set needed to build the rate model.
4) Created data specifications to pull the minimum data set for years of data used in the rate model.
5) Obtained the raw data files included in the minimum dataset.
6) Compiled all existing supporting data tables and crosswalks like departmental fee schedules and provider characteristic tables. These crosswalks were used to create “flags” that when turned on or off would create different scenarios to populate in the reporting packet.
7) Produced standard reporting statistics for each variable in the minimum data set over the study period years that would be used in the rate model.
8) Developed provider and beneficiary identification matching strategies between datasets.
9) Documented data anomalies, data validity concerns, and any transformations necessary to use the data.
10) Populated standardized reporting packets to review the data.

2.3 Findings

A preliminary memo summarizing the findings of the data review was sent on April 1, 2016. The substance of that memo is re-stated below but includes updates and clarifications gained in the subsequent eight months of work.

2.3.1 Medicaid Management Information System (MMIS) Claims and Financial Transaction Data

B&A reviewed claims data by funding source and designated agency /specialized service agency provider identification numbers. We reviewed descriptive statistics of key variables.

Data Question	B&A Findings
How are DAs/SSAs billing Medicaid? What level of organization will be necessary for rate modeling?	We confirmed that the federal tax identification field on the claims data was a valid way to crosswalk multiple Medicaid IDs to a DA/SSA. The individual Medicaid IDs may be used in order to exclude certain services from the model.
What level of services data is available? For example, what CPT/HCPCS are used by providers receiving funding by DMH, ADAP, DAIL, DVHA and others?	There is detailed claims data representing what we estimate to be approximately 85%-100% of DA/SSA revenue. Most of the data includes CPT/HCPCS level details. The charges, payments and units fields are populated. Category of service descriptors are being used to map claims to cost centers. Funding source is also an essential variable in order to map claims to cost centers as well as exclude certain services—even though not all payments are accounted for through claims.
What payments are missing from claims data?	DAs/SSAs receive revenue from non-claims sources. DAs/SSAs are also receiving federal, state and local grants to fund a range of activities. In most cases, a transactional or encounter claim is unlikely. One example would be inebriate center grants.
What are the array of underlying payment models observed in the claims data?	Using the CPT/HCPCS descriptors and units' fields, the model is able to account for differences in the manner in which specific services are reported and how payments are accounted for in the current system; examples are per 15 minutes, per session, and per day.
In addition to claims, what other sources of data from the MMIS system were used?	One key missing element of the health care transactional claims data is encounter and spending on community, rehabilitation and treatment program (CRT) participants. B&A collected financial transaction data to account for this difference. B&A also acquired and used enrollment data to calculate number of months beneficiaries eligible as opposed to number of months beneficiaries received services; both are presented in the reporting packages. B&A used financial transaction data in the creation of "monthly encounter" records to account for spending on the community, rehabilitation and treatment (CRT) program.

2.3.2 Monthly Service Reporting (MSR) Data

B&A reviewed the two MSR files received, the service file and the client file. We reviewed descriptive statistics of key variables.

Data Question	B&A Findings
Are there service details included in the MSR that are not in the claims data and vice versa? What is the Venn diagram of MSR and claims data?	We investigated a number of ways to match claims data with the MSR data in order to understand their relationship. We did not identify a key unique identifier between the files. We derived a new provider id using a number of characteristics on the claims (name, birthdate) and matched the sources. We found that 53% of the claims in the current DA model data could be matched to MSR data using a combination of new beneficiary ID, date of service and provider FEIN. (506,727 or 949,178 claims records matched on SFY 2015 data). There are cases where there is an MSR intake client file but no claims data associated with that individual. Matching the data allowed for extensive expansion of data analysis for those beneficiaries in the MSR and claims data.
What level of information on services is available?	There is useful summarized information on diagnosis as well as other social determinants data. The client data has more than would be traditionally captured in the claims record. It is also used in order to calculate the diagnostic cohorts used in the rate model described in the final report. The MSR has services organized into categories of clinical interventions, therapies, medication, clinical assessment, planning and coordinating, planning services, crisis, housing and home supports, and respite. A unique count of CRT participants by provider was created and paired with financial transaction data in order to account for spending not available in the claims data set.
What information on quality reporting or risk adjustment is available in the MSR?	1) The data could be used for monitoring and evaluation of outcomes. There are some social determinant outcomes like employment, housing and income. These outcome measures could be considered for quality incentive payments and/or, at minimum, for monitoring purposes. 2) In addition to residential services indicators used in the creation of cohorts, this data could be used to develop a more sophisticated risk adjustment score. Detailed diagnostic information and/or those variables identified as statistically significant predictors of charges, costs or payments could be used. Examples of the enhanced diagnostic variables that could be explored include: a. Marital / Family Problems, b. Social /Interpersonal Problems, c. Medical Somatic Problems, d. Depression or Mood Problems, e. History of Suicide, f. Alcohol, Drug, Eating Problems, g. Criminal Justice Involvement h. Victim, i. Run-away.

Data Question	B&A Findings
	3) There is an "assigned therapist" variable that could be useful in informing whether a claims-based approach would reflect care provided or to compare against any potential attribution scenarios.
What are the data quality issues?	B&A had little data available upon which to benchmark the MSR data. However, in a few instances, the following problems were identified: 1) Some fields associated with ADAP programs are not populated. B&A believes these are more likely being reported in VDH Statis data. 2) The variable identifying payer source did not produce reliable results when presented to stakeholders for review.

2.3.3 DMH Electronic Financial (eFIN) Data

B&A reviewed the electronic financial reporting (eFIN) data provided by DMH. We focused the review on what type and level of data was reported and how this compared to other cost reporting templates like those used for hospitals, FQHCs or the CCBHC template. We reviewed descriptive statistics of key variables.

What type and level of granularity about expenses are included?	Common expense categories are collected. There is less detail collected on underlying expenses than included on common cost report templates.
What type and level of granularity about revenues are included?	Revenue categories collected are similar to those being reported on financial statements by DAs.
Is there information on charges included?	There is not information on charges. We were able to derive charges for some cost categories using the "donated discounts" information reported on Howard Center's audited financial statements.
How useful would this be for rate setting?	This data would be extremely useful in rate setting. B&A recommends to the extent possible to use the existing data submission to create new table formats for future rate setting and monitoring activities.

2.3.4 Audited Financial Data and Survey of Charges

B&A requested and received audited financial statements and supporting schedules from most DAs and SSAs, including schedules. B&A also conducted a survey of charges of the DAs for use in evaluating alternative ways to model the payment rates. The audited financials were ultimately used in lieu of the electronic financial (eFIN) data to conduct analysis given their flexibility in data re-mapping compared to the electronic financial (eFIN) standardized output tables. As discussed in more detail in Section 4.0, the charges data was not ultimately used in the final rate models presented in this report given the lack of stakeholder buy-in about its validity for use in rate calculations.

2.3.5 Statis Data

B&A became aware of the Statis dataset late in the project. Statis contains more detailed data on substance use disorder treatments. Given that the scope of the project had narrowed to only the DA and SSA network—and not the additional SUD preferred providers—B&A did not obtain and review this data. This could be important in the future for properly defining cohorts, risk adjustment and monitoring outcomes.

3. DA Global Budget

3.1 Overview

As described in Appendix F of the Act 113, Section 12 Medicaid Pathway 2016 Legislative Report, a global budget is an expenditure target for health care spending. The purpose of setting an expenditure target is to constrain both the level and rate of growth of spending. The advantage of this approach is that it provides a clear incentive to operate efficiently. A weakness of the model, however, is that these constraints can lead to access problems due to rationing or waitlists.

Given that a global budget sets a target and then locks into a rate of growth over time, if inequities in financing are not addressed before setting the baseline, all existing disparities across funding sources would continue through the future periods. It may also not address negative incentives created by the status quo or be detailed enough to identify any new unintended consequences associated with changing care delivery and financing. Finally, it may not incentivize sufficient data collection on which to base future capitation rates, improve the use of appropriate risk adjustment or attribution approaches for these provider types, or be available for use in population health management activities.

As part of the project, B&A created a global budget dashboard template which estimated baseline SFY15 global budget targets. B&A also reviewed multiple sources of data for calculation of the denominator in the per capita calculations. B&A also explored the use of the Medicare risk adjustment score as a means to risk adjust the baseline per capita payment among providers.

At the time of this final report preparation, B&A has made recommendations on setting a baseline global budget target but has not produced recommendations or deliverables in support of implementation of the global budgeting process by which those baseline rates would be monitored and updated on some regulatory cycle. If this were implemented, new estimates of change in scope or adjustments to reflect anticipated changes in utilization of specific services would be required.

Exhibit 3.1 displays a conceptual representation of a total global budget and AHS-specific global budget. Exhibit 3.2 illustrates the basic approach to calculation of the DA-specific global budget historic baseline. Exhibit 3.3 describes the basic approach to setting future global budget targets.

Exhibit 3.1 Conceptual Representation of Global Budgets

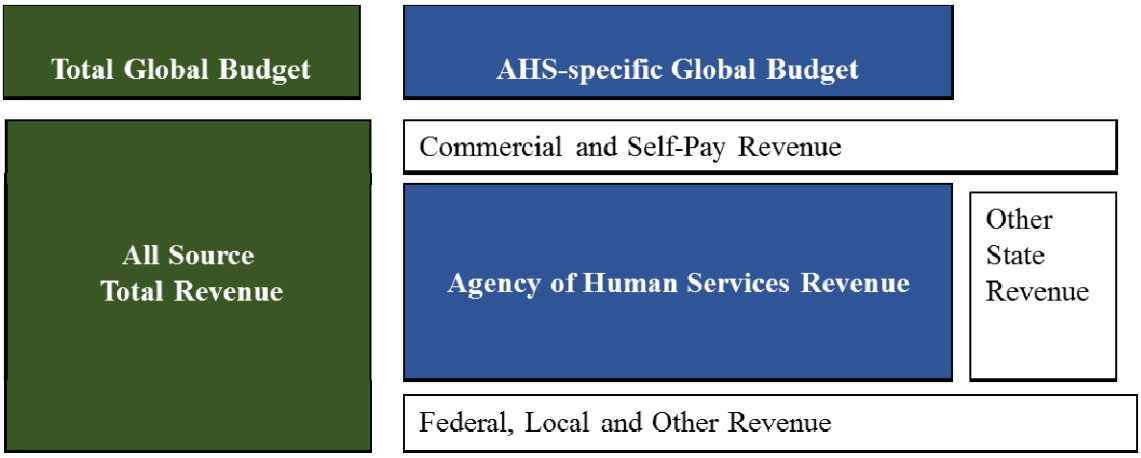


Exhibit 3.2. Historic Baseline Global Budget Target Calculation

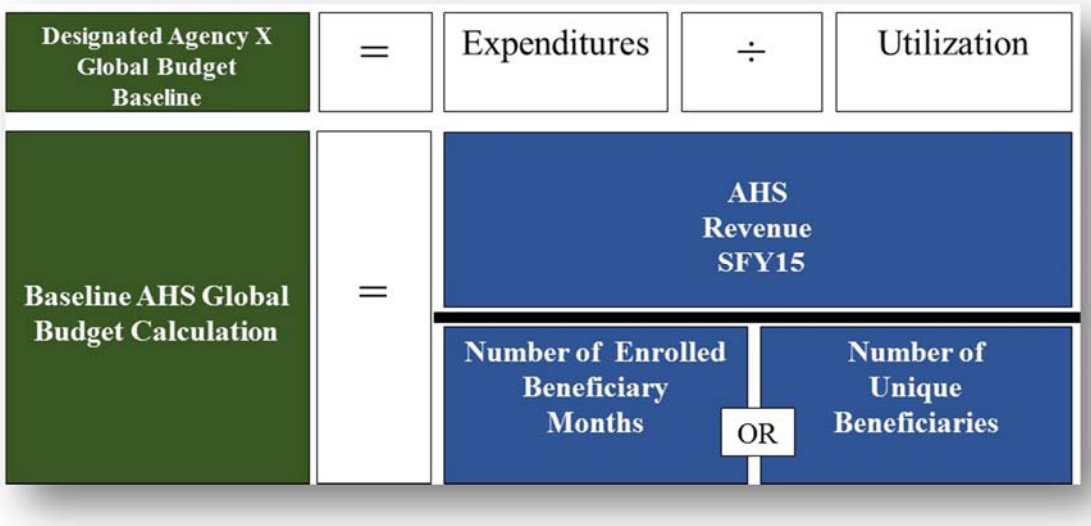
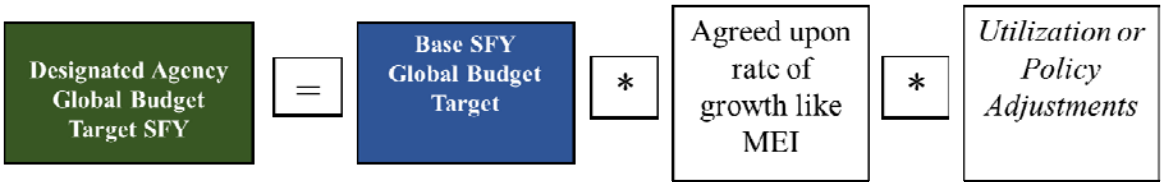


Exhibit 3.3 Basic Approach to Setting Future Global Budget Targets



MEI=Medicare Economic Index

3.2 Data Analysis

3.2.1 Data Sources Used

- Audited Financial Data from DAs and SSAs
- DMH Monthly Service Reporting Data
- MMIS Financial Transactions Data

3.2.2 Data Manipulation

In part to validate the electronic financial reporting system (eFIN) data and also, because of challenges in using the data discussed in Section 2, B&A independently collected year end 2013, 2014, and 2015 audited financial statements and detailed schedules, where possible. Refer to Appendix 3 for a full accounting of documentation received and included in the analysis.

To calculate the financial targets, B&A analysts mapped sources of revenue—where detail was available--into categories of Total Revenue, State Revenue and AHS Revenue. To calculate the number of beneficiaries and beneficiary months, two data sources were explored. The MSR was first consulted to produce population count estimates for the global budget but was judged to be invalid. In this final report, B&A uses claims data augmented to account for Community Rehabilitation and Treatment (CRT) monthly financial transaction data to estimate the number of unique beneficiaries served. The latter data was determined to be more reliable than MSR beneficiary counts by payer and therefore, it is used and presented is from the standard reporting packages. As described in the recommendations section, should this approach be adopted, alternative data on the number of beneficiaries and beneficiary months should be collected to ensure reliability for an individual providers as well as when comparing across peer groups.

3.2.3 Benchmarking and Validation

- Financial Data
  The revenue breakdowns used in the analysis were validated for those DAs that submitted detailed financial breakdowns. Three large DAs participated in the validation meetings and submitted revenues such that there is high confidence in those estimates. For those DAs for which the detail was not available, there is some under and over reporting in the amount of revenue classified as State versus non-State. Total revenue dollars is as reported on audited financials.

- Utilization Data
  The MSR data was presented as part of the sub-group validation meetings. The field used to assign payer source was determined to not be valid for this purpose. The rate model estimates of State beneficiary counts were the best source of information. As described in the recommendations section, should a global budget approach be adopted, accurate utilization data would need to be submitted by providers that was trackable back to the audited financial statements, if a cost-reporting approach was adopted.

3.3 Findings

3.3.1 Payer Mix

Unlike providers like hospitals or physician offices who may receive payments from a mix of payers including commercial, Medicare and Medicaid, the DA and SSA network relies almost exclusively on AHS funding sources. B&A estimates that AHS composes from 76.2% to 99.6% of the revenue received among entities in peer group one and a similar range among peer group three. Exhibit 3.4 estimates the percent of total funding attributable to AHS sources in SFY15 by peer group. There is one exception, Pathways Vermont, who does not fit this trend.

Pathway's data suggests it receives a greater percentage of revenue from non-AHS sources or that there may be a data validity issue. Given all these estimates were based on an independent mapping based on audited financials, caution should be exercised before using these results for purposes other than examination or monitoring of providers. In the future, the current breakdown of AHS versus non-AHS revenue should be mapped from existing eFIN data or submitted directly by the providers.

Exhibit 3.4: Estimated Amount of AHS Revenue, Compared to Total for SFY15

Entity Abbreviation	Total Revenue	Estimated AHS Revenue	Percent, AHS of Total
Peer Group 1			
HC	$85,835,603	$74,021,370	86.2%
UCS	$15,952,295	$14,739,628	92.4%
NCSS	$35,446,128	$32,682,745	92.2%
RMHS	$26,812,836	$24,874,228	92.8%
NKHS	$32,671,287	$32,530,780	99.6%
CSAC	$20,431,306	$18,747,470	91.8%
WCMHS	$45,153,112	$43,312,793	95.9%
LCMH	$14,203,913	$13,017,081	91.6%
CMC	$11,452,308	$8,729,743	76.2%
HCRS	$46,156,832	$42,288,631	91.6%
Peer Group 2			
NFI	$13,688,041	$13,509,526	98.7%
PV	$4,251,022	$676,745	15.9%
Peer Group 3			
PCC*	$0	$0	0.0%
LSI	$3,878,542	$3,733,136	96.3%
SSTA*	$0	$0	0.0%
UVS	$16,524,614	$13,186,892	79.8%
SAS	$6,567,342	$6,535,024	99.5%
SCC*	$0	$0	0.0%
FF	$4,617,419	$4,431,269	96.0%
CVS	$3,766,499	$3,563,161	94.6%
* No financial statements received for entity			

3.3.2 Global Budget Targets

To create the global budget targets, financial data described above must be paired with measures of utilization and/or number of beneficiaries. Due to concerns related to using MSR data to produce beneficiary counts, B&A presents global budget targets using a measure of beneficiary months and unique beneficiaries included in the B&A claims measure. Given the limitations of that data source, the numbers presented may be under-estimates and should be updated prior to finalization as discussed in the recommendations section.

Global budget targets were estimated by dividing AHS expenditures by number of beneficiary months and unique beneficiaries from the B&A rate model. There are clear variations in size and scope among the providers even within a peer group. Lamoille County is the smallest DA in the peer group with 669 unique beneficiaries over 4,630 beneficiary months compared to the largest, Howard Center, serving 3,370 unique beneficiaries over 43,929 beneficiary months. There is less variation among the other peer groups and their scale is substantially smaller whereby no one provider services more than 233 unique beneficiaries.

Among peer one providers, the estimated SFY15 global baseline targets:

- Rutland Mental Health Services, Northwestern Counseling & Support Services, Howard Center, and Counseling Services of Addison County have similar estimated SFY baseline global targets ranging from $10,337 to $11,906 per beneficiary.
- Lamoille and Washington County were the highest targets at $18,387 and $17,895, respectively.
- Health Care & Rehabilitation Service of Southeastern Vermont, Northeast Kingdom, and UCS have similar targets ranging from $7,609 to $9,593.
- The lowest target is for Clara Martin Center (CMC) at $4,029; CMC also had the smallest percentage of AHS revenue which may be contributing to this finding.

The variation in these estimates among DAs and SSA are attributable to a number of factors including, but not limited to:

- Poor data quality. It is possible that either DA or SSA-specific AHS revenue or utilization data is over- or under-estimating actuals targets for specific-DA or SSA.
- The case-mix of services offered. For example, DAs with more developmental disabilities services as a proportion of total services will be more costly than those with less.
- The underlying severity of the population served across the DAs or SSAs.
- Historic differences in AHS financing and program delivery.

Exhibits 3.5, 3.6 and 3.7 summarize the estimated SFY15 global budget targets per unique beneficiary served and per beneficiary months received services.

Exhibit 3.5 SFY15 Actual Average Annual Revenue per Beneficiary

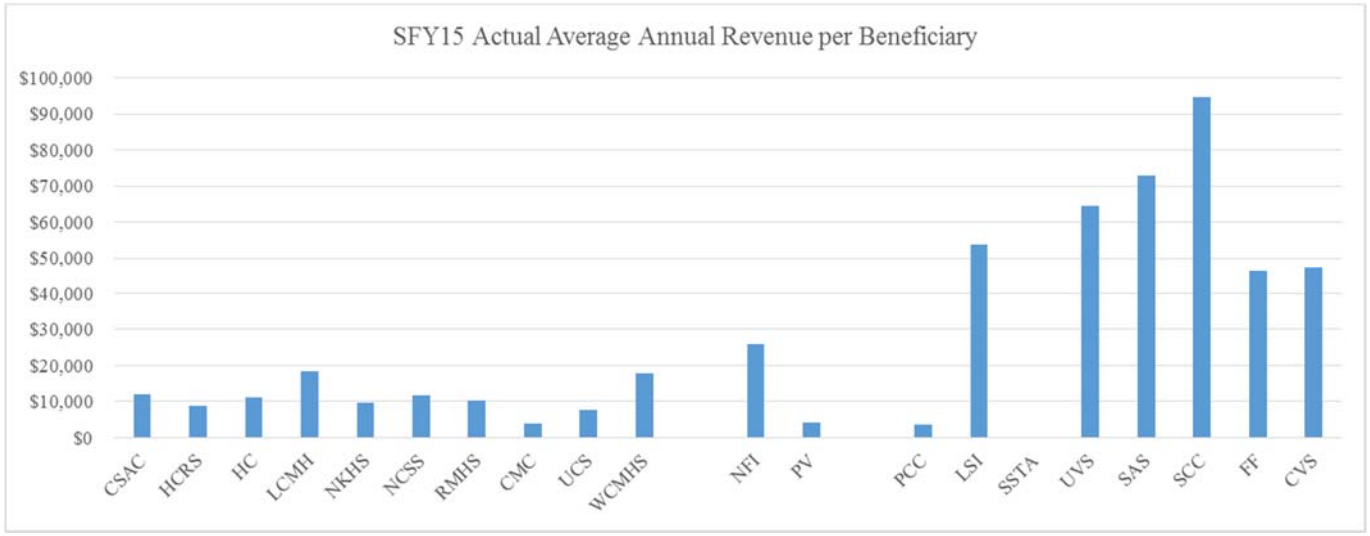


Exhibit 3.6 SFY15 Actual Average Revenue per Beneficiary Month

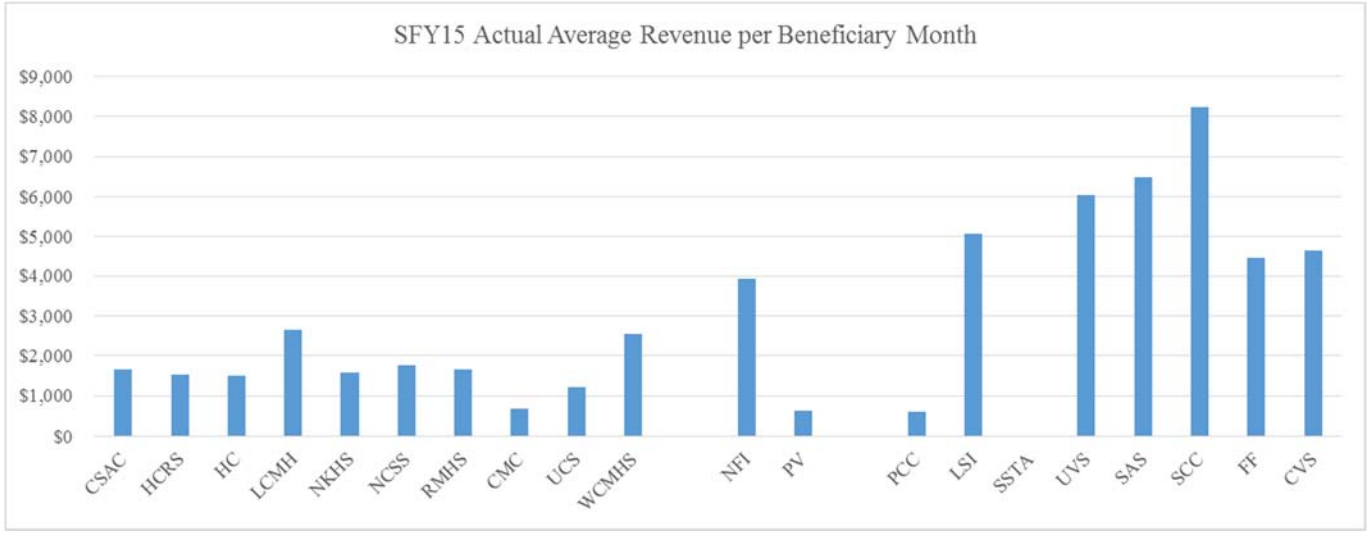


Exhibit 3.7 Summary of Average Annual Revenue per Beneficiary and per Beneficiary Month,, SFY15

Tax ID	Entity Abbreviation	Unique Beneficiaries	Beneficiary Months	AHS Actual Revenue	Avg. Per Beneficiary	Avg. Per Beneficiary Month
030212396	CSAC	1,416	10,180	$16,859,200	$11,906	$1,656
237017624	HCRS	3,370	19,573	$29,875,256	$8,865	$1,526
030179433	HC	5,988	43,929	$66,312,072	$11,074	$1,510
030219658	LCMH	669	4,630	$12,300,918	$18,387	$2,657
030212039	NKHS	2,966	18,067	$28,452,949	$9,593	$1,575
030210542	NCSS	2,628	17,278	$30,495,609	$11,604	$1,765
030210725	RMHS	2,130	13,358	$22,018,093	$10,337	$1,648
030220733	CMC	1,885	10,834	$7,594,499	$4,029	$701
030199213	UCS	1,622	10,117	$12,341,570	$7,609	$1,220
030215872	WCMHS	2,390	16,882	$42,768,857	$17,895	$2,533
030304434	NFI	168	1,112	$4,355,735	$25,927	$3,917
300604758	PV	161	1,064	$688,105	$4,274	$647
030280370	PCC	173	1,005	$614,077	$3,550	$611
030280863	LSI	69	731	$3,710,632	$53,777	$5,076
030285677	SSTA	0	0			
030305008	UVS	233	2,490	$15,034,025	$64,524	$6,038
030314664	SAS	78	879	$5,688,936	$72,935	$6,472
030347106	SCC	51	586	$4,827,125	$94,650	$8,237
030353100	FF	89	923	$4,117,100	$46,260	$4,461
036015899	CVS	75	757	$3,529,085	$47,054	$4,662

3.4 Advantages and Disadvantages

Expenditure targets alone do little to explain differences in the spending per beneficiary summarized in Exhibits 3.5 and 3.6. Options for case-mix and risk-adjustment approaches were explored as part of the development of the second rate model included in this final report, referred to as the "bundled" payment or the prospective payment model, number two (PPS2) from the federal Certified Community Behavioral Health Center (CCBHC) demonstration. See a discussion of case-mix and risk-adjustment approaches in Section 4.2.4.4.

Global budgets would set up a process to monitor and constrain the rate of growth in spending at the DAs and SSAs. To fully harness the power of the global budget, however, AHS financial streams would need to be consolidated in a manner to allow for monitoring and have an enforcement and reconciliation mechanism against the budget targets.

The global budget process can be challenging in terms of deciding which allowances to make in future budgets for policy or utilization adjustments beyond which annual growth rate will be used.

Integrity in the global budget process would need to rely on a more efficient way to capture valid data for those measures used to monitor current budgets and to set future budgets. Program-level data including claims data for use in a wide number of *mostly* required activities would still need to be generated in some fashion in a reliable manner even though not as directly linked to payment.

3.5 Recommendations if Adopted

1. Given the level of aggregation of payment and the potential for an incentive for scaling back services, a global budget should be paired with a robust performance tracking component with appropriate incentives and penalties associated with poor quality outcomes.
2. A global budget approach would be strengthened by aggregating programmatic, financing and rate setting activities such that there were mechanisms for easily tracking and making updates to global budget targets.
3. Given the extent of the data challenges that currently exist, the most administratively simple way to implement would be using DA annual cost report submissions which would include the necessary utilization data necessary to compute targets and payment rates.
4. An alternative method based on existing data is possible, as demonstrated by the B&A model, but until data quality is improved with more standardized billing practices, there will be some shortcomings and laborious data validity work that would need to be conducted.

4. Monthly Prospective Payment System (based on PPS2 for CCBHCs)

4.1 Overview

The work done under the Medicaid Pathway was done in part in response to the federal "certified community behavioral health center" (CCBHC) demonstration project. The CCBHC is an attempt to create more standardization in services and care coordination among community mental health and substance use disorder clinics. This federal demonstration includes two alternative payment rate designs as well as a value-based performance framework. The following eight states are participating in the demonstration: Minnesota, Missouri, New Jersey, New York, Nevada, Oklahoma, Oregon, and Pennsylvania.

The more advanced of two alternative payment designs proposed in the CCBHC framework is called the "prospective payment system, option two" (PPS2) which is, in essence, a provider-specific, cost-based, monthly payment for an individual falling into pre-designated population cohorts.

In its most simplistic form, it can be described as a bundled payment for any covered services received by the beneficiary in that month. Similar to how rates are set for federally qualified health centers (FQHCs), these rates would also be based on provider costs and, over time, increased by an agreed upon rate of growth like the Medicare Economic Index (MEI) or the Global Insight Market Basket indices for Home Health Services. The key of the demonstration is that an enhanced match rate would be paid for "anticipated costs" associated with meeting the requirements of CCBHC participation, i.e., more federal funds would be invested.

Under this approach, services previously paid by numerous departments would now be consolidated into per person, monthly payments.

For any beneficiary who received some minimum threshold of services, a DA would receive a payment specific to that DA or SSA for the diagnostic group and/or level of care assigned to that beneficiary for that month or year based on historic costs + and inflationary factor in future years.

In a "Request for Feedback", AHS proposed a first wave of services and clinical expectations – consistent with the CCBHC model design and the Vermont Model of Care – be consolidated from across DVHA, DMH, ADAP and DAIL into one pool of financing for a defined set of sub-populations and services. The State proposed that it would adopt the CCBHC PPS2 model as a starting place for more detailed discussion about alternative payment models.

In general, those services proposed for inclusion in the bundled payment are:

- Adult Mental Health Services
- Child Mental Health Services
- Community, Rehabilitation, and Treatment (CRT)
- Emergency/Crisis Services
- Outpatient and Intensive Outpatient Substance Use Disorder Services
- Developmental Disability Services

A strict interpretation of the CCHBC model and the associated PPS2 payment system would require all AHS financing to flow through it. One reason for this is because using this approach for only a sub-set of costs complicates cost reporting and rate development and creates the potential for double paying through overestimated rates. However, there was not widespread agreement on the scope of services and financing to be included in the rate model. Therefore, B&A built a model that was able to run scenarios under multiple exclusion criteria like funding sources, services or programs.

To help facilitate a better understanding of how different payments across departments were reflected in existing claims, financial transaction or MSR data and, arguably, one of the most important exercises of the B&A project, was to benchmark what expenditures and utilization could be measured with existing SFY15 claims, financial transaction and MSR data. With these data, B&A could estimate for the State how payments would have been different under the PPS2 rates in SFY15 if implemented. Also, because the PPS2 rates are based on costs and not rates across multiple departments, the model can gauge the magnitude of any over- or under- payments in its current system. Finally, the model also estimated changes in PPS2 versus actual, with and without different exclusions applied.

A discussion of the advantages and disadvantages are included in Section 4.3. Like the global budget model, any new alternative payment system that aggregates payments like the PPS2 model should be paired with a robust quality and performance system that includes incentives and penalties.

4.2 Data Analysis

4.2.1 Data Sources Used

- Audited Financials
- Independent Charges Survey
- Claims Data
- MSR Data
- Financial Transaction Data

4.2.2 Benchmarking and Validation

Information related to how claims were billed and collected within the State's Medicaid Management Information System (MMIS) administered by their fiscal agent, DXC, is contained across multiple AHS programs. As described in PHPG's June 28, 2016 report titled "Ad Hoc Report: Coverage and Reimbursement Policy Review Mental Health & Specialized Medicaid Programs", there are a wide array of ways AHS pays DAs and SSAs for services. Some methods generate a claim and some do not. B&A used multiple sources of data to compile as many of the payment streams together in order to better describe which revenue is trackable using a standardized utilization data and which are trackable at the person or service level. Examples of those items not trackable include some waiver services and revenue related to grants. .

In order to validate the magnitude of those services and payments that are trackable via existing data sources, B&A used schedules from audited financials to map AHS revenue types into those which were believed to generate a claim or financial transaction record and those that would not. These

independently derived amounts were then compared against the payments contained in the B&A rate model. The results are presented in Exhibit 4.1.

In most cases, B&A was able to estimate the claims amount +/- 10%. The comparison revealed that, in some instances, the rate model was less than expected and, in some cases, greater than expected. Since the mapping of AHS revenues listed on audited to financials to how they translate into claim or financial transaction is not a perfect science, being within this range were deemed reliable for the purposes of exploring alternative rate models. However, as reflected in the recommendations, future PPS2 rates would benefit from consistent billing guidance and data collection such that all revenue is transparently included or excluded from the PPS2 model.

In addition, B&A conducted a series of validation meetings with a subset of DA chief financial officers (CFOs) in order to review preliminary results and explore issues related to the underlying data or assumptions in the model. A number of changes were adopted as a result of these meetings and the findings presented in this report include those identified and agreed upon during those sessions.

Exhibit 4.1 SFY15 Revenue Included in Claims Data Analyses Compared to Audited Financials

Entity Abbrev.	Total Revenue, Estimated AHS			Bundled Revenue, Benchmark		
	Total Financials	Total Claims	Percent	Total Estimated Financials	Total Claims	Percent
Peer Group 1						
HC	$74,021,370	$66,312,072	89.6%	$68,723,970	$66,312,072	96.5%
UCS	$14,739,628	$12,341,570	83.7%	$13,532,334	$12,341,570	91.2%
NCSS	$32,682,745	$30,495,609	93.3%	$31,274,968	$30,495,609	97.5%
RMHS	$24,874,228	$23,302,723	93.7%	$23,898,823	$22,018,093	92.1%
NKHS	$32,530,780	$28,452,949	87.5%	$31,002,244	$28,452,949	91.8%
CSAC	$18,747,470	$16,859,200	89.9%	$17,577,301	$16,859,200	95.9%
WCMHS	$43,312,793	$42,768,857	98.7%	$40,904,618	$42,768,857	104.6%
LCMH	$13,017,081	$12,300,918	94.5%	$11,642,929	$12,300,918	105.7%
CMC	$8,729,743	$7,594,499	87.0%	$7,328,646	$7,594,499	103.6%
HCRS	$42,288,631	$29,875,256	70.6%	$35,007,410	$29,875,256	85.3%
Peer Group 2						
NFI	$13,509,526	$4,355,735	32.2%	$13,509,526	$4,355,735	32.2%
PV	$676,745	$688,105	101.7%	$676,745	$688,105	101.7%
Peer Group 3						
PCC		$614,077			$614,077	
LSI	$3,733,136	$3,710,632	99.4%	$3,733,136	$3,710,632	99.4%
SSTA						
UVS	$13,186,892	$15,034,025	114.0%	$13,186,892	$15,034,025	114.0%
SAS	$6,535,024	$5,688,936	87.1%	$6,535,024	$5,688,936	87.1%
SCC		$4,827,125			$4,827,125	
FF	$4,431,269	$4,117,100	92.9%	$4,431,269	$4,117,100	92.9%
CVS	$3,563,161	$3,529,085	99.0%	$3,563,161	$3,529,085	99.0%

4.2.3 Data Manipulations

4.2.3.1 Estimating Costs

The PPS2 model is based on provider-specific costs for a defined set of services. In lieu of existing cost reports tailored for this purpose, there was a need to estimate costs in order to simulate PPS2 rates. The costing approach was discussed and adapted based on extensive interaction with the stakeholders. B&A acknowledges the data limitations inherent in the costing exercise and presents the findings related to cost projections in this section as estimates-only whereby the trends presented should be viewed directionality as estimates important for the policy maker. B&A recommends a more detailed survey or standardized submittal of data from the DA and SSAs--like the cost report approach used by the CCBHCs—to improve or validate future costing analysis. A full description of the costing analysis methodology is contained in Appendix 4 and Appendix 5. A copy of the survey instrument developed to collect charges data, a tabulation of who responded, and a summary of data received can be found in Appendix 3.

B&A includes in the appendices a unique reporting package for two different cost analysis using two different metrics—namely, a cost to charge ratio (CCR) multiplied by charges and a cost to revenue ratio (CRR) multiplied by revenue--for matching audited financial data with utilization within the rate model in order to derive costs. Results of the CRR analysis may underestimate costs relative to revenue and, given the lack of confidence in the charges data included on claims and submitted by providers, B&A has less confidence in this approach compared to the other approach using CRRs. Therefore, only the analysis in which B&A has more confidence, the one using the CRR, is presented in the final report tables and discussion.

4.2.3.2 Why the effort?

Utilization, expenditure, audited financial, and enrollment data are key data sources for rate setting of any kind. The objective is to set a prospective rate such that, at the end of the year, the system has paid out roughly what was intended to cover some percentage of the facilities' cost for those services. In other payment systems for similar community-based facilities, like Federally Qualified Health Centers (FQHC), audited financial revenue and cost data is matched to utilization and expenditure data in order to produce prospective payments roughly equal to some unit of payment. FQHCs, for example, receive a per visit rate as their primary source of their revenue but their payments cannot be less than a floor calculated using federal guidelines. However, in the case of FQHCs, they can also receive separate payment for some services like labs and PCCM/CHT/PCP incentive payments.

Without attempting to estimate costs at a claim level, the State will not have a way to evaluate the payment adequacy beyond the six categories currently captured. Moreover, the State also runs the risk of not adequately reporting claims-based outcomes measures (e.g., "Follow-up with MH visit following discharge within 7 days"). And finally, it should be a goal to continue to collect and use essential data elements in a standardized way to enable future evaluation of new service models or investments.

4.2.3.3 What are the Current system challenges?

DMH financial reporting through their electronic financial repository ("eFIN") is used to monitor total and DMH-specific revenue as well as by six categories of programmatic breakdowns by children and adults. It is a plentiful source of data and is used to produce important Key Performance Indicators of overall financial health of each organization. While obtaining the raw data submission files directly from the DAs and SSAs or the State would be preferable over the current eFIN interface just for ease of use in future rate model development, the current system contributes important monitoring and evaluation component to DA and SSA contract management.

The major challenge faced in this project was matching these financial data to a reliable source of utilization and expenditure data. Because of the decentralized and programmatically-tailored billing and reimbursement arrangements, there is no one good source upon which to derive good utilization data and expenditure data. To address these challenges, a number of data transformations and assumptions where modeled to derive estimated costs. It was in these details over which B&A and the stakeholders were still under discussions as of the end of 2016. Future rate development will benefit from more standardized rate and billing data.

4.2.3.4 Key take-away related to baseline estimated costs presented

As mentioned previously, these findings should be evaluated based on their directionality and trend over time but not as point estimates given the lack of consensus of one or more of the model assumptions. Moving forward, future rate model development would benefit from an independent survey and/or a standardized cost report submission from the DA/SSAs (i.e., tailored cost report or electronic financial data submissions).

4.2.4 Model Design Elements

The following were considered design elements when modeling PPS2 rate models:

- Eligible Populations
- Covered Services
- Case-mix, Risk-adjustments or Cohort-design
- Frequency of Payment
- Unit of Payment
- Exclusions
- Outlier Thresholds

4.2.4.1 Eligible Populations

In the baseline models, B&A used any population having received care at the DA. It is noteworthy to emphasize that the population in question were 'users' having received care at some point during the period in question. This population definition differs from that used under traditional capitation rate development, which traditionally uses all 'eligible' individuals regardless of whether the individuals received care during the period.

4.2.4.2 Covered Services

There were a number of scenarios related to covered services modeled under the project period. The findings presented within this final report represent a PPS2 baseline with very limited exclusions. Refer to PHPG's June 28, 2016 report titled "Ad Hoc Report: Coverage and Reimbursement Policy Review Mental Health & Specialized Medicaid Programs" for a description of services provided by the peer groups studied.

4.2.4.3 Case-mix

One approach to case-mix adjustment common among hospitals and home health providers is the concept of cost-based relative clinical groupings. This approach uses charges and costs data to group clinically similar services into categories with similar resource-intensity (i.e., costs) and calculate relative intensity scores. It is then possible to compare how resource intensive is the mix of services across one provider versus another. For example, the global budget example from Section 3.4 indicates that it is possible for a given DA to have a higher per person monthly cost because they serve beneficiaries who are some of the most costly compared to the peer group average. The only available case-mix available to AHS currently is the standardized reporting categories of adult and children's mental health, CRT, substance use disorder, developmental disabilities and emergency/crisis services. As reflected in the recommendations, it would be advantageous to adopt a case-mix adjustment methodology in any future model.

4.2.4.4 Risk adjustment

B&A also explored risk adjustment of rates using weighted, beneficiary-level risk scores calculated from Medicare's Hierarchical Condition Category Coding (HCC) software program. As a simplistic test for whether risk scores would be an appropriate measure of adjusting rates, B&A tested whether it would be possible to predict actual spending in a historic base year using an average spend for average risk beneficiary then adjusted by a provider's specific risk score. While HCC is not the best risk adjustment for a Medicaid population, particularly for children, other risk-adjusters like the Chronic Illness and Disability Payment System (CDPS) still predict medical spend, not community services spending, so the results of our findings are transferable to these risk adjustment methods as well.

In summary, the exercise found that the HCC risk scores do a poor job of predicting spending in this cohort, particularly among children, and therefore are not appropriate for use in the rate setting model. While a more Medicaid-friendly risk adjustment method like CDPS may improve this finding, the root cause of the problem is that the scores are based on medical spend, not DA or SSA-specific spending.

An illustrative example of the review is described in Exhibit 4.2. This table displays the results of risk-adjusting the weighted average cost per episode for peer group one using the provider-specific risk score. These predicted results, when compared to actual estimated costs in SFY15, result in differences in the magnitude in this timeframe between -44% and 158%. This variation suggests that using HCC scores to predict spending will not result in reliable estimates in the future.

There are a number of reasons for this finding besides the limitations of the HCC for this population; however, the most important factor contributing to the observed issues relates to what type and scope of spending these scores were meant to predict. To further illustrate the point, take for example a very severely ill beneficiary with multiple chronic conditions who requires intensive, costly acute care and resides in facilities much of the year. This beneficiary would likely have a very high risk score. This beneficiary may have received some outpatient mental health services while residing in the community but given his use of acute settings during much of the year is not very costly to the DA. Therefore, the HCC score actually over-estimates predicted spending while a lower score may under-estimate predicted spending.

B&A worked with AHS and stakeholders to develop alternatives to traditional risk adjustment or case-mix models. The CCBHC PPS2 model gives State the flexibility to define diagnostic cohorts. The goal of the cohorts would be clinical similarity and similar resource intensity. The next section, Section 4.2.4.5 describes these cohorts, which can be thought of as a starting point for developing a risk or case-mix adjustment strategy. Refinements to this approach would be necessary before finalizing. It may also may be advantageous to explore the use of MSR data for creating a more sophisticated risk adjustment approach should the State adopt a capitation model. See Section 5.0 for a broader description of the capitated model alternative.

Exhibit 4.2 Summary of Comparison of Predicted Risk-adjusted Costs versus Estimated Costs

SFY 2015 Utilization Totals	HCC Risk Score	Number of 30 day Episodes	Total Estimated Costs	Estimated Costs per Episode	Predicted Costs per Episode using Risk Score	Difference Predicted from Estimated Actuals	% Difference Predicted from Estimated Actuals
Counseling Service of Addison County	0.456	8,541	$17,011,864	$ 1,992	$1,804	$ (188)	-9%
Health Care & Rehab Srv of SE Vermont	0.479	17,514	$30,219,881	$ 1,725	$1,895	$ 170	10%
HowardCenter	0.490	39,431	$65,472,049	$ 1,660	$1,941	$ 280	17%
Lamoille County Mental Health	0.402	4,217	$12,013,226	$ 2,849	$1,593	$ (1,256)	-44%
Northeast Kingdom Human Services	0.412	16,226	$28,406,556	$ 1,751	$1,631	$ (120)	-7%
Northwestern Counseling & Support Services	0.386	15,165	$30,214,088	$ 1,992	$1,529	$ (463)	-23%
Rutland Mental Health Services	0.529	12,298	$22,388,013	$ 1,820	$2,094	$ 274	15%
Clara Martin Center	0.523	9,355	$7,499,218	$ 802	$2,069	$ 1,268	158%
United Counseling Service	0.487	9,243	$12,219,930	$ 1,322	$1,927	$ 605	46%
Washington County Mental Health Services	0.397	15,391	$43,176,663	$ 2,805	$1,573	$ (1,232)	-44%
Total	**0.460**	**147,381**	**$268,621,488**	**$ 1,823**	**$1,823**	**$ (663)**	-36%

4.2.4.5 Alternative Cohort Design

As shown in Exhibit 4.1, the risk score often predicts the opposite direction of actual spend because of the phenomena, as described above, whereby the highest risk score beneficiary is actually least expensive because the cost of their acute or residential care is being provided by hospitals or other medical benefit providers. Given the shortcomings of the traditional case-mix approach and risk-adjustment approach considered, B&A worked with stakeholders to define a set of cohorts for which there was clinical and resource similarity. A number of scenarios were considered and modeled. This report, however, describes only the most broadly accepted and validated model of those considered.

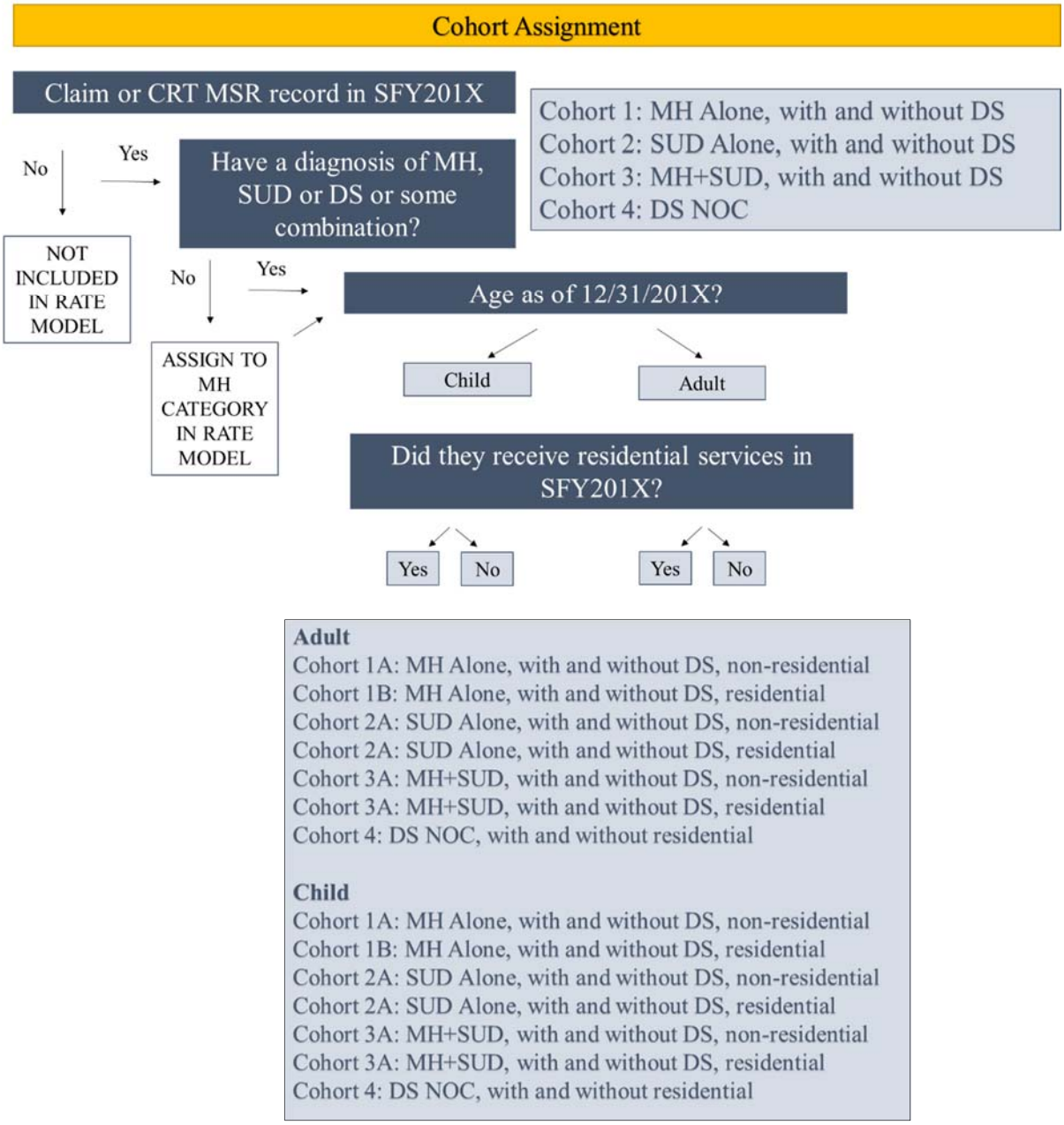
The cohort design with the most stakeholder buy-in and determined by B&A to have the best potential of alternatives modeled for purposes of grouping together populations with clinical and resource-intensity similarities is shown below. The cohorts developed as part of the stakeholder engagement process break down patients by age, diagnosis and whether receiving residential services. Appendix 6 summarizes the diagnoses codes used to group the providers. Exhibit 4.3 summarizes the cohorts created for use as a proxy case and risk adjuster in the PPS2 model. Exhibit 4.4 illustrates the specifications framework used to assign claims and beneficiaries into monthly cohorts. Refer to Section 4.4 for a discussion of findings of payments and costs among the cohorts developed. B&A used the definition proposed by the stakeholder group of to define the children's population; their preferred definition was children were those beneficiaries 21 and younger and adults were considered if 22 and older; age was determined based on date as of December 31 of each annual dataset.

Exhibit 4.3 Summary of PPS2 Cohort

Adult
Cohort 1A: MH Alone, with and without DS, non-residential
Cohort 1B: MH Alone, with and without DS, residential
Cohort 2A: SUD Alone, with and without DS, non-residential
Cohort 2A: SUD Alone, with and without DS, residential
Cohort 3A: MH+SUD, with and without DS, non-residential
Cohort 3A: MH+SUD, with and without DS, residential
Cohort 4: DS NOC, with and without residential

Child
Cohort 1A: MH Alone, with and without DS, non-residential
Cohort 1B: MH Alone, with and without DS, residential
Cohort 2A: SUD Alone, with and without DS, non-residential
Cohort 2A: SUD Alone, with and without DS, residential
Cohort 3A: MH+SUD, with and without DS, non-residential
Cohort 3A: MH+SUD, with and without DS, residential
Cohort 4: DS NOC, with and without residential

Exhibit 4.4 PPS2 Cohort Assignment Logic



4.2.4.6 Exclusions Scenarios

At the onset of the project, the scope of services, both in terms of specific programs and funding sources across AHS departments, was uncertain. Moreover, there was a lack of systematic reconciliation of what proportion of total spending could be accounted for using claims and financial transaction data versus grants and other financing streams. B&A, therefore, compiled all available data and benchmarked it to reported audited financials as reported in Section 4.2.2. Of those services upon which there was data that could be included in the model, B&A identified funding sources and program-specific claims so that different scenarios could be run. Throughout the course of this project, numerous scenarios under different exclusions were modeled and shared with State-only and Multi-stakeholder group. Consistent with the intent of the CCBHC PPS2, the data presented in this final report includes all funding sources with one exception, the claims associated with Rutland's intermediate care facility (ICF) were removed.

Exhibits 4.5 and 4.6 summarizes the data in the rate model by major funding source and program area respectively. As noted, removal of one or more of the funding sources below from the rate model would impact the calculation of rates and outliers. Similarly, the removal of one or more of the programs identified would impact the PPS2 rates.

Exhibit 4.5 SFY15 Payments by Provider, by Fund Source

Entity Abbreviation	DVHA (A & V)	DMH (G)	DMH/CRT (S & MSR/CRT)	DAIL (B & L)	ADAP (K)	DCF (I)
Peer Group 1						
HC	$2,095,557	$20,200,153	$6,209,111	$32,049,557	$5,748,691	$9,004
UCS	$537,635	$2,445,898	$2,227,902	$6,863,614	$266,521	
NCSS	$799,965	$12,988,351	$3,385,927	$13,321,367		
RMHS	$466,944	$3,419,265	$3,220,122	$15,499,604	$696,788	
NKHS	$757,436	$3,930,996	$4,635,931	$17,473,583	$391,812	$1,263,192
CSAC	$382,264	$7,013,109	$2,657,833	$6,696,932	$109,061	
WCMHS	$745,162	$20,490,230	$7,339,731	$14,147,384	$46,351	
LCMH	$86,890	$5,036,454	$2,514,003	$4,663,572		
CMC	$592,376	$3,952,304	$2,066,488		$983,331	
HCRS	$727,551	$8,488,302	$5,587,616	$14,855,252	$216,535	
Peer Group 2						
NFI	$93,510	$4,262,225				
PV	$243	$390,012	$297,850			
Peer Group 3						
PCC		$614,077				
LSI				$3,710,632		
SSTA						
UVS	$333			$15,033,693		
SAS				$5,688,936		
SCC				$4,827,125		
FF	$179,451			$3,937,649		
CVS				$3,529,085		

Exhibit 4.6 SFY15 Payments by Provider, by Program Flag

Entity Abbreviation	General Services	Intermediate Care Facility (ICF)	Private Non-Medical Institution (PNMI)	Personal Care Services (PCS)	Traumatic Brain Injury (TBI)	Success Beyond Six (SBS)	JOBS: Children Vocational Rehab	Children Enhanced Family Treatment (EFT)	Integrated Family Services (IFS)
Peer Group 1									
HC	$18,576,361		$1,894,869			$12,811,976	$165,804	$32,863,063	
UCS	$5,153,873			$829		$245,408	$87,496	$6,853,964	
NCSS	$4,451,921					$7,935,487		$13,206,803	$4,901,398
RMHS	$6,711,354	$1,284,630				$1,031,052	$75,423	$14,200,264	
NKHS	$9,725,740					$1,271,985	$86,832	$17,368,393	
CSAC	$3,521,784			$93		$3,002,838		$6,582,958	$3,751,527
WCMHS	$15,358,675					$13,120,055	$80,274	$14,209,853	
LCMH	$3,361,942			$1,330		$3,819,273	$25,941	$5,092,431	
CMC	$7,323,605						$94,196	$176,698	
HCRS	$12,333,268			$1,331		$2,797,630	$111,465	$14,631,561	
Peer Group 2									
NFI	$4,251,330		$104,405						
PV	$688,105								
Peer Group 3									
PCC									$614,077
LSI								$3,710,632	
SSTA									
UVS	$27,712							$15,006,313	
SAS								$5,688,936	
SCC								$4,827,125	
FF	$217,762							$3,899,338	
CVS	$1,360							$3,527,725	

4.2.4.7 Outlier Policy

B&A examined the data at a provider-specific, cohort, and age-specific member month level at two, three and four standard deviations for the appropriate use as a threshold above which an outlier payment would be generated (to account for extraordinarily high costs). Exhibits 4.7 – 4.24 summarizes the review of data at two, three and four standard deviation of the mean based on charges and payments by the adult and child cohorts for each peer group. Given the number of summary tables related to outliers, these exhibits are found at the end of the document, starting on Page 67.

Setting an outlier threshold at three standard deviations of the provider-specific, cohort-specific mean created an outlier pool in the B&A rate model of approximately 2.6% of total charges data and payments data. Targeting approximately 2.5% of total spending is considered an adequate and reasonable pool for covering outlier expenses. Therefore, B&A used an outlier threshold of three standard deviations from the provider-specific, cohort-specific mean for the models presented in these findings. Exhibits 4.25 and 4.26 on page 35 summarize the outlier thresholds modeled for each peer group and for each cohort for adults and children, respectively, using a three standard deviation threshold.

Exhibit 4.25 Monthly Outlier Threshold for Three Standard Deviations by Cohort, Adults

	Outlier Threshold, Adults		
	Peer Group 1	**Peer Group 2**	**Peer Group 3**
Mental Health	$4,515	$3,202	$31,036
Mental Health, Residential	$15,485	$3,123	$41,125
Substance Use Disorder	$1,607	$3,466	$3,863
Substance Use Disorder, Residential	$2,245		
Mental Health & Substance Use Disorder	$2,112	$1,901	
Mental Health & Substance Use Disorder, Residential	$3,829	$1,673	
Developmental Services	$12,904		$15,739

Exhibit 4.26 Monthly Outlier Threshold for Three Standard Deviations by Cohort, Children

	Outlier Threshold, Children		
	Peer Group 1	**Peer Group 2**	**Peer Group 3**
Mental Health	$8,560	$12,731	$9,073
Mental Health, Residential	$19,479	$12,571	$15,751
Substance Use Disorder	$1,538		
Substance Use Disorder, Residential	$2,774		
Mental Health & Substance Use Disorder	$5,981	$12,096	
Mental Health & Substance Use Disorder, Residential	$9,927	$11,803	
Developmental Services	$9,388		$14,754

4.3 Findings

4.3.1 Trends in Costs and Revenues

One measure of payment adequacy is known as cost coverage. One metric used to evaluate cost coverage is a cost-to-revenue ratio, or CRR. A CRR quantifies to what extent revenues from services cover the costs of providing those services. In the aggregate, DAs and SSAs maintain overall budget neutrality whereby revenues do not exceed costs by a large amount in any one year. Exhibits 4.27-4.33 describe the CRRs across five major program categories over time, by peer group.

A review of these CRRs revealed that, in total, CRRs are stable and have a very slight positive trend. However, the CRRs do vary at the program and/or population-level. The relevant trends identified by B&A include:

- Developmental disability services represent a large proportion of the overall spend. The service model includes at least in part person/family-centered budgets. Based on the DA and SSA financial analysis, adequacy of payment in terms of payments covering costs, has been stable in this program area. There is little potential to expand service offerings or to see additional populations in need, but not eligible for waiver services, under the current financial model.
- Outpatient adult mental health revenues tend to fall short of expenses and there is much more variation year over year.
    - Based on CPT/HCPCS analysis across AHS funding sources, B&A identified outpatient medical services paid for by DVHA as being well below cost. This should be balanced by noting that is not unexpected given the rates for services paid by DVHA are benchmarked based on costs for similar services in the physician office setting.
    - DMH pays a premium to DVHA rates for similar services, i.e., a percentage mark-up for different beneficiaries or programs. This helps close some of the gaps in costs and payments.
- Children's programs are more likely to be at or below 1.0 CRR meaning that revenues for children's programs are often adequate in covering expenses.
- Emergency and crisis funding are costing more than direct client revenue is financing in the current system. Year over year variability is high.
- Community rehabilitation and treatment (CRT) program revenue for serious mental illness is not meeting the cost; year over year variability is high.
- Revenue for substance use disorder services are similarly not meeting costs; there is a declining trend.

Exhibit 4.27 Statewide Total Cost-to-Revenue Ratios, SFY13-SFY15

Cost-to-Revenue Ratio (CRR)	Peer Group 1		Peer Group 2		Peer Group 3	
	Mean	Wt. Avg.	Mean	Wt. Avg.	Mean	Wt. Avg.
2013	98.5%	102.9%			97.5%	98.5%
2014	99.5%	104.0%	101.8%	101.8%	102.3%	102.2%
2015	99.4%	99.7%	100.8%	101.6%	101.4%	101.1%
3-Yr Avg	99.1%	102.2%	101.3%	60.4%	100.4%	100.6%
3-Yr Med	99.4%	102.9%	101.3%	60.4%	101.4%	101.1%

Exhibit 4.28 Statewide Total Cost-to-Revenue Ratios, Developmental Services, SFY13-SFY15

Cost-to-Revenue Ratio (CRR)	Peer Group 1		Peer Group 2		Peer Group 3	
	Mean	Wt. Avg.	Mean	Wt. Avg.	Mean	Wt. Avg.
2013	98.8%	99.5%			98.2%	99.3%
2014	100.1%	100.0%			102.2%	103.5%
2015	101.2%	101.0%			101.1%	102.3%
3-Yr Avg	100.0%	100.2%			100.5%	101.7%
3-Yr Med	100.1%	100.0%			101.1%	102.3%

Exhibit 4.29 Statewide Total Cost-to-Revenue Ratios, Adult Mental Health, SFY13-SFY15

Cost-to-Revenue Ratio (CRR)	Peer Group 1		Peer Group 2		Peer Group 3	
	Mean	Wt. Avg.	Mean	Wt. Avg.	Mean	Wt. Avg.
2013	118.4%	115.8%				
2014	119.4%	112.2%				
2015	107.8%	103.9%				
3-Yr Avg	115.2%	110.6%				
3-Yr Med	118.4%	112.2%				

Exhibit 4.30 Statewide Total Cost-to-Revenue Ratios, Child Mental Health, SFY13-SFY15

Cost-to-Revenue Ratio (CRR)	Peer Group 1		Peer Group 2		Peer Group 3	
	Mean	Wt. Avg.	Mean	Wt. Avg.	Mean	Wt. Avg.
2013	95.1%	96.3%				
2014	95.2%	96.6%				
2015	94.5%	95.4%				
3-Yr Avg	94.9%	96.1%				
3-Yr Med	95.1%	96.3%				

Exhibit 4.31 Statewide Total Cost-to-Revenue Ratios, Emergency and Crisis, SFY13-SFY15

Cost-to-Revenue Ratio (CRR)	Peer Group 1		Peer Group 2		Peer Group 3	
	Mean	Wt. Avg.	Mean	Wt. Avg.	Mean	Wt. Avg.
2013	99.8%	103.0%				
2014	99.4%	102.3%				
2015	98.0%	103.1%				
3-Yr Avg	99.1%	102.8%				
3-Yr Med	99.4%	103.0%				

Exhibit 4.32 Statewide Total Cost-to-Revenue Ratios, MH CRT, SFY13-SFY15

Cost-to-Revenue Ratio (CRR)	Peer Group 1		Peer Group 2		Peer Group 3	
	Mean	Wt. Avg.	Mean	Wt. Avg.	Mean	Wt. Avg.
2013	97.3%	97.6%				
2014	98.7%	99.0%				
2015	101.3%	101.4%				
3-Yr Avg	99.1%	99.4%				
3-Yr Med	98.7%	99.0%				

Exhibit 4.33 Statewide Total Cost-to-Revenue Ratios, SUD, SFY13-SFY15

Cost-to-Revenue Ratio (CRR)	Peer Group 1		Peer Group 2		Peer Group 3	
	Mean	Wt. Avg.	Mean	Wt. Avg.	Mean	Wt. Avg.
2013	121.4%	102.0%				
2014	115.7%	108.9%				
2015	103.1%	100.2%				
3-Yr Avg	113.4%	103.7%				
3-Yr Med	115.7%	102.0%				

4.3.2 PPS2 SFY15 Simulated Baseline Rates

The PPS2 payment model consists of a provider-specific, population cohort-specific monthly visit rate. If the total cost of the monthly visit was in excess of the cohort-specific thresholds created at three standard deviations of the mean costs, an outlier payment was assigned. So the total amount paid would in a given year would be the sum of the monthly visits*rates, or "Inlier Payments" and total outlier payments. The application of this methodology does cause some providers to receive more and others less depending on how the model estimated costs. Given the limitations discussed related to using these data to predict costs, B&A recommends collecting new data or improving the data upon which these estimates are based prior to finalize of any new rate. Moreover, these models are to depict what would have been paid and the impact of those new payments relative what was actually paid in state fiscal year 2015.

Rates in the PPS2 model are "cost-based" such that rates will reflect the overall costs of providing services. Given that the DAs and SSAs do not currently submit a PPS2-specific cost report—which is a mandatory component of the federal CCBHC pilot program—there was no readily available data on which to base the estimates. Therefore, B&A used its rate model, and its estimates of costs, to simulate what rates would have been in SFY15 had AHS used the PPS2 model instead of the existing financing system.

An important caveat for this analysis is that only those revenues for which B&A could identify or create claims-history are included in the analysis. Said another way, these reports do not fully account for all revenues and the findings are specific to those subset of revenues and expenses which could be included in the rate model. Refer to *Section 4.2.3.1* for a full description of the B&A approach to estimating costs. Refer to *Exhibit 4.1 SFY15 Revenue Included in Claims Data Analyses Compared to Audited Financials* for an accounting of the percent of total revenue included in the rate B&A model presented. Exhibit 4.34 summarizes the total model payments which are equivalent to estimated costs under the PPS2 model by peer group for those services within the potential scope of the PPS2 model contained in the B&A model.

Exhibit 4.34 Total Modeled PPS2 Payments by Peer Group

	Peer Group 1	**Peer Group 2**	**Peer Group 3**
Total, All Cohorts	$268,621,555	$5,011,568	$38,218,588
Outlier Payments	$41,607,680	$142,228	$2,380,805
Percentage, Outlier	15.5%	2.8%	6.2%

4.3.2.1 PPS2 Rates for Peer Group 1

Using the PPS2 model design elements described in Section 4.2, B&A estimated provider-specific monthly visit rates and outlier payments for each provider, for each population-based cohort. A unique rate was calculated on the child versus adult population. Exhibits 4.35-4.37 summarize the estimated SFY15 adult PPS2 rates for peer group 1 and outlier payments. Exhibits 4.38-4.41 summarize the estimated SFY15 child PPS2 rates for peer group 1 and outlier payments.

Exhibit 4.35 SFY15 Estimated PPS2 Monthly Rates by Cohort, Adults, Peer Group 1

Entity Abbreviation	PPS2 Cohort						
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS
HC	$867.88	$3,045.81	$451.47	$447.15	$461.02	$567.51	$4,322.31
UCS	$955.05	$3,713.70	$304.71	$357.68	$356.82	$712.98	$3,467.09
NCSS	$1,023.20	$4,585.69	$294.48	$1,369.41	$347.36	$465.04	$3,434.94
RMHS	$1,205.56	$4,751.91	$365.25	$665.31	$567.68	$674.89	$3,945.82
NKHS	$1,086.19	$3,490.27	$210.28	$410.68	$230.99	$884.99	$4,322.40
CSAC	$1,081.65	$3,727.23	$365.18	$408.15	$476.98	$703.02	$4,297.53
WCMHS	$1,408.16	$3,182.24	$297.49	$2,110.27	$276.54	$429.49	$4,264.73
LCMH	$1,598.61	$3,674.58	$50.51		$645.08	$336.46	$4,537.51
CMC	$777.76	$1,012.99	$273.39	$435.73	$374.84	$551.78	
HCRS	$1,066.54	$4,184.34	$399.67	$725.61	$484.67	$782.93	$4,267.54

Exhibit 4.36 SFY15 Estimated PPS2 Total Outlier Payments by Cohort, Adults, Peer Group 1

Entity Abbreviation	PPS2 Cohort						
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS
HC	$893,338	$449,114	$22,081		$37,512	$91,551	$1,094,810
UCS	$875,786		$1,565		$3,465	$6,414	
NCSS	$1,178,671	$144,555			$24,576		$551,568
RMHS	$37,558	$765,995	$79,608	$8,322	$13,879		$175,115
NKHS	$446,161	$798,609	$214,979	$87,923	$13,108	$72,927	$1,092,122
CSAC	$177,714				$16,370		$203,303
WCMHS	$586,344	$172,648	$120,662		$163,594		$956,464
LCMH	$115,858	$117,337	$7,394		$14,901		
CMC			$102,694		$20,586		
HCRS	$594,484	$763,543	$56,068	$40,212	$43,686	$130,852	

Exhibit 4.37 PPS2 Modeled Monthly Rates, Adults, Peer Group 1

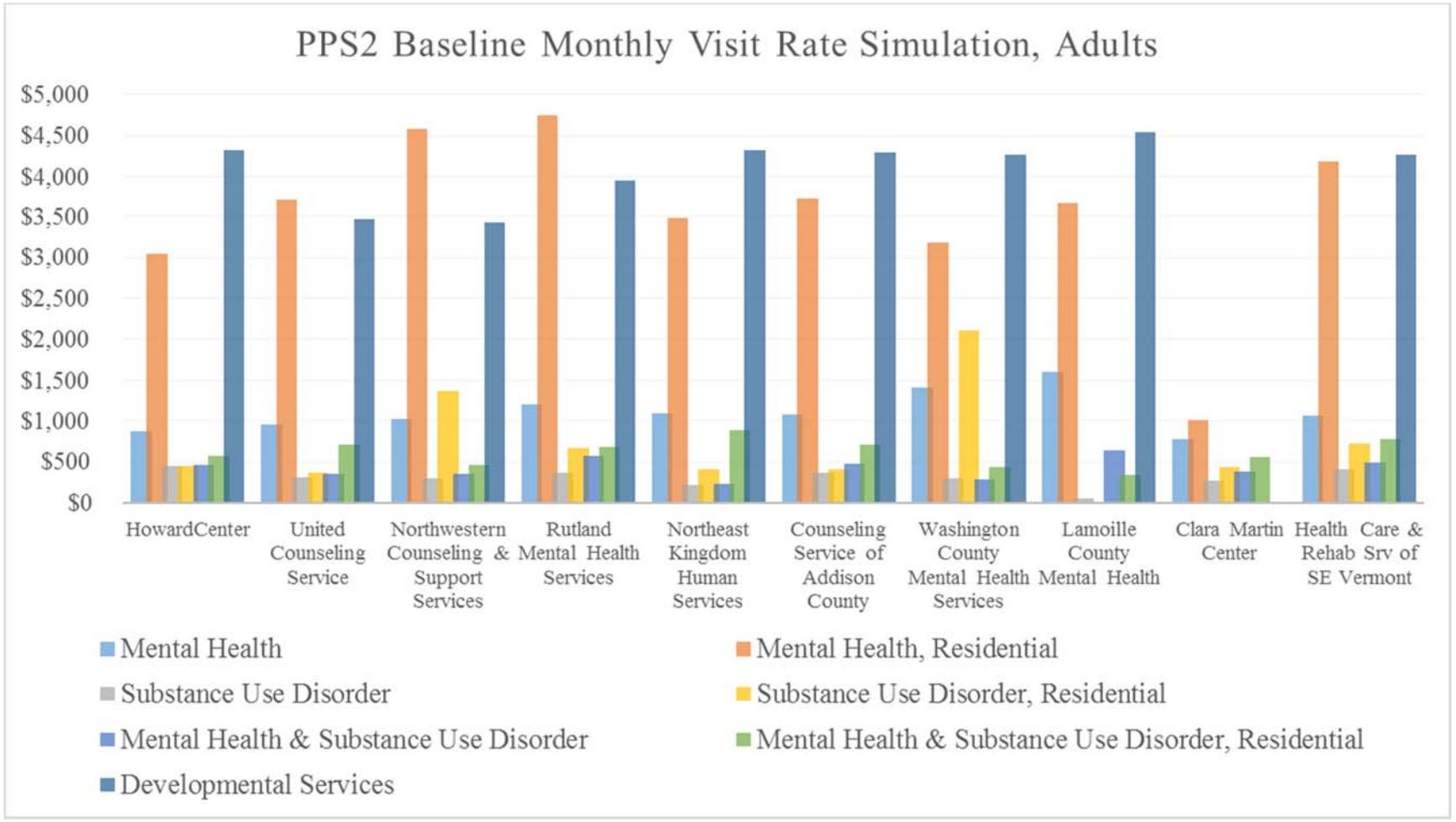


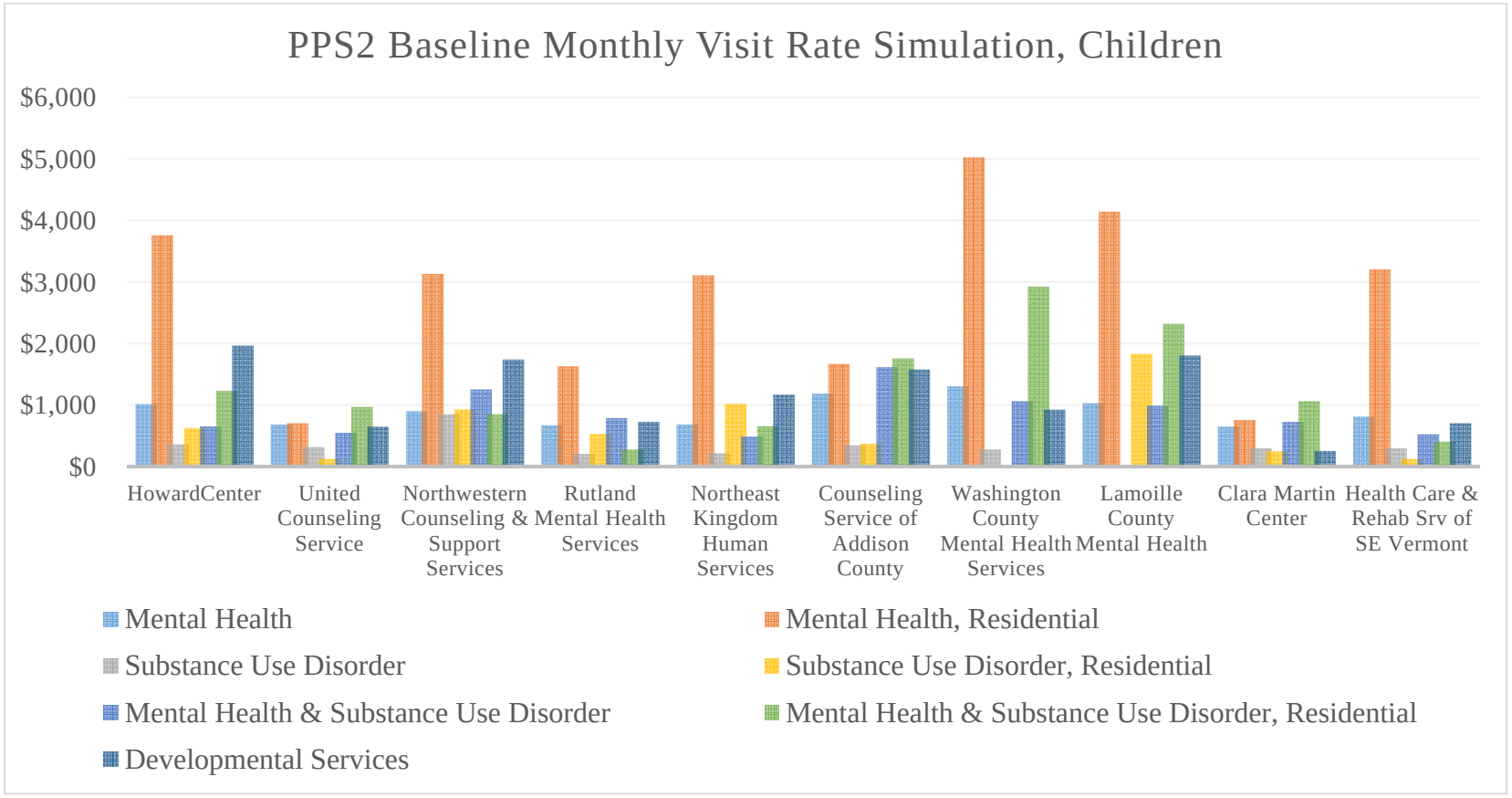
Exhibit 4.38 SFY15 Estimated PPS2 Monthly Rates by Cohort, Children, Peer Group 1

Entity Abbreviation	PPS2 Cohort						
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS
HC	$1,014.51	$3,760.54	$359.89	$626.26	$652.34	$1,230.06	$1,966.09
UCS	$684.63	$704.46	$317.57	$123.21	$547.91	$968.77	$647.07
NCSS	$899.13	$3,131.54	$852.83	$928.11	$1,254.29	$850.64	$1,740.32
RMHS	$672.38	$1,628.38	$206.52	$528.56	$788.35	$277.62	$725.50
NKHS	$683.20	$3,109.14	$215.28	$1,018.74	$487.15	$654.33	$1,167.00
CSAC	$1,184.25	$1,669.41	$344.68	$370.06	$1,616.32	$1,759.54	$1,577.73
WCMHS	$1,304.50	$5,028.91	$276.51		$1,060.95	$2,924.70	$925.31
LCMH	$1,030.50	$4,143.76		$1,833.76	$990.36	$2,318.83	$1,805.86
CMC	$648.92	$757.77	$296.28	$246.97	$727.36	$1,060.51	$253.37
HCRS	$811.87	$3,203.58	$296.55	$124.18	$525.21	$406.63	$704.80

Exhibit 4.39 SFY15 Estimated PPS2 Total Outlier Payments by Cohort, Children, Peer Group 1

Entity Abbreviation	PPS2 Cohort						
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS
HC	$5,092,552	$89,660			$11,967	$12,366	$398,647
UCS							
NCSS	$3,764,769	$160,661			$61,635		$106,410
RMHS	$183,172	$271,682	$3,771				
NKHS	$144,600		$23,834			$41,862	
CSAC	$759,648				$72,179		$9,471
WCMHS	$7,572,755	$1,591,830			$244,868	$75,173	$329,319
LCMH	$2,433,362	$272,589				$48,051	$185,274
CMC	$1,047,967		$5,301		$136,772		
HCRS	$2,087,037	$443,575	$3,875		$70,700		$264,321

Exhibit 4.40 PPS2 Modeled Monthly Rates, Adults, Peer Group 1



4.3.2.2 PPS2 Rates for Peer Groups 2 & 3

Using the PPS2 model design elements described in Section 4.2, B&A estimated provider-specific monthly visit rates and outlier payments for each provider, for each population-based cohort. A unique rate was calculated on the child versus adult population. Given most providers who were assigned to peer groups two and three do not offer the variety of services of those providers in peer group one, rates were not calculated for population cohorts not served by the provider. Exhibits 4.41-4.44 summarize the estimated SFY15 adult and child PPS2 rates and outliers for peer group two. Exhibits 4.45-4.48 do the same for peer group three.

Exhibit 4.41 SFY15 Estimated PPS2 Monthly Rates by Cohort, Adults, Peer Group 2

Entity Abbreviation	PPS2 Cohort						
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**
NFI	$165.77						
PV	$569.19	$603.59	$712.55		$502.15	$492.44	

Exhibit 4.42 SFY15 Estimated PPS2 Total Outlier Payments by Cohort, Adults, Peer Group 2

Entity Abbreviation	PPS2 Cohort						
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**
NFI							
PV	$121,765	$6,765			$11,745	$1,953	

Exhibit 4.43 SFY15 Estimated PPS2 Monthly Rates by Cohort, Children, Peer Group 2

Entity Abbreviation	PPS2 Cohort						
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**
NFI	$3,591.63	$5,323.09			$4,677.14	$2,903.92	
PV	$25.36						

Exhibit 4.44 SFY15 Estimated PPS2 Total Outlier Payments by Cohort, Children, Peer Group 2

Entity Abbreviation	PPS2 Cohort						
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**
NFI							
PV							

Exhibit 4.45 SFY15 Estimated PPS2 Monthly Rates by Cohort, Adults, Peer Group 3

Entity Abbreviation	PPS2 Cohort						
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**
PCC							
LSI		$6,614.61					$5,289.04
SSTA							
UVS	$6,627.06	$15,056.10					$6,052.50
SAS	$20,219.39	$6,669.80					$6,057.29
SCC	$13,263.63	$22,954.04					$7,074.74
FF	$6,901.09		$2,627.02				$5,328.46
CVS	$8,723.87	$4,544.42					$4,446.15

Exhibit 4.46 SFY15 Estimated PPS2 Total Outlier Payments by Cohort, Adults, Peer Group 3

Entity Abbreviation	PPS2 Cohort						
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**
PCC							
LSI							$19,617
SSTA							
UVS							$831,545
SAS							$105,005
SCC							$182,359
FF							$550,250
CVS							$35,207

Exhibit 4.47 SFY15 Estimated PPS2 Monthly Rates by Cohort, Children, Peer Group 3

Entity Abbreviation	PPS2 Cohort						
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS
PCC	$619.91	$664.38					$483.65
LSI	$2,518.97	$3,838.91					$3,312.07
SSTA							
UVS	$3,245.28	$7,900.12					$3,768.03
SAS	$3,874.14	$7,559.39					$4,776.48
SCC							$2,203.25
FF	$1,848.98	$5,009.51					$2,113.22
CVS		$9,336.83					$4,330.52

Exhibit 4.48 SFY15 Estimated PPS2 Total Outlier Payments by Cohort, Children, Peer Group 3

Entity Abbreviation	PPS2 Cohort						
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS
PCC							
LSI							
SSTA							
UVS							$243,649
SAS	$126,434						
SCC	$55,808						
FF	$195,520						$35,411
CVS							

4.3.2.3 Trends in PPS2 Rates among Cohorts

With some exceptions, the population-based, age stratified cohorts proposed by the stakeholder produced more stable rates with less variation than observed at the global budget level reflecting the ability of the cohort design to service as a case-mix or risk-adjustment proxy. Moreover, for the most part, spending in the adult residential cohorts was as expected based on stakeholder input that these beneficiaries are more complex and costly given they are receiving higher level of care.

Among peer group one providers, the rates for adult mental health services fall within a relatively reasonably small band of $868 to $1,599 per monthly visit rate. Similar congruency was observed in the corresponding residential cohorts which range from $3,046 to $4,752. The ranges above exclude the Clara Martin Center which had the lowest rates, since their residential costs were substantially lower than the rest of peer group one and similar to its payer mix is dissimilar in some respects to the other members of peer group one. The Howard Center had the lowest reported rates for the adult mental health cohorts (residential and non-residential) which could be the result of many factors including volume, efficiency, less severe patient mix within a population cohort, or other non-modeled sources of revenues and costs. Similarly, Rutland Mental Health services had the highest rates which could be influenced by any of the same factors mentioned above.

B&A estimated lower monthly visit rates for the children's mental health non-residential cohort; however, variability in the rates among providers is similar to the corresponding adult rates. For example, the estimated range of the child mental health population is $683.20-$1,304.50. However, there is much wider variation in the residential cohort rates from children compared to adults ranging from $704.46-$5,028.91. This variation may be attributable to different mix and breadth of residential services under the auspices of the designated agency or a problem with the data used to properly classify beneficiary visits into the appropriate cohort. Given this variation, B&A recommends further exploration of these differentiations in the children's population-based cohorts should this approach be adopted.

The adult and children substance use disorder (SUD) non-residential cohorts for peer group one providers were very similar, with a few exceptions. For example, adult SUD PPS2 rates ranged from $210.28-$451.47 and from $206.52-$359.89. There were two outliers excluded in those ranges: Lamoille County's adult SUD rate was $50.51 and Northwestern Counseling & Support Services' child rate was $852.83. These outliers warrant further exploration prior to adopting a PPS2 approach.

The differences between the SUD residential versus non-residential costs were more variable than the mental health cohorts, with a few exceptions. The rates for Northwestern Counseling Services and Supports and Washington County for example, show a demonstrable difference between the SUD residential and non-residential populations. Factors that could be impacting these results include smaller sample sizes and/or different underlying system of care for which other providers play a more significant role. It is also possible given the limitations of the MSR data for the SUD population in terms of identifying those receiving residential services may be contributing some of the findings presented; future models may want to further refine these cohorts.

Moreover, based on stakeholder input, B&A expected that the cohorts who have comorbid mental health and substance use disorder diagnoses would have higher complexity and costs; however, the PPS2 rate simulation suggests that if there are more costs, they are not widely different from those of the SUD alone populations. These cohorts could likely be collapsed together. This may help further reduce variability by increasing the sample size of each cohort.

In the final population-based cohort, disability services (DS), adult rates range from $3,434.94-$4,537.51. Like the other rate categories, there are likely underlying differences in the service mix and severity of illness among the populations served by each provider. As a reminder, beneficiaries with mental health and/or substance use disorder who also had a diagnosis of development disabilities would be included in the mental health and/or SUD cohorts. Those falling into the DS cohort had only a diagnosis of DS and no other conditions.

The PPS2 rates for peer group 2 providers demonstrated that a single cohort may be warranted. For example, the Northeastern Family Institute (NFI) rates for children's mental health cohorts follow the expected trend while those with comorbid MH and SUD do not. These issues suggest that collapsing some cohorts together for these populations may be warranted. Similar treatment may be appropriate for Pathways Vermont for their adult population. One provider from peer group three, PCC, may be more appropriately grouped in peer group two and warrant a single cohort rate for children.

Among peer group three providers, the adult cohorts produced much more variability among providers and across cohorts. The differences in the estimated PPS2 rates for the residential cohorts were also not consistently in the expected direction. That being said, the adult DS cohort was reasonable stable and similar, although slightly higher, than observed in peer group one. The children's PPS2 rates were more stable and in the direction expected for the residential cohort. NFI's children's rates were similar to peer group three providers for these cohorts. Also, although there is variation at the provider-level, the cohorts with a development disabilities diagnosis but no comorbid mental health diagnosis are less costly than those with a comorbidity. Only one SSA had beneficiaries attributed to a SUD population cohort.

In summary, the observations presented above suggest that AHS and stakeholders may explore some changes to the cohort design to improve the rates produced by the PPS2 methodology. Specifically, these areas of exploration include:

1) Improving assignment of children into the residential and non-residential mental health categories among peer group one providers
2) Considering collapsing the SUD and SUD+MH categories into single category across all providers.
3) Identifying approaches to improve the differential of beneficiary visits into the SUD residential and non-residential categories. Determine if that distinction is as meaningful as observed in the mental health population-based cohorts.
4) Creating one adult cohort for Pathway's Vermont and one children's cohort for NFI and in addition, consider moving PCC into peer group 2 and similarly, using one cohort to define monthly visit rate.

4.3.2.4 Impact of PPS2 Simulation by Peer Group

The impact of the PPS2 compared to actual payments is not surprising given the findings of the analysis of Cost to Revenue Ratios (CRRs) described in Section 4.3. For example, many children's programs were paid above expenses in SFY15 so when paying based on estimated cost alone, it is not a surprising result that children's programs would be predicted to have been paid less under a PPS2. The alternative is also true; for programs for which providers were paid less than expenses, these PPS2 rates would result in more revenue than compared to what was paid in SFY15 like most adult mental health programs.

B&A estimates that six DAs in peer group one would have received less under the PP2 methodology modeled including Howard Center, United Counseling Services, Northwestern Counseling & Support Services, Northeast Kingdom, Lamoille and Clara Martin Center. Four DAs would have received more: Healthcare & Rehabilitation Services of Southeast Vermont, Washington County, Counseling Services of Addison County, and Rutland Mental Health Services.

While not presented, when key children's program funding are removed, like "Success beyond Six" (SBS), B&A observed that the impact analysis would change such that some providers who would have received less under the PPS2 now would receive more. Said another way, these results would change if the scope of covered services or programs excluded key children's services. Moreover, an important limitation to these estimates is that they do not include those revenues or utilization for AHS payments made outside the rate model as described in Exhibit 4.3 such that if they were included, the PPS2 rates and their subsequent modeled impact would change.

Among peer groups two and three, three providers would have been paid less in SFY15 and six would have been paid more under the PPS2 model. Most of the amounts were small and represented a small percentage of costs in both directions. Upper Valley Services and Families First would gain the most while Green Mountain Support Services and Champlain Valley Services would lose the most.

Exhibits 4.49-4.51 display the total estimated impact on the adult and child cohorts by provider for each peer group. Total rate and outlier payments predicted under the SFY15 PPS2 model were compared to what was actually paid in SFY15. Any text highlighted in red translates into less estimated revenue than current under SFY15 PPS2 rates. Exhibits 4.52-4.57 summarize the impact for each peer group at the population-based cohort and age-based cohorts. These tables are presented at the end of the document, starting on Page 85.

Exhibit 4.49 Total Impact of Actual Payment versus PPS2 Estimated Payments, Peer Group 1

Provider Name	Adults	Children	Total, All Ages
Howard Center			
Inlier Payment (Rate * Monthly Visits)	$37,440,284	$19,838,179	$57,278,464
Outlier Payment	$2,588,406	$5,605,192	$8,193,598
Total PPS2 Payment	$40,028,691	$25,443,372	$65,472,062
Actual Payments	$40,551,987	$25,760,086	$66,312,072
Variance (PPS2 - Actual)	($523,296)	($316,714)	($840,010)
United Counseling Service			
Inlier Payment (Rate * Monthly Visits)	$8,789,067	$2,543,626	$11,332,693
Outlier Payment	$887,231	$0	$887,231
Total PPS2 Payment	$9,676,298	$2,543,626	$12,219,924
Actual Payments	$9,768,061	$2,573,509	$12,341,570
Variance (PPS2 - Actual)	($91,764)	($29,883)	($121,646)
Northwestern Counseling & Support Services			
Inlier Payment (Rate * Monthly Visits)	$14,958,034	$9,263,191	$24,221,225
Outlier Payment	$1,899,370	$4,093,475	$5,992,845
Total PPS2 Payment	$16,857,405	$13,356,666	$30,214,071
Actual Payments	$16,588,321	$13,907,289	$30,495,609
Variance (PPS2 - Actual)	$269,084	($550,623)	($281,539)

Provider Name	Adults	Children	Total, All Ages
Rutland Mental Health Services			
Inlier Payment (Rate * Monthly Visits)	$16,783,706	$4,065,192	$20,848,898
Outlier Payment	$1,080,477	$458,624	$1,539,102
Total PPS2 Payment	$17,864,183	$4,523,817	$22,388,000
Actual Payments	$17,393,101	$4,624,992	$22,018,093
Variance (PPS2 - Actual)	$471,082	($101,175)	$369,907
Northeast Kingdom Human Services			
Inlier Payment (Rate * Monthly Visits)	$18,737,035	$6,733,459	$25,470,494
Outlier Payment	$2,725,828	$210,296	$2,936,124
Total PPS2 Payment	$21,462,863	$6,943,755	$28,406,618
Actual Payments	$21,436,074	$7,016,875	$28,452,949
Variance (PPS2 - Actual)	$26,789	($73,120)	($46,331)
Counseling Service of Addison County			
Inlier Payment (Rate * Monthly Visits)	$9,807,638	$5,965,571	$15,773,209
Outlier Payment	$397,387	$841,297	$1,238,684
Total PPS2 Payment	$10,205,025	$6,806,869	$17,011,893
Actual Payments	$9,667,959	$7,191,241	$16,859,200
Variance (PPS2 - Actual)	$537,066	($384,373)	$152,693
Washington County Mental Health Services			
Inlier Payment (Rate * Monthly Visits)	$20,140,679	$11,222,318	$31,362,997
Outlier Payment	$1,999,712	$9,813,946	$11,813,658
Total PPS2 Payment	$22,140,391	$21,036,264	$43,176,655
Actual Payments	$21,442,169	$21,326,688	$42,768,857
Variance (PPS2 - Actual)	$698,222	($290,424)	$407,798
Lamoille County Mental Health			
Inlier Payment (Rate * Monthly Visits)	$5,780,276	$3,038,190	$8,818,465
Outlier Payment	$255,490	$2,939,276	$3,194,766
Total PPS2 Payment	$6,035,766	$5,977,465	$12,013,231
Actual Payments	$6,129,913	$6,171,005	$12,300,918
Variance (PPS2 - Actual)	($94,147)	($193,540)	($287,687)
Clara Martin Center			
Inlier Payment (Rate * Monthly Visits)	$3,562,694	$2,623,200	$6,185,894
Outlier Payment	$123,280	$1,190,039	$1,313,319
Total PPS2 Payment	$3,685,974	$3,813,238	$7,499,213
Actual Payments	$3,529,696	$4,064,803	$7,594,499
Variance (PPS2 - Actual)	$156,278	($251,564)	($95,286)
Health Care & Rehab Srv of SE Vermont			
Inlier Payment (Rate * Monthly Visits)	$17,813,874	$7,907,660	$25,721,534
Outlier Payment	$1,628,844	$2,869,509	$4,498,352
Total PPS2 Payment	$19,442,718	$10,777,169	$30,219,886
Actual Payments	$19,009,187	$10,866,069	$29,875,256
Variance (PPS2 - Actual)	$433,531	($88,900)	$344,631

Exhibit 4.50 Total Impact of Actual Payment versus PPS2 Estimated Payments, Peer Group 2

Provider Name	Adults	Children	Total, All Ages
Northeastern Family Institute			
Inlier Payment (Rate * Monthly Visits)	$3,481	$4,300,138	$4,303,620
Outlier Payment	$0	$0	$0
Total PPS2 Payment	$3,481	$4,300,138	$4,303,620
Actual Payments	$3,523	$4,352,211	$4,355,735
Variance (PPS2 - Actual)	($42)	($52,073)	($52,115)
Pathways Vermont			
Inlier Payment (Rate * Monthly Visits)	$565,695	$25	$565,721
Outlier Payment	$142,228	$0	$142,228
Total PPS2 Payment	$707,923	$25	$707,948
Actual Payments	$688,080	$25	$688,105
Variance (PPS2 - Actual)	$19,843	$1	$19,843

Exhibit 4.51 Total Impact of Actual Payment versus PPS2 Estimated Payments, Peer Group 3

Provider Name	Adults	Children	Total, All Ages
PCC			
Inlier Payment (Rate * Monthly Visits)	$0	$620,665	$620,665
Outlier Payment	$0	$0	$0
Total PPS2 Payment	$0	$620,665	$620,665
Actual Payments	$0	$614,077	$614,077
Variance (PPS2 - Actual)	$0	$6,588	$6,588
LSI			
Inlier Payment (Rate * Monthly Visits)	$3,548,999	$201,783	$3,750,782
Outlier Payment	$19,617	$0	$19,617
Total PPS2 Payment	$3,568,616	$201,783	$3,770,399
Actual Payments	$3,512,047	$198,584	$3,710,632
Variance (PPS2 - Actual)	$56,569	$3,199	$59,767
SSTA			
Inlier Payment (Rate * Monthly Visits)	$0	$0	$0
Outlier Payment	$0	$0	$0
Total PPS2 Payment	$0	$0	$0
Actual Payments	$0	$0	$0
Variance (PPS2 - Actual)	$0	$0	$0
UVS			
Inlier Payment (Rate * Monthly Visits)	$13,357,473	$1,144,121	$14,501,594
Outlier Payment	$831,545	$243,649	$1,075,194
Total PPS2 Payment	$14,189,018	$1,387,769	$15,576,787
Actual Payments	$13,694,611	$1,339,414	$15,034,025
Variance (PPS2 - Actual)	$494,406	$48,356	$542,762

Exhibit 4.51 cont., Total Impact of Actual Payment versus PPS2 Estimated Payments, Peer Group3

Provider Name	Adults	Children	Total, All Ages
SAS			
Inlier Payment (Rate * Monthly Visits)	$4,855,429	$447,036	$5,302,465
Outlier Payment	$105,005	$126,434	$231,439
Total PPS2 Payment	$4,960,434	$573,470	$5,533,904
Actual Payments	$5,099,400	$589,536	$5,688,936
Variance (PPS2 - Actual)	($138,966)	($16,066)	($155,032)
SCC			
Inlier Payment (Rate * Monthly Visits)	$4,672,740	$26,439	$4,699,179
Outlier Payment	$182,359	$55,808	$238,166
Total PPS2 Payment	$4,855,099	$82,247	$4,937,346
Actual Payments	$4,746,715	$80,411	$4,827,125
Variance (PPS2 - Actual)	$108,384	$1,836	$110,220
Families First			
Inlier Payment (Rate * Monthly Visits)	$2,751,499	$790,008	$3,541,507
Outlier Payment	$550,250	$230,932	$781,181
Total PPS2 Payment	$3,301,749	$1,020,939	$4,322,688
Actual Payments	$3,144,719	$972,381	$4,117,100
Variance (PPS2 - Actual)	$157,030	$48,558	$205,588
CVS			
Inlier Payment (Rate * Monthly Visits)	$3,150,397	$271,195	$3,421,593
Outlier Payment	$35,207	$0	$35,207
Total PPS2 Payment	$3,185,604	$271,195	$3,456,799
Actual Payments	$3,252,218	$276,867	$3,529,085
Variance (PPS2 - Actual)	($66,614)	($5,671)	($72,285)

4.4 Advantages and Disadvantages

Compared to fee-for-service (FFS) payments, the advantage of a bundled, prospective payment model is that it incents efficient use of resources to provide services for a beneficiary within a given month. Also, unlike the current system which is spread across departments, adoption of this payment approach will streamline the rate setting component of DA and SSA administration and create a transparent process for evaluating financial needs via the alternative payment model. It will also provide a mechanism to collect information on unanticipated costs or scope of service changes. Alternative payment models can reduce the overall need for "cost shifting" within DAs and SSAs in order to cover some services or programs that were underfunded in the past because it can smooth out unnecessary variation in payment.

There are some downsides to this approach. For example, on its own, it does not provide a direct incentive to manage the months of use across a person-year. In actuality, this methodology provides the reverse incentive in that the providing entity is afforded a higher revenue stream if an individual incurs services in more months in future period(s) than the base line period. Also, if there are targeted exclusions, it poorly incents efficiency and coordination across those services and funding streams outside of the new reimbursement model. Both incentives are mitigated should more spending be included in the new model and when paired with the global budget.

4.5 Recommendations if Adopted

1. Should AHS adopt the PPS2 methodology, caution should be exercised in the PPS2 when defining allowable cost. AHS should mandate that costs related to services provided under separate financing streams such as grants or contracts—or any specifically excluded program or population—would not be double counted in the calculation of the PPS2 rate.
2. The rates for each DA and cohort could be computed using a State-maintained rate model, as with the case of hospitals, or alternatively--and as is consistent with the federal CCBHC demonstration--submit standardized, new cost reports annually for determination of cost-based rates. Submission of cost reports is the most administratively simple way to set the rates.
3. This approach works best if there are limited exclusions which reduces the need for monitoring other revenue streams and/or maintaining a separate master grant and/or global budget process.
4. This PPS2/CCBHC model also sets forth a potential way to risk stratify these patient populations into similar spending categories under future capitated payment models.

5. Attribution and Capitated Rates

5.1 Overview

Population-based capitation is a model whereby a provider accepts full accountability for an entire population across all services. Capitation payments, commonly referred to as per member, per month payments (PMPMs), constrain spending by setting targeted spending limits. It therefore carries a large amount of risk as well as minimum requirements for organizing across providers and sharing information. This model shares many of the same strengths and weaknesses of the global budget system but unlike a global budget, it would extend beyond to assign accountability across a wider service array and/or include other provider types.

The payment model for the Vermont Medicaid Next Generation Accountable Care Organization (ACO) contract is an example of population-based capitation. In that payment model, the State pays one organization a monthly per member, per month payment and the accountable organization is responsible for distributing payments to its provider network. The payments cover traditional medical benefit services.

Beneficiaries attributed to the ACO may be in need of, or receiving, community-based services outside of the traditional medical benefit. Since care management across the full continuum of care may have a direct impact on downstream medical benefit spending, it is therefore in the interest of the State, ACOs and community providers to align incentives and improve quality on both covered and non-covered services. Adopting a population-based capitation approach for community-based services would be one way to align incentives, manage total cost of care beyond the medical benefit and improve health outcomes.

To model risk-based capitation rates, a few threshold questions must be answered. At the conclusion of the MP, there was not yet consensus on these questions. Key questions include:

1) Who is eligible for the benefit and how is eligibility determined?
2) What services and which providers are included in the covered services for the benefit?
3) How is accountability for a given population assigned (i.e., attribution) to providers?
4) Which providers meet requirements for attribution?

Given the lack of consensus on these questions, B&A did not model per member, per month payments. Instead, the analyses focused on options for covering additional services under a capitation arrangements, an attribution approach, and exploring challenges like risk adjustment and incomplete data. As described in the recommendations section, B&A recommends that the State contract with an actuarial firm to develop the final rates. We caution the State that there will be a need for significant data capture, transformation and validation to create the initial rates, particularly to the extent these services fall across additional provider types like the preferred substance use disorder provider network.

The same data challenges previously described for other models apply here as well. For example, one challenge is the lack of uniform billing such that some AHS revenue and utilization data is not captured in one standardized data source. In particular, the Community, Rehabilitation and Treatment (CRT) population data (i.e., adults with serious mental illness and enrolled in comprehensive management program) is not captured in the Medicaid Management Information System (MMIS) claims data.

5.2 Data Analysis

B&A developed options for population-based payments. B&A then tested a method of attribution that could be used to attribute beneficiaries to likely-eligible providers under those options described. B&A also reviewed the overall validity of the data for use in producing reliable, actuarially-sound capitation rates, with or without risk adjustment.

5.2.1 Data Sources Used

- MMIS Claims Data
- MSR Data
- MMIS Financial Transaction Data

5.2.2 Data Manipulation

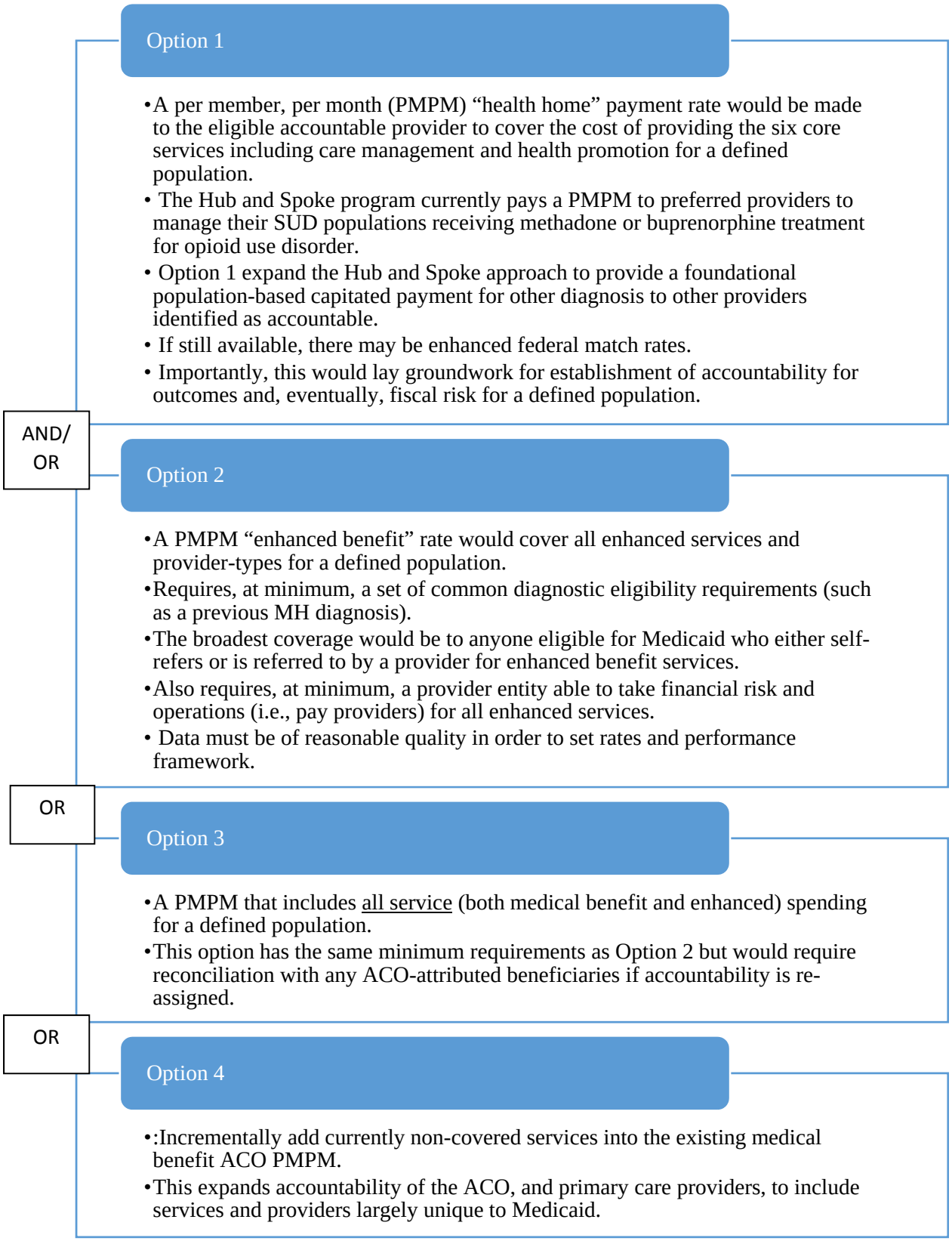
Unlike the analysis described in section 4.2.2, which only included the utilization of services for beneficiaries receiving care from any provider in the peer groups, this analysis expands the universe to include all Medicaid beneficiaries in SFY15 who had any claim with a diagnosis of interest and the attribution includes any claim which has a target service. See Section 5.3.1 and 5.3.2 for a detailed description of the attribution methodology used to evaluate setting capitation rates for enhanced services.

5.3 Findings

In the first phase of evaluating this model, B&A identified multiple options for covering more services—and in particular, those services provided at DAs and SSAs—under population-based capitation. The options include:

1. Provide additional capitated care management for certain eligible populations to new accountable provider types.
2. Develop new capitated payments for enhanced benefit package to new accountable provider types for defined population.
3. Develop a combined new capitated payment for the medical and enhanced package to new accountable provider types for defined population.
4. Expand the existing medical benefit capitated payment to include all or some enhanced services to existing accountable provider types for a defined population.

The first option could be done alone or in combination with one of the others. Options two, three and four are mutually exclusive. If option one is done alone, it would be more akin to a sub-capitated approach as the payment would only cover the care management component of care. Additional considerations for each option are summarized on the next page.


Option 1
•A per member, per month (PMPM) "health home" payment rate would be made to the eligible accountable provider to cover the cost of providing the six core services including care management and health promotion for a defined population.
• The Hub and Spoke program currently pays a PMPM to preferred providers to manage their SUD populations receiving methadone or buprenorphine treatment for opioid use disorder.
• Option 1 expand the Hub and Spoke approach to provide a foundational population-based capitated payment for other diagnosis to other providers identified as accountable.
• If still available, there may be enhanced federal match rates.
• Importantly, this would lay groundwork for establishment of accountability for outcomes and, eventually, fiscal risk for a defined population.
AND/ OR
Option 2
•A PMPM "enhanced benefit" rate would cover all enhanced services and provider-types for a defined population.
•Requires, at minimum, a set of common diagnostic eligibility requirements (such as a previous MH diagnosis).
•The broadest coverage would be to anyone eligible for Medicaid who either self-refers or is referred to by a provider for enhanced benefit services.
•Also requires, at minimum, a provider entity able to take financial risk and operations (i.e., pay providers) for all enhanced services.
• Data must be of reasonable quality in order to set rates and performance framework.
OR
Option 3
•A PMPM that includes all service (both medical benefit and enhanced) spending for a defined population.
•This option has the same minimum requirements as Option 2 but would require reconciliation with any ACO-attributed beneficiaries if accountability is re-assigned.
OR
Option 4
•:Incrementally add currently non-covered services into the existing medical benefit ACO PMPM.
•This expands accountability of the ACO, and primary care providers, to include services and providers largely unique to Medicaid.

5.3.1 Defining an Enhanced Benefit

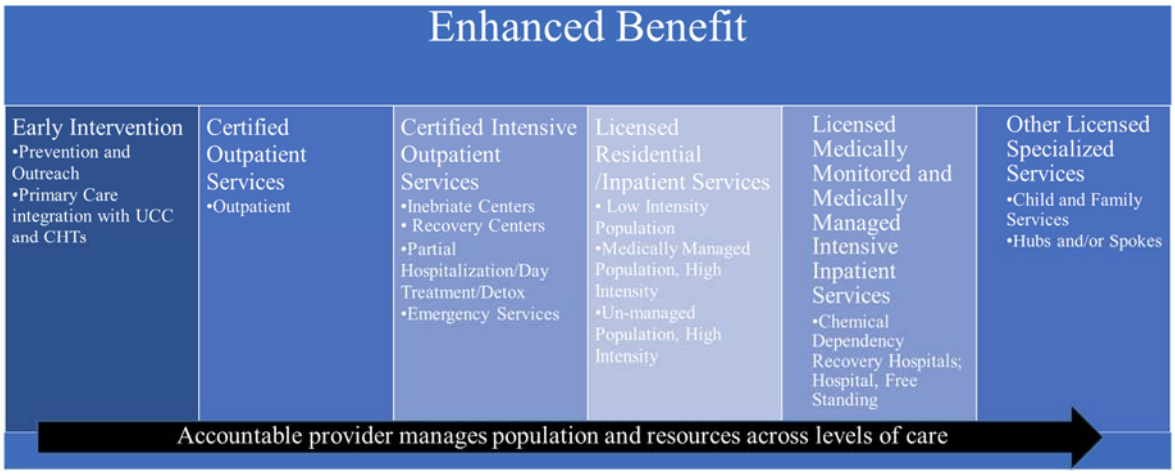
As described in the introduction to Section 5, before proceeding with population-based capitation, AHS must define what services and providers comprise an enhanced benefit. Eligibility requirements, if beyond existing enrollment requirements like the presence of a particular diagnosis, must be well defined if associated with an additional per member per month (PMPM) payment. A methodology for assignment of financial and quality accountability to eligible accountable providers is also needed.

See Exhibit 5.1 for an example of defining an enhanced benefit distinct from the medical benefit. Exhibit 5.2 on page 58 describes the enhanced benefit by levels of care and portrays the expectation that the accountable providers would be ensuring management of their attributed populations across the care continuum.

Exhibit 5.1 Illustrative Example of Basic versus Enhanced Benefits

Basic Benefit, ACO-covered	Not ACO-covered, "Enhanced Benefit"
•Inpatient hospital services •Outpatient hospital departments, including emergency room (ER) services •Professional services, *including non-certified mental health outpatient services* •*Physician-administered drugs* •Durable medical equipment and related services •Home health and hospice services •Federally qualified health centers and rural health clinic services •Clinical laboratory services •*Non-certified intensive outpatient MH services* •*Non-certified intensive inpatient MH services* •*Non-certified partial hospitalization*	•Personal care services •Pharmacy benefit services •Non-Emergency transportation benefit services •Dental benefit services •Choices for Care services •DMH, ADAP, DAIL, DCF developmental disabilities, integrated family services, mental health or substance abuse services •Traumatic brain injury benefit services •Hi-Tech care services •Ladies First care services •Other not otherwise defined Medicaid program service

Exhibit 5.2 of Accountable Providers and Management of Enhanced Benefit Covered Services



5.3.2 Attribution Analysis

Another important component of establishing population-based capitated payment is assignment of accountability to a given provider, known as attribution. B&A modeled a potential two-step approach to attribution under an enhanced benefit similar to that used for the both the Medicare and Vermont Medicaid Next Generation ACO programs. The first step is to assign all Medicaid beneficiaries, including those who receive services at DAs and those who do not, into resource and diagnostically similar cohorts. In this example, B&A used the mapping described in Section 4.2.4.5 Alternative Cohort Design. Exhibit 5.3 on page 59 summarizes this process. Similar to the process currently in place under the Medicare and Vermont Medicaid Next Generation ACO program, this approach would use historic data on which to attribute beneficiaries prospectively.

In the second step, B&A pulled all the claims for the eligible beneficiaries that include a pre-specified list of evaluation and management, mental health, substance use disorder treatment and developmental disabilities common among all provider-types serving these beneficiaries. The equivalent of these services in the Medicare and Vermont Medicaid Next Generation ACO program is the use of preponderance of qualified evaluation and management services, or QEMs, to assign accountability between providers and beneficiaries.

Claims with these pre-specified services were then grouped into categories of provider type and summed. The provider type categories included DAs, SSAs, non-DA substance use disorder preferred providers, and other Medicaid providers. The provider type with the highest amount of paid claims for the list of services is the one identified as being accountable for the beneficiary. Once the provider type was assigned, an individual provider within the provider type would be identified by summing the services across providers within a peer group and identifying the provider with the most claims payments. Exhibit 5.4, also on page 59, summarizes step two of the attribution process.

Exhibit 5.3 Step One of Basic Attribution to Eligible Accountable Provider: Assign Cohort

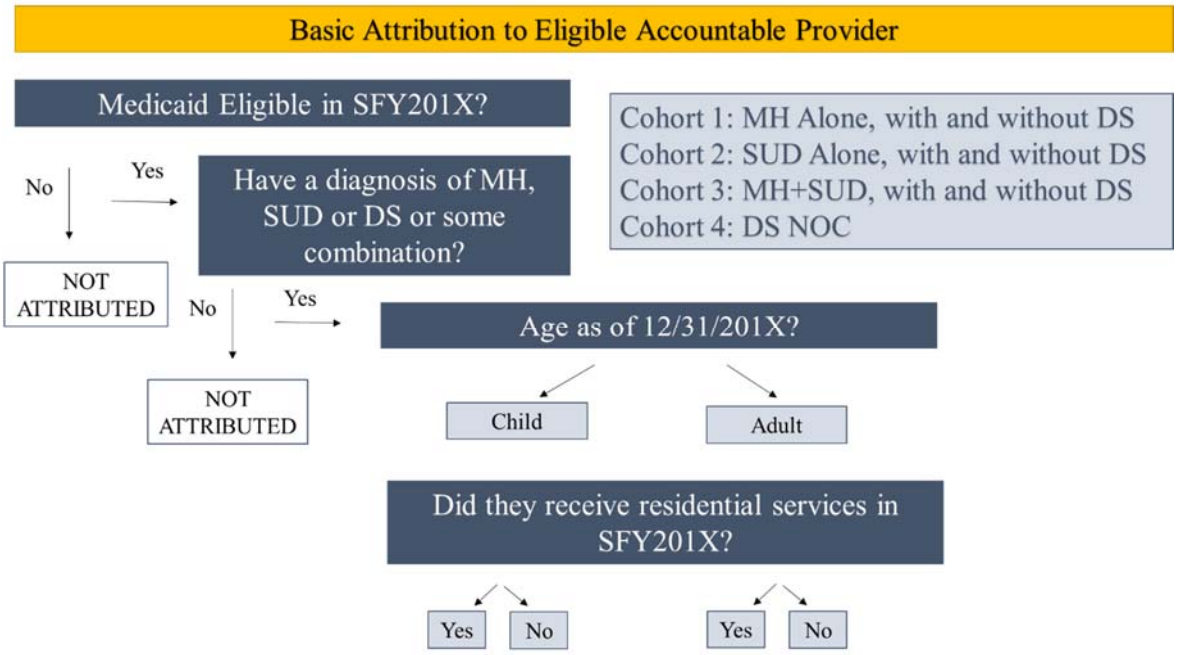
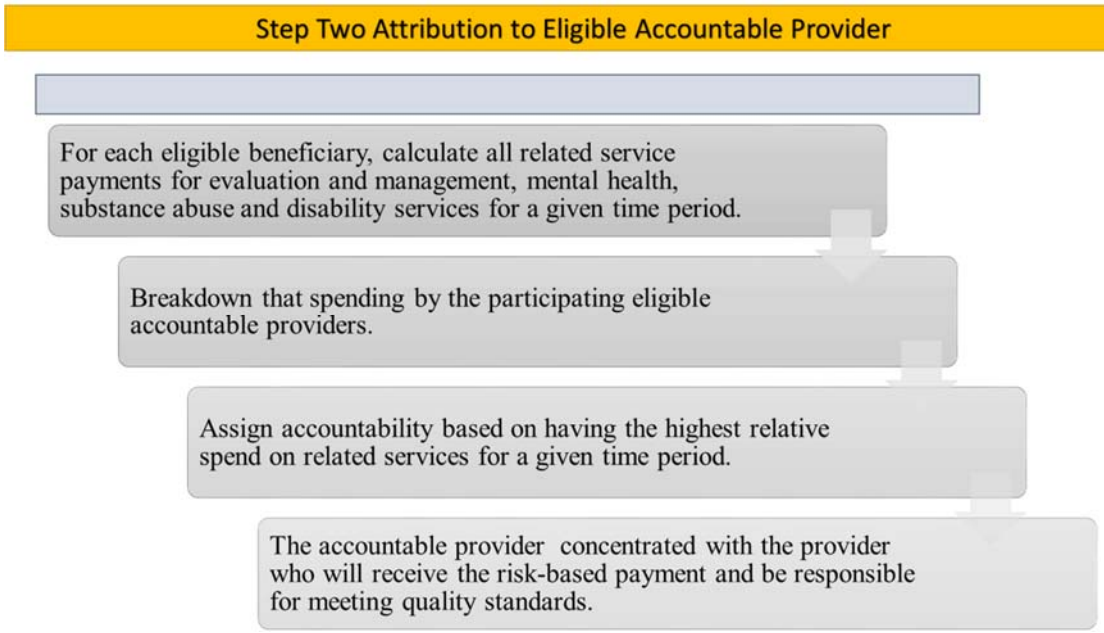


Exhibit 5.4 Step Two of Basic Attribution to Eligible Accountable Provider: Assign Accountability



5.3.3 Attribution Method Test Results

Exhibit 5.5 on page 61 displays the results of the attribution analysis using SFY15 data. As modeled, the vast majority of beneficiaries who have a claim with a diagnosis included in the cohorts were receiving the majority of selected services from providers other than DAs, SSAs and non-DA preferred providers. These are likely beneficiaries with mild mental illness, substance use disorder or developmental disabilities and/or beneficiaries with other physical health conditions which result in more evaluation and management among non-focus providers. To further focus the attribution methodology, the State or its actuaries could make the diagnosis restrictions stricter (e.g., requiring more than one diagnosis or receipt of a claim from a certain provider-type). Another approach to make attribution more specific would be to use only claims with specified services which also include a relevant diagnosis (e.g., mental health, substance use disorder, or developmental disabilities).

The DAs represented approximately 20% of the overall attribution in the adult population and 37% among children who were eligible for attribution. Approximately 62% of beneficiaries receiving at least one service at a DA attribute via this method (15,578 out of 25,064). The DAs' attributed population has the largest proportion of beneficiaries receiving residential services, which are beneficiaries with a higher level of care and are often more complex and costly. It is notable that the "other" provider category also attributes a large number of beneficiaries falling into the residential category.

The SSAs only account for 1% and 2% of the total adult and child populations, respectively. But the population they serve attributes mostly to them, that is, approximately 82% (900 out of 1,097) of beneficiaries who receive a service at a SSA attribute to the SSAs. The attributed populations to SSAs fell into the cohorts "mental health with or without development disability" and "developmental disability alone" as was expected.

A similarly small population, 885 beneficiaries, attribute to non-DA substance abuse providers. The non-SUD preferred provider attributed population has a small number of the population falling into the residential category. This could be a positive indicator that beneficiaries attributed to these providers are receiving the majority of their care from these providers and are maintaining treatment at a lower-level of care than residential services. This population would likely attribute to providers already receiving support through Vermont's health home program, known as the Hub and Spoke model, for management of these beneficiaries.

5.3.3 Case-Mix and Risk Adjustment Considerations

While DA/SSAs share the same minimal clinical requirements in statute, they are unique organizations. Each provides a different mix of services for a different mix of sub-populations. Traditional age and gender breakdowns do not accurately predict spending patterns for services provided in the DAs and SSAs. Diagnostic and utilization-based risk scores are also poor predictors of DA and SSA spend as discussed in Section 4.2.4.3 and 4.2.4.4. What's more, most actuaries assume data used to set capitation rates has largely been case-mix adjusted however, the DAs and SSAs currently have a very rudimentary case mix based on age and five program areas; these program areas relate more to traditional funding sources. These factors raise questions about whether these data are sufficient to create reliable capitation rates. As discussed in the challenges and recommendations section, B&A recommends evaluating alternative risk adjustment approaches should this model be adopted.

Exhibit 5.5 Findings of Attribution using SFY15 Claims Data, augmented for CRT

Adults	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services	Total	Percent of Total
1 DA	2,592	790	869	152	1,750	411	1,238	7,802	20%
2 SSA	124	12	4	0	41	3	374	558	1%
3 SUD PP	20	0	277	9	392	39	0	737	2%
4 Other	16,783	880	3,288	37	5,959	392	94	27,433	69%
5 No Spend	1,986	10	708	6	641	9	4	3,364	8%
Total	**21,505**	**1,692**	**5,146**	**204**	**8,783**	**854**	**1,710**	**39,894**	

Children	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services	Total	Percent of Total
1 DA	6,320	525	132	9	479	94	217	7,776	37%
2 SSA	255	27	1	0	10	4	45	342	2%
3 SUD PP	23	0	66	3	51	5	0	148	1%
4 Other	9,892	79	202	3	410	34	521	11,141	53%
5 No Spend	1,306	1	51	0	45	0	83	1,486	7%
Total	**17,796**	**632**	**452**	**15**	**995**	**137**	**866**	**20,893**	

5.4 Advantages and Disadvantages

This model, in many ways, is the gold standard for payment reform as envisioned under the Affordable Care Act of 2010. It is the antithesis of a pure fee for service (FFS) model. FFS models inherently incent the over-utilization of services; moreover, most are devoid of any accountability for beneficiaries' health outcomes beyond what occurs during a single uncoordinated visit.

A population-based capitation model counters these negative incentives by promoting the use of the most cost-effective mix of services to achieve the best outcomes. It requires active care management to the lowest level of care necessary to achieve improved health status in order to manage costs. And, as an evolution to the health maintenance model (HMO) of the past, it directly requires that health care providers share risk—not just a third party insurer.

The key advantage of this model in Vermont is:

1. It shifts the largest amount of financial and quality of care risk to accountable providers and,
2. It is consistent with Vermont's All Payer Model Agreement.

While it is considered the gold standard of payment reform from a public payer perspective, it is well documented that certain pre-existing factors must be in place in order for it to operate successfully. For example, the accountable providers must possess and be able to interact with the infrastructure necessary to execute the program. The accountable providers must be able to accept and manage an aggregated set of population-based payments and reach agreement on how best to distribute these payments across multiple providers in their network. The accountable providers must be able to meet monitoring and reporting standards required by federal and state regulators. As discussed in detail in this report, some Vermont providers evaluated in this study may not yet be ready to adopt the full requirements that accompany a capitated payment. The potential for success under this model would be improved by making incremental systems reforms aimed at those factors identified as necessary for a successful capitated model.

Moreover, this model does carry the potential for some negative incentives created by paying for a beneficiary's total costs and not at an individual service. One potential negative incentive is rationing of services in order to maximize potential margin on each beneficiary. To guard against this, a robust performance framework with meaningful metrics, targets and corrective actions must be in place. This model could also incent shifting expensive beneficiaries to outside networks as well as wait-listing or otherwise delaying access. The State will need to ensure its monitoring activities include monitoring access and changes in spending across capitated versus FFS providers.

5.5 Recommendations if Adopted

1. Create clear guidelines on which populations would be eligible for attribution based on further examination of diagnosis and care seeking behavior.
2. Further refine the attribution algorithm to ensure accountability is assigned appropriately, ensuring identification of which providers could take on the risk of the payment model.
3. Starting with the cohorts developed by the DAs, further refine a risk-adjustment or eligibility-categorization strategy which best predicts annual spending on covered services.
4. For as many included providers as possible (at minimum the DAs), ensure standardization of the financial, utilization and outcomes data across departments for these populations and provider classes covered.
5. Similarly, standardization of the reimbursement and billing guidelines for the DAs/SSAs across departments will help ensure that actuaries can set valid capitation rates.
6. Consider shadow testing a value-based risk model for some period of time with those providers who were identified as participating accountable providers before a go-live implementation. This is similar to the way AHS used the Vermont Medicaid Shared Savings Program (VMSSP) as the predecessor to the Vermont Medicaid Next Generation Program (VMNG).

6.0 Conclusions and Recommendations

6.1 Key Findings

1. The rates produced in the model are roughly equivalent to what would have been paid under various scenarios in a baseline SFY15 time period and therefore, are a good starting point for discussions about alternative payment models.
2. The development of these rates required resource-intensive data cleaning and tolerance for a lack of systematically collected data.
3. Original data collection through a cost report or survey would be advantageous because it would provide the opportunity to improve reliability of rates produced under future payment models. In addition, at minimum, standardization of existing data would improve reliability of rates and importantly, more closely resemble the data commonly used by actuaries to model medical benefit capitation rates should that alternative rate model be chosen.
4. AHS has more than one option with regard to the phasing-in of alternative payment models. For example, AHS could reform the financial management and reimbursement of the DA and SSA system—and improve data collection--through adoption of a Prospective Payment System (PPS) model. Adoption of the PPS would not preclude future transition to a population-based, capitated agreement and in fact, would improve the data upon which future capitation rates would be built.

6.2 Policy Options for Alternative Payment Designs

1. The primary avenue for the expansion of a provider-led, risk-based capitation agreement would be to create an enhanced benefit of services for some set of defined “eligible” beneficiaries covering all levels of care and eligible provider classes for the eligible mental health and/or substance use disorder and/or developmental disability populations. This is consistent with the Substance Use Disorder (SUD) Demonstration framework.
2. Time-limited enhanced federal revenue could be raised to support care coordination related activities for non-SUD beneficiaries through expansion of the federal Health Home program to include the additional populations (i.e., the program already supports beneficiaries receiving SUD treatment).
3. If an enhanced match rate is not available in the future, expansion of the health homes to additional populations beyond SUD would require new revenue upon which a standard match rate would be applied and/or re-assignment of existing revenue for similar services to a standardized health home model expansion.

4. The following activities would support the transition to a population-based capitation agreement, particularly for the DA and SSA network:
    a. Development of risk adjustment strategy unique to the defined eligible populations. The starting point would be to use the cohorts developed by the DAs which included stratifying patients by age, diagnosis and use of residential services.
    b. Standardization of the financial, utilization and outcomes data across departments for these populations and provider classes covered.
    c. Standardization of the reimbursement and billing guidelines for the DAs and SSAs across departments.
    d. Shadow testing a value-based risk model like with the Vermont Medicaid Shared Savings Program (VMSSP).

5. In lieu of implementing a shadow capitation program as suggested in 4.d., AHS could instead implement a moderate risk alternative payment system which includes a value-based component.
    a. For example, development of a PPS2 approach consistent with the federal demonstration program for certified community behavioral health centers (CCBHCs) would represent progress in reforming the system of payments currently used for DAs and SSAs consistent with the goals of the MP.
    b. The rates for each DA and cohort could be computed using a State-maintained rate model, as with the case of hospitals, or alternatively--and as is consistent with the federal CCBHC demonstration—through provider submission of audited, tailored cost reports and/or raw source data through the electronic financial reporting system (known as “eFIN”) annually for determination of cost-based rates.
    c. Submission of cost reports is the most administratively simple way to implement the PPS2 and is consistent with the parallel federal model.
    d. This approach works best if there are limited exclusions, thereby reducing the need for monitoring other revenue streams and/or maintaining a separate master grant and/or global budget process.
    e. This PPS2 model also sets forth a potential way to risk stratify these patient populations into similar spending categories under future capitated payment models. These cohorts should undergo some consolidation before finalizing in light of sample size or anticipated changes to financing, utilization or case-mix.
    f. The State would need to designate a lead department to manage rate setting activities including, but not limited to, re-design processes for billing and data collection; determining a process for inflationary or other adjustments to annual rates; and developing a process for review of provider requests for changes in scope of service or other adjustments to annual rates.
    g. The State could choose to phase in the new payment model among providers but it would require maintaining two systems for similar providers simultaneously.

6. Given the fragility of the providers in the Vermont DA/SSA system, their reliance on AHS as their primary source of revenue, and the swelling demand for services, it is likely that increased investment would be required to support fully realizing the benefits of any payment reform on care delivery and quality of care.
    a. Investments such as those for better care coordination, a reliable annual increase, and improvements in compensation would make adoption of any alternative payment model more successful in the long term.

b. No matter what alternative model is adopted (if any), there is a need to improve the value-based components of the current DA and SSA payment system such that AHS can better measure the impact of any financing or policy decisions.

6.3 Ongoing Challenges

There is uncertainty among stakeholders as to the right balance of capacity for overlapping services between community providers and traditional medical providers. A key area of uncertainty is how best to achieve primary and mental health integration. Another challenge is how best to coordinate and finance emergency mental health crisis services. Ensuring cost-effective access to residential services is another unique challenge whereby there are federal restrictions on Medicaid funding but growing demand. As with all areas of health care, how to expand financing and payment to cover new or emerging technologies or therapies continues to be a challenge. Expansion of applied behavioral analysis (ABA) therapy is an example.

Another notable challenge is how best to introduce an alternative payment system that does not add, but truly consolidates financing and reimbursement functions for AHS and providers. The extent to which populations, covered services, funding sources and/or programs are included or excluded from any new alternative payment model will influence administratively complexity for both AHS and providers. Said another way, the more exceptions to what is included in the alternative model, the more need for separate programmatic, operations and financing for distinct populations, covered services, funding sources and/or programs. Similarly, if a pilot or demonstration for a subset of providers is chosen, for at least the short term, two distinct reimbursement systems will need to run simultaneously for different providers depending on their participation although presumably, this need would decrease over time as other providers transition to the new model.

6.4 Limitations

There are a number of limitations to the analysis and findings presented in the final report. The most important is the lack of a uniform source of data upon which to model payment alternatives. This lack of data presents challenges in terms of the completeness of findings presented as well as the construction of reliable rate models. Another important limitation is that at the time of drafting this final report, there were a number of funding sources and programs identified as potential exclusions from the model; any exclusions to an alternative payment system creates a unique set of challenges in terms of establishing clear differentiations between what is considered to be included in the alternative model and what is not; depending on what ultimately is excluded, there is at least moderate risk of either under- or over- estimating rates of the alternative model should it not be easy to identify from a common data source.

Exhibit 4.7 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Total Population, Peer Group 1

Charges (All Ages)	PPS2 Cohort							Total
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS	
Beneficiary Months	98,043	13,169	12,785	2,748	12,809	3,830	19,707	163,091
Minimum	$5	$16	$25	$28	$11	$11	$21	$5
Maximum	$29,760	$34,145	$4,590	$4,568	$17,610	$35,408	$25,480	$35,408
Average	$1,309	$4,113	$570	$718	$701	$994	$3,828	$1,717
Median	$878	$2,631	$393	$780	$465	$750	$3,585	$878
St. Deviation	$2,007	$4,520	$506	$624	$1,003	$1,592	$3,001	$2,577
Threshold	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD
Low Outliers	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	3,792	717	762	147	293	99	868	7,561
Pct High	3.9%	5.4%	6.0%	5.3%	2.3%	2.6%	4.4%	4.6%
Threshold	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD
Low Outliers	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	2,672	311	156	30	177	61	301	4,203
Pct High	2.7%	2.4%	1.2%	1.1%	1.4%	1.6%	1.5%	2.6%
Threshold	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD
Low Outliers	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	1,986	106	31	23	113	43	162	2,258
Pct High	2.0%	0.8%	0.2%	0.8%	0.9%	1.1%	0.8%	1.4%

Exhibit 4.8 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Total Population, Peer Group 1

Payments (All Ages)	**PPS2 Cohort**							**Total**
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**	
Beneficiary Months	98,043	13,169	12,785	2,748	12,809	3,830	19,707	163,091
Minimum	$0	$0	$0	$0	$0	$0	$0	$0
Maximum	$22,976	$33,438	$4,590	$4,458	$16,658	$35,314	$25,480	$35,314
Average	$1,255	$4,029	$424	$564	$573	$865	$3,821	$1,650
Median	$850	$2,548	$345	$493	$387	$493	$3,585	$841
St. Deviation	$1,961	$4,370	$393	$569	$943	$1,525	$3,006	$2,540
Threshold	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD
Low Outliers	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	3,931	731	590	163	291	110	865	7,825
Pct High	4.0%	5.6%	4.6%	5.9%	2.3%	2.9%	4.4%	4.8%
Threshold	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD
Low Outliers	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	2,678	301	318	47	190	60	301	4,222
Pct High	2.7%	2.3%	2.5%	1.7%	1.5%	1.6%	1.5%	2.6%
Threshold	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD
Low Outliers	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	1,975	86	159	24	130	43	161	2,210
Pct High	2.0%	0.7%	1.2%	0.9%	1.0%	1.1%	0.8%	1.4%

Exhibit 4.9 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Adults, Peer Group 1

Charges (Adults Only)	PPS2 Cohort							Sub-Total Adults	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	42,417	8,200	11,975	2,640	10,011	3,174	16,215	94,632	163,091
Minimum	$20	$16	$28	$28	$24	$22	$21	$16	$5
Maximum	$20,752	$24,289	$4,590	$4,568	$14,678	$17,582	$25,480	$25,480	$35,408
Average	$1,189	$4,066	$579	$712	$607	$851	$4,306	$1,809	$1,717
Median	$1,042	$3,335	$402	$780	$438	$756	$3,969	$989	$878
St. Deviation	$1,098	$3,801	$509	$619	$625	$1,071	$2,861	$2,326	$2,577
Threshold	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	1,252	364	711	139	326	73	726	4,610	7,561
Pct High	3.0%	4.4%	5.9%	5.3%	3.3%	2.3%	4.5%	4.9%	4.6%
Threshold	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	860	175	138	30	112	35	241	1,830	4,203
Pct High	2.0%	2.1%	1.2%	1.1%	1.1%	1.1%	1.5%	1.9%	2.6%
Threshold	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	360	67	31	23	42	19	146	876	2,258
Pct High	0.8%	0.8%	0.3%	0.9%	0.4%	0.6%	0.9%	0.9%	1.4%

Exhibit 4.10 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Adults, Peer Group 1

Payments (Adults Only)	**PPS2 Cohort**							**Sub-Total Adults**	**Total All Ages**
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**		
Beneficiary Months	42,417	8,200	11,975	2,640	10,011	3,174	16,215	94,632	163,091
Minimum	$0	$0	$0	$0	$0	$18	$13	$0	$0
Maximum	$20,752	$24,289	$4,590	$4,458	$14,678	$17,020	$25,480	$25,480	$35,314
Average	$1,158	$4,045	$426	$556	$462	$714	$4,301	$1,749	$1,650
Median	$1,042	$3,335	$345	$493	$345	$493	$3,969	$967	$841
St. Deviation	$1,119	$3,813	$394	$563	$550	$1,038	$2,868	$2,351	$2,540
Threshold	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	1,251	364	561	156	348	74	724	4,611	7,825
Pct High	2.9%	4.4%	4.7%	5.9%	3.5%	2.3%	4.5%	4.9%	4.8%
Threshold	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	767	168	299	48	111	44	241	1,822	4,222
Pct High	1.8%	2.0%	2.5%	1.8%	1.1%	1.4%	1.5%	1.9%	2.6%
Threshold	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	359	67	149	25	53	17	146	859	2,210
Pct High	0.8%	0.8%	1.2%	0.9%	0.5%	0.5%	0.9%	0.9%	1.4%

Exhibit 4.11 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Children, Peer Group 1

Charges (Children Only)	PPS2 Cohort							Sub-Total Children	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	55,626	4,969	810	108	2,798	656	3,492	68,459	163,091
Minimum	$5	$18	$25	$28	$11	$11	$25	$5	$5
Maximum	$29,760	$34,145	$2,424	$2,424	$17,610	$35,408	$21,043	$35,408	$35,408
Average	$1,401	$4,190	$446	$852	$1,038	$1,687	$1,606	$1,590	$1,717
Median	$735	$1,640	$294	$744	$539	$745	$876	$739	$878
St. Deviation	$2,482	$5,505	$432	$721	$1,749	$2,943	$2,612	$2,883	$2,577
Threshold	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	2,986	343	46	2	110	26	126	3,568	7,561
Pct High	5.4%	6.9%	5.7%	1.9%	3.9%	4.0%	3.6%	5.2%	4.6%
Threshold	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	2,086	118	21	0	66	14	96	2,361	4,203
Pct High	3.8%	2.4%	2.6%	0.0%	2.4%	2.1%	2.7%	3.4%	2.6%
Threshold	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	1,196	35	3	0	45	8	66	1,141	2,258
Pct High	2.2%	0.7%	0.4%	0.0%	1.6%	1.2%	1.9%	1.7%	1.4%

Exhibit 4.12 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Children, Peer Group 1

Payments (Children Only)	**PPS2 Cohort**							**Sub-Total Children**	**Total All Ages**
	MH	**MH, Res**	**SUD**	**SUD, Res**	**MH & SUD**	**MH & SUD, Res**	**DS**		
Beneficiary Months	55,626	4,969	810	108	2,798	656	3,492	68,459	163,091
Minimum	$0	$0	$0	$28	$0	$0	$0	$0	$0
Maximum	$22,976	$33,438	$2,424	$2,424	$16,658	$35,314	$21,043	$35,314	$35,314
Average	$1,329	$4,004	$390	$748	$966	$1,595	$1,591	$1,512	$1,650
Median	$689	$1,528	$263	$550	$492	$739	$876	$696	$841
St. Deviation	$2,410	$5,158	$383	$675	$1,671	$2,778	$2,599	$2,774	$2,540
Threshold	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD	2SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	2,992	349	28	4	113	27	126	3,626	7,825
Pct High	5.4%	7.0%	3.5%	3.7%	4.0%	4.1%	3.6%	5.3%	4.8%
Threshold	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD	3SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	2,094	132	20	0	65	14	95	2,392	4,222
Pct High	3.8%	2.7%	2.5%	0.0%	2.3%	2.1%	2.7%	3.5%	2.6%
Threshold	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD	4SD
Low Outliers	0	0	0	0	0	0	0	0	0
Pct Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High Outliers	1,212	10	14	0	46	7	64	1,187	2,210
Pct High	2.2%	0.2%	1.7%	0.0%	1.6%	1.1%	1.8%	1.7%	1.4%

Exhibit 4.13 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Total Population, Peer Group 2

Charges (All Ages)	PPS2 Cohort							Total
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS	
Beneficiary Months	1,463	236	49		352	76		2,176
Minimum	$0	$0	$0		$0	$25		$0
Maximum	$8,867	$8,867	$3,288		$7,977	$8,867		$8,867
Average	$2,472	$4,841	$693		$1,225	$1,354		$2,448
Median	$666	$6,060	$321		$505	$444		$690
St. Deviation	$2,861	$2,823	$924		$1,911	$2,137		$2,848
Threshold	2SD	2SD	2SD		2SD	2SD		2SD
Low Outliers	0	0	0		0	0		0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%
High Outliers	17	0	5		32	8		31
Pct High	1.2%	0.0%	10.2%		9.1%	10.5%		1.4%
Threshold	3SD	3SD	3SD		3SD	3SD		3SD
Low Outliers	0	0	0		0	0		0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%
High Outliers	0	0	0		11	2		0
Pct High	0.0%	0.0%	0.0%		3.1%	2.6%		0.0%
Threshold	4SD	4SD	4SD		4SD	4SD		4SD
Low Outliers	0	0	0		0	0		0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%
High Outliers	0	0	0		0	0		0
Pct High	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%

Exhibit 4.14 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Total Population, Peer Group 2

Payments (All Ages)	PPS2 Cohort							Total
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS	
Beneficiary Months	1,463	236	49		352	76		2,176
Minimum	$0	$0	$0		$0	$25		$0
Maximum	$8,867	$8,867	$3,288		$7,977	$8,867		$8,867
Average	$2,329	$4,556	$693		$1,215	$1,307		$2,318
Median	$637	$6,061	$321		$505	$444		$680
St. Deviation	$2,751	$2,832	$924		$1,901	$2,069		$2,747
Threshold	2SD	2SD	2SD		2SD	2SD		2SD
Low Outliers	0	0	0		0	0		0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%
High Outliers	45	0	5		32	7		69
Pct High	3.1%	0.0%	10.2%		9.1%	9.2%		3.2%
Threshold	3SD	3SD	3SD		3SD	3SD		3SD
Low Outliers	0	0	0		0	0		0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%
High Outliers	0	0	0		11	4		0
Pct High	0.0%	0.0%	0.0%		3.1%	5.3%		0.0%
Threshold	4SD	4SD	4SD		4SD	4SD		4SD
Low Outliers	0	0	0		0	0		0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%
High Outliers	0	0	0		0	0		0
Pct High	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%

Exhibit 4.15 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Adults, Peer Group 2

Charges (Adults Only)	PPS2 Cohort							Sub-Total Adults	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	648	42	49		294	51		1,084	2,176
Minimum	$0	$0	$0		$0	$25		$0	$0
Maximum	$3,288	$3,288	$3,288		$3,288	$1,898		$3,288	$8,867
Average	$693	$715	$693		$522	$508		$639	$2,448
Median	$345	$382	$321		$419	$419		$394	$690
St. Deviation	$837	$803	$924		$461	$388		$744	$2,848
Threshold	2SD	2SD	2SD		2SD	2SD		2SD	2SD
Low Outliers	0	0	0		0	0		0	0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
High Outliers	50	3	5		8	3		62	31
Pct High	7.7%	7.1%	10.2%		2.7%	5.9%		5.7%	1.4%
Threshold	3SD	3SD	3SD		3SD	3SD		3SD	3SD
Low Outliers	0	0	0		0	0		0	0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
High Outliers	36	2	0		4	1		59	0
Pct High	5.6%	4.8%	0.0%		1.4%	2.0%		5.4%	0.0%
Threshold	4SD	4SD	4SD		4SD	4SD		4SD	4SD
Low Outliers	0	0	0		0	0		0	0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
High Outliers	0	0	0		3	0		0	0
Pct High	0.0%	0.0%	0.0%		1.0%	0.0%		0.0%	0.0%

Exhibit 4.16 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Adults, Peer Group 2

Payments (Adults Only)	PPS2 Cohort							Sub-Total Adults	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	648	42	49		294	51		1,084	2,176
Minimum	$0	$0	$0		$0	$25		$0	$0
Maximum	$3,288	$3,288	$3,288		$3,288	$1,898		$3,288	$8,867
Average	$693	$715	$693		$520	$506		$638	$2,318
Median	$345	$382	$321		$419	$419		$394	$680
St. Deviation	$837	$803	$924		$460	$389		$744	$2,747
Threshold	2SD	2SD	2SD		2SD	2SD		2SD	2SD
Low Outliers	0	0	0		0	0		0	0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
High Outliers	50	3	5		8	3		62	69
Pct High	7.7%	7.1%	10.2%		2.7%	5.9%		5.7%	3.2%
Threshold	3SD	3SD	3SD		3SD	3SD		3SD	3SD
Low Outliers	0	0	0		0	0		0	0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
High Outliers	36	2	0		4	1		59	0
Pct High	5.6%	4.8%	0.0%		1.4%	2.0%		5.4%	0.0%
Threshold	4SD	4SD	4SD		4SD	4SD		4SD	4SD
Low Outliers	0	0	0		0	0		0	0
Pct Low	0.0%	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%
High Outliers	0	0	0		3	0		0	0
Pct High	0.0%	0.0%	0.0%		1.0%	0.0%		0.0%	0.0%

Exhibit 4.17 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Children, Peer Group 2

Charges (Children Only)	PPS2 Cohort							Sub-Total Children	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	815	194			58	25		1,092	2,176
Minimum	$25	$62			$64	$113		$25	$0
Maximum	$8,867	$8,867			$7,977	$8,867		$8,867	$8,867
Average	$3,886	$5,735			$4,792	$3,080		$4,244	$2,448
Median	$4,786	$6,061			$6,060	$3,030		$6,060	$690
St. Deviation	$3,103	$2,253			$2,420	$3,022		$3,024	$2,848
Threshold	2SD	2SD			2SD	2SD		2SD	2SD
Low Outliers	0	16			0	0		0	0
Pct Low	0.0%	8.2%			0.0%	0.0%		0.0%	0.0%
High Outliers	0	0			0	0		0	31
Pct High	0.0%	0.0%			0.0%	0.0%		0.0%	1.4%
Threshold	3SD	3SD			3SD	3SD		3SD	3SD
Low Outliers	0	0			0	0		0	0
Pct Low	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%
High Outliers	0	0			0	0		0	0
Pct High	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%
Threshold	4SD	4SD			4SD	4SD		4SD	4SD
Low Outliers	0	0			0	0		0	0
Pct Low	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%
High Outliers	0	0			0	0		0	0
Pct High	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%

Exhibit 4.18 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Children, Peer Group 2

Payments (Children Only)	PPS2 Cohort							Sub-Total Children	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	815	194			58	25		1,092	2,176
Minimum	$0	$0			$65	$86		$0	$0
Maximum	$8,867	$8,867			$7,977	$8,867		$8,867	$8,867
Average	$3,631	$5,388			$4,734	$2,939		$3,986	$2,318
Median	$4,546	$6,061			$6,061	$3,030		$4,786	$680
St. Deviation	$3,033	$2,394			$2,454	$2,955		$2,984	$2,747
Threshold	2SD	2SD			2SD	2SD		2SD	2SD
Low Outliers	0	18			0	0		0	0
Pct Low	0.0%	9.3%			0.0%	0.0%		0.0%	0.0%
High Outliers	0	0			0	1		0	69
Pct High	0.0%	0.0%			0.0%	4.0%		0.0%	3.2%
Threshold	3SD	3SD			3SD	3SD		3SD	3SD
Low Outliers	0	0			0	0		0	0
Pct Low	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%
High Outliers	0	0			0	0		0	0
Pct High	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%
Threshold	4SD	4SD			4SD	4SD		4SD	4SD
Low Outliers	0	0			0	0		0	0
Pct Low	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%
High Outliers	0	0			0	0		0	0
Pct High	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%

Exhibit 4.19 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Total Population, Peer Group 3

Charges (All Ages)	PPS2 Cohort							Total
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS	
Beneficiary Months	1,272	178	12				5,908	7,370
Minimum	$48	$643	$2,139				$25	$25
Maximum	$54,562	$34,519	$3,537				$33,727	$54,562
Average	$2,257	$9,870	$2,502				$5,574	$5,100
Median	$680	$7,222	$2,303				$5,012	$4,709
St. Deviation	$4,428	$8,855	$453				$3,461	$4,125
Threshold	2SD	2SD	2SD				2SD	2SD
Low Outliers	0	0	0				0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%
High Outliers	74	14	2				278	296
Pct High	5.8%	7.9%	16.7%				4.7%	4.0%
Threshold	3SD	3SD	3SD				3SD	3SD
Low Outliers	0	0	0				0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%
High Outliers	37	0	0				91	116
Pct High	2.9%	0.0%	0.0%				1.5%	1.6%
Threshold	4SD	4SD	4SD				4SD	4SD
Low Outliers	0	0	0				0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%
High Outliers	13	0	0				32	50
Pct High	1.0%	0.0%	0.0%				0.5%	0.7%

Exhibit 4.20 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Total Population, Peer Group 3

Payments (All Ages)	PPS2 Cohort							Total
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS	
Beneficiary Months	1,272	178	12				5,908	7,370
Minimum	$0	$0	$2,139				$0	$0
Maximum	$54,562	$34,519	$3,537				$33,727	$54,562
Average	$2,207	$9,867	$2,502				$5,573	$5,091
Median	$680	$7,223	$2,303				$5,012	$4,709
St. Deviation	$4,449	$8,859	$454				$3,462	$4,136
Threshold	2SD	2SD	2SD				2SD	2SD
Low Outliers	0	0	0				0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%
High Outliers	74	14	2				278	296
Pct High	5.8%	7.9%	16.7%				4.7%	4.0%
Threshold	3SD	3SD	3SD				3SD	3SD
Low Outliers	0	0	0				0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%
High Outliers	30	0	0				91	116
Pct High	2.4%	0.0%	0.0%				1.5%	1.6%
Threshold	4SD	4SD	4SD				4SD	4SD
Low Outliers	0	0	0				0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%
High Outliers	13	0	0				32	50
Pct High	1.0%	0.0%	0.0%				0.5%	0.7%

Exhibit 4.21 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Adults, Peer Group 3

Charges (Adults Only)	PPS2 Cohort							Sub-Total Adults	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	145	111	12				5,163	5,431	7,370
Minimum	$561	$643	$2,139				$25	$25	$25
Maximum	$28,702	$34,519	$3,537				$28,196	$34,519	$54,562
Average	$10,166	$13,268	$2,502				$5,902	$6,159	$5,100
Median	$10,234	$9,872	$2,303				$5,376	$5,396	$4,709
St. Deviation	$6,957	$9,286	$453				$3,279	$3,851	$4,125
Threshold	2SD	2SD	2SD				2SD	2SD	2SD
Low Outliers	0	0	0				0	0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
High Outliers	10	12	2				249	235	296
Pct High	6.9%	10.8%	16.7%				4.8%	4.3%	4.0%
Threshold	3SD	3SD	3SD				3SD	3SD	3SD
Low Outliers	0	0	0				0	0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
High Outliers	0	0	0				89	94	116
Pct High	0.0%	0.0%	0.0%				1.7%	1.7%	1.6%
Threshold	4SD	4SD	4SD				4SD	4SD	4SD
Low Outliers	0	0	0				0	0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
High Outliers	0	0	0				28	45	50
Pct High	0.0%	0.0%	0.0%				0.5%	0.8%	0.7%

Exhibit 4.22 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Adults, Peer Group 3

Payments (Adults Only)	PPS2 Cohort							Sub-Total Adults	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	145	111	12				5,163	5,431	7,370
Minimum	$561	$643	$2,139				$25	$25	$0
Maximum	$28,702	$34,519	$3,537				$28,196	$34,519	$54,562
Average	$10,166	$13,268	$2,502				$5,902	$6,159	$5,091
Median	$10,235	$9,872	$2,303				$5,377	$5,397	$4,709
St. Deviation	$6,957	$9,286	$454				$3,279	$3,851	$4,136
Threshold	2SD	2SD	2SD				2SD	2SD	2SD
Low Outliers	0	0	0				0	0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
High Outliers	10	12	2				249	235	296
Pct High	6.9%	10.8%	16.7%				4.8%	4.3%	4.0%
Threshold	3SD	3SD	3SD				3SD	3SD	3SD
Low Outliers	0	0	0				0	0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
High Outliers	0	0	0				89	94	116
Pct High	0.0%	0.0%	0.0%				1.7%	1.7%	1.6%
Threshold	4SD	4SD	4SD				4SD	4SD	4SD
Low Outliers	0	0	0				0	0	0
Pct Low	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%
High Outliers	0	0	0				28	45	50
Pct High	0.0%	0.0%	0.0%				0.5%	0.8%	0.7%

Exhibit 4.23 SFY15 Beneficiary Month Charge Statistics by PPS2 Cohort, Children, Peer Group 3

Charges (Children Only)	PPS2 Cohort							Sub-Total Children	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	1,127	67					745	1,939	7,370
Minimum	$48	$680					$37	$37	$25
Maximum	$54,562	$14,339					$33,727	$54,562	$54,562
Average	$1,239	$4,242					$3,302	$2,135	$5,100
Median	$680	$3,552					$1,875	$680	$4,709
St. Deviation	$2,611	$3,829					$3,814	$3,347	$4,125
Threshold	2SD	2SD					2SD	2SD	2SD
Low Outliers	0	0					0	0	0
Pct Low	0.0%	0.0%					0.0%	0.0%	0.0%
High Outliers	33	2					33	86	296
Pct High	2.9%	3.0%					4.4%	4.4%	4.0%
Threshold	3SD	3SD					3SD	3SD	3SD
Low Outliers	0	0					0	0	0
Pct Low	0.0%	0.0%					0.0%	0.0%	0.0%
High Outliers	26	0					14	42	116
Pct High	2.3%	0.0%					1.9%	2.2%	1.6%
Threshold	4SD	4SD					4SD	4SD	4SD
Low Outliers	0	0					0	0	0
Pct Low	0.0%	0.0%					0.0%	0.0%	0.0%
High Outliers	16	0					6	13	50
Pct High	1.4%	0.0%					0.8%	0.7%	0.7%

Exhibit 4.24 SFY15 Beneficiary Month Payment Statistics by PPS2 Cohort, Children, Peer Group 3

Payments (Children Only)	PPS2 Cohort							Sub-Total Children	Total All Ages
	MH	MH, Res	SUD	SUD, Res	MH & SUD	MH & SUD, Res	DS		
Beneficiary Months	1,127	67					745	1,939	7,370
Minimum	$0	$0					$0	$0	$0
Maximum	$54,562	$14,340					$33,727	$54,562	$54,562
Average	$1,183	$4,232					$3,295	$2,100	$5,091
Median	$680	$3,552					$1,875	$680	$4,709
St. Deviation	$2,630	$3,840					$3,820	$3,366	$4,136
Threshold	2SD	2SD					2SD	2SD	2SD
Low Outliers	0	0					0	0	0
Pct Low	0.0%	0.0%					0.0%	0.0%	0.0%
High Outliers	33	2					33	86	296
Pct High	2.9%	3.0%					4.4%	4.4%	4.0%
Threshold	3SD	3SD					3SD	3SD	3SD
Low Outliers	0	0					0	0	0
Pct Low	0.0%	0.0%					0.0%	0.0%	0.0%
High Outliers	26	0					14	42	116
Pct High	2.3%	0.0%					1.9%	2.2%	1.6%
Threshold	4SD	4SD					4SD	4SD	4SD
Low Outliers	0	0					0	0	0
Pct Low	0.0%	0.0%					0.0%	0.0%	0.0%
High Outliers	16	0					6	13	50
Pct High	1.4%	0.0%					0.8%	0.7%	0.7%

Exhibit 4.52 Impact of Actual Payment versus PPS2 Estimated Payments by Cohort, Adults, Peer Group 1

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
Howard Center							
Inlier Payment (Rate * Monthly Visits)	$6,798,972	$5,372,809	$2,858,257	$722,594	$2,130,373	$1,079,404	$18,477,875
Outlier Payment	$893,338	$449,114	$22,081	$0	$37,512	$91,551	$1,094,810
Total PPS2 Payment	$7,692,310	$5,821,922	$2,880,337	$722,594	$2,167,885	$1,170,955	$19,572,686
Actual Payments	$7,935,136	$5,848,104	$2,984,465	$748,581	$2,237,337	$1,202,557	$19,595,809
Variance (PPS2 - Actual)	($242,826)	($26,181)	($104,127)	($25,986)	($69,451)	($31,601)	($23,123)
United Counseling Service							
Inlier Payment (Rate * Monthly Visits)	$3,079,081	$2,751,852	$156,316	$38,629	$257,267	$148,300	$2,357,621
Outlier Payment	$875,786	$0	$1,565	$0	$3,465	$6,414	$0
Total PPS2 Payment	$3,954,868	$2,751,852	$157,881	$38,629	$260,732	$154,714	$2,357,621
Actual Payments	$4,068,203	$2,771,387	$142,556	$33,501	$238,619	$148,565	$2,365,231
Variance (PPS2 - Actual)	($113,335)	($19,536)	$15,326	$5,128	$22,114	$6,149	($7,610)
Northwestern Counseling & Support Services							
Inlier Payment (Rate * Monthly Visits)	$4,347,577	$5,025,916	$7,951	$16,433	$159,438	$35,343	$5,365,376
Outlier Payment	$1,178,671	$144,555	$0	$0	$24,576	$0	$551,568
Total PPS2 Payment	$5,526,248	$5,170,471	$7,951	$16,433	$184,014	$35,343	$5,916,944
Actual Payments	$5,470,120	$5,073,770	$7,941	$16,354	$183,469	$35,921	$5,800,745
Variance (PPS2 - Actual)	$56,128	$96,701	$10	$79	$545	($578)	$116,200

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
Rutland Mental Health Services							
Inlier Payment (Rate * Monthly Visits)	$3,937,359	$5,450,441	$301,331	$195,601	$185,064	$80,987	$6,632,923
Outlier Payment	$37,558	$765,995	$79,608	$8,322	$13,879	$0	$175,115
Total PPS2 Payment	$3,974,917	$6,216,436	$380,939	$203,923	$198,943	$80,987	$6,808,039
Actual Payments	$3,622,714	$6,120,128	$419,669	$212,571	$205,868	$84,252	$6,727,899
Variance (PPS2 - Actual)	$352,202	$96,308	($38,729)	($8,648)	($6,926)	($3,265)	$80,140
Northeast Kingdom Human Services							
Inlier Payment (Rate * Monthly Visits)	$4,638,031	$1,978,983	$195,560	$67,352	$242,770	$151,333	$11,463,005
Outlier Payment	$446,161	$798,609	$214,979	$87,923	$13,108	$72,927	$1,092,122
Total PPS2 Payment	$5,084,192	$2,777,592	$410,540	$155,274	$255,878	$224,260	$12,555,126
Actual Payments	$5,217,198	$2,753,630	$423,224	$158,717	$266,332	$229,729	$12,387,243
Variance (PPS2 - Actual)	($133,006)	$23,962	($12,684)	($3,443)	($10,454)	($5,469)	$167,883
Counseling Service of Addison County							
Inlier Payment (Rate * Monthly Visits)	$3,233,052	$1,856,161	$100,059	$38,774	$133,077	$75,926	$4,370,588
Outlier Payment	$177,714	$0	$0	$0	$16,370	$0	$203,303
Total PPS2 Payment	$3,410,766	$1,856,161	$100,059	$38,774	$149,447	$75,926	$4,573,891
Actual Payments	$3,144,043	$1,800,523	$59,038	$22,716	$110,703	$59,308	$4,471,627
Variance (PPS2 - Actual)	$266,723	$55,637	$41,022	$16,058	$38,744	$16,618	$102,264
Washington County Mental Health Services							
Inlier Payment (Rate * Monthly Visits)	$8,486,980	$2,784,460	$32,426	$109,734	$149,885	$56,263	$8,520,931
Outlier Payment	$586,344	$172,648	$120,662	$0	$163,594	$0	$956,464
Total PPS2 Payment	$9,073,324	$2,957,108	$153,088	$109,734	$313,479	$56,263	$9,477,395
Actual Payments	$8,528,781	$2,911,282	$145,622	$102,034	$313,269	$55,310	$9,385,872
Variance (PPS2 - Actual)	$544,543	$45,827	$7,466	$7,700	$210	$953	$91,523
Lamoille County Mental Health							
Inlier Payment (Rate * Monthly Visits)	$2,399,514	$742,265	$51	$0	$100,632	$1,346	$2,536,468
Outlier Payment	$115,858	$117,337	$7,394	$0	$14,901	$0	$0
Total PPS2 Payment	$2,515,372	$859,602	$7,445	$0	$115,533	$1,346	$2,536,468
Actual Payments	$2,623,181	$860,607	$7,817	$0	$118,183	$1,337	$2,518,788
Variance (PPS2 - Actual)	($107,809)	($1,005)	($372)	$0	($2,650)	$9	$17,680

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
Clara Martin Center							
Inlier Payment (Rate * Monthly Visits)	$2,235,282	$193,481	$575,213	$79,739	$366,968	$112,011	$0
Outlier Payment	$0	$0	$102,694	$0	$20,586	$0	$0
Total PPS2 Payment	$2,235,282	$193,481	$677,907	$79,739	$387,554	$112,011	$0
Actual Payments	$2,123,521	$189,707	$649,549	$76,088	$381,621	$109,210	$0
Variance (PPS2 - Actual)	$111,762	$3,774	$28,357	$3,651	$5,933	$2,801	$0
Health Care & Rehab Srv of SE Vermont							
Inlier Payment (Rate * Monthly Visits)	$5,888,367	$4,184,340	$244,998	$65,305	$569,003	$221,569	$6,640,292
Outlier Payment	$594,484	$763,543	$56,068	$40,212	$43,686	$130,852	$0
Total PPS2 Payment	$6,482,851	$4,947,883	$301,065	$105,517	$612,688	$352,421	$6,640,292
Actual Payments	$6,406,333	$4,839,077	$267,028	$97,253	$574,677	$339,864	$6,484,955
Variance (PPS2 - Actual)	$76,518	$108,806	$34,037	$8,264	$38,011	$12,557	$155,338

Exhibit 4.53 Impact of Actual Payment versus PPS2 Estimated Payments by Cohort, Children, Peer Group 1

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
HowardCenter							
Inlier Payment (Rate * Monthly Visits)	$10,970,911	$6,328,989	$57,582	$13,151	$760,628	$344,417	$1,362,500
Outlier Payment	$5,092,552	$89,660	$0	$0	$11,967	$12,366	$398,647
Total PPS2 Payment	$16,063,463	$6,418,649	$57,582	$13,151	$772,595	$356,783	$1,761,148
Actual Payments	$16,284,575	$6,483,867	$59,699	$13,637	$788,266	$362,903	$1,767,139
Variance (PPS2 - Actual)	($221,112)	($65,218)	($2,117)	($485)	($15,670)	($6,121)	($5,991)
United Counseling Service							
Inlier Payment (Rate * Monthly Visits)	$2,242,163	$129,621	$17,466	$123	$94,788	$34,876	$24,589
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$2,242,163	$129,621	$17,466	$123	$94,788	$34,876	$24,589
Actual Payments	$2,274,011	$131,638	$15,786	$106	$91,558	$35,607	$24,803
Variance (PPS2 - Actual)	($31,848)	($2,017)	$1,680	$18	$3,230	($731)	($214)
Northwestern Counseling & Support Services							
Inlier Payment (Rate * Monthly Visits)	$7,534,709	$1,055,329	$68,226	$13,922	$194,415	$46,785	$349,804
Outlier Payment	$3,764,769	$160,661	$0	$0	$61,635	$0	$106,410
Total PPS2 Payment	$11,299,478	$1,215,990	$68,226	$13,922	$256,050	$46,785	$456,214
Actual Payments	$11,794,476	$1,258,093	$67,026	$13,665	$267,232	$46,382	$460,414
Variance (PPS2 - Actual)	($494,998)	($42,103)	$1,200	$256	($11,182)	$403	($4,200)
Rutland Mental Health Services							
Inlier Payment (Rate * Monthly Visits)	$3,045,881	$579,703	$14,043	$10,043	$89,084	$7,218	$319,220
Outlier Payment	$183,172	$271,682	$3,771	$0	$0	$0	$0
Total PPS2 Payment	$3,229,053	$851,385	$17,814	$10,043	$89,084	$7,218	$319,220
Actual Payments	$3,325,835	$852,951	$20,030	$11,293	$91,643	$7,769	$315,470
Variance (PPS2 - Actual)	($96,782)	($1,566)	($2,216)	($1,251)	($2,559)	($551)	$3,750

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
Northeast Kingdom Human Services							
Inlier Payment (Rate * Monthly Visits)	$4,150,440	$1,147,273	$14,208	$27,506	$139,325	$34,025	$1,220,682
Outlier Payment	$144,600	$0	$23,834	$0	$0	$41,862	$0
Total PPS2 Payment	$4,295,040	$1,147,273	$38,042	$27,506	$139,325	$75,888	$1,220,682
Actual Payments	$4,355,235	$1,136,454	$39,496	$28,546	$143,704	$77,801	$1,235,639
Variance (PPS2 - Actual)	($60,196)	$10,819	($1,453)	($1,040)	($4,379)	($1,913)	($14,957)
Counseling Service of Addison County							
Inlier Payment (Rate * Monthly Visits)	$4,836,477	$687,797	$4,481	$2,960	$147,085	$87,977	$198,794
Outlier Payment	$759,648	$0	$0	$0	$72,179	$0	$9,471
Total PPS2 Payment	$5,596,125	$687,797	$4,481	$2,960	$219,264	$87,977	$208,265
Actual Payments	$5,948,571	$695,927	$3,374	$1,699	$238,909	$92,099	$210,662
Variance (PPS2 - Actual)	($352,446)	($8,130)	$1,107	$1,261	($19,644)	($4,122)	($2,397)
Washington County Mental Health Services							
Inlier Payment (Rate * Monthly Visits)	$6,131,150	$4,546,135	$30,140	$0	$179,301	$157,934	$177,660
Outlier Payment	$7,572,755	$1,591,830	$0	$0	$244,868	$75,173	$329,319
Total PPS2 Payment	$13,703,905	$6,137,965	$30,140	$0	$424,169	$233,107	$506,979
Actual Payments	$13,967,561	$6,152,875	$30,790	$0	$431,583	$234,230	$509,650
Variance (PPS2 - Actual)	($263,656)	($14,910)	($650)	$0	($7,414)	($1,124)	($2,671)
Lamoille County Mental Health							
Inlier Payment (Rate * Monthly Visits)	$1,475,676	$1,222,409	$0	$9,169	$36,643	$48,695	$245,597
Outlier Payment	$2,433,362	$272,589	$0	$0	$0	$48,051	$185,274
Total PPS2 Payment	$3,909,038	$1,494,998	$0	$9,169	$36,643	$96,746	$430,871
Actual Payments	$4,068,384	$1,521,001	$0	$9,634	$37,702	$100,877	$433,408
Variance (PPS2 - Actual)	($159,345)	($26,003)	$0	($465)	($1,059)	($4,130)	($2,537)

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
Clara Martin Center							
Inlier Payment (Rate * Monthly Visits)	$2,267,975	$47,740	$59,256	$1,235	$169,475	$62,570	$14,949
Outlier Payment	$1,047,967	$0	$5,301	$0	$136,772	$0	$0
Total PPS2 Payment	$3,315,942	$47,740	$64,557	$1,235	$306,247	$62,570	$14,949
Actual Payments	$3,542,068	$51,601	$62,484	$1,187	$324,013	$67,498	$15,951
Variance (PPS2 - Actual)	($226,126)	($3,862)	$2,073	$47	($17,766)	($4,928)	($1,003)
Health Care & Rehab Srv of SE Vermont							
Inlier Payment (Rate * Monthly Visits)	$6,120,688	$1,201,343	$13,938	$993	$218,487	$22,365	$329,846
Outlier Payment	$2,087,037	$443,575	$3,875	$0	$70,700	$0	$264,321
Total PPS2 Payment	$8,207,725	$1,644,917	$17,813	$993	$289,188	$22,365	$594,168
Actual Payments	$8,343,981	$1,611,341	$16,921	$1,017	$288,949	$20,916	$582,945
Variance (PPS2 - Actual)	($136,255)	$33,576	$892	($23)	$239	$1,449	$11,223

Exhibit 4.54 Impact of Actual Payment versus PPS2 Estimated Payments by Cohort, Adult, Peer Group 2

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
Northeastern Family Institute							
Inlier Payment (Rate * Monthly Visits)	$3,481	$0	$0	$0	$0	$0	$0
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$3,481	$0	$0	$0	$0	$0	$0
Actual Payments	$3,523	$0	$0	$0	$0	$0	$0
Variance (PPS2 - Actual)	($42)	$0	$0	$0	$0	$0	$0
Pathways Vermont							
Inlier Payment (Rate * Monthly Visits)	$336,391	$24,144	$34,915	$0	$145,624	$24,622	$0
Outlier Payment	$121,765	$6,765	$0	$0	$11,745	$1,953	$0
Total PPS2 Payment	$458,156	$30,908	$34,915	$0	$157,369	$26,575	$0
Actual Payments	$445,316	$30,042	$33,936	$0	$152,957	$25,830	$0
Variance (PPS2 - Actual)	$12,841	$866	$979	$0	$4,412	$745	$0

Exhibit 4.55 Impact of Actual Payment versus PPS2 Estimated Payments by Cohort, Children, Peer Group 2

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
Northeastern Family Institute							
Inlier Payment (Rate * Monthly Visits)	$2,923,587	$1,032,679	$0	$0	$271,274	$72,598	$0
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$2,923,587	$1,032,679	$0	$0	$271,274	$72,598	$0
Actual Payments	$2,958,989	$1,045,186	$0	$0	$274,559	$73,477	$0
Variance (PPS2 - Actual)	($35,402)	($12,506)	$0	$0	($3,285)	($879)	$0
Pathways Vermont							
Inlier Payment (Rate * Monthly Visits)	$25	$0	$0	$0	$0	$0	$0
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$25	$0	$0	$0	$0	$0	$0
Actual Payments	$25	$0	$0	$0	$0	$0	$0
Variance (PPS2 - Actual)	$1	$0	$0	$0	$0	$0	$0

Exhibit 4.56 Impact of Actual Payment versus PPS2 Estimated Payments by Cohort, Adults, Peer Group 3s

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
Parent Child Center (PCC)							
Inlier Payment (Rate * Monthly Visits)	$0	$0	$0	$0	$0	$0	$0
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$0	$0	$0	$0	$0	$0	$0
Actual Payments	$0	$0	$0	$0	$0	$0	$0
Variance (PPS2 - Actual)	$0	$0	$0	$0	$0	$0	$0
LSI							
Inlier Payment (Rate * Monthly Visits)	$0	$105,834	$0	$0	$0	$0	$3,443,165
Outlier Payment	$0	$0	$0	$0	$0	$0	$19,617
Total PPS2 Payment	$0	$105,834	$0	$0	$0	$0	$3,462,782
Actual Payments	$0	$104,156	$0	$0	$0	$0	$3,407,891
Variance (PPS2 - Actual)	$0	$1,678	$0	$0	$0	$0	$54,891
SSTA Transportation							
Inlier Payment (Rate * Monthly Visits)	$0	$0	$0	$0	$0	$0	$0
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$0	$0	$0	$0	$0	$0	$0
Actual Payments	$0	$0	$0	$0	$0	$0	$0
Variance (PPS2 - Actual)	$0	$0	$0	$0	$0	$0	$0
UVS							
Inlier Payment (Rate * Monthly Visits)	$139,168	$677,525	$0	$0	$0	$0	$12,540,780
Outlier Payment	$0	$0	$0	$0	$0	$0	$831,545
Total PPS2 Payment	$139,168	$677,525	$0	$0	$0	$0	$13,372,325
Actual Payments	$134,319	$653,917	$0	$0	$0	$0	$12,906,375
Variance (PPS2 - Actual)	$4,849	$23,607	$0	$0	$0	$0	$465,950

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
SAS							
Inlier Payment (Rate * Monthly Visits)	$242,633	$166,745	$0	$0	$0	$0	$4,446,051
Outlier Payment	$0	$0	$0	$0	$0	$0	$105,005
Total PPS2 Payment	$242,633	$166,745	$0	$0	$0	$0	$4,551,056
Actual Payments	$249,430	$171,417	$0	$0	$0	$0	$4,678,553
Variance (PPS2 - Actual)	($6,797)	($4,672)	$0	$0	$0	$0	($127,497)
SCC							
Inlier Payment (Rate * Monthly Visits)	$676,445	$550,897	$0	$0	$0	$0	$3,445,398
Outlier Payment	$0	$0	$0	$0	$0	$0	$182,359
Total PPS2 Payment	$676,445	$550,897	$0	$0	$0	$0	$3,627,757
Actual Payments	$661,344	$538,599	$0	$0	$0	$0	$3,546,772
Variance (PPS2 - Actual)	$15,101	$12,298	$0	$0	$0	$0	$80,985
Families First							
Inlier Payment (Rate * Monthly Visits)	$338,153	$0	$31,524	$0	$0	$0	$2,381,822
Outlier Payment	$0	$0	$0	$0	$0	$0	$550,250
Total PPS2 Payment	$338,153	$0	$31,524	$0	$0	$0	$2,932,072
Actual Payments	$322,071	$0	$30,025	$0	$0	$0	$2,792,623
Variance (PPS2 - Actual)	$16,083	$0	$1,499	$0	$0	$0	$139,448
CVS							
Inlier Payment (Rate * Monthly Visits)	$104,686	$4,544	$0	$0	$0	$0	$3,041,167
Outlier Payment	$0	$0	$0	$0	$0	$0	$35,207
Total PPS2 Payment	$104,686	$4,544	$0	$0	$0	$0	$3,076,373
Actual Payments	$106,876	$4,639	$0	$0	$0	$0	$3,140,703
Variance (PPS2 - Actual)	($2,189)	($95)	$0	$0	$0	$0	($64,330)

Exhibit 4.57 Impact of Actual Payment versus PPS2 Estimated Payments by Cohort, Children, Peer Group 3s

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
PCC							
Inlier Payment (Rate * Monthly Visits)	$587,675	$19,931	$0	$0	$0	$0	$13,059
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$587,675	$19,931	$0	$0	$0	$0	$13,059
Actual Payments	$581,437	$19,720	$0	$0	$0	$0	$12,920
Variance (PPS2 - Actual)	$6,238	$211	$0	$0	$0	$0	$139
LSI							
Inlier Payment (Rate * Monthly Visits)	$25,190	$7,678	$0	$0	$0	$0	$168,916
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$25,190	$7,678	$0	$0	$0	$0	$168,916
Actual Payments	$24,790	$7,556	$0	$0	$0	$0	$166,238
Variance (PPS2 - Actual)	$399	$122	$0	$0	$0	$0	$2,678
SSTA Transportation							
Inlier Payment (Rate * Monthly Visits)	$0	$0	$0	$0	$0	$0	$0
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$0	$0	$0	$0	$0	$0	$0
Actual Payments	$0	$0	$0	$0	$0	$0	$0
Variance (PPS2 - Actual)	$0	$0	$0	$0	$0	$0	$0
UVS							
Inlier Payment (Rate * Monthly Visits)	$152,528	$94,801	$0	$0	$0	$0	$896,791
Outlier Payment	$0	$0	$0	$0	$0	$0	$243,649
Total PPS2 Payment	$152,528	$94,801	$0	$0	$0	$0	$1,140,440
Actual Payments	$147,213	$91,498	$0	$0	$0	$0	$1,100,702
Variance (PPS2 - Actual)	$5,315	$3,303	$0	$0	$0	$0	$39,737

Provider Name	Mental Health	Mental Health, Residential	Substance Use Disorder	Substance Use Disorder, Residential	Mental Health & Substance Use Disorder	Mental Health & Substance Use Disorder, Residential	Developmental Services
SAS							
Inlier Payment (Rate * Monthly Visits)	$69,735	$90,713	$0	$0	$0	$0	$286,589
Outlier Payment	$126,434	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$196,169	$90,713	$0	$0	$0	$0	$286,589
Actual Payments	$201,665	$93,254	$0	$0	$0	$0	$294,618
Variance (PPS2 - Actual)	($5,496)	($2,541)	$0	$0	$0	$0	($8,029)
SCC							
Inlier Payment (Rate * Monthly Visits)	$0	$0	$0	$0	$0	$0	$26,439
Outlier Payment	$55,808	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$55,808	$0	$0	$0	$0	$0	$26,439
Actual Payments	$54,562	$0	$0	$0	$0	$0	$25,849
Variance (PPS2 - Actual)	$1,246	$0	$0	$0	$0	$0	$590
Families First							
Inlier Payment (Rate * Monthly Visits)	$144,220	$35,067	$0	$0	$0	$0	$610,721
Outlier Payment	$195,520	$0	$0	$0	$0	$0	$35,411
Total PPS2 Payment	$339,741	$35,067	$0	$0	$0	$0	$646,132
Actual Payments	$323,583	$33,399	$0	$0	$0	$0	$615,400
Variance (PPS2 - Actual)	$16,158	$1,668	$0	$0	$0	$0	$30,732
CVS							
Inlier Payment (Rate * Monthly Visits)	$0	$37,347	$0	$0	$0	$0	$233,848
Outlier Payment	$0	$0	$0	$0	$0	$0	$0
Total PPS2 Payment	$0	$37,347	$0	$0	$0	$0	$233,848
Actual Payments	$0	$38,128	$0	$0	$0	$0	$238,738
Variance (PPS2 - Actual)	$0	($781)	$0	$0	$0	$0	($4,890)