North Sound Mental Health Administration
2013 External Quality Review Report

Performance Improvement Project Validation
Information Systems Capabilities Assessment
Encounter Data Validation
Clinical Record Review

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Presented to the Division of Behavioral Health and Recovery

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EXECUTIVE SUMMARY

The Division of Behavioral Health and Recovery (DBHR) contracts with Acumentra Health to perform an annual external quality review (EQR) of managed mental health services for Medicaid enrollees in Washington, in fulfillment of federal requirements under 42 CFR §438.350.

This report summarizes the 2013 review of North Sound Mental Health Administration (NSMHA), one of 11 regional support networks (RSNs) with which DBHR contracts to deliver managed mental health services. This year's review includes:

- evaluation of the RSN's performance improvement projects (PIPs)
- follow-up review of the RSN's compliance with federal and state regulations and contract provisions governing managed care operations
- an Information Systems Capabilities Assessment (ISCA)
- encounter data validation and a review of clinical records

The reviews rate NSMHA's overall performance in 2012, identify strengths and opportunities for improvement, and offer specific recommendations to address deficiencies. The results summarized below are presented in more detail in the main body of the report.

PIP evaluation results

Because RSNs begin their PIPs at different times, and because PIPs are typically multi-year projects, the studies may be in different stages at the time of the EQR evaluation. As ongoing projects, the PIPs may not meet all standards the first year, but a PIP is expected to achieve better scores as the project progresses, eventually reaching full compliance.

Acumentra Health reviewed one clinical and one nonclinical PIP conducted by NSMHA:

1. **Clinical—Decrease in the Days to Medication Evaluation Appointment After Request for Service:** This PIP, initiated in 2009, seeks to reduce the average number of days between an enrollee's request for service and a medication evaluation appointment. After initial results showed no improvement in the study indicator, NSMHA modified the original intervention, a decision tree tool to aid clinicians in making timely referrals to a medication evaluation. The modified intervention added elements to the decision tree tool to emphasize discharge planning and clinician training on medication management transfers to primary care providers. Remeasurement data showed no statistically significant improvement in the two periods following baseline. Data for a third remeasurement period were not available at the time of this report, though NSMHA stated its belief that the PIP was "making slow but steady progress." Acumentra Health recommends that NSMHA retire this mature PIP, the results of which are compromised by multiple confounding factors.
2. **Nonclinical—Improving the Quality of Care Coordination for High-Risk Transition Age Youth:** This first-year PIP, submitted to meet DBHR requirements for a children's PIP, focuses on improving care coordination for high-risk transition age youth (age 16–20). NSMHA clearly described the importance of this topic, its relevance to the local Medicaid population, and the systematic selection and prioritization process used to select the topic. In addition to a primary study question and indicator, NSMHA developed two supporting study questions and indicators to better track performance and improvement in relation to this complex topic. At the time of the PIP review, NSMHA had identified a general improvement strategy involving workforce development and implementation of practice guidelines, but had not selected specific interventions.

The clinical PIP scored 95 on a scale of 100, earning a Fully Met rating. At the onsite PIP interview, NSMHA agreed with Acumentra Health's recommendation to retire this PIP, but the RSN's report did not document the decision to discontinue the PIP.

The nonclinical PIP scored 49 on a 90-point scale, earning a Partially Met rating. NSMHA still needs to clarify the numerator and denominator definitions and inclusion/exclusion criteria, describe data validation procedures, refine its data analysis plan, and select appropriate interventions.

Compliance follow-up results

In 2012, Acumentra Health reviewed NSMHA's compliance with federal and state standards related to eight major areas of managed care operations. As a follow-up activity in 2013, DBHR directed Acumentra Health to review each RSN's response to the specific 2012 EQR findings for which DBHR required the RSN to perform corrective action. NSMHA had no such findings in the 2012 EQR review.

ISCA results

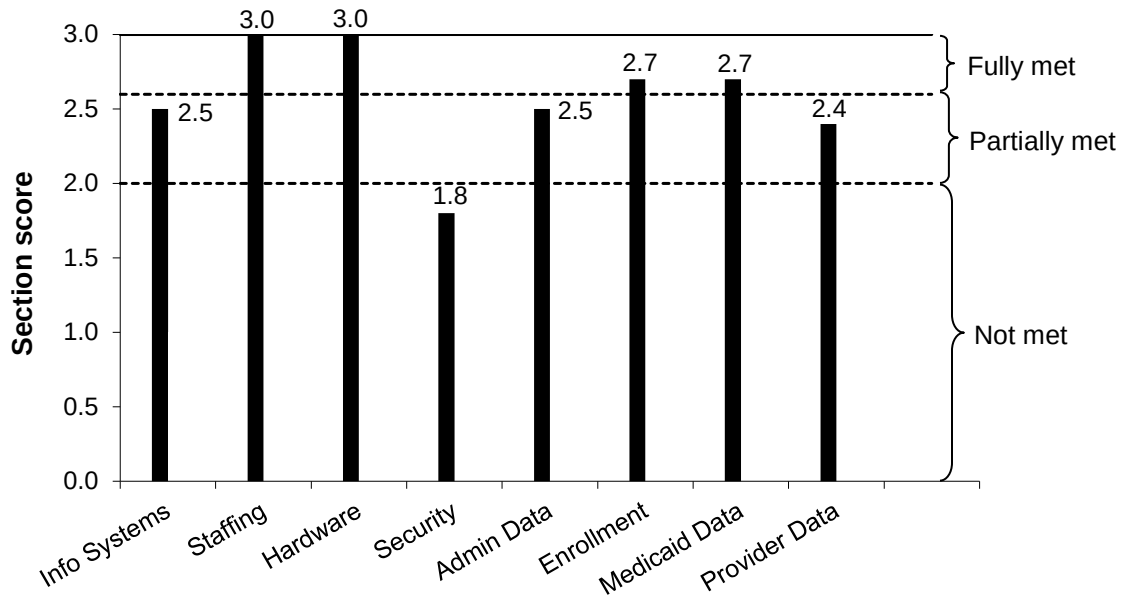
Acumentra Health examined NSMHA's information systems and data processing and reporting procedures to determine the extent to which they supported the production of valid and reliable state performance measures and the capacity to manage care of RSN enrollees.

The ISCA found that NSMHA *partially met* the federal standards related to data processing procedures and personnel, and *partially met* the standards related to data acquisition capabilities. The review revealed deficiencies with regard to data security practices and system documentation.

Figure 1 depicts the RSN's scores on individual ISCA subsections.

For additional detail, including strengths and recommendations for improvement, see the report section beginning on page 25.

Figure 1. Summary results of North Sound MHA ISCA review.



Encounter data validation results

DBHR requires each RSN to conduct an annual encounter data validation (EDV) to determine the accuracy of encounter data submitted by network providers. As an independent check of the RSNs' results, Acumentra Health audited and verified the EDV process for each RSN in 2013.

Electronic checks of the data elements making up NSMHA's total outpatient and demographic data generally found complete data in mandatory fields, except that 16.7% of records contained out-of-range ethnicity data and 0.5% contained out-of-range sexual orientation data, including the submission of invalid codes. In a small percentage of records (0.1%), the minutes of service were not compatible with the state's reporting instructions. Also, in a large number of encounters, the claim ID was duplicated or triplicated. NSMHA and DBHR provided conflicting explanations regarding this duplication.

Acumentra Health's review of 461 encounter records in 109 charts revealed that the service code matched the service described in the chart note in 82.9% of encounters reviewed. Provider type, service location, and service date recorded in the charts matched the state data in 95% to 96% of encounters, but ethnicity and language matched in only 68.8% of encounters, and minutes of service matched in only 58.8%.

Golden Thread analysis

In conjunction with the EDV, Acumentra Health reviewed clinical records to determine providers' adherence to the "Golden Thread" of clinical documentation, tying together the mental health diagnosis, treatment plan, and progress notes. Reviewers examined whether the assessment in the enrollee's chart substantiated the diagnosis, whether the treatment plan was consistent with the diagnosis, and whether progress notes addressed goals and interventions in the treatment plan.

The majority of mental health assessments were well written for both children and adults. The assessments documented the presenting problem, the medical necessity for treatment, and the clinical formulation for diagnosis and services.

Almost all treatment plans included individualized interventions and measurable goals consistent with issues identified in the assessment.

The progress notes were consistent and well written, addressing interventions identified in the treatment plan and the enrollee's progress toward meeting the stated goals.

Clinical record review results

Also in conjunction with the EDV, Acumentra Health reviewed clinical records at four outpatient provider agencies to assess compliance with the mental healthcare criteria defined by DBHR. This study focused on the degree to which the RSN's system of care adhered to the principles of the Children's Mental Health Redesign, including the principles defined in the interim settlement of *T.R. v. Dreyfus*, regarding uniform screening and assessment of children with serious emotional disturbances.

Assessments. Clinicians did a good job of documenting the child's home environment and systems of support. The percentage of applicable assessments that addressed developmental and sensory impairment, cultural and language issues, and justifying the diagnosis all fell well within the acceptable range. More than 80% of assessments had been completed within the past year.

Treatment plans. Most treatment plans reflected issues included in the assessments. The majority of treatment goals were based on the children's strengths. Involvement of family members and support systems in treatment was documented in the majority of the records. For children with other service agency involvement, coordination with other agencies was incorporated into two-thirds of the treatment plan objectives.

- **NSMHA should ensure that providers coordinate care with other service agencies involved in the child's life and document this coordination in the treatment plan.**

Only 42% of the treatment plans included a multi-disciplinary team-based approach to treatment.

- **NSMHA needs to offer guidance to the agencies to ensure that children's treatment includes a team-based approach when appropriate.**

Progress notes. Almost all progress notes demonstrated that the child received unconditional treatment. The majority of progress notes documented use of strength-based interventions and activities as identified in the treatment plans.

Team-based services and coordination with other agencies were lacking in progress note documentation. For children with multi-agency involvement, only 43.8% of progress notes documented coordination of care with other agencies and systems.

- **NSMHA needs to ensure that progress notes document coordination of care with other agencies and systems that serve the child, where appropriate.**

INTRODUCTION

This report summarizes the results of the 2013 review of NSMHA, a mental health RSN that serves Medicaid recipients. Acumentra Health performed the review in its capacity as DBHR's External Quality Review Organization (EQRO).

Currently, DBHR contracts with 11 RSNs to deliver mental health services for Medicaid enrollees through managed care. The RSNs, in turn, contract with provider groups, including community mental health programs and private nonprofit agencies and hospitals, to deliver treatment services. The RSNs must ensure that services are delivered in a manner that complies with legal, contractual, and regulatory standards for effective care.

NSMHA, headquartered in Mount Vernon, serves public mental health enrollees in Island, San Juan, Skagit, Snohomish, and Whatcom counties. A nine-member board of directors drawn from each county's executive and legislative branches of government sets the RSN's policy direction, and a citizen advisory board provides independent advice to the board and feedback to local jurisdictions and service providers. During 2012, NSMHA had about 189,000 enrollees in its service area.

EQR activities

42 CFR §438.358 specifies three mandatory activities that the EQR must address in a manner consistent with protocols established by the Centers for Medicare & Medicaid Services (CMS):

- a review every three years of health plan compliance with federal and state regulations and contract provisions regarding access to care, structure and operation, and quality measurement and improvement
- annual validation of PIPs, a required element of health plans' quality improvement (QI) programs
- annual validation of performance measures reported by plans or calculated by the state, including an ISCA

Acumentra Health conducted the compliance review for each RSN during 2011–2012, and conducted the ISCA for each RSN and for DBHR in 2013. In addition, Acumentra Health conducted the PIP validation, an encounter data validation, and a clinical record review for each RSN in 2013. Together, these activities addressed the following questions:

1. Does the RSN meet CMS regulatory requirements?
2. Does the RSN meet the requirements of its contract with the state?
3. Does the RSN monitor and oversee contracted providers in their performance of any delegated activities to ensure regulatory and contractual compliance?
4. Does the RSN conduct the two required PIPs, and are they valid?
5. Does the RSN's information technology infrastructure support the production and reporting of valid and reliable performance measures?

Review procedures for each activity were adapted from the applicable CMS protocol:

- *EQR Protocol 1: Assessment of Compliance with Medicaid Managed Care Regulations.* Version 2.0, September 2012
- *EQR Protocol 3: Validating Performance Improvement Projects (PIPs).* Version 2.0, September 2012
- *Appendix V: Information Systems Capabilities Assessment*. September 2012

The scoring plan for each activity was adapted from CMS guidelines, using a DBHR-approved weighting system developed by Acumentra Health.

Performance Improvement Project Validation

Under 42 CFR §438.240(d), a managed care organization that serves Medicaid enrollees must have an ongoing program of PIPs that focus on improving clinical care and nonclinical aspects of service delivery. The PIPs enable the organization to assess and improve the processes and, in turn, the outcomes of care.

PIPs are validated each year as part of the EQR to ensure that the projects are designed, conducted, and reported according to accepted methods, establishing confidence in the reported results. The PIPs must include:

- measurement of performance using objective quality indicators
- implementation of system interventions to improve quality
- evaluation and initiation of the interventions
- planning and initiation of activities for increasing or sustaining improvement

Through repeated measurement of the selected quality indicators, a PIP is expected to demonstrate meaningful change in performance relative to the performance observed during baseline measurement.

Acumentra Health has validated the Washington RSNs' PIPs each year since 2008. Most RSNs have carried their individual PIP topics forward for at least several years, enabling Acumentra Health to evaluate their progress toward achieving sustained improvement.

Because RSNs begin their PIPs at different times, the studies may be in different stages at the time of the EQR evaluation. Some may be underway but not yet complete; others may have progressed to collecting baseline and remeasurement data; still others may have progressed to multiple remeasurements. The stage of the PIP at review determines the level of analysis that Acumentra Health applies.

PIP review procedures

Through document review and onsite interviews, Acumentra Health reviews PIPs for these elements:

- a written project plan with a study design, an analysis plan, and a summary of results
- a clear, concise statement of the topic being studied, the specific questions the study is designed to address, and the quantifiable indicators that will answer those questions
- a clear statement of the improvement strategies, their impact on the study question, and how that impact will be assessed and measured
- evidence that the intervention services and materials are culturally and linguistically appropriate, per the 2012 CMS protocol
- an analysis plan that addresses project objectives, defines indicators clearly, specifies the population being studied, identifies data sources and/or the data collection procedure, and discusses the methods for analyzing the data and performing statistical tests
- if applicable, a sampling methodology that yields a representative sample
- if the data collection involves clinical chart review, a check on inter-rater reliability
- use of validation procedures at the point of data entry and within the database to verify that data used for population-based analysis are complete and accurate
- a summary of results covering all data collection and analysis, explaining limitations in the data and methodologies and discussing whether the intervention(s) resulted in improvements

PIP scoring

The PIP scoring methodology, adapted from the CMS protocol for this activity and approved by DBHR, involves rating the RSN's performance on as many as 10 standards, listed in Table 1. Appendix A defines in detail the specific criteria used to evaluate performance.

Each standard has a potential score of 100 points for full compliance. The total points earned for each standard are weighted and combined to determine an overall PIP score. The overall score is weighted 90% for demonstrable improvement in the first year (Standards 1–8) and 10% for sustained improvement in later years (Standards 9–10). Thus, for a PIP that has completed one remeasurement, the maximum overall project score is 90 points. (Note: In years before 2012, the maximum score for these PIPs was 80 points.) If the PIP has progressed to at least a second remeasurement, enabling reviewers to assess sustained improvement, the maximum overall project score is 100 points.

Table 1. Standards for PIP validation.

Demonstrable improvement	
1	Selected study topic is relevant and prioritized
2	Study question is clearly defined
3	Study indicator is objective and measurable
4	Study population is clearly defined and, if a sample is used, appropriate methodology is used
5	Data collection process ensures valid and reliable data
6	Improvement strategy is designed to change performance based on the quality indicator
7	Data are analyzed and results interpreted according to generally accepted methods
8	Reported improvement represents “real” change
Sustained improvement	
9	The RSN has documented additional or ongoing interventions or modifications
10	The RSN has sustained the documented improvement

Table 2 shows the compliance ratings and associated scoring ranges for PIPs graded on the 90-point and 100-point scales. Appendix A presents a sample scoring worksheet. Note: these compliance rating ranges for the overall PIP score are different from the ranges used in assessing compliance for individual PIP standards; see Appendix A.

Per the approved protocol, Acumentra Health scores all PIPs according to the same criteria, regardless of the stage of completion. As ongoing multi-year QI projects, the PIPs may not meet all standards the first year, but a PIP is expected to achieve better scores as project activities progress, eventually reaching full compliance.

Table 2. PIP scoring ranges.

Compliance rating	Description	100-point scale	90-point scale
Fully met	Meets or exceeds all requirements	80–100	72–90
Substantially met	Meets essential requirements, has minor deficiencies	60–79	54–71
Partially met	Meets essential requirements in most, but not all, areas	40–59	36–53
Minimally met	Marginally meets requirements	20–39	18–35
Not met	Does not meet essential requirements	0–19	0–17

Review results for Clinical PIP: Decrease in the Days to Medication Evaluation Appointment After Request for Service

This PIP, initiated in 2009, seeks to reduce the average number of days from an enrollee's request for service (RFS) to a medication evaluation appointment. After initial study results showed no improvement in the study indicator, NSMHA modified the original intervention, a decision tree tool for clinicians to use at the first ongoing appointment following intake to help make timely referrals to a medication evaluation. The modified intervention added elements to the decision tree tool to emphasize discharge planning and clinician training on medication management transfers to primary care providers (PCPs).

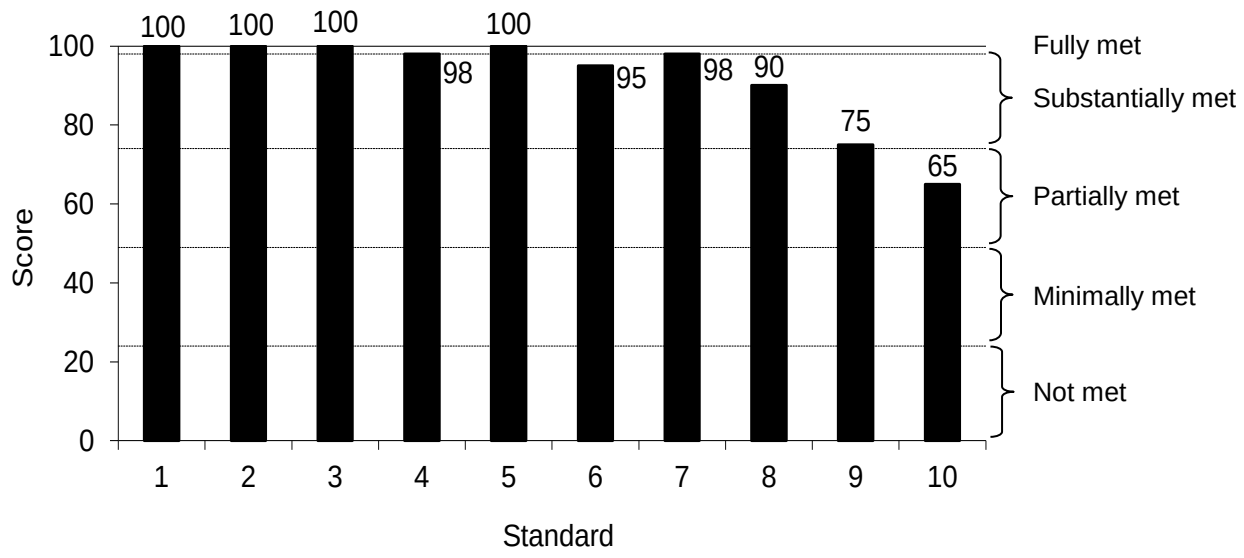
NSMHA reported data showing no statistically significant improvement in the study indicator in the two remeasurement periods following baseline. Data for a third remeasurement period were not available at the time of this report, though NSMHA stated its belief that the PIP was "making slow but steady progress."

The RSN originally proposed further modifying the intervention and continuing to track the study indicator for another year. At the onsite PIP interview, Acumentra Health recommended retiring this mature PIP, the results of which are compromised by multiple confounding factors. NSMHA agreed, but its report did not document the decision to discontinue this PIP topic.

The overall weighted score for this PIP is 95, based on a scale of 100, resulting in a compliance rating of Fully Met.

Figure 2 shows the score for each of the 10 validation standards reviewed for this project.

Figure 2. Validation scores by standard for clinical PIP, Decrease in the Days to Medication Evaluation Appointment After Request for Service.



Standard 1: Study Topic
Score: 100 (Fully met)

To meet Standard 1, the RSN needs to establish the importance of the study topic in general and present local data to demonstrate that the topic applies to a large or high-risk portion of the Medicaid population; and demonstrate that a systematic selection and prioritization process was used in choosing the topic.

NSMHA's PIP workgroup, including consumers, advocates, providers, and RSN staff, identified areas needing improvement and presented their two top priorities—improving the timeliness of medication evaluation and increasing consumer employment rates—to NSMHA's Quality Management Oversight Committee (QMOC). The committee chose timely access to medication evaluation appointments because "approximately half of NSMHA's consumers receive medication services from NSMHA-contracted providers and the consequences of waiting for this service can be incredibly negative."

NSMHA presented local data showing that enrollees waited an average of 64.5 days to receive a first prescriber appointment for a medication evaluation. The RSN did not refer to a benchmark or other comparison to indicate whether this wait time was high or low. From a consumer perspective, the regional Ombuds representative reported that complaints related to "physicians and medications" ranked third among enrollee complaints, and that people complained specifically about the length of time they had to wait for medication appointments. NSMHA cited literature showing that increased wait times are related to increased psychiatric hospitalization, decompensation, and suicide risk. People who must wait for services longer are also less likely to attend appointments when offered.

The QMOC approved this project and the two interventions developed by the PIP workgroup, which had identified two general barriers to access: network capacity and timely identification of individual need for a prescriber appointment. The workgroup initially developed an intervention focusing on timely assessment and referral, while continuing to discuss capacity issues. For the current year, NSMHA focused on capacity and developed a second intervention that attempts to increase system capacity by improving the flow of enrollees through medication services.

NSMHA documented the importance of this topic in general, its prioritization and selection process, and its relevance to the local service population.

NSMHA fully meets this standard.

Standard 2: Study Question
Score: 100 (Fully met)

To meet Standard 2, the RSN needs to present a study question that provides a clear framework for data collection, analysis, and interpretation. The study question should refer to the proposed intervention, a study population (denominator), a measure (numerator), a metric (e.g., average, percentage), and a direction of desired change.

The study question is: "Does implementing planful discharge at the first ongoing appointment significantly decrease the average number of days from the request for service to the medication evaluation for Medicaid-enrolled individuals who receive a medication evaluation within 180 days of the request for service?"

The question refers to the intervention (planful discharge), the numerator (interval between RFS and medication evaluation), the study population (individuals who receive a medication evaluation within 180 days), the metric (days), and the direction of change (decrease).

NSMHA chose the first ongoing appointment as the point of intervention because it is the first appointment after the enrollee's clinical eligibility is established, and it occurs with the enrollee's ongoing clinician, who has a primary role in treatment planning and interventions for the enrollee.

NSMHA fully meets this standard.

Standard 3: Study Indicator
Score: 100 (Fully met)

To meet Standard 3, the RSN needs to define the measure (numerator) and study population (denominator); define key terms; and discuss the basis for adopting the indicator as a valid proxy for enrollee outcomes, satisfaction, or quality of care.

NSMHA defined the study indicator as the average number of days from RFS to a medication evaluation.

Numerator: Total number of days between RFS and medication evaluation for consumers identified in the denominator.

Denominator: Number of service requests by Medicaid enrollees who receive a medication evaluation within 180 days.

NSMHA defined the following key terms.

Request for service: a phone call to NSMHA's central access line requesting an intake assessment appointment.

First ongoing appointment: the first outpatient service appointment with a mental healthcare professional. This is the point at which the intervention occurs.

Medication evaluation: the first appointment with a prescriber after a service request. The terms *medication evaluation* and *first prescriber appointment* are used interchangeably.

Planful discharge: a process to "assist with improving the flow of people through treatment." The process includes a decision tree that has been revised to emphasize early discharge planning and coordination with the enrollee's primary care provider (PCP) and a revised RSN policy on medication management.

NSMHA justified the term of 180 days for inclusion in the denominator as a limit to help manage timely data collection, and demonstrated that about 91% of the cases fell within that period. The number of days from RFS to medication evaluation was chosen to represent the issue of access, from the moment of expressing a need to receiving service.

NSMHA fully meets this standard.

Standard 4: Denominator (Study Population) Data Collection
Score: 98 (Substantially met)

To meet Standard 4, the RSN needs to list all inclusion and exclusion criteria for the study population; document all data sources, including fields, codes, and calculations; and describe data validation procedures. If a sample is selected, the RSN needs to describe the sampling methods.

The study population includes people (a) served by NSMHA, (b) with a medication evaluation, (c) with a service request within 180 days before the evaluation, and (d) eligible for Medicaid at the time of the RFS. The population includes people with dual eligibility (Medicare/Medicaid) and those with special healthcare conditions. People who had a service request and a medical evaluation "without the opportunity to implement the intervention" (i.e., the person did not have a first ongoing appointment) were also included in the study, but NSMHA did not explain why. NSMHA reported that in the first quarter of the baseline period, no individuals received a medication evaluation appointment without first being scheduled for an ongoing appointment, and that the number of these individuals in subsequent quarters was very small.

There are no study exclusion criteria.

NSMHA described the data sources, fields, calculations and codes used to identify the study population. The RSN's Consumer Information System (CIS) was the principal database used to identify medication evaluations and service requests. NSMHA verified Medicaid eligibility against the eligibility list transmitted from DBHR monthly. NSMHA considered its data accurate and reliable because encounter data validation, performed between October 2010 and March 2011, reviewed 2,630 services out of a population of 172,449 and identified a 98.5% match between

data in the electronic record and data in enrollees' clinical records.

NSMHA explained that the denominator included all service requests, even if a given enrollee made more than one request. The RSN chose to include all service requests within a single measurement period because "periods of care are not linear and it is possible to start and stop a period of care several times with multiple RFS's." NSMHA acknowledged that including all service requests may result in double-counting people who have multiple service requests with one prescriber service as the end point, but the effect should be equal in all study periods. The RSN presented data showing that the percentages of service requests originating from the same person were comparable for the baseline and first intervention period.

To meet this standard fully, NSMHA needs to clarify why the study population includes people who do not receive the intervention at the first ongoing appointment.

Standard 5: Numerator (What Is Being Measured) Data Collection and Analysis Plan
Score: 100 (Fully met)

To meet Standard 5, the RSN needs to list all inclusion and exclusion criteria for the numerator (what is being measured); document all data sources, including fields, codes, and calculations; describe data validation procedures; and present a clear data analysis plan, including time frames for the measurement and intervention periods, and an appropriate statistical test to measure differences between the baseline and remeasurement periods.

The numerator is the number of days between RFS and medication evaluation for consumers identified in the denominator. NSMHA described the data sources, fields, calculations, and codes used to build the numerator under Standard 4.

NSMHA outlined the following study time frames.

Baseline: July 1, 2009–June 30, 2010

First intervention: July 1, 2010–June 30, 2011

First remeasurement of first intervention: July 1, 2011–May 31, 2012

Second intervention: June 1, 2012–May 31, 2013

Second remeasurement of second intervention: June 1, 2013–May 31, 2014

NSMHA applied the term *intervention* to both the intervention and measurement period, running concurrently. All remeasurement periods are 12 months in length, but have different start dates. The start date of the second intervention was significantly delayed due to the need to adhere to RSN and provider procedures for review and approval.

NSMHA used a two-tailed t-test to determine statistical significance between two different measurement periods, with a probability level of $p<.05$. NSMHA noted that the t-test is appropriate to compare averages.

NSMHA fully meets this standard.

Standard 6: Study Intervention
Score: 95 (Substantially met)

To meet Standard 6, the RSN needs to select an improvement strategy that will affect a wide range of enrollees or a high-risk enrollee population, and that is reasonably expected to result in measurable improvement. The RSN needs to discuss the basis for adopting the intervention; document the implementation of the intervention, including dates and locations of principal activities; discuss cultural competence; and track how effectively the intervention was implemented.

After selecting the topic, the QMOC workgroup identified "two potential and significant" barriers to timely medication evaluation: capacity and timely identification of the need. The workgroup prioritized timely identification over capacity for reasons of feasibility. After identifying and discussing barriers to timely identification and referral, the workgroup chose as the intervention

the use of a decision tree and target symptom list at the first ongoing appointment. The tool was intended to facilitate "increased MHCP [mental health care provider] awareness of target symptoms and assessment of medication evaluation need in the first ongoing appointment." After using the decision tree tool in assessing the enrollee, the provider was instructed to document the outcome in the treatment plan. NSMHA attached copies of the decision tree and target symptom list to its report.

All clinicians involved in direct consumer care were to be trained in the process, and a record kept of the training. NSMHA stated that an audit of the provider agency training logs demonstrated "compliance with training expectations."

NSMHA tracked implementation of the initial and revised decision tree through chart reviews. The RSN calculated the number of charts to be reviewed at each provider agency based on the number of open qualifying RFS events. For the first intervention, NSMHA conducted chart reviews in September–October 2010 (3 months after the start of the intervention) and May 2011 (the end of the first intervention). The chart reviews showed that in the first year of the intervention, both usage of the decision tree at the first appointment and documentation of the decision tree in the treatment plan improved.

In addition to chart reviews, NSMHA calculated the study indicator on a quarterly basis in order to "internally inform in process management of the intervention implementation."

With regard to the cultural and linguistic appropriateness requirement (new for 2013), NSMHA acknowledged that the RSN "has room to grow" in this area, and discussed RSN-wide strategies aimed at improving cultural and linguistic competence. NSMHA reported that the PIP lead coordinator planned to review National Center for Cultural Competence training content with the PIP workgroup to ensure that future PIPs incorporate cultural and linguistic competency standards. The RSN described no cultural or linguistic considerations specific to this PIP.

To meet this standard fully, NSMHA needs to discuss cultural and linguistic appropriateness specific to the PIP.

Standard 7: Study Results
Score: 98 (Substantially met)

To meet Standard 7, the RSN needs to present results according to the data analysis plan, including the study indicator, the original data used to compute the indicator, and a statistical test to measure differences between the baseline and remeasurement periods; and discuss how the intervention influenced the results.

NSMHA reported the raw results and calculated indicator for the baseline (7/1/2009–6/30/2010) and first intervention period (7/1/2010–6/30/2011), as shown below.

Average Number of Days Between RFS and Medication Evaluation

	Baseline	1st intervention
Numerator	2,496	2,189
Denominator	175,181	154,804
Average	**70.18**	**70.72**
P-value		0.667
Significant		**No**

The average number of days between RFS and medication evaluation for enrollees in the study population remained essentially the same between the baseline and first intervention measurement period.

NSMHA collected chart review data during September–October 2010 (2–3 months after the start of the intervention) and May 2011 (the end of the first intervention measurement period), and presented the following data.

Chart Review Results

Review question	2010 (n=139)	2011 (n=79)
DT used at 1st routine appoint	64%	73%
DT outcome documented in treatment plan	66%	93%
DT outcome resulted in med eval referral	63%	53%
Referral initiated within 1 calendar week	70%	62%
Referral initiated after 1 calendar week	15%	26%
Referral completed within 1 calendar week	61%	48%
Referral completed after 1 calendar week	30%	39%

DT = decision tree

Med eval = Medical evaluation

In the onsite PIP review, NSMHA explained that referral times could not be determined for some of the charts. Since these numbers were not included in the chart review data, the percentages do not add up to 100%. NSMHA should include all data in the chart review table.

NSMHA considered the intervention implemented as planned, evidenced by improvement in the use of the decision tree and documentation in the treatment plan. However, the RSN acknowledged that despite these improvements, "the intervention appears to have no impact on improving the time between request for service and the medication evaluation appointment."

NSMHA hypothesized that the worsening in the timeliness of referral initiation (from 70% to 62% within 1 calendar week) did not reflect clinician behavior, but rather the additional referral review procedures implemented by at least one agency. In addition, NSMHA observed that this delay could partly account for the lack of improvement in the study indicator. Further interpretation of the study results is discussed in Standard 8.

To meet this standard fully, NSMHA needs to report summary data on all charts reviewed, including those without referral times.

Standard 8: Interpretation of Study Results Score: 90 (Substantially met)

To meet Standard 8, the RSN needs to assess whether any reported improvement is "real" by documenting that baseline and remeasurement data were collected using the same methods and are comparable; discuss the statistical and clinical significance of the study results; address barriers to improvement and lessons learned during the PIP process; and identify confounding factors that may have affected the results.

NSMHA noted no statistically significant change in the study indicator from baseline to the first intervention measurement period. With regard to clinical outcomes, NSMHA hypothesized that the reduction in the number of initiated medication evaluation referrals (from 63% in 2010 to 53% in 2011) could be due to increased clinician awareness and fewer unnecessary referrals.

Regarding barriers to improvement, NSMHA noted that "differences in referral processes between agencies," such as completion of additional paperwork before scheduling a medication evaluation appointment or waiting for records before scheduling, affected the timeliness of the referral. The RSN did not discuss how it addressed this barrier.

NSMHA identified several confounding factors that could have affected the first intervention measurement results:

- *Clinic "no-show" rates.* NSMHA does not monitor no-show rates, and believes "our intervention is affected a number of ways which [we] were currently unable to quantify." The RSN reported that this topic has been discussed internally at NSMHA, but leadership has not decided on a course of action.
- *Differences in child/youth treatment services.* The RSN observed that most children have a PCP, and if they do not, Medicaid standards require that the mental health provider make a referral. Also, NSMHA suggested that many PCPs

prescribe minor psychiatric medications for children/youth. The RSN drew no conclusions about how the differences might have affected the study results.

- *Medication evaluation outside the NSMHA system.* Once a medication evaluation need is identified, adults with dual eligibility (Medicaid/Medicare) and children with Medicaid and private insurance could forgo a referral and visit their own PCPs directly. NSMHA stated that it cannot collect data on the use of external resources and cannot provide an estimate for this population.

NSMHA clearly identified different confounding factors, but needs to conduct further analyses and draw conclusions about the effect of these confounders on its confidence in, and validity of, the study results.

With regard to data collection methods and comparability, NSMHA stated that the transition from Sound Data as the sole data clearinghouse to direct reporting of data by each provider agency did not affect service reporting levels.

To meet this standard fully, NSMHA needs to discuss how the identified confounding factors may have affected the study results.

Standard 9: Study Modifications After the First Remeasurement
Score: 75 (Substantially met)

To meet Standard 9, the RSN needs to document modifications to the intervention, or added interventions, planned or implemented after the first remeasurement period; and discuss changes in other aspects of the PIP based on lessons learned from data analysis or barrier analysis.

NSMHA described modifications to the intervention as follows.

First remeasurement of first intervention (June 2011–May 2012): After implementing the original intervention for one year, NSMHA reviewed preliminary data, noted no improvement in the indicator, and decided to continue efforts to reduce the time between RFS and medication evaluation by using a different intervention.

After identifying and discussing barriers, the PIP workgroup decided to focus on lack of capacity, an issue previously identified as important, and which remained problematic for all provider agencies. Among three possible interventions, the workgroup chose to recommend "planful discharge" to the QMOC, which approved the new intervention.

NSMHA stated that a significant barrier during this reporting period was the delay in implementation of the modified ("second") intervention due to provider policies. Regarding this barrier, NSMHA noted that "the only way to address these operational delays is to change our internal practices and policies." Currently, RSN leadership is exploring "more meaningful and efficient practices."

NSMHA described this period as "the time frame in which the [second] intervention had not yet been implemented and data continued to be measured." Although NSMHA continued to collect data on the study indicator, the RSN conducted no chart reviews during this measurement period, making it difficult to evaluate whether or not the intervention was implemented effectively during this time.

Second intervention (June 2012–May 2013): In February 2012, NSHMA distributed a memorandum to the provider agencies describing the new intervention. NSMHA stated that its contract with providers requires a minimum 60-day transition period to implement new policies and/or procedures. As a result, implementation of the second intervention did not begin until May 22, 2012.

NSMHA described planful discharge as a process wherein "discharge planning begins at admission and involves helping people develop and utilize other resources in preparation for discharge." The purpose is to move people through treatment quickly and efficiently to ensure that "NSMHA system resources are available in a timelier

manner," i.e., to transfer medication management to PCPs as quickly as possible, thereby opening up more prescriber appointment slots for new medical evaluations instead of maintaining appointments for medication monitoring. To facilitate this transition, NSMHA revised the decision tree tool (still used at the first ongoing appointment following intake) by adding "action boxes" that emphasized discharge planning and communication and collaboration with the PCP.

In the 2012 PIP report, NSMHA stated that for the second intervention, it had confirmed training documentation from its largest provider agency, Compass Health, and would verify documentation from other agencies at the next administrative audit. The RSN's 2013 PIP report provided no update on the training documentation.

As for barriers to improvement, NSMHA cited lack of adequate training and consequences to ensure compliance, agency culture, a historical lack of integration of primary and behavioral health care, and lack of PCP communication and cooperation with mental health clinicians. The RSN planned to address these barriers in another modification to the intervention.

NSMHA's chart review in July–August 2012 (1–2 months after the start of the second intervention) demonstrated sustained improvement in the use of the decision tree tool and documentation of outcomes. However, timeliness of initiation and completion of referrals did not reach baseline levels. In terms of the new planful discharge elements, only 40% of the charts documented a referral to a PCP for enrollees who did not have a PCP at intake, and only 47% of charts indicated efforts to communicate with the PCP about medication management. NSMHA did not conduct any other chart reviews, so it is not clear whether the effectiveness of the intervention implementation improved over the course of the measurement period.

To meet this standard fully, NSMHA needs to track the implementation of its intervention in order to determine the extent to which it was successfully implemented.

Standard 10: Overall Study Results Score: 65 (Partially met)

To meet Standard 10, the RSN needs to report complete study results for two or more measurement periods, including the study indicator, original data used to compute the indicator, and a statistical test of group differences; and interpret the statistical and clinical significance of the overall results, discuss lessons learned, and determine if goals were met and sustained improvement was achieved.

NSMHA reported that the study indicator (average number of days from RFS to medication evaluation) decreased (improved) from 70.2 at baseline to 68.8 at the end of the first remeasurement of the first intervention period (June 2011–May 2012), but the difference was not statistically significant.

At the time of the PIP review, NSMHA had not reported data for the entire second intervention measurement period (because of the 180-day delay in data collection), but presented data comparing the first two quarters of the baseline (7/1/2009–12/31/2009) with the first two quarters of the second intervention measurement period (6/1/2012–11/30/2012). The RSN reported that the study indicator decreased (improved) from 69.87 to 68.13, but the improvement was not statistically significant.

Although NSMHA hypothesized that "statistically significant results can be realized within the next two quarters," the RSN had earlier stated that "improvements may not be completely attributable to our interventions." As noted under Standard 9, the effect of the intervention on results is difficult to evaluate as the RSN did not monitor the intervention in the first remeasurement of the first intervention and second intervention measurement periods.

NSMHA also analyzed the second intervention data by provider agency and age (child vs. adult) and compared these data for the first two quarters of the baseline against the first two quarters of the second intervention. Two of the larger provider

agencies that had implemented Open Access (a walk-in, same-day intake model) in July and September 2011 showed a statistically significant decrease in the days to medical appointment. In discussing the effect of this confounder on the study results, NSMHA stated that "the role of Open Access on improving this outcome cannot be underestimated."

In examining the data for provider agencies that serve children, NSMHA noted that the rate of medication evaluation referrals was unchanged. NSMHA discussed differences in medical evaluation and treatment between children and adults (referenced under Standard 8). The RSN should discuss whether or not the two study populations should be considered separately with two different study questions and indicators.

While the quarterly data on the study indicator for sub-groups is suggestive, it cannot be considered conclusive, as it provides a limited snapshot in time, covers different months (July–December versus June–November), and is subject to seasonality. NSMHA needs to continue its data collection and analyze the results according to its data analysis plan.

In addition to confounding factors discussed in Standard 8, NSMHA identified an increase in prescriber rates (as of September 2012) as having a potential effect on the study results. In the 2012 report, NSMHA hypothesized that "this could change the availability of prescriber services." The RSN did not report on whether the change in rates did, in fact, affect the study results.

NSMHA stated that it intended to conduct further barrier analyses and continue to modify the intervention. However, in the onsite PIP review, Acumentra Health recommended discontinuing this PIP because (a) the project has continued beyond two remeasurement periods without statistically significant improvement; (b) PIPs should cover a range of study topics and study populations over time; and (c) multiple confounders already make it difficult to interpret the current study results and would compromise future analyses as well. NSMHA agreed to discontinue this PIP, but did not document its decision in the report.

To meet this standard fully, NSMHA needs to complete data collection for the second intervention measurement period; conduct the appropriate statistical tests and analyze the results according to the data analysis plan; discuss how the lack of intervention monitoring affects the interpretation of the study results; discuss whether the change in prescription rates affected the study results; and document its decision to discontinue this PIP.

Review results for nonclinical PIP: Improving the Quality of Care Coordination for High-Risk Transition Age Youth

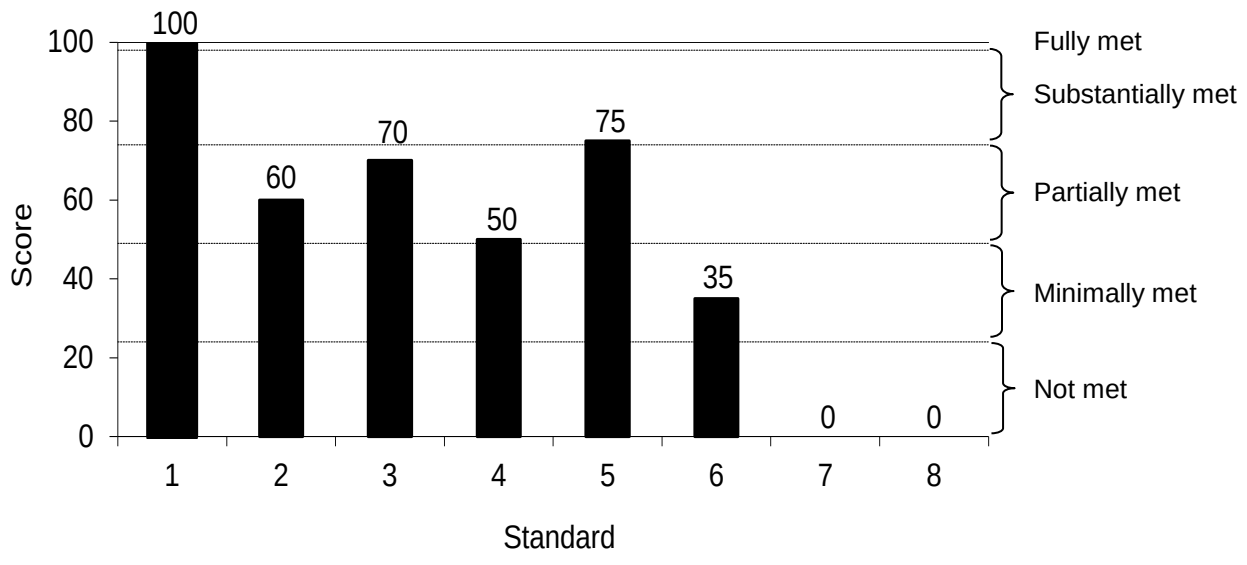
This first-year PIP, submitted to meet DBHR requirements for a children's PIP, focuses on improving care coordination for high-risk transition age youth (age 16–20). NSMHA clearly described the importance of this topic, its relevance to the local Medicaid population, and the systematic selection and prioritization process used to select the topic. In addition to a primary study question and indicator, NSMHA developed two supporting study questions and indicators to better track performance and improvement in relation to this complex topic.

At the time of the PIP review, NSMHA had identified a general improvement strategy involving workforce development and implementation of practice guidelines, but had not selected specific interventions. NSMHA still needs to clarify the numerator and denominator definitions and inclusion/exclusion criteria, describe data validation procedures, refine the data analysis plan, and select appropriate interventions.

The overall weighted score for this PIP is 49, based on a scale of 90, resulting in a compliance rating of Partially Met.

Figure 3 shows the score for each of the eight validation standards reviewed for this project.

Figure 3. Validation scores by standard for nonclinical PIP, Improving the Quality of Care Coordination for High-Risk Transition Age Youth.



Standard 1: Study Topic
Score: 100 (Fully met)

To meet Standard 1, the RSN needs to establish the importance of the study topic in general and present local data to demonstrate that the topic applies to a large or high-risk portion of the Medicaid population; and demonstrate that a systematic selection and prioritization process was used in choosing the topic.

NSMHA submitted this PIP, which focuses on improving care coordination for high-risk transition age youth (HRTAY), to meet DBHR's requirement for a children's PIP.

Traditionally, mental health services have distinguished between children (under age 18) and adults (over age 18), with the expectation that children would make an easy and automatic transition from one stage to the next. NSMHA observed that for high-risk/high-need Medicaid-eligible youth, this transition is complicated by mental health issues, lack of support, poverty, substance use, and siloed services. NSMHA cited national research demonstrating a lack of comprehensive and coordinated services and supports for transition age youth.

The topic of care coordination for HRTAY emerged as NSMHA began brainstorming a different PIP topics related to children, youth, and families. Support for this topic came from feedback from care coordinators, providers, and parents/caregivers, who were frustrated by the lack of coordination between systems of care. Also, NSMHA stated that the study topic and target population were identified through a series of "Have Your Say Cafes" and an online community survey.

Analysis of local data for 2010–2012 showed that the percentage of youths who received mental health services when 15–17 years old dropped precipitously as they aged. Of NSMHA enrollees age 15–17, none were still enrolled at age 21–23. NSMHA discussed possible explanations for this trend, ranging from voluntary withdrawal from treatment due to improved health to involuntarily "falling through the cracks," and the RSN continues to search for supporting data. NSMHA cited national and research sources and provided local data to demonstrate that this topic relates to enrollee quality of care and outcomes.

The PIP topic was reviewed and approved by the QMOC, which includes consumers, advocates, providers, and NSMHA staff. After a series of communications and clarifications, DBHR granted approval for the PIP topic.

NSMHA fully meets this standard.

Standard 2: Study Question
Score: 60 (Substantially met)

To meet Standard 2, the RSN needs to present a study question that provides a clear framework for data collection, analysis, and interpretation. The study question should refer to the proposed intervention, a study population (denominator), a measure (numerator), a metric (e.g., average, percentage), and a direction of desired change.

NSMHA stated that to "fully understand the perspectives related to quality and to study the impact of our process-type improvement," the RSN has developed one primary and two supporting study questions:

Primary study question:

1. "Does implementing workforce development strategies and related practice guidelines (specific to delivering services to Transition Age Youth and implemented by staff in provider agencies) improve *youth perception* of quality of coordinated care received by High-Risk Transition Age Youth (HRTAY) as measured by a change in scores on the Youth Participation in Planning Scale?"

This study question refers to an intervention (workforce strategies and practice guidelines), a study population (HRTAY), and a numerator (scores on the Youth Participation in Planning Scale). The study question should clarify whether an increase or decrease in scores (direction) indicates improvement. Also, in order to compare

data over time, the study question should include a metric, such as an average.

Supporting study questions:

2. "Does implementing workforce development strategies and related practice guidelines (specific to delivering services to Transition Age Youth and implemented by staff in provider agencies) improve *caregiver perception* of quality of coordinated care received by High-Risk Transition Age Youth (HRTAY) as measured by a change in scores on the Service Coordination Scale?"
3. "Does implementing workforce development strategies and related practice guidelines (specific to delivering services to Transition Age Youth and implemented by staff in provider agencies) improve *provider perception* of quality of coordinated care received by High-Risk Transition Age Youth (HRTAY) as measured by a change in scores on the Transition Service Provider Competency Scale?"

The primary study question indicates that the focus of the intervention is to improve enrollee (HRTAY) satisfaction. The supporting questions measure the effectiveness of implementation of the primary study question intervention by measuring the satisfaction of caregivers and service providers, who are stakeholders in the same intervention. NSMHA could choose to examine caregiver and provider perceptions as study questions and study indicators, or the RSN could eliminate the supporting study questions and indicators and discuss caregiver and provider perceptions in the context of the intervention tracking and monitoring plan. If caregiver and provider perceptions are to be framed as study questions, the supporting questions need to indicate the desired direction of change as well as a metric.

To meet this standard fully, NSMHA needs to indicate a direction of change and a metric for all study questions.

Standard 3: Study Indicator
Score: 70 (Partially met)

To meet Standard 3, the RSN needs to define the measure (numerator) and study population (denominator); define key terms; and discuss the basis for adopting the indicator as a valid proxy for enrollee outcomes, satisfaction, or quality of care.

NSMHA discussed its rationale for selecting "perception/patient satisfaction" as proxies for measuring quality of care. For the primary indicator, the RSN selected Portland State University's Youth Participation in Planning (YPP) Scale because the tool is validated, easily administered, reflects a System of Care framework (a NSMHA principle), and is free to use. Also, NSMHA "holds a related contract with PSU for workforce development, which could be a source of funding—already allocated—to support our interventions."

For the supporting indicators, NSMHA selected the Service Coordination Scale (for caregivers) and the Transition Service Provider Competency Scale (for service providers), because these tools were validated, easily administered, and reflected System of Care values.

NSMHA defined the numerator for all indicators as "post-intervention change in scores" for those in the study denominator. NSMHA could more accurately define the numerators as a "change in mean scores for individuals in the study population."

In this situation, the denominators for all of the indicators are not study populations (as in a proportion), but rather the denominator formula used in calculating the t-test (the appropriate statistical test for analyzing scores), as applied to the study population. NSMHA should document the formula for each indicator, and then describe the study population for each indicator.

Indicator #1 (primary) study population: Medicaid-enrolled transition age youth "who consent to completing the survey and who meet two or more of the following criteria:

- Two or more psychiatric inpatient admissions in the last three years
- WSH/CLIP admission in last three years
- Current LR/CR
- Greater than 60 hours of outpatient service in the last three years
- Current LOC 4 or higher and less than 20 hours of outpatient service in the last 6 months
- Current CA/LOCUS Co-Morbidity score of 4 or higher
- Four or more crisis contacts/month in the last six months
- In foster home or homeless per consumer periodics"

Indicator #2 (supporting) study population: "Consenting caregivers of youth who meet criteria for HRTAY study inclusion (and consent to, and complete YPP)."

Indicator #3 (supporting) study population: "Consenting RSN provider network, primary mental health service providers (clinician or wraparound facilitator) for youth who meet criteria for HRTAY study inclusion (and consent to and complete the YPP)."

NSMHA defined the following key terms.

Transition age youth: Enrollees age 16–20. NSMHA chose this age range because 16 years is the lower age range definition used by local school districts and child welfare, and 21 years is the upper age range as determined by the *T.R. vs. Dreyfus* lawsuit.

CA/LOCUS 4 or higher: The Child & Adolescent Level of Care Utilization System (CA/LOCUS) is a nationally validated assessment tool developed by the American Association of Community Psychiatrists (AACP). The RSN provided the AACP definition of level 3, which NSMHA used as a minimum level indicating the need for more intensive outpatient services. NSMHA calculated the size of the 16-to-20-year-old population that met the 3+ level and decided that "we simply do not have the resources to implement our PIP at that scale." Instead, the RSN will implement the PIP with a smaller, higher-risk/need population, and later will adapt any successful interventions to the larger population. NSMHA did not define CA/LOCUS 4.

Regarding the primary study indicator, NSMHA needs to provide full phrases for acronyms; define "admission," "in foster home or homeless," and "current"; and report the codes for "outpatient" and "crisis."

For the supporting indicator study populations, NSMHA needs to define "caregiver" and "primary mental health service provider." For example, is the "primary" provider the person who sees the youth for the most visits, or who is designated as "primary" in the system?

To meet this standard fully, NSMHA needs to refine the numerator definitions for the primary and supporting indicators, state the appropriate formula used for all indicators, and define key elements for all indicators.

Standard 4: Denominator (Study Population) Data Collection
Score: 50 (Partially met)

To meet Standard 4, the RSN needs to list all inclusion and exclusion criteria for the study population; document all data sources, including fields, codes, and calculations; and describe data validation procedures. If a sample is selected, the RSN needs to describe the sampling methods.

HRTAY is defined under Standard 3. For Standard 4, NSMHA listed the sources for the inclusion criteria as the RSN's CIS and Provider One, but provided no data source details and listed no continuous enrollment criteria. As NSMHA described pulling data on the HRTAY population for a root cause analysis, the RSN must have defined the relevant inclusion criteria (fields, codes, and calculations) and followed a data collection process. The RSN should document this information in its report.

NSMHA stated that it is developing a "care coordination data base" that it expects to use for this PIP. Once it completes development and begins implementation, NSMHA will need to describe the steps in data collection and transfer related to the PIP.

Exclusion criteria include crisis phone calls when determining crisis contacts and a still-to-be-decided age qualification (at what point does an enrollee age out of the study population). As with the inclusion criteria, NSMHA needs to identify corresponding codes and calculations.

For the HRTAY population, NSMHA plans to validate Medicaid eligibility and RSN enrollment through the Provider One. NSMHA should also describe how it plans to ensure that other data elements have been accurately collected.

With regard to the supporting indicator study populations (caregivers and mental health providers), NSMHA needs to describe the inclusion and exclusion criteria and data validation procedures.

To meet this standard fully, NSMHA needs to document fields, codes, and calculations for all study populations; define any age exclusion criteria for the primary study population; and describe validation procedures for all data elements for all study populations.

Standard 5: Numerator (What Is Being Measured) Data Collection and Analysis Plan
Score: 75 (Substantially met)

To meet Standard 5, the RSN needs to list all inclusion and exclusion criteria for the numerator (what is being measured); document all data sources, including fields, codes, and calculations; describe data validation procedures; and present a clear data analysis plan, including time frames for the measurement and intervention periods, and an appropriate statistical test to measure differences between the baseline and remeasurement periods.

The numerator for the primary indicator is scores on the YPP scale. Survey responses that do not answer all 16 questions will not be considered complete.

The numerators for the supporting indicators are the scores on the Service Coordination Scale (SCS) and Transition Service Provider Competency Scale (TSPC). NSMHA needs to define "complete" for the two supporting scales, and clarify whether "incomplete" surveys will be scored and included in the study. NSMHA attached copies of the YPP and TSPC tools and scoring instructions.

The method of administration of the YPP is still under discussion, and NSMHA stated that it hopes a soon-to-be-created youth and family advisory team would consult on the matter. NSMHA should also discuss how it plans to administer the other two surveys. Participation in the PIP is voluntary, but NSMHA is considering using a small financial incentive (gift cards) to encourage youth and family to complete the surveys.

To increase mental health clinician participation, NSMHA plans to address possible fears among clinicians about individual performance monitoring by aggregating data from the TSPC surveys according to agency provider. Data will be sent to NSMHA when at least five TSPC scales are completed by unique clinicians.

All surveys will be either e-mailed via secure, encrypted protocols or faxed to NSMHA. Trained RSN staff will enter the scale data into secure Excel spreadsheets and will conduct logic and range checks. NSMHA stated that it has not yet developed a process for dealing with missing and suspect data.

NSMHA presented a plan to administer all three surveys at baseline, and then according to the term of individual participation, at 6 months and 12 months, but did not describe the windows for each event (e.g., "within two weeks before and after the target test date"). NSMHA stated that it intends to administer the scales to all three populations "a second time within 3 months to get our baseline,"

to gain a better understanding of "potential change in the absence of the intervention."

It is not clear whether NSMHA intends to enroll HRTAY enrollees, administer the YPP, continue routine care, administer the YPP three months later, and then start the intervention. If that is to be the case, which scale would then be considered the "baseline"? Also, it is not clear whether the advantage of having a "true" baseline outweighs the disadvantages of the difficulties of obtaining another survey and increasing the possibilities of refusal and drop-outs, potentially threatening internal validity (inconsistencies in testing, anticipation of correct answers). It is acceptable to monitor progress over time without using a "true baseline." NSMHA needs to discuss in more detail its rationale for re-administering surveys three months after enrollment and how the RSN will address the resulting challenges.

NSMHA will identify and enroll eligible youth into the study on a quarterly basis, creating "cohort groups." It is not clear whether the RSN intends to have four different cohorts or create a single cohort by enrolling youth over 12 months. Once it decides how to determine cohort groups, NSMHA should assign dates to the measurement periods (e.g., for cohort #1 in the baseline period, HRTAY need to be enrolled in the study from January 1 to June 30, 2014, etc.). NSMHA should describe a data analysis plan for the supporting indicators as well.

NSMHA will compare results for the primary and secondary indicators using a paired t-test for the first remeasurement and a repeated measure ANOVA for multiple remeasurement periods. All comparisons will be conducted with a probability level of $p \leq .05$. NSMHA also plans to analyze its data by agency type ("adult serving" vs. "child serving" providers).

To meet this standard fully, NSMHA needs to clarify inclusion criteria ("complete") for the two supporting indicator numerators; describe data collection procedures for all three surveys; discuss how it will determine study cohorts; report a rationale for conducting a three-month survey; and assign dates to measurement periods.

Standard 6: Study Intervention
Score: 35 (Minimally met)

To meet Standard 6, the RSN needs to select an improvement strategy that will affect a wide range of enrollees or a high-risk enrollee population, and that is reasonably expected to result in measurable improvement. The RSN needs to discuss the basis for adopting the intervention; document the implementation of the intervention, including dates and locations of principal activities; discuss cultural competence; and track how effectively the intervention was implemented.

At the time of the PIP review, NSMHA had not yet selected a study intervention(s). However, the RSN had taken preliminary steps, including pulling exploratory data on the primary study population to identify service patterns and gaps; consulting with Tamara Johnson, executive director of Washington Youth 'N Action, in developing a youth and family advisory board; developing prioritization criteria; and discussing monitoring and tracking tools.

NSMHA stated that it plans to ensure the cultural and linguistic appropriateness of its future interventions by including in the planning processes people who "represent the populations we are, and sometimes are not serving." The RSN also outlined a number of strategies on improving cultural and linguistic competence that are being implemented at the RSN level. NSMHA will need to address the intervention strategy as it applies to all three study populations.

To meet this standard fully, NSMHA needs to provide details about its intervention(s) and the identified barriers the interventions address; discuss how the interventions can improve the study indicator; describe how the implementation will be tracked and monitored; and discuss how the interventions are culturally and linguistically appropriate.

Standard 7: Study Results
Score: 0 (Not met)

To meet Standard 7, the RSN needs to present results according to the data analysis plan, including the study indicator, the original data used to compute the indicator, and a statistical test to measure differences between the baseline and remeasurement periods; and discuss how the intervention influenced the results.

NSMHA did not report on this standard because no study results were available at the time of the PIP review.

Standard 8: Interpretation of Study Results
Score: 0 (Not met)

To meet Standard 8, the RSN needs to assess whether any reported improvement is "real" by documenting that baseline and remeasurement data were collected using the same methods and are comparable; discuss the statistical and clinical significance of the study results; address barriers to improvement and lessons learned during the PIP process; and identify confounding factors that may have affected the results.

NSMHA did not report on this standard because no study results were available at the time of the PIP review.

Standard 9: Study Modifications After the First Remeasurement
Score: n.a.

To meet Standard 9, the RSN needs to document modifications to the intervention, or added interventions, planned or implemented after the first remeasurement period; and discuss changes in other aspects of the PIP based on lessons learned from data analysis or barrier analysis.

Acumentra Health did not score this standard, as the study had not progressed to a second remeasurement.

Standard 10: Overall Study Results
Score: n.a.

To meet Standard 10, the RSN needs to report complete study results for two or more measurement periods, including the study indicator, original data used to compute the indicator, and a statistical test of group differences; and interpret the statistical and clinical significance of the overall results, discuss lessons learned, and determine if goals were met and sustained improvement was achieved.

Acumentra Health did not score this standard, as the study had not progressed to a second remeasurement.

Compliance Review Follow-up

Acumentra Health's 2012 compliance review addressed NSMHA's compliance with federal and state standards related to eight major sections of managed care operations. Each review section contained elements corresponding to relevant sections of 42 CFR §438, DBHR's contract with RSNs, the Washington Administrative Code, and other state regulations where applicable. The reviews followed a protocol adapted from the CMS protocol and modified with DBHR's approval. The provisions of Washington's Medicaid waiver and the RSN contract are such that some parts of the federal protocol do not apply directly to RSNs.

As a follow-up activity in 2013, DBHR directed Acumentra Health to review each RSN's response to the specific 2012 EQR findings for which DBHR required the RSN to perform corrective action. NSMHA had no such findings in the 2012 EQR review.

Information Systems Capabilities Assessment

Acumentra Health examined NSMHA's information systems and data processing and reporting procedures to determine the extent to which they supported the production of valid and reliable state performance measures and the capacity to manage care of RSN enrollees.

The ISCA procedures were based on the CMS protocol for this activity, as adapted for the Washington RSNs with DBHR's approval. In 2013, Acumentra Health added a new review subsection, Meaningful Use of Electronic Health Records, per the CMS protocol published in September 2012. Due to the timing of the CMS waiver, this section will be reviewed but not scored in 2013.

The 2011–2013 RSN contracts include Exhibit C with more detailed data security requirements. These criteria were included in the 2013 ISCA for the first time.

The ISCA review was organized in two main sections—(1) Data Processing Procedures and Personnel and (2) Data Acquisition Capabilities—with nine subsections, each containing review elements from the ISCA protocol. Appendix B explains the review criteria in greater detail.

Within each subsection, Acumentra Health used the information collected in the ISCA data collection tool, responses to interview questions, and results from the security walkthrough to score the RSN's performance on each element on a scale from 1 to 3 (see Table 3).

After scoring the individual elements, Acumentra Health combined the scores and calculated a weighted average score for each subsection. The detailed criteria for scoring are available from Acumentra Health upon request.

Table 3. Scoring scheme for ISCA standards.

Score	Rating	Definition
2.6–3.0	Fully met (pass)	Meets or exceeds the standard requirements.
2.0–2.5	Partially met (pass)	Meets essential requirements of the standard but is deficient in some areas.
< 2.0	Not met (fail)	Does not meet the essential requirements of the standard.
–	N/A	Not applicable.

Summary of review results

In late 2011, NSMHA transitioned from using a hosted Raintree solution to NSMHA-CIS, an internally developed application and SQL database.

NSMHA's provider agencies use a variety of solutions to manage their internal data. Providers send encounter data and authorization requests to NSMHA in the appropriate HIPAA-compliant file format.

Acumentra Health's review found that in 2012, NSMHA *partially met* federal standards related to data processing procedures and personnel, and *partially met* the data acquisition capabilities standards.

Table 4 summarizes the ISCA subsection scores and compliance ratings.

Table 4. Weighted average scores and ratings on ISCA sections.

Review section/subsection	Score	Compliance rating
Section 1: Data Processing Procedures and Personnel		
A. Information Systems	2.5	Partially met
B. Staffing	3.0	Fully met
C. Hardware Systems	3.0	Fully met
D. Security	1.8	Not met
Section 2: Data Acquisition Capabilities		
A. Administrative Data (claims and encounter data)	2.5	Partially met
B. Enrollment Systems (Medicaid eligibility)	2.7	Fully met
C. Vendor Data Integration	2.7	Fully met
D. Provider Data (compensation and profiles)	2.4	Partially met
E. Meaningful Use of Electronic Health Records	n.a.	n.a.

ISCA Section 1: Data Processing Procedures and Personnel

Section 1A: Information Systems — Score: 2.5 (Partially met)

This subsection reviews the RSN's systems development life cycle (SDLC) and supporting environments, including database management systems and/or billing software, programming languages, and training for programmers.

Near the end of 2011, NSMHA transitioned its data processing from the commercial Raintree software to an internal NSMHA-CIS data processing system that uses Microsoft SQL Server database management system.

NSMHA's data warehouse contains historical data from the Raintree implementation as well as current encounter data. Encounters and past authorization information are available for NSMHA staff to use for reporting. NSMHA uses Microsoft SQL Server, Access, and Excel software for additional warehousing, analysis, and reporting of Medicaid data.

NSMHA maintains limited documentation related to the authorization process and how that process affects encounter data processing.

All programming work related to encounter data is performed in-house. NSMHA's four IT staff members perform specialized roles and provide limited redundancy and backup for each other.

Strengths

- NSMHA's encounter processing database is secure, robust, and scalable, giving programmers the flexibility to develop data processing methods.

Findings

RSN Contract 11.2.2.1.5: Management Information System. NSMHA has minimal documentation related to its NSMHA-CIS data processing system.

- NSMHA needs to finish developing detailed documentation for the CIS.

Recommendations

The individual skills of NSMHA's IT staff members are highly specialized. Lack of backup, coupled with incomplete documentation and training materials, creates risk of unplanned and extended disruptions of NSMHA's internal processes and claims processing.

- NSMHA needs to designate a backup administrator who could keep the customized database running if the current programmer became unavailable.

NSMHA does not use version control processes for reports and any software or databases developed in-house.

- NSMHA should consider implementing a formal version control process for its reporting, software, or databases.

NSMHA lacks a formal peer review process for computer programming and data report production to validate data accuracy and completeness prior to production. The RSN does not use version control management software for internal reporting, in-house developed software, or databases. Instead, RSN staff renames previous versions of files or programs, and edits new copy as needed.

- NSMHA needs to develop and implement a formal process that includes peer review by IT staff to ensure that the data elements extracted are appropriate for the report being created. To enable a more robust, quick, and efficient process that is less prone to error, NSMHA should use version control software for any internal reporting, in-house developed software, or databases.

NSMHA lacks a formal SDLC and sign-off process for code changes to NSMHA-CIS systems.

- NSMHA needs to develop a formal process for software development changes, including peer review, testing, and authorization for production.

NSMHA has limited training programs in place to ensure that IT staff members keep abreast of rapid changes in information technology.

- NSMHA needs to develop a plan for IT staff to receive ongoing training in order to maintain essential knowledge and skills.

NSMHA maintains limited documentation related to how the authorization process affects encounter data processing.

- NSMHA needs to develop internal documentation related to authorizations and encounter data, including procedures for dealing with encounters that do not have a valid authorization attached.

Section 1B: Staffing — Score: 3.0 (Fully met)

This subsection assesses physical access by the RSN's staff to IT assets, as well as specific training requirements for claims processing and care authorization staff, and RSN staffing.

NSMHA has two primary quality specialists dedicated to making authorization determinations. An additional quality specialist is available as a backup when necessary. Providers' authorization requests are exported into the NSMHA-CIS database and processed by quality specialists. Decisions are sent back to the agencies through a similar process.

Strengths

- Outpatient authorizations are processed and housed in the same system with encounter data.
- NSMHA maintains low staff turnover, indicating effective management and employee satisfaction.
- NSMHA maintains adequate staff for authorization determinations.

Section 1C: Hardware Systems — Score: 3.0 (Fully met)

This subsection assesses the RSN's network infrastructure and hardware systems.

During the review year (2012), NSMHA's reporting data resided on Dell PowerEdge 2800/Microsoft Windows Server 2008 servers, with Redundant Array of Independent Disks (RAID) configuration. In 2013, NMSHA upgraded its hardware to meet increased data processing needs. NSMHA has begun virtualizing some of its servers.

Strengths

- NSMHA maintains current hardware, software, and vendor service contracts.
- NSMHA upgraded its hardware and has begun virtualizing some of its servers.
- NSMHA maintains adequate hardware redundancy for NSMHA-CIS systems.

Section 1D: Security — Score: 1.8 (Not met)

This subsection assesses the RSN's information systems for integrity and the ability to prevent data loss and corruption. A security walkthrough of the computer area and/or data center assesses the possibility of a breach in security measures.

NSMHA maintains extensive data security policies and procedures, but they have not been updated and/or reviewed in many years.

The Business Continuity/Disaster Recovery (BC/DR) plan submitted for review omits significant information required to support recovery in the event of an actual disaster. The plan specifies no formal auditing and testing process. NSMHA reported that the plan was last updated in 2008.

NSMHA maintains its data warehouse and reporting servers and performs nightly full backups to a removable storage backup disk. NMSHA backs up the CIS several times each day. Currently, encrypted backups are sent offsite on a monthly basis. NSMHA plans to increase this frequency to weekly.

Strengths

- NSMHA sends backups offsite to a commercial secure storage facility.

Findings

RSN Contract 11.2.2.1: Management Information System. NSMHA's BC/DR plan specifies no formal auditing and testing process. NSMHA reported that the plan was last updated in 2008. The plan omits significant information required to support recovery in the event of an actual disaster.

- NSMHA needs to update its BC/DR plan to include all required information and ensure that it is reviewed at least annually, in accordance with DBHR contract requirements.

RSN Contract 11.2.2: Testing of DR/BC Plan. NSMHA reported that it had tested its BC/DR plan recently, but did not submit the test results.

- NSMHA needs to ensure annual testing of its BC/DR plan in accordance with DBHR contract requirements.

One of RSN's provider agencies reported that it had not tested its BC/DR plan recently.

- NSMHA needs to work with provider agencies to ensure that they test their BC/DR plans annually to meet DBHR contract requirements.

RSN Contract Exhibit C: Data Security Requirements. NSMHA's data security policies and procedures are outdated and have not been reviewed recently. Many have not been updated since 2005. Industry best practices call for a review of policies and procedures at least every two years.

- NSMHA needs to update its data security policies and procedures in accordance with DBHR contract requirements and industry best practices.

RSN Contract Exhibit C: Data Security Requirements. 2. Protection of Data. Two of NSMHA's provider agencies reported that passwords used to connect to key software are not required to be changed and do not enforce a complexity component.

- NSMHA needs to revise its password security requirements to force changes and meet complexity standards, in accordance with DBHR contract requirements and industry best practices.

NSMHA's provider agencies use various encryption strategies for laptop computers, hard drives, and other portable devices. Unencrypted laptop storage that relies on a manual process by users to properly identify protected health information and avoid storage on the device should be discouraged.

- NSMHA should review provider agencies' encryption strategies to ensure that they align with current industry standards and HIPAA requirements.

One provider agency does not have a hardware destruction policy. Aged hardware is kept in a locked closet onsite.

- NSMHA needs to work with provider agencies to ensure that they have formal policies and procedures to dispose of media, in accordance with DBHR contract requirements.

Recommendations

NSMHA's monthly offsite backup schedule was not adequate to prevent data loss or to support recovery. NSMHA planned to increase its offsite backup schedule to weekly.

- NSMHA needs to perform offsite backups more often than monthly.
- NSMHA needs to regularly review its offsite backup schedule to ensure that the recovery strategy meets current business needs.

ISCA Section 2: Data Acquisition Capabilities

Section 2A: Administrative Data — Score: 2.5 (Partially met)

This subsection reviews the RSN's submission of accurate information, process for describing differences when verifying accuracy of submitted claims, and data assessment and retention.

Encounter data submitted to NSMHA-CIS by providers run through an automated, rules-based edit system that screens the data, identifies potential input errors, and ensures compliance with DBHR's data dictionary and encounter reporting requirements.

NSMHA requires its providers to remedy all encounter data errors within 20 calendar days of receiving an error report. Encounter records that fail to pass the various data checks are returned to the submitting agency for correction. NMSHA is working with provider agencies on strategies for reporting outstanding encounters.

NSMHA verifies and certifies batched encounter data for accuracy and completeness before transmitting the data to DBHR. NSMHA's executive director is responsible for ensuring the RSN's compliance with state Medicaid reporting requirements.

Acumentra Health interviewed four provider agencies to gain understanding of the flow of encounter data from providers to NSMHA. These interviews targeted the agencies' processes for validating data; diagnoses and procedure codes captured in their billing systems; handling of Medicaid-Medicare dual enrollees; types of encounter data forwarded to NSMHA; and methods for submitting encounter data.

Strengths

- NSMHA performs regular audits of encounter claims to ensure data integrity and validity.
- NSMHA uses state-supplied data extracts for some internal reporting purposes.

Recommendations

During the EDV review, Acumentra Health found a significant number of duplicate encounters in the DBHR data set for NSMHA. The RSN does not have a process to reconcile NSMHA-CIS data with the state data set. NSMHA is working with the state to monitor and resolve this issue.

- NSMHA needs to monitor encounter data submissions to the state to ensure accuracy and completeness.

NSMHA does not use "aging" and error tracking reports to monitor provider agencies with outstanding encounter claims. NSMHA is working to implement such reports in the existing environment.

- NSMHA needs to implement aging and error tracking reports for pended encounter claims to monitor and reduce submission lag time and liability.

It is unclear whether provider agencies are capturing and reporting only the diagnosis assigned at the time of the enrollee's intake assessment or reassessment. The diagnosis at the time of the service encounter may not reflect the current diagnosis.

- NSMHA needs to develop a method to ensure that the diagnosis being treated at the time of service is reported on the encounter record.

Section 2B: Enrollment Systems — Score: 2.7 (Fully met)

This subsection assesses the RSN's systems pertaining to Medicaid enrollment and disenrollment, tracking claims and encounter data, Medicaid enrollment data updates, Medicaid enrollment code, and data verification.

NSMHA performs monthly reconciliation activities to verify the authorization status of each encounter service, along with various other data elements, before paying providers.

NSMHA does not verify enrollee eligibility before submitting encounter data to DBHR. Instead, NSMHA verifies monthly whether or not services were delivered to Medicaid-eligible clients. NSMHA indicated that it expects providers to check eligibility periodically rather than at each service encounter.

Recommendations

NSMHA does not verify enrollee eligibility on the date of service before submitting encounter data to DBHR.

- NSMHA needs verify enrollee eligibility on the date of service before submitting encounter data to DBHR.

NSMHA expects providers to check eligibility periodically rather than at each service encounter.

- NSMHA needs to communicate the expectation that providers will verify eligibility at each service encounter.

Section 2C: Vendor Data Integration — Score: 2.7 (Fully met)

This subsection assesses how the RSN integrates vendor data with administrative data for data completeness and quality.

NSMHA performs EDV audits once a year for each provider agency, using a sample proportionate to the number of encounters submitted by each agency. However, the EDV audit period, from October 2011 through June 2012, limited the evaluation of encounter data accuracy during the ISCA review year.

One provider agency implemented an electronic health record (EHR) in April 2012, resulting in significant delays, errors, and missing data elements. These issues affected the timeliness, completeness, and quality of encounter data submissions for about nine months. At the time of the ISCA review, the provider agency believed that the issue had been addressed.

Strengths

- NSMHA transmits all encounter data to DBHR in HIPAA-compliant 837 format.

Recommendations

At least one provider agency manually enters encounter data into two separate systems.

- NSMHA should work with provider agencies to streamline their information systems processes to enable a more robust and efficient process and reduce the potential for error.

One provider agency's EHR implementation negatively affected the completeness, accuracy, and quality of NSMHA's encounter data submissions to the state for about nine months.

- See recommendations in Section 2E.

Section 2D: Provider Data — Score: 2.4 (Partially met)

This subsection assesses how the RSN maintains its provider directory, as well as the RSN's fee schedules and contractual payment updates.

NSMHA conducts an onsite audit of all provider agencies every year.

Recommendations

NSMHA does not maintain adequate provider profile information to help Medicaid enrollees identify providers that can meet their special care needs, such as non-English languages spoken or clinical specialties.

- NSMHA needs to develop an accessible repository of provider profile information, listing all practitioners' gender, credentials, specialties, languages spoken, use of sign language and interpretive services, and other characteristics enabling them to meet special care needs.

Section 2E: Meaningful Use of Electronic Health Records — Score: n.a.

This subsection assesses how the RSN and its contracted providers use electronic health records (EHRs). Due to the timing of the CMS waiver, Acumentra Health and DBHR determined that this section would be reviewed in 2013, but no scores will be reported this year.

One of NSMHA's provider agencies experienced significant data errors, missing data elements, and delayed encounter data submissions following an EHR implementation in April 2012. These issues persisted for the majority of the review period (approximately nine months).

Recommendations

- NSMHA should develop EHR-related policies and procedures in advance of implementation, specifying the RSN's role in EHR adoption, expectations during implementation, and plans for transition periods when data may not be available.
- NSMHA should consider testing with provider data systems during provider agency EHR implementation.
- NSMHA should consider monitoring data for quality, completeness, and accuracy throughout EHR implementation, including a post-implementation review.

ENCOUNTER DATA VALIDATION

Medicaid encounter data must be complete and accurate to be useful in calculating statewide performance measures and determining managed care capitation rates. DBHR's contract requires each RSN to conduct an annual encounter data validation (EDV) to determine the accuracy of encounter data submitted by providers.

As an independent check of the RSNs' EDV results, Acumentra Health audits and verifies the EDV process for each RSN. DBHR accepts the RSNs' self-validation of their encounter data, subject to audit and verification by Acumentra Health.

For each RSN, the 2013 EDV involved:

- checking each field in the state's outpatient electronic data set for missing and out-of-range data and logic problems
- comparing specific data fields in clinical records of the RSN's providers against the state's electronic data sets to determine whether data submitted by the providers were accurate and complete

As a special topic, the 2013 EDV also examined the degree to which providers' clinical records demonstrated adherence to the "golden thread" of mental health therapy:

1. Does the assessment in the clinical record substantiate the individual's diagnosis?
2. Are the documented goals of the treatment plan consistent with the diagnosis?
3. Do the progress notes address the individual's progress toward meeting the treatment plan goals?

Appendix C presents an overview of Acumentra Health's EDV procedures.

North Sound MHA's EDV procedure

According to documentation submitted for this audit, NSMHA performs annual EDV activities at each agency and creates RSN-wide analyses to summarize the results. The RSN samples from all encounters that are expected to be sent to the state. The time frame for the sample reviewed was October 1, 2011–June 30, 2012.

Acumentra Health recommends that for all EDV activities, the RSN use encounters received by the state rather than encounters sent to the state. That way, the RSN can ensure that its encounter data are received and processed as expected, and the RSN will have the opportunity to address any data errors in a timely manner. Acumentra Health also recommends creating agency-specific analyses to summarize the results. This break-out could help determine whether errors are system-wide or coming from a single agency.

This review first assesses NSMHA's sampling procedure, then discusses the strengths of the RSN's data entry tool and analytical procedures.

Sampling procedure

To evaluate the RSN's sampling methodology, Acumentra Health examined the overall sample size and whether the sample was chosen in a random process.

NSMHA reviewed 121 charts and 550 encounters, exceeding the DBHR contract requirement of 100 charts and 411 encounters (or 1% of encounters, whichever is less). It was unclear whether all of the charts applied to Medicaid enrollees.

NSMHA selected 12 charts from each of nine contracted agencies and five encounters per chart to validate. The sample was proportionate to the distribution of encounters between children and adults served within the study period. The sample was not proportionate to agency size; encounters at smaller agencies were overrepresented, while those at larger agencies were underrepresented.

The documentation submitted by NSMHA for this review provided no details of sampling procedure.

Without more information, Acumentra Health cannot verify the randomness of the procedure used to select the enrollee charts for review. We recommend that NSMHA elaborate on its EDV report to clarify the sampling methodology and process for external readers.

Record review tools, process, and results

NSMHA uses an integrated MS Access database to monitor and score EDV activities. Encounters to be reviewed are integrated into the database and results are calculated automatically after the EDV is complete. The RSN has used this database in the past, and has made revisions to correct functionality issues discovered in past EDV activities.

In 2012, Acumentra Health recommended that NSMHA implement a testing system, including code review, to ensure that EDV systems work before using those systems in the field. It was unclear from the submitted documents whether NSMHA had implemented such a system.

NSMHA reviewed all elements that are required to be reviewed per the DBHR contract. A single reviewer conducted all review activities.

EDV results were presented at the data element level and aggregated by error type for the RSN, except that "missing" encounters (those that are documented in charts do not appear in the state data) were not presented. Acumentra Health recommends presenting results at the agency level to identify variations in scores and to determine whether a corrective action plan is necessary for any agency. As a whole, NSMHA met all accuracy thresholds and so is not required to complete a corrective action plan, but certain agencies with which the RSN contracts may need additional technical assistance.

If NSMHA's review seeks to identify "missing" encounters, we recommend that the RSN present related findings. If those encounters are not part of the current EDV activities, NSMHA should add that topic to its review.

NSMHA's record review procedure is adequate for assessing the accuracy and completeness of the EDV data.

Validation results

This report presents the EDV results in three parts: first, the results of electronic data checks; second, the results of comparing the clinical chart documentation with the state's electronic data, as part of the onsite review; and finally, the results of the "golden thread" analysis.

Electronic data checks

Acumentra Health analysts checked data fields in 521,040 outpatient encounters for missing and out-of-range data and logic problems, representing all outpatient encounters reported by NSMHA during October 2011–September 2012. The fields examined included RSN ID, consumer ID, agency ID, primary diagnosis, service date and location, provider type, procedure code, claim number, and minutes of service.

All fields were complete with expected values, except for 397 encounters (0.1%) for which the minutes of service were not compatible with the state's reporting instructions.

Analysts also found 13,902 duplicate Claim ID numbers. Including the original and 1,485 triplicates, a total of 29,289 encounters (5.6%) were involved. None of the duplicates were exact replicas; 12,745 (91.7%) were mismatched by agency ID, 1,638 (11.8%) were mismatched by the date the encounter was posted, and 155 (1.1%) were mismatched by consumer ID.

NSMHA explained that the "association tables" at DBHR assigned multiple agency IDs to a single encounter if the provider was currently, or had previously been, associated with other contracted agencies. Several mergers have taken place in NSMHA in recent years, potentially contributing to the problem. However, DBHR did not believe that the association tables could export duplicate claim IDs. Acumentra Health suggests that the appropriate experts from NSMHA and DBHR

collaborate to determine the source of this data error, and to implement a solution to prevent further duplication of Claim ID data. NSMHA and DBHR should also explore options to rectify historic data, as these errors may affect actuarial calculations.

Next, analysts checked the demographic data set, examining 19,276 records. The fields examined included RSN ID, consumer ID, first and last names, date of birth, gender, ethnicity, Hispanic origin, language preference, Social Security number (SSN), and sexual orientation.

Considering mandatory fields, 3,216 records (16.7%) contained out-of-range ethnicity data and 95 records (0.5%) contained out-of-range sexual orientation data, including the submission of invalid codes. All other mandatory fields were complete with values expected per the DBHR data dictionary.

Considering optional fields, 5,477 records (28.4%) omitted SSN data. All other optional fields were complete with expected values.

Table 5 summarizes the results of electronic data checks for outpatient and demographic data.

Onsite review results

Acumentra Health staff audited 461 encounter records for NSMHA. The encounters were reported in 109 charts. The data fields compared for each encounter included procedure code, provider type, minutes of service, service date, and service location. Acumentra Health staff reviewed the encounter notes to verify that the procedure code accurately described the treatment provided, and they compared electronic data from the state's demographic data set with the chart documentation for the 109 enrollees. Demographic fields that were compared included first name, last name, date of birth, ethnicity, and language.

The choices available to the audit team in comparing electronic data with the source chart documentation for each field were:

1. Chart matches state data
2. Data in chart missing from state data
3. Missing from both chart and state data
4. Could not locate in chart
5. Data found in chart do not match state data

Reviewers also compared encounters documented in the clinical record with encounters in the electronic data to identify "missing" encounters that were documented in the clinical record but were not sent to the state.

Table 6 shows the results of Acumentra Health's validation activity.

The service code matched the service described in the chart note in 82.9% of encounters reviewed. Minutes of service recorded in the chart matched state data in 58.8% of encounters, and procedure code matched in 88.1% of encounters. Provider type, service location, and service date matched in 95% to 96% of encounters.

There is a systematic issue in converting service minutes from NSMHA to units required for reporting to Provider One, which converts units back to minutes in the data housed by DBHR. DBHR staff are working on this issue.

Within the demographic data set, the enrollee's first name, last name, and date of birth in the chart matched the state data in all records. Ethnicity and language matched in 68.8% of records.

Reviewers found two "missing" encounters that were documented in the clinical record but were not sent to the state.

Table 5. Results of 2013 electronic data checks.

Field	State standard	% complete[a]
Outpatient encounter data		
RSN ID	100% complete (non-missing values), with values known to DBHR	100.0
Consumer ID	100% complete (non-missing values), with values known to DBHR	100.0
Agency ID	100% complete (non-missing values)	100.0
Primary diagnosis	100% complete (non-missing values), one diagnosis must be present	100.0
Service date	100% complete (non-missing values), must be in valid date format	100.0
Service location	100% complete (non-missing values), with values specified in data dictionary	100.0
Provider type	100% complete (non-missing values), with values specified in data dictionary	100.0
Procedure code	100% complete (non-missing values), with values specified in service instructions	100.0
Claim number	100% complete (non-missing values)	100.0
Minutes of service	100% complete for records with no per diem CPT/HCPCS codes	99.9
Demographic data		
RSN ID	100% complete (non-missing values), with values known to DBHR	100.0
Consumer ID	100% complete (non-missing values)	100.0
First name	100% complete (non-missing values)	100.0
Last name	100% complete (non-missing values)	100.0
Date of birth	Optional per the state's Data Dictionary	100.0
Gender	Optional per the state's Data Dictionary	100.0
Ethnicity	100% complete (non-missing values), with values specified in data dictionary	83.3
Hispanic origin	100% complete (non-missing values)	100.0
Language preference	100% complete (non-missing values)	100.0
Social Security number	Optional per the state's Data Dictionary	71.6
Sexual orientation	100% complete (non-missing values)	99.5

[a]Due to rounding, some fields showing 100.0 percent completeness may have had a small number of missing data values.

Table 6. Results of Acumentra Health's encounter data validation for North Sound MHA.					
Field	**Chart matches state data**	**Data in chart missing from state data**	**Missing from both chart and state data**	**Data could not be located in chart**	**Data found in chart do not match state data**
Demographic information from each clinical record reviewed (N=109)					
First name	109 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Last name	109 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Date of birth	109 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Ethnicity	75 (68.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	34 (31.2%)
Language	75 (68.8%)	0 (0.0%)	0 (0.0%)	1 (0.9%)	33 (30.3%)
Results from multiple encounters and a mix of services (N=461)					
Provider type	439 (95.4%)	0 (0.0%)	0 (0.0%)	21 (4.6%)	0 (0.0%)
Minutes of service	271 (58.8%)	0 (0.0%)	0 (0.0%)	28 (6.1%)	162 (35.1%)
Service location	437 (94.8%)	0 (0.0%)	0 (0.0%)	22 (4.8%)	2 (0.4%)
Procedure code	406 (88.1%)	0 (0.0%)	0 (0.0%)	29 (6.3%)	26 (5.6%)
Service date	443 (96.1%)	0 (0.0%)	0 (0.0%)	18 (3.9%)	0 (0.0%)

*Minimum data elements: these are the fields required by contract to be validated.

Golden Thread analysis

This portion of the EDV examines whether the enrollee's assessment substantiates the diagnosis, whether the treatment plan is consistent with the diagnosis, and whether progress notes address the treatment plan.

Table 7 displays the results of the golden thread analysis for NSMHA. "Not applicable" or blank responses were removed from the table, so the denominator for both "% Yes" and "% Partially" includes only charts that were scored "yes," "no," or "partially."

The assessment substantiated the Category A diagnosis for 96.6% of children and adults. The assessment partially substantiated the diagnosis for an additional 3.5% of children and 3.4% of adults. Ten children had a Category B diagnosis, all substantiated by the assessments.

For 97.6% of children and 98.4% of adults, the treatment plan included interventions and goals consistent with issues identified in the assessment. The treatment plan was individualized in 100% of children's records and 98.3% of adults' records. Progress notes addressed interventions that were identified in the treatment plan and the enrollee's progress toward meeting stated goals in 90.5% of children's records and 95.0% of adults' records.

Table 7. Results of "golden thread" analysis for North Sound MHA.						
Assessment substantiates the diagnosis; treatment plan is consistent with the diagnosis; progress notes address the treatment plan						
Number of charts reviewed *(N=102)*						
	Children		**Adults**		**Total**	
	% "Yes"	**% "Partially"**	**% "Yes"**	**% "Partially"**	**% "Yes"**	**% "Partially"**
1. Does the assessment substantiate the Category A diagnosis (if applicable)?	28 (96.6%)	1 (3.5%)	57 (96.6%)	2 (3.4%)	85 (96.6%)	3 (3.4%)
2. Does the assessment substantiate the Category B diagnosis (if applicable)?	10 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
3. Does the treatment plan include interventions and goals consistent with issues identified in the assessment?	40 (97.6%)	0 (0.0%)	60 (98.4%)	0 (0.0%)	100 (98.0%)	0 (0.0%)
4. Are the treatment plan objectives individualized?	41 (100.0%)	0 (0.0%)	59 (98.3%)	0 (0.0%)	100 (99.0%)	0 (0.0%)
5. Do the progress notes address interventions identified in the treatment plan and the individual's progress toward meeting stated goals?	38 (90.5%)	1 (2.4%)	57 (95.0%)	1 (1.7%)	95 (93.1%)	2 (2.0%)

NOTE: Proportions exclude "not applicable" or missing responses, so the denominator of each item may vary.

Discussion and recommendations

NSMHA's EDV procedure used a sufficient sample size of 121 charts and 550 encounters, but it was unclear from the documentation submitted how NSMHA chose the sample and whether it was random. The database used pre-loaded encounter data and calculated the EDV results automatically following the review, reducing the risk of human error associated with manual procedures. Acumentra Health recommends that NSMHA present the EDV results by agency in order to identify variations in scores. Acumentra Health also recommends assessing enrollee charts for "missing" encounters.

The encounter data submitted by NSMHA to the state appeared to be mostly complete, with values in expected ranges per the data dictionary. However, Acumentra Health is concerned about the number of claims in which the Claim ID was duplicated or triplicated. NSMHA and DBHR provided conflicting explanations regarding this duplication.

Ethnicity and language information in the charts matched the state data in only 68.8% of records. Acumentra Health recommends examining the cause of this high rate of mismatched information and ensuring that ethnicity and language values submitted to the state match values allowed in the data dictionary.

Acumentra Health compared the 2013 EDV results with the 2010 and 2008 results. Among the demographic variables, there was a drop in the match rate for ethnicity, while first name, last name, and date of birth remained consistent. Among the encounter variables, there was a drop in the match rate in minutes of service and procedure code. Provider type and service location remained consistent, and service date was not previously assessed.

Golden Thread analysis

Assessments. The majority of mental health assessments were well written for both children and adults. The assessments documented the presenting problem, the medical necessity for treatment, and the clinical formulation for diagnosis and services.

Treatment plans. Almost all treatment plans included individualized interventions and measurable goals consistent with issues identified in the assessment.

Progress notes. The progress notes were consistent and well written, addressing interventions identified in the treatment plan and the enrollee's progress toward meeting the stated goals.

Clinical Record Review

In conjunction with the 2013 EDV for NSMHA, Acumentra Health reviewed clinical records at four outpatient provider agencies to assess mental healthcare criteria as directed by DBHR. The clinical record study focused on the degree to which the RSN's system of care adhered to the principles of the Children's Mental Health Redesign, including the principles of the interim settlement of *T.R. v. Dreyfus*, regarding uniform screening and assessment of children with serious emotional disturbances.

The 43 charts reviewed for this activity were among those requested for the EDV. The sample included consumers aged 3–19 served during October 2011–September 2012, each of whom had at least three outpatient service encounters during the review period.

To ensure consistency in reviewing the clinical records, Acumentra Health followed rigorous procedures to ensure inter-rater reliability. Before conducting the review at any RSN, Acumentra Health trained all reviewers to use a customized data collection tool and scoring criteria and guidelines approved by DBHR.

The data collection tool prompted reviewers to complete a series of questions concerning aspects of adherence to the *T.R. v. Dreyfus* principles. After examining the clinical record (chart) and progress notes, reviewers recorded responses to each question in the tool. Using the SAS Proc Freq function, analysts calculated the distribution of responses for each question.

Review results

Eighty-three percent of charts reviewed contained an assessment that had been completed within the past year, and the remainder had been completed between one and three years previously.

Every assessment evaluated the child's living environment and safety needs; natural systems of support; any developmental, learning, or sensory impairments; language needs; and involvement in activities outside the home. The diagnosis was fully justified by the assessment in 97.5% of charts and partially justified in the remaining charts.

All treatment plans included activities and interventions that built on strengths to promote resiliency, and contained individualized objectives. Nearly all treatment plans (97.5%) contained interventions and goals that were consistent with issues identified in the assessment. However, only 41.9% included team-based services, and only 63.4% included case closure planning.

About two-thirds of the treatment plans (65.6%) demonstrated coordination and collaboration with other service agencies identified in the assessment, while only 43.8% of applicable progress notes documented care coordination with other agencies and systems.

Outcome-based progress notes were found in 88.9% of records reviewed, while an additional 5.6% of records contained partially outcome-based notes. Between 90% and 95% of progress notes documented unconditional treatment, strength-based services, and interventions that were identified in the treatment plan.

Discussion and recommendations

Assessments. Clinicians did a good job of documenting the child's home environment and systems of support. The percentage of applicable assessments that addressed developmental and sensory impairment, cultural and language issues, and justifying the diagnosis all fell well within the acceptable range. More than 80% of assessments had been completed within the past year.

Treatment plans. Most treatment plans reflected issues included in the assessments. The majority of treatment goals were based on the children's strengths. Involvement of family members and support systems in treatment was documented in the majority of the records. For children with other service agency involvement, coordination with other agencies was incorporated into two-thirds of the treatment plan objectives.

- **NSMHA should ensure that providers coordinate care with other service agencies involved in the child's life and document this coordination in the treatment plan.**

Only 42% of the treatment plans included a multi-disciplinary team-based approach to treatment.

- **NSMHA needs to offer guidance to the agencies to ensure that children's treatment includes a team-based approach when appropriate.**

Progress notes. Almost all progress notes demonstrated that the child received unconditional treatment. The majority of progress notes documented use of strength-based interventions and activities as identified in the treatment plans. Team-based services and coordination with other agencies were lacking in progress note documentation. For children with multi-agency involvement, only 43.8% of progress notes documented coordination of care with other agencies and systems.

- **NSMHA needs to ensure that progress notes document coordination of care with other agencies and systems that serve the child, where appropriate.**

Table 8. Results of clinical record review for North Sound MHA.		
Assessment, treatment plan, and progress notes indicate adherence to principles of Children's Mental Health Redesign		
Number of charts reviewed =43		
Assessment	**% Yes**	**% No**
1. Is there a completed assessment within the last year?	82.5	17.5
Assessment includes:	**% Yes**	**% Partially**
1. Living environment and safety needs	100.0	
2. Documentation of current living situation		
Home (parental)	79.5	
Foster home	5.1	
Other friend/family home	15.4	
Homeless/shelter	0.0	
Independent living	0.0	
3. Child's/family's natural systems of support	100.0	
4. Development, learning, or sensory impairment	100.0	
5. Cultural issues that may affect treatment	90.9	
6. Language needs taken into consideration	100.0	
7. Child/family involvement in activities outside of the home	100.0	
8. Justification of diagnosis	97.5	2.5
Treatment plan includes:	**% Yes**	**% Partially**
1. Activities and interventions that build on strengths to promote resiliency	100.0	
2. Treatment plan objectives are individualized	100.0	
3. Documentation showing family/guardian participation in developing the treatment plan	89.5	
4. Coordination with agencies and collaboration with others identified in assessment	65.6	
5. Interventions and goals consistent with issues identified in assessment	97.5	
6. Team-based services	41.9	
7. Case closure	63.4	
Progress notes include:	**% Yes**	**% Partially**
1. Interventions identified in the treatment plan and progress toward meeting stated goals	90.2	2.4
2. Unconditional treatment	95.1	
3. Documentation that services delivered are strength-based	90.2	
4. Progress notes care coordination with agencies and systems	43.8	
5. Outcome-based progress notes	88.9	5.6

NOTE: Proportions exclude "not applicable" or missing responses, so the denominator of each item may vary.

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APPENDIX A: PIP VALIDATION AND SCORING PROTOCOL

All managed care organizations that serve Medicaid enrollees must conduct two performance improvement projects (PIPs) each year aimed at improving enrollee health outcomes or processes of care. The PIPs are validated each year by external quality review to ensure that they are designed, conducted, and reported according to sound methods.

Acumentra Health's PIP validation protocol is based on the PIP validation protocol published by the Centers for Medicare & Medicaid Services (CMS). The most recent version of the CMS protocol, published in September 2012, added a requirement related to cultural competency. For 2013, Acumentra Health added a criterion to the DBHR PIP Review Tool to address this requirement:

> 6.4 Discuss how the intervention services and materials are culturally and linguistically appropriate.

Other changes in the 2012 CMS protocol reflect a new emphasis on certain aspects of the study design. Acumentra Health will modify the PIP Review Tool for 2014 to conform to the new areas of emphasis in the CMS protocol.

The 10 validation standards adapted by Acumentra Health from the CMS protocol define critical elements in a PIP study design. Specific criteria for each standard are listed on the following pages.

Standard 1. Study Topic

Standard 2. Study Question

Standard 3. Study Indicator

Standard 4. Denominator (Study Population) Data Collection

Standard 5. Numerator (What Is Being Measured) Data Collection and Analysis Plan

Standard 6. Study Intervention

Standard 7. Study Results

Standard 8. Interpretation of Study Results

Standard 9. Study Modifications After the First Remeasurement

Standard 10. Overall Study Results

Standard 1: Study Topic

To meet Standard 1, the RSN needs to establish the importance of the study topic in general and present local data to demonstrate that the topic applies to a large or high-risk portion of the Medicaid population; and demonstrate that a systematic selection and prioritization process was used in choosing the topic.

Please explain:

1.1 The importance of the study topic in general.

1.2 How the study topic is relevant to your local Medicaid population.

1.3 How you identified the study topic (e.g., quality committee, focus group, grievances, QAPI activities, other sources).

1.4 Why you prioritized this topic, including considerations of quality (e.g., high risk, prevalent issue) and feasibility (e.g., data and resource availability).

1.5 How the study topic relates to enrollee outcomes, satisfaction, or quality of care.

Standard 2: Study Question

To meet Standard 2, the RSN needs to present a study question that provides a clear framework for data collection, analysis, and interpretation. The study question should refer to the proposed intervention, a study population (denominator), a measure (numerator), a metric (e.g., average, percentage), and a direction of desired change.

2.1 Please state your study question. A complete study question includes an intervention, a study population (denominator), what you are measuring (numerator), a metric (percent or average), and a desired direction of change (increase or decrease). If you have more than one study indicator, you should present a separate study question for each study indicator.

Standard 3: Study Indicator

To meet Standard 3, the RSN needs to define the measure (numerator) and study population (denominator); define key terms; and discuss the basis for adopting the indicator as a valid proxy for enrollee outcomes, satisfaction, or quality of care.

Please define the following elements for each study indicator:

3.1 The denominator (study population), and continuous enrollment criteria if applicable.

3.2 The numerator (what is being measured), including the event or enrollee characteristics that qualify for the numerator.

3.3 All relevant terms, CPT codes, diagnosis codes, etc., associated with the study indicator.

3.4 Describe why you selected the study indicator. Your description should include a discussion of:

a. The validity of the study indicator (i.e., HEDIS, commonly accepted measures, research literature, etc.).

b. How the indicator measures enrollee outcomes, satisfaction, or quality of care either directly or indirectly through a process which is closely related to enrollee outcomes or satisfaction.

Standard 4: Denominator (Study Population) Data Collection

To meet Standard 4, the RSN needs to list all inclusion and exclusion criteria for the study population; document all data sources, including fields, codes, and calculations; and describe data validation procedures. If a sample is selected, the RSN needs to describe the sampling methods.

Describe your data sources.

4.1 List the inclusion criteria for the denominator (study population) and name each data element and its source, table, field, calculation (if applicable), and relevant codes.

4.2 List all exclusion criteria for the denominator (study population) and name each data element and its source, table, field, calculation (if applicable), and relevant codes. You do not need to list the inverse of the inclusion criteria as exclusions.

4.3 Describe data validation procedures for each data element.

4.4 If you used a sample, describe the sampling methodology and a justification for the sample size.

Standard 5: Numerator (What Is Being Measured) Data Collection and Analysis Plan

To meet Standard 5, the RSN needs to list all inclusion and exclusion criteria for the numerator (what is being measured); document all data sources, including fields, codes, and calculations; describe data validation procedures; and present a clear data analysis plan, including time frames for the measurement and intervention periods, and an appropriate statistical test to measure differences between the baseline and remeasurement periods.

Describe your data sources.

5.1 List the study inclusion criteria for the numerator (what is being measured) and name each data element and its source, table, field, calculation (if applicable), and relevant codes.

5.2 List all exclusion criteria for the numerator (what is being measured) and name each data element and its source, table, field, calculation (if applicable), and relevant codes. You do not need to list the inverse of the inclusion criteria as exclusions.

5.3 Describe data validation procedures for each data element.

5.4 Document clear study measurement periods. The baseline period should end before the start date of the intervention. The first remeasurement period should not begin before the start date of the intervention. The intervention and remeasurement periods may run concurrently.

5.5 Document a data analysis plan that includes an appropriate statistical test, rationale for selecting the test, and a probability level. If you have more than one study indicator, you should document a separate data analysis plan for each indicator.

Standard 6: Study Intervention

To meet Standard 6, the RSN needs to select an improvement strategy that will affect a wide range of enrollees or a high-risk enrollee population, and that is reasonably expected to result in measurable improvement. The RSN needs to discuss the basis for adopting the intervention; document the implementation of the intervention, including dates and locations of principal activities; discuss cultural competence; and track how effectively the intervention was implemented.

6.1 Describe the intervention strategy. Once intervention activities begin, please provide updated details, including dates and locations.

6.2 Describe why you selected this particular intervention; for example, because it is based on barriers identified in your system or because it is an evidence-based practice. It should be clear how the intervention strategy is expected to improve the study indicators.

6.3 Describe how you will track the implementation of the intervention (i.e., how you will know whether all aspects of the intervention were implemented successfully). If the intervention has already been implemented, report on the results of your tracking.

6.4 Discuss how the intervention services and materials are culturally and linguistically appropriate.

Standard 7: Study Results

To meet Standard 7, the RSN needs to present results according to the data analysis plan, including the study indicator, the original data used to compute the indicator, and a statistical test to measure differences between the baseline and remeasurement periods; and discuss how the intervention influenced the results.

7.1 Present raw data for the numerator (what you are measuring) and denominator (study population) as well as the calculated study indicator for the baseline and first remeasurement periods.

7.2 Present the results of your statistical analysis comparing baseline data to the first remeasurement data. Report the probability level to determine whether or not there is a statistically significant difference.

7.3 Discuss how the intervention influenced the study results.

Standard 8: Interpretation of Study Results

To meet Standard 8, the RSN needs to assess whether any reported improvement is "real" by documenting that baseline and remeasurement data were collected using the same methods and are comparable; discuss the statistical and clinical significance of the study results; address barriers to improvement and lessons learned during the PIP process; and identify confounding factors that may have affected the results.

Discuss the following:

8.1 Whether the PIP resulted in real statistical and clinical improvement.

8.2 Any barriers to improvement or lessons learned during the PIP process.

8.3 Whether there were any changes in methodology or inconsistencies in measurement periods and, if so, whether measurement periods are comparable.

8.4 Any confounding factors that may have affected the PIP results.

Standard 9: Study Modifications After the First Remeasurement

To meet Standard 9, the RSN needs to document modifications to the intervention, or added interventions, planned or implemented after the first remeasurement period; and discuss changes in other aspects of the PIP based on lessons learned from data analysis or barrier analysis.

9.1 Discuss how you addressed the identified barriers and describe any other modifications you made to the PIP after the first remeasurement period.

Standard 10: Overall Study Results

To meet Standard 10, the RSN needs to report complete study results for two or more measurement periods, including the study indicator, original data used to compute the indicator, and a statistical test of group differences; and interpret the statistical and clinical significance of the overall results, discuss lessons learned, and determine if goals were met and sustained improvement was achieved.

10.1 Present raw data for the numerator (what you are measuring) and denominator (study population), and the calculated study indicator for the baseline and the second remeasurement.

10.2 Present the results of a statistical analysis comparing baseline data to the second remeasurement data. Report the probability level to determine whether or not there is a statistically significant difference.

10.3 Interpret whether the PIP resulted in sustained statistical and clinical improvement over multiple remeasurement periods.

10.4 Draw a conclusion about whether the PIP was successful overall. Discuss lessons learned during the PIP process, whether you met your goals for this PIP overall, and the factors that contributed to whether the PIP achieved sustained improvement.

PIP scoring

Acumentra Health assigns a score to each PIP standard to measure compliance with federal standards. Each standard has a potential score of 100 points, as shown in Table A-1.

Table A-1. Compliance rating for PIP standards by point range.

Rating	Definition	Points
Fully met	Meets or exceeds the essential criteria	100
Substantially met	Meets essential criteria, has minor deficiencies	75–99
Partially met	Meets criteria with deficiencies in some areas	50–74
Minimally met	Marginally meets criteria	25–49
Not met	Does not meet essential criteria	0–24

The scores for each standard are weighted and combined to determine the overall PIP score. The maximum overall score is 90 points for Standards 1–8, and 100 points for Standards 1–10, as shown in Table A-2.

Table A-2. Weighting of points on PIP standards in the overall PIP score.

Standard	Scoring weight
1 Study Topic	20%
2 Study Question	10%
3 Study Indicator	10%
4 Denominator (Study Population) Data Collection	10%
5 Numerator (What Is Being Measured) Data Collection and Analysis Plan	10%
6 Study Intervention	10%
7 Study Results	10%
8 Interpretation of Study Results	10%
Demonstrable Improvement Score	**90%**
9 Study Modifications After the First Remeasurement	5%
10 Overall Study Results	5%
Sustained Improvement Score	**10%**
Overall PIP Score	**100%**

The overall PIP score corresponds to a compliance rating that ranges from Fully Met to Not Met. Table A-3 shows the compliance ratings and associated scoring ranges for PIPs graded on the 90-point and the 100-point scale.

Table A-3. Compliance rating for PIPs by overall score.

Compliance rating	Description	100-point scale	90-point scale
Fully met	Meets or exceeds all requirements	80–100	72–90
Substantially met	Meets essential requirements, has minor deficiencies	60–79	54–71
Partially met	Meets essential requirements in most, but not all areas	40–59	36–53
Minimally met	Marginally meets requirements	20–39	18–35
Not met	Does not meet essential requirements	0–19	0–17

Table A-4 shows an example scoring calculation for a PIP on Standards 1–8 for demonstrable improvement, and on Standards 1–10 for sustained improvement.

Table A-4. Scoring worksheet example.

Standard	Compliance rating	Assigned points	Weight	Overall score
1	Fully met	100	20%	20.00
2	Fully met	100	10%	10.00
3	Partially met	50	10%	5.00
4	Partially met	50	10%	5.00
5	Fully met	100	10%	10.00
6	Minimally met	25	10%	2.50
7	Partially met	50	10%	5.00
8	Partially met	50	10%	5.00
Overall score 1–8	**Substantially met**			**62.50**
9	Substantially met	75	5%	3.75
10	Partially met	50	5%	2.50
Overall score 1–10	**Substantially met**			**68.75**

APPENDIX B: ISCA METHODOLOGY

The Information Systems Capabilities Assessment (ISCA) examines each RSN's information systems and data processing/reporting procedures to determine the extent to which they support the production of valid and reliable state performance measures and the capacity to manage care of RSN enrollees.

The ISCA protocol for the Washington RSNs is adapted from the protocol published by the Centers for Medicare & Medicaid Services (CMS). The review process consists of four phases:

Phase 1: Collect standard information about RSN information systems. The RSN completes the ISCA data collection tool (ISCA-T) provided by Acumentra Health before the onsite review. Acumentra Health also asks the RSN to submit other relevant documents at this time.

Phase 2: Acumentra Health reviews the completed ISCA-T and accompanying documents. Where an answer seems incomplete or indicates an inadequate process, Acumentra Health marks that section for follow-up.

Phase 3: Data center security walkthrough and in-depth interviews with knowledgeable RSN staff. Provider agency interviews, also performed at this time, ask about each agency's information systems, encounter/claims processing, and handling of enrollment data.

Phase 4: Post-onsite analysis of findings about the RSN's information systems and the implications of the findings regarding:

1. completeness and accuracy of claims and encounter data collected and submitted to DBHR
2. the RSN's capacity to conduct quality assurance/performance improvement initiatives
3. the RSN's capacity to oversee and manage the delivery of health care to its enrollees

The following pages discuss the specific criteria for assessing compliance with each review standard.

Section 1: Data Processing Procedures and Personnel

Section 1A: Information Systems

This section provides a detailed review of the RSN's systems development life cycle (SDLC) and supporting environments, including database management systems and/or billing software, programming languages, and training for programmers.

A data storage and processing system that facilitates valid and reliable performance measurement would have the following characteristics:

- flexible data structures
- no degradation of processing with increased data volume
- adequate programming staff
- reasonable processing and coding time
- ease of interoperability with other database systems
- data security via user authentication and permission levels
- data locking capability
- proactive response to changes in encounter and enrollment criteria
- adherence to the federally required format for electronic submission of encounter data

To ensure accurate and complete performance measure calculation, best practices in computer programming include:

- good documentation
- clear, continuous communication between the client and the programmers on client information needs (e.g., analysis needs, reports)
- a quality assurance process
- version control
- continuous professional development of programming staff

Section 1B: Staffing

This section assesses physical access by the RSN's staff to IT assets, as well as specific training requirements for claims processing staff.

Best practices for sustaining quality in processing encounter data include

- adequately trained staff for processing and tracking errors in encounter data submission
- a comprehensive, documented formal training process for new hires and experienced professionals
- refresher courses for staff when updates occur and when new systems are implemented
- established and monitored productivity goals
- low staff turnover

Section 1C: Hardware Systems

This section assesses the RSN's network infrastructure and hardware systems.

Best practices for sustaining quality hardware systems include

- infrastructural support that includes maintenance and timely replacement of computer equipment and software, disaster recovery procedures, adequate training of support staff, and a secure computing environment
- redundancy or duplication of critical components of a hardware system with the intention of increasing reliability of the system, usually in the case of a backup or fail-safe

Section 1D: Security

This section assesses the RSN's information systems for integrity and the ability to prevent data loss and corruption. A security walkthrough of the computer area and/or data center assesses the possibility of a breach in security measures.

Best practices for securing data are summarized below.

- A well-run security management program includes IT governance, risk assessment, policy development, policy dissemination, and monitoring. Each of these activities should flow into the next to ensure that policies remain current and that important risks are addressed.
- Computer systems and terminals should be protected from unauthorized access through use of a password system and security screens. Passwords should be changed frequently and reset whenever an employee terminates.

- Paper-based claims and encounters should be in locked storage facilities when not in use.
- Data transferred between systems/locations should be encrypted.
- A comprehensive backup plan includes scheduling, rotation, verification, retention, and storage of backups to provide additional security in the event of a system crash or compromised integrity of the data. Managers responsible for processing claims and encounter data must be knowledgeable of their backup schedules and of retention of backups to ensure data integrity.
- To ensure integrity, backups should be verified periodically by performing a "restore" and comparing the results. Ideally, annual backups would be kept for seven years or more in an offsite climate-controlled facility.
- Databases and database updates should include transaction management, commits, and rollbacks. Transaction management is useful when making multiple changes in the database to ensure that all changes work without errors before finalizing the changes. A database commit is a command for committing a permanent change or update to the database. A rollback is a method for tracking changes before they have been physically committed to disk. This prevents corruption of the database during a sudden crash or some other unintentional intervention.
- Formal controls in the form of batch control sheets or assignment of a batch control number should be used to ensure a full accounting of all claims received.

Section 11.2 of DBHR's 2011–2013 RSN contract presents requirements related to Business Continuity and Disaster Recovery (BC/DR). The contractor must certify annually that a BC/DR plan is in place for both the contractor and subcontractors. The certification must indicate that the plans are up to date and that the system and data backup and recovery procedures have been tested. The plan must address:

- a mission or scope statement
- an appointed IS disaster recovery staff
- provisions for backup of key personnel, identified emergency procedures, visibly listed emergency telephone numbers
- procedures for allowing effective communication with hardware and software vendors
- confirmation of updated system and operations documentation, process for frequent backup of systems and data
- offsite storage of system and data backups, ability to recover data and systems from backup files
- designated recovery options that may include use of a hot or cold site
- evidence that disaster recovery tests or drills have been performed

Exhibit C of the 2011–2013 RSN contract presents detailed requirements for data security, including:

1. data protection during electronic transport, including via email and the public Internet
2. safeguarding access to data stored on hard media (hard disk drives, network server disks, and optical discs), on paper, or on portable devices or media, and access to data used interactively over the State Governmental Network
3. segregation of DSHS data from non-DSHS data to ensure that all DSHS data can be identified for return or destruction, and to aid in determining whether DSHS data has or may have been compromised in the event of a security breach
4. data disposition (return to DSHS or destruction) when the contracted work has been completed or when data no longer needed
5. notification of DSHS in the event of compromise or potential compromise of DSHS shared data
6. sharing of DSHS data with subcontractors

Section 2: Data Acquisition Capabilities

Section 2A: Administrative Data

This section provides a detailed review of the RSN's submission of accurate information, process for describing differences when verifying accuracy of submitted claims, and data assessment and retention.

To ensure the validity and timeliness of the encounter and claims data used in calculating performance measures, it is important to have documented standards, a formal quality assurance of input data sources and transactional systems, and readily available historical data.

Best practices include:

- automated edit and validity checks of procedure and diagnosis code fields, timely filing, eligibility verification, authorization, referral management, and a process to remove duplicate claims and encounters
- a documented formal procedure for rectifying encounter data submitted with one or more required fields missing, incomplete, or invalid. Ideally, the data processor would not alter the data until receiving written notification via a paper claim or from the provider.
- periodic audits of randomly selected records conducted internally and externally by an outside vendor to ensure data integrity and validity. Audits are critical after major system upgrades or code changes.
- multiple diagnosis codes and procedure codes for each encounter record, distinguishing clearly between primary and secondary diagnoses
- efficient data transfer (frequent batch processing) to minimize processing lags that can affect data completeness

Section 2B: Enrollment Systems

This section assesses the RSN's Medicaid enrollment systems pertaining to enrollment and disenrollment processes, tracking claims and encounter data, Medicaid enrollment data updates, Medicaid enrollment code, and data verification.

Timely and accurate eligibility data are paramount in providing high-quality care and for monitoring services reported in utilization reports.

Best practices are summarized below.

- Access to up-to-date eligibility data should be easy and fast.
- Enrollment data should be updated daily or in real time.
- The enrollment system should be capable of tracking an enrollee's entire history within the RSN, further enhancing the accuracy of the data.

Section 2C: Vendor Data Integrity

This section assesses how the RSN integrates vendor data with administrative data for completeness of data and quality of data.

An ideal vendor data integration system includes:

- converting data, including code sets, for compatibility with the state's data systems

- receiving only member-level data, as opposed to aggregate data
- incorporating other data (e.g., dental care, primary care manager, history of care) to provide a more complete picture of a member's care
- ensuring consistency in the data for required fields, including multiple diagnosis and procedures codes

Section 2D: Provider Data

This section assesses how the RSN maintains its provider directory, as well as the RSN's fee schedules and contractual payment updates.

An RSN designs its provider compensation structure to balance contractual expectations, the needs of enrolled populations, and capitation rates set by the state. To set appropriate capitation rates, the state relies on accurate and timely encounter data.

A good payment structure is critical to ensure reasonable and timely compensation, which encourages an accessible, qualified community network of providers to continue to provide service to Medicaid enrollees.

An ideal provider profile directory, which allows enrollees and staff to make informed choices, would list all available providers, including their gender, credentials and specialties, languages spoken, whether they use sign language, whether they offer interpretive services, and whether the office is ADA-certified.

Section 2E: Meaningful Use of Electronic Health Records

This section requests information on how the RSN and its contracted providers use electronic health records (EHRs), including:

- any planning and/or development efforts the RSN has taken toward adopting and using a certified EHR system
- number of providers in the RSN network currently using EHRs
- if providers are using EHRs, whether the RSN has sought to determine whether the technology has been certified by the appropriate federal body
- any training, education, or outreach the RSN has delivered to network providers on the meaningful use of certified EHR technology
- whether the RSN uses data from EHRs as part of its quality improvement program (e.g., to improve the quality of services delivered or to develop PIPs)
- strategies or policies the RSN has developed to encourage the adoption of EHR by providers that are not eligible for the Medicaid Incentive Program

APPENDIX C: ENCOUNTER DATA VALIDATION PROCEDURES

In validating RSN encounter data, Acumentra Health follows the steps outlined below, based on the CMS protocol, *Validating Encounter Data*.

1. Review the state's requirements for collecting, processing, and submitting encounter data, based on specifications in the RSN contract, the state's data dictionary, and other information furnished by the state.
2. Review results of the previous EDV study to identify follow-up needs.
3. Review the capability of each RSN's information system to capture accurate and complete encounter data, drawing on findings of the ISCA review and interviews with RSN personnel.
4. Analyze electronic encounter data to establish the magnitude of missing data, types of potentially missing data, overall data quality issues, and problems with how the RSN compiles and submits encounters to the state. Subtasks include:
    - Apply general edit and consistency checks, such as verifying that critical fields contain values that are consistent across fields.
    - Inspect data fields for general validity, including a review of each data element and of the volume of data by type or place of service.
    - Using standard statistical procedures, analyze data to obtain a validity overview of the RSN's encounter data. This step involves analyzing and interpreting the data in submitted fields, the volume and consistency of encounter data, and utilization rates, both overall and by specific diagnosis, procedure, service, and provider types.
    - Compare the RSN's encounter data with state standards and/or benchmarks.
5. If necessary, review clinical records to confirm findings of the above analysis.

Acumentra Health reviewed each RSN's internal EDV activities in 2013, but unlike in 2012, did not recreate the EDV calculations. Based solely on the information provided in the RSN's EDV report, Acumentra Health assessed whether the RSN's EDV tool, sampling procedures, EDV process, and subsequent results were adequate for assessing the accuracy and completeness of the EDV data.

Acumentra Health reviewed a sample of enrollee charts to ensure that the information in the encounter data matched the information in the charts. The following data elements were scored:

- first name
- last name
- date of birth
- ethnicity
- language
- provider type
- minutes of service
- service location
- service date
- procedure code
- whether the service code matched the chart note

Scoring options included:

- Match: cases where there is an exact match of all the minimum data elements for each randomly selected sample between the subcontractor's encounters and those in the clinical record
- No Match: cases where the subcontractor's encounters do not match the clinical records.
    - Erroneous: Encounters occurred and are presented in the clinical record but contain incorrect data or omit any of the minimum data elements.
    - Unsubstantiated (not in the medical record): Encounters submitted by the subcontractor either cannot be verified in the clinical record or are duplicated.
    - Missing (not in the encounter record): Clinical record contains evidence of a service but the service is not represented by the encounter record.

Also in 2013, Acumentra Health reviewed all sample enrollee charts for evidence of adherence to the "Golden Thread" of therapy, evaluating whether the assessment substantiates the diagnosis, whether the treatment plan is consistent with the diagnosis, and whether progress notes address the treatment plan. The following Golden Thread data elements were scored:

- Does the assessment substantiate the Category A diagnosis?
- Does the assessment substantiate the Category B diagnosis?
- Does the treatment plan include interventions and goals consistent with issues identified in the assessment?
- Do the progress notes address interventions identified in the treatment plan and the individual's progress toward meeting stated goals?
- Are treatment plan objectives individualized?