

*CONNECTING THE DOTS: THE RIGHT DATA TO THE RIGHT PERSON*

- CLIENT COHORTS –*
- TENURE IN TREATMENT –*
- PERFORMANCE INDICATORS–*



*WESTERN INTERSTATE COMMISSION ON HIGHER EDUCATION*  
*DHSS: DIVISION OF BEHAVIORAL HEALTH*  
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## Principal Authors

Western Interstate Commission on Higher Education (WICHE)

- Chuck McGee, Senior Research & Technical Assistance Associate
- Allen Press,

Division of Behavioral Health

- Mark Haines-Simeon, Policy & Planning Section -- Manager

## Review & Advisory

### ■ Outcomes Identification & Systems Performance (OISP) Stakeholders Advisory Committee

|  |   |
|--|---|
| Mike Baldwin – AK MH Trust Authority             | Barb Rath – The Arc                         |
| Katie Baldwin-Johnson - AK MH Trust Authority    | Dave Reeves – Anch. Community MH Services   |
| Cathy Bishop – Nugens Ranch                      | Laronsia Reynolds – The Arc                 |
| Gretchen Bishop - ABADA/AMHB                     | Pam Robinson – Assets                       |
| Kate Burkhart – ABADA/AMHB                       | Brian Saylor – Akeela                       |
| Tom Chard – Alaska BH Directors Association      | Karin Schaff – Volunteers of America        |
| Deb Craig – Juneau Alliance for the Mentally Ill | Bernard Segal – Akeela & YKHC               |
| Carey Edney – Anch. Community MH Services        | Jim Sellers - AARC/Akeela Development Corp. |
| Jeannie Fanning – AK Child & Family              | Steve Shultz – Juneau Youth Services        |
| Chris Gunderson - Denali Family Services         | Pat Sidmore – ABADA/AMHB                    |
| Janice Hamerick – SEARHC                         | Kimberly Stephens – Set Free Alaska         |
| Bill Herman – AK Mental Health Trust Authority   | Melissa Stone – Choices/Soteria             |
| Pamela Kennedy – Anchor. Community MH Services   | Martin Theulen – NDTC                       |
| Siobhan Lynch – Fairbanks Native Association     | Kerry Tomlinson – SCPS                      |
| Rosalie Nadeau – Akeela                          | Jodie Trojan – Evaluator                    |
| Karen Nugen – Nugens Ranch                       | Pat Ventgen – Akeela                        |
| Kelly Overacker – Denali Family Services         | Amy Zanuzoski – Sitka C&P                   |

### ■ Division of Behavioral Health

Joan Houlihan  
Holly Byrnes  
Brenda Knapp  
Kathleen Ramage

## Background

The Division of Behavioral Health (DBH) is committed to the vision of Alaskans with a “...quality of life through the right service to the right person at the right time”. To that end, the DBH has implemented a *Performance Management System*, initiated by the 2007 Legislature<sup>1</sup>. A Performance Management System is a systematic approach to performance improvement through an ongoing process of establishing strategic performance objectives; measuring performance; collecting, analyzing, reviewing, and reporting performance data; and using that data to drive continuous performance improvement.

The DBH *Performance Management System* uses the Results Based Accountability (RBA) framework of (a) Quantity: How much did we do? (b) Quality: How well did we do it? and, (c) Outcomes: Is anybody better off? The annual Performance Based Funding (PBF) measures also reflect and build on this vision and key areas of “Quality, Quantity, and Outcomes”. How these questions are answered are influenced and informed and challenged by the ability to measure different populations (case mix adjustment) and associated timeframes for differing treatment life cycles.

The refinement of this *Performance Management System* has involved an ongoing collaboration of research and analysis including the Outcomes Identification & Systems Performance (OISP) provider advisory group, The Advisory Board on Alcoholism and Drug Abuse and the Alaska Mental Health Board and the Alaska Mental Health Trust Authority, with support and expertise from the Western Interstate Commission on Higher Education (WICHE). Over time, this has contributed to significant improvements in the instruments used to define data sets<sup>2</sup>, as well as the process and methods of data collection, analysis and reporting to inform the measurement of performance.

The purpose of this report is to provide a synopsis of multiple research and analysis conducted to inform and refine the Division’s Performance Management System through a continuous quality improvement process. This report includes a review of research on:

- The validity of CSR Measures
- Case mix adjustment by client mix
- Client length or tenure in treatment
- Aligning performance measure with client mix and tenure in treatment

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<sup>1</sup> *It is the intent of the legislature that the department continues developing policies and procedures surrounding the awarding of recurring grants to assure that applicants are regularly evaluated on their performance in achieving outcomes consistent with the expectations and missions of the Department related to their specific grant. The recipient's specific performance should be measured and incorporated into the decision whether to continue awarding grants. Performance measurement should be standardized, accurate, objective and fair, recognizing and compensating for differences among grant recipients including acuity of services provided, client base, geographic location and other factors necessary and appropriate to reconcile and compare grant recipient performances across the array of providers and services involved.*

<sup>2</sup> The Alaska Screening Tool (AST), the Client Status Review (CSR), the Behavioral Health Consumer Survey (BHCS).

## Introduction and Overview

The Division's *Performance Management System* entails developing performance measures for providers based on client self reports. The client self-reports are reported within the Client Status Review (CSR) -- completed at admission to treatment and every 90-135 days, as long as the client is in treatment, and at discharge from services.

In order to develop performance indicators it is necessary to account for differences in clients served by providers. This is referred to as *case mix adjustment* or *risk adjustment*. It is also necessary to identify appropriate performance indicators for different groups of clients based on length of time or *tenure in treatment*.

This section will provide an overview of these two concepts, *case mix adjustment* and *tenure in treatment*, and presents key findings.

### The Case for Case Mix Adjustment

In order to develop performance indicators for providers it is necessary to account for differences in clients served by providers; differences in clients served by providers have a direct impact on outcomes. Adjusting for these differences is referred to as case mix adjustment or risk adjustment. This may also entail applying different performance indicators for various client groups.

Case-mix adjustment methods are applied to account for differences between clients with characteristics that affect treatment outcomes as well as the indicators used to measure their respective outcomes. The background research of the DBH Performance Management System validates the need to measure treatment outcomes by the following specific populations:

- A. Severely Mentally Ill Adults (SMI)
- B. Severely Emotionally Disturbed Children/Youth (SED)
- C. Substance Use – Adults & Youth (SU)
- D. Co-occurring Disorders (COD)
- E. General Mental Health (GMH)

The primary CSR indicators relevant to these populations are:

- *"Life Satisfaction"* (9 items) for all populations (A, B, C, D, and E)
- *"Mentally Unhealthy Days"* for all populations except Substance Use (A, B, D, and E)
- *"Days Consumed Alcohol or Drugs"* for Substance Use and Co-occurring Disorders populations (C, D)

This structure and logic is reflected in the current DBH Results Based Accountability Dashboard, specifically in the measurement of client outcomes.

## Defining Tenure in Treatment

In order to develop performance indicators for providers it is necessary to identify appropriate performance indicators for different groups of clients based on length of time or tenure in treatment. Foundational research validates the differences between clients with different lengths of time in treatment, including different measures for each group. The following “cohorts” or groups, based on tenure in treatment have been identified:

- Assessment only: Includes clients who have only accessed assessment services.
  - There is no change measure, as there is no “Time 2” CSR.
  - The statewide analysis indicates that these clients report more severe problems than persons in households not receiving treatment.
  - Different performance indicators need to be developed.
  - An initial recommended indicator to develop would focus on the proportion of clients in this group.
- Cohort I: Includes clients who enter treatment, complete a CSR, and drop out of service without having been in treatment long enough to complete a second follow-up CSR. (Note: later analysis will include “Assessment Only” clients into Cohort I).
  - There is no change measure, as there is no “Time 2” CSR
  - Different performance indicators need to be developed.
  - The statewide analysis indicates that these clients report many more problems than persons in households not receiving treatment.
  - The concern for Cohort I is the degree to which this indicates a lack of engagement in treatment.
  - An initial recommended indicator to develop would focus on the proportion of clients in this group.
- Cohort II: Includes clients entering treatment who have an Intake at Time 1 and a Time 2 CSR four months later and no additional CSRs. These client episodes are less than 6 months.
  - The state-wide analysis indicates that these clients report more severe problems than persons in households not receiving treatment.
  - Analysis indicates that clients reported statistically significant change from Time 1 to Time 2 that is clinically meaningful.
  - Change measures are most appropriate for Cohort II.
- Cohort III: Includes clients entering treatment who have an Intake at Time 1, a Time 2 CSR four months later, and a Time 3 CSR. These clients are in treatment from 6-12 months.
  - The state-wide analysis indicates that these clients report more severe problems than persons in households not receiving treatment.
  - Analysis indicates that clients reported statistically significant change from Time 1 to Time 2 that is clinically meaningful.
  - Change measures are most appropriate for Cohort III.

- Cohort IV: Includes clients in treatment for over one year.
  - The state-wide analysis indicates that these clients report more severe problems than persons in households not receiving treatment.
  - In the state-wide analysis these clients did not report improvement that extended and continued to 8 and 12 month intervals.
  - Analysis indicates many of these clients have one or more of three medical co-morbid conditions, and more medical problems in general.
  - There may be several groups in Cohort III, including some with chronic conditions needing substantial services, others needing a low level of service maintenance, and others needing a different treatment approach.
  - Additional analysis is needed for this Cohort that associates the volume and type of services being used with the outcome measures.
  - Initial recommended performance indicators would include CSR measures of “quality of life” and “quality of services” as reported on the most recent CSR.

## The Validity of CSR Outcome Measures

This section reviews and identifies the CSR measures that demonstrate improvement and discusses the criteria used to assess the validity of these measures. A report presented to the OISPP in January 2012 demonstrated the validity of the client reported measures generated from completed CSRs.<sup>3</sup> Analyses from this report are summarized here.

Three criteria are used to assess the validity of CSR data for performance indicators:

- the way they were developed
- whether they perform as expected, and
- the value of the indicators to inform clinicians and other stakeholders

The validity of a measure is largely dependent on who created it and what it was intended for. The CSR instrument was created through a statewide stakeholder collaboration involving state staff, provider organizations, and subject matter experts for use as a clinical tool and for performance indicators. It was pilot tested and refined prior to implementation. As such, it is a model for instrument development; this method provides additional credibility to the instrument.

Other validity criteria include the degree to which the instrument performs as expected, and whether the findings inform stakeholders. The first set of analyses looked at each measure in the CSR to see how it performed as a measure of change. Three research questions were raised:

Question 1: Does the measure discriminate among groups at Intake in ways expected?

Question 2: Does the measure show statistically significant change from Time 1 to Time 2 that is clinically meaningful?

Question 3: Do adult clients report more problems than the general household population.

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<sup>3</sup> ‘CSR\_Analysis\_ver4\_-\_WICHE\_Jan\_14\_2012.pdf’

**Validity Questions 1 & 2 (Reference Table #1)**

Question 1: Does the measure discriminate among groups at Intake in ways expected?

Question 2: Does the measure show statistically significant change from Time 1 to Time 2 that is clinically meaningful?

An analysis was conducted for age groups of adults, youth, and children. The analysis included performance measures at Time 1 (Intake), Time 2 (Four Months Later), and Gain scores (improvement from Time 1 to Time 2). Reference Table 1 demonstrates:

- Differences between client groups were found based on “reason for treatment”.
- Statistically significant gain scores (improvement) on indicators were found.
- The degree of improvement was meaningful (based on the effect size of the gain) for some measures.
- The improvement was most profound for Cohort II clients who were discharged at Time 2 (Four Months Later). Meaningful gain is shown for clients in treatment for mental health (MH), substance abuse (SU), and co-occurring disorders MH and SU (COD).

**TABLE 1 CSR MEASURES SHOWING GAIN: FROM TIME 1 INTAKE TO TIME 2 FOUR MONTHS LATER FOR ADULTS**

| Measure                     | Gain in Direction Expected | Gain Significant | Meaningful Gain   |
|-----------------------------|----------------------------|------------------|---|
| Mentally Unhealthy Days     | Yes                        | Yes              | MH: large for discharges; medium otherwise<br>COD: medium for discharges; small to medium otherwise<br>SA: small for discharges |
| Quality of Life (overall 9) | Yes                        | Yes              | SA: small<br>COD: medium for discharges; small otherwise<br>MH: small-medium for discharges; small otherwise                    |
| Alcohol and Drugs Combined  | Yes                        | Yes              | SA: small to medium<br>COD: small to medium<br>MH: small for discharges   |
| Physically Unhealthy Days   | Yes                        | Yes              | MH: medium for discharges<br>COD: small-medium for discharges   |
| Activity Limitation Days    | Yes                        | Yes              | SA: small<br>MH: large for discharges; small otherwise<br>COD: small to medium for discharges; small-medium not discharged      |
| Legal Involvement           | Yes                        | Yes              | SA: small to medium<br>COD: small to medium   |
| Arrested Past 30 Days       | Yes                        | Yes              | SA: small<br>COD: small   |
| Arrested Past 12 Months     | Yes                        | Yes              | SA: small<br>COD: small for discharges  |

**TABLE 2 CSR MEASURES SHOWING GAIN: FROM TIME 1 INTAKE TO TIME 2 FOUR MONTHS LATER FOR YOUTHS AND CHILDREN  
YOUTH MH**

| Measure                     | Gain in Direction Expected | Gain Significant | Gain Meaningful                 |
|-----------------------------|----------------------------|------------------|---------------------------------|
| Mentally Unhealthy Days     | Yes                        | Yes              | MH: small-medium for discharges |
| Quality of Life (overall 9) | Positive to begin          |                  |                                 |
| Alcohol and Drugs Combined  | Yes                        | Yes              |                                 |
| Legal Involvement           | Yes                        | Yes              | Small                           |

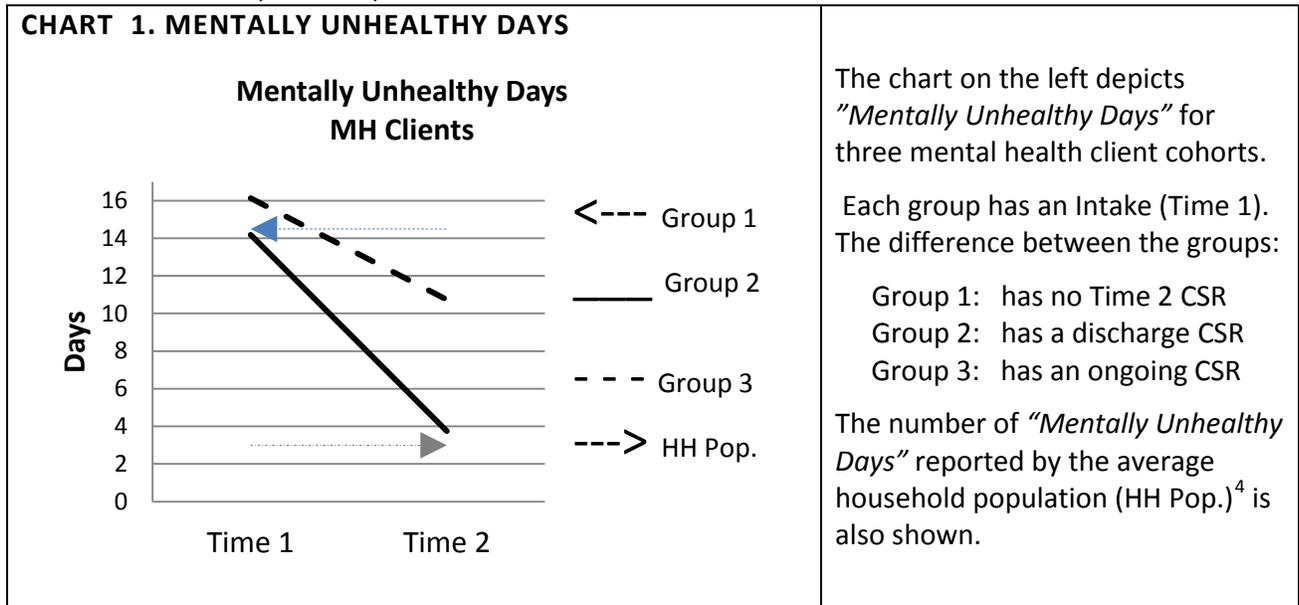
**CHILD MH**

| Measure                     | Gain in Direction Expected | Gain Significant | Gain Meaningful                        |
|-----------------------------|----------------------------|------------------|--|
| Mentally Unhealthy Days     | Yes                        | yes              | Medium for discharges; small otherwise |
| Quality of Life (overall 9) | Positive to begin          |                  |  |

**Validity Question #3: (Reference Chart #1)**

Question 3: Do adult clients report more problems than the general household population.

This analysis is best demonstrated for the CSR measure of *Mentally Unhealthy Days* (MUD) for adults. Chart 1 shows the MUD measure at Time 1 Intake, Time 2 Four Months Later, and the improvement for clients in treatment for mental health. These findings are very much in line with what one would expect and predict.



<sup>4</sup> “Mentally Unhealthy Days” is included within the Behavioral Risk Factor Surveillance System Survey (BRFSS), conducted annually on a sampling of Alaskan households. By including BRFSS questions within the CSR, the Division is able to compare “general household” and behavioral health clients receiving treatment services.

## FINDINGS

- For the general Alaskan household (not in treatment), the rate of “*Mentally Unhealthy Days*” is 3.2 days per month.
- For Group 1 clients (at intake) the rate of “*Mentally Unhealthy Days*” is 14+ days per month.
- For Group 2 clients (at intake) the rate of “*Mentally Unhealthy Days*” is 14+ days per month
- For Group 2 clients (at discharge) they report:
  - The greatest gain at Time 2.
  - At discharge, they report approximately the same “*Mentally Unhealthy Days*” as clients in the general household population (3.2 days).
- For Group 3 clients (ongoing) the rate of “*Mentally Unhealthy Days*” is 16+ days per month. While the improvement was less than Cohort 2, they still reported meaningful gain at Time 2.

## Applying Performance Measures to Client Cohorts

The intent of a Performance Management System is to develop performance indicators for all clients served in a year. Different indicators are needed for clients in treatment for different lengths of time. This section reports on cohorts of clients served based on their length in treatment. Client Cohorts provide a means in which to identify clients who are included and which are excluded from certain performance indicators.

Just as an example to show what this section discusses, consider clients with an intake CSR who do not remain in treatment long enough to complete an additional CSR. Clearly these clients are not included in performance indicators that measure change over time

Four cohorts have been identified based on time in treatment:

- Cohort 1: Clients with an Intake Only CSR in the year
- Cohort 2: Short Term Clients (less than six months in treatment)
- Cohort 3: Intermediate Term Clients (in treatment 6-12 months)
- Cohort 4: Long Term Clients (in treatment one year or more)

In order to identify these groups of clients CSR data were used to establish treatment episodes for each client<sup>5</sup>. The Three Year Cycle chart (Table 3) on the following page reports client counts for three years of data, SFY 2011, SFY 2012, and SFY 2013. It also reports the total number of client episodes each year, and the number in each cohort.

The increase in client episodes each year may reflect changes in the administration of CSRs and not necessarily an increase in actual clients<sup>6</sup>. By SFY 2013 the episodes are more stable.

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<sup>5</sup> CSR data indicate that agencies follow different rules for administrating CSRs. For this reason grouping clients is not straight-forward. Rules were developed to identify episodes to group clients. A basic rule is that no episode starts if there is a previous CSR within 8 months (excluding a previous Discharge CSR). Refer to the Appendix 1: Rules for Creating Episodes.

<sup>6</sup> In December, 2011, the Integrated Behavioral Health Regulations were implemented; requiring the administration of the CSR instrument at Intake, during the course of treatment every 90-135 days, and at discharge. With this regulatory requirement, it is asserted that the timely submission of CSR's

## Three Year Cycle

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- Cohort I: Assessment Only
- Cohort II: Short Term (discharged in less than 6 months)
- Cohort III: Medium Term (6 months to 1 year)
- Cohort IV: Long Term (1 or more year)

**TABLE 3. THREE YEAR CYCLE**

|                           | SFY11   | SFY12   | SFY13  |
|---------------------------|---|---|--|
|                           |  |  |   |
| Cohorts                   | Findings  | Findings  | Findings   |
|                           |   | 60% of all clients were new to the system   | 60% of all clients were new<br>Likely to remain in treatment more than one year: Children (61%); Adults (41%); Youth (32%) |
|                           | <b>10,258 CSR Client Episodes</b>   | <b>15,979 Episodes</b> <i>Increase of 56%</i>                                       | <b>17,389 Episodes</b> <i>Increase of 9%</i>   |
| Cohort I: Assessment Only | 3,345 (32.6%)   | 4,233 (26.5) <i>27% increase</i>  | 4,597 (26.4%) <i>9% increase</i>   |
| Cohort II: Short Term     | 1,277 (12.4%)   | 3,008 (19 %) <i>136% increase</i>   | 4,055 (23.3%) <i>35% increase</i>  |
| Cohort III: Medium Term   | 839 (8.1%)  | 2,092 (13%) <i>149% increase</i>  | 2,909 (16.7 %) <i>39% increase</i>   |
| Cohort IV: Long Term      | 4,797 (46.7%)   | 6,646 (41.6%) <i>39% increase</i>   | 5,828 (33.5%) <i>12% decrease</i>  |

Several observations on these data are worth pointing out.

- It is noteworthy that 60% of clients are new to the system each year. ('New' meaning they have not had a CSR in at least the prior eight months.) This is consistent across two years and is significant.
- Of the clients served, those likely to remain in treatment more than one year include: Children (61%); Adults (41%); Youth (32%)
- There is a 7% decrease in SFY2013 of long term clients (over 1 year). This is likely an artifact of not having enough data to follow some clients admitted at the end of the year for an entire year follow-up.

The rest of this section expands on this analysis beyond general client cohorts. Cohorts are first separated by age, with a description of which cohorts are included and which are excluded from the initial performance indicators. More information is then provided on adults, first separating them by "reason for treatment", and reporting their respective improvement at 4, 8, and 12 months.

### Cohorts Included and Excluded from Initial Performance Indicators

The following, Table 4 provides counts and percentages for each age group in each cohort. Seventy-five percent (75%) of client episodes represent adults (12,982/17,389=75%). Children and youths are represented at about the same level, approximately 13% each. There are some differences in the percentages in each cohort. Children are more likely to become "long term" than adults, and both are more likely becoming "long term" than youths (44%, 32%, and 23% respectively). Children are also less likely to have an "Intake only" CSR or be short term.

**TABLE 4. COHORTS FOR EACH AGE GROUP**

| Cohort       | Description  | Episodes SFY2013 |              |               |               | Percent in Each Cohort |             |             |             |
|--------------|--------------|------------------|--------------|---------------|---------------|------------------------|-------------|-------------|-------------|
|              |              | Child            | Youth        | Adult         | Total         | Child                  | Youth       | Adult       | Total       |
| 1            | Intake Only  | 372              | 595          | 3,624         | 4,591         | 17%                    | 27%         | 28%         | 26%         |
| 2            | Short Term   | 92               | 295          | 1,534         | 1,921         | 4%                     | 13%         | 12%         | 11%         |
| 3            | Intermediate | 753              | 821          | 3,734         | 5,308         | 35%                    | 37%         | 29%         | 31%         |
| 4            | Long Term    | 959              | 520          | 4,090         | 5,569         | 44%                    | 23%         | 32%         | 32%         |
| <b>Total</b> |              | <b>2,176</b>     | <b>2,231</b> | <b>12,982</b> | <b>17,389</b> | <b>100%</b>            | <b>100%</b> | <b>100%</b> | <b>100%</b> |

Findings:

- Cohort 1:
  - Initial performance indicators which measure improvement from Intake at Time 1 to Time 2 (Four Months Later) are not relevant to Cohort 1 since this cohort does not report a Time 2.
  - Cohort 1 represents 26% of clients not included in initial CSR performance indicators.
  - This group is largely substance use/abuse adults.
    - Initial CSR measures show them reporting somewhat higher problems than Cohorts 2 and 3 at Intake; additional analysis is warranted to pinpoint these differences.
    - Approximately 81% of substance abuse adults have a legal referral source.
    - A significant percentage of these adults are court ordered for evaluation only; subsequent referral to treatment may occur after a protracted period of legal process and litigation. For this reason it is difficult to identify the number who may be lost to treatment due to lack of engagement.

- Cohort II:
  - The initial indicators are appropriate for Short Term (11%) clients.
- Cohort III:
  - The initial indicators are appropriate for “Intermediate” clients (31%). Taken together, Cohort II and III represent 42% of all clients served in a year.
- Cohort IV:
  - Cohort 4 could be excluded from the initial performance indicators.
  - These are clients in long term treatment; largely include adults (32%) in treatment for mental health treatment.
- Cohorts and Reason for Treatment for Adults:
  - Of all clients served, Adults represent 74.6%, Youth represent 12.8%, and children represent 12.5%.
  - Over one-half of adults are in treatment for mental health (55%), one-third for substance use (33%), and just over ten percent co-occurring (12%).
  - Long term clients are predominantly mental health (48%). Counts and percents are in Appendix 2.

### **Adult Client Improvement: Intake to Four, Eight, and 12 Months Later**

The following analysis looks more extensively at the measurement of change over time for adult clients who remain in treatment long term. Previous analysis has indicated the appropriateness and value of measuring client change for Cohort II (short-term) and Cohort III (intermediate). Long term clients in Cohort IV raise additional questions of appropriate measurement over time. For example, is it reasonable to measure client improvement from Intake at Time 1 to Time 2 (four months later) and ignore subsequent and extensive treatment?

Adults are fairly evenly represented in three cohorts (Long Term, Intermediate, and Intake Only; 32%, 29% and 28% respectively). There are many fewer Short Term clients (12%).

Over one-half of clients are in treatment for mental health (55%), one-third for substance use (33%), and just over ten percent co-occurring (12%). Long term clients are predominantly mental health. Counts and percents are in Appendix 2.

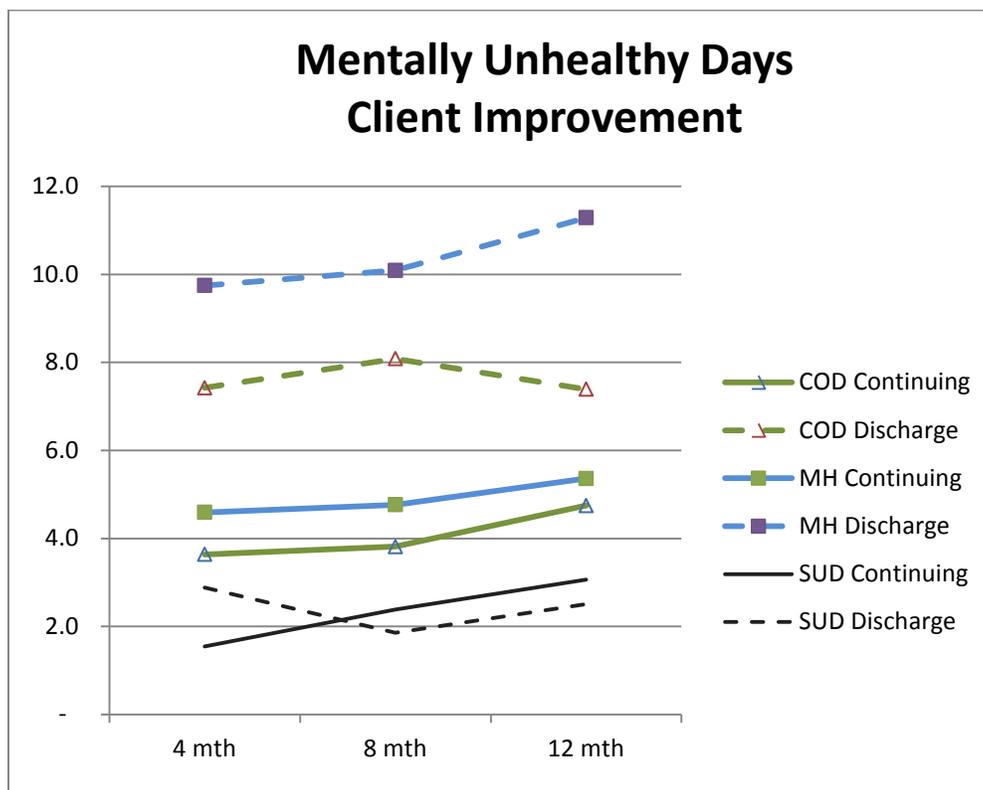
Adults client episodes are used to show improvement from Intake to four, eight, and twelve months. All episodes are for clients living in the community. The measure discussed here is improvement on the measure “mentally unhealthy days”. Other measures showed similar results.

Clients in treatment for mental health who were discharged reported an improvement of 9.7 days at **4 months**, 10.1 days at **8 months**, and 11.3 days at **12 months** (for those remaining in treatment long enough to report at those intervals). COD clients discharged reported the next highest gains. MH and COD continuing clients reported lower gains (about 4). SA clients also reported gains on this measure though less than MH and COD clients.

Chart 2 demonstrates that after the initial gain at 4 months, there is little gain beyond that at the 8 month and 12 month intervals. This raises the question of appropriate performance indicators for long term clients. Additional analyses of long term clients in Cohort 4 are discussed in other parts of this report.

Essentially, the proportion of clients included in initial performance indicators as well as those excluded, are validated.

**CHART 2. ADULT CLIENT IMPROVEMENT 4, 8, AND 12 MONTHS**



Dashed lines show clients at discharge. The most gain for each client group is reported by clients at discharge. This is reasonable and expected. Clients continuing in service are shown with solid lines. They also show improvement from Intake at Time 1 to Time 2 Four months later.

### Can We Predict Who Becomes a Long Term Client?

The analysis assesses how strongly client characteristics are associated with long term treatment. For example, are clients reporting more adverse experiences at intake more likely to be long term clients? The client characteristics examined in this analysis include age group, Client Type, AST Data, and Medicaid payments.<sup>7</sup>

SFY2012 is used for this analysis in order to follow client CSRs for at least one year after Intake, and to link with available Medicaid data. In addition, some analyses rely on AST data which are not available on all clients. Cohort counts in this section may differ from other reports.

### Client Types and Cohorts for Three Age Groups SFY2012

This section provides tables showing the number of clients in each age group for each Client Type and each Cohort. Client Type is determined at Intake for type of services received: Mental Health (MH),

<sup>7</sup> This is taken from the OISPP report 'SFY2012 Clients and Trajectories 4.11.2014.docx'

Substance Abuse (SA) or Co-occurring Disorders (COD). There are 15,981 CSRs in SFY2012, 75% are adults (n=11,979), 13% children (n=2,105), and 13% youth (n= 2,045).

**TABLE 5 COHORTS FOR CHILDREN**

**Children**

This table shows the number of children in each cohort.

In sum, for children:

- 16% are Intake Only (Cohort 1) episodes
- 23% less than one year (Cohorts 2 and 3)
- 61% long term (Cohort 4)

(The few non-MH clients were combined into MH)

| Children |                | MH    |      |
|----------|----------------|-------|------|
| Cohort   |                | Total | %    |
| 1        | Intake Only    | 338   | 16%  |
| 2        | < 6 months     | 214   | 10%  |
| 3        | 6 to 12 months | 268   | 13%  |
| 4        | 1 Year +       | 1,285 | 61%  |
| Total    |                | 2,105 | 100% |

**Youth**

Counts and percent's for youth are shown in table 5 by Cohort and Client Type. In sum for youth:

- 25% Intake Only (Cohort 1) episodes
- 43% less than one year (Cohorts 2 and 3)
- 32% long term (Cohort 4)

**TABLE 6 COHORTS FOR YOUTHS**

| Youths |                | MH    |      | SA    |      | COD   |      | Total |      |
|--------|----------------|-------|------|-------|------|-------|------|-------|------|
| Cohort |                | Total | %    | Total | %    | Total | %    | Total | %    |
| 1      | Intake Only    | 373   | 25%  | 84    | 28%  | 57    | 24%  | 514   | 25%  |
| 2      | < 6 months     | 283   | 19%  | 151   | 50%  | 93    | 39%  | 527   | 26%  |
| 3      | 6 to 12 months | 236   | 16%  | 51    | 17%  | 60    | 25%  | 347   | 17%  |
| 4      | 1 Year +       | 613   | 41%  | 15    | 5%   | 29    | 12%  | 675   | 32%  |
| Total  |                | 1,505 | 100% | 301   | 100% | 239   | 100% | 2,045 | 100% |

**Adults**

Counts and percents for adults are shown in this table by Cohort and Client Type. In sum, for adults:

- 28% are Intake Only (Cohort 1) episodes
- 31% less than one year (Cohorts 2 and 3)
- 41% long term (Cohort 4)

**TABLE 7 COHORTS FOR ADULTS**

| Adults         |  | MH    |      | SA    |      | COD   |      | Total  |      |
|----------------|--|-------|------|-------|------|-------|------|--------|------|
| Cohort         |  | Total | %    | Total | %    | Total | %    | Total  | %    |
| Intake Only    |  | 1,524 | 23%  | 1,452 | 37%  | 405   | 32%  | 3,381  | 28%  |
| < 6 months     |  | 547   | 8%   | 1,388 | 35%  | 332   | 26%  | 2,267  | 19%  |
| 6 to 12 months |  | 635   | 9%   | 626   | 16%  | 215   | 17%  | 1,476  | 12%  |
| 1 Year +       |  | 4,017 | 59%  | 511   | 13%  | 327   | 25%  | 4,855  | 41%  |
| Total          |  | 6,723 | 100% | 3,977 | 100% | 1,279 | 100% | 11,979 | 100% |

## Long Term Clients: the Alaska Screening Tool (AST)

A second means of analysis examines potential client characteristics associated with long term treatment, using the Alaska Screening Tool (AST) for adult clients. The intent is to see if long term clients report greater depression at Intake, more trauma-related issues, and a higher count of accumulated adverse experiences (AE).

For this purpose we focus on adults and exclude “Intake Only” (Cohort 1). Only adults with ASTs are included. Table 8 shows average scores. Depression can range from 0-3; trauma from 0-3; and adverse experiences from 0- 8.

There are significant differences between Client Types (MH, SA, COD) on these scores. Substance use clients report less depression, trauma, and adverse experiences than mental health and co-occurring clients. However, there are only minor differences in cohorts on average scores within Client Types. This indicates that AST scores for these specific variables are not useful for identifying long term clients.

**TABLE 8 AVERAGE AST SCORES BY CLIENT TYPE AND COHORT**

| Client Type | Cohort | Time in Treatment | Average    |        |                           | Number in Cohort |
|-------------|--------|-------------------|------------|--------|---------------------------|------------------|
|             |        |                   | Depression | Trauma | Adverse Experiences Count |                  |
| SU          | 2      | <6 months         | 0.76       | 0.56   | 2.45                      | 2,262            |
| SU          | 3      | 6 up to 12 mths   | 0.65       | 0.46   | 2.39                      | 945              |
| SU          | 4      | 12+ months        | 0.89       | 0.66   | 2.94                      | 259              |
| COD         | 2      | <6 months         | 1.2        | 0.96   | 3.27                      | 575              |
| COD         | 3      | 6 up to 12 mths   | 1.16       | 0.92   | 3.34                      | 354              |
| COD         | 4      | 12+ months        | 1.31       | 1.05   | 3.67                      | 215              |
| MH          | 2      | <6 months         | 1.4        | 1.11   | 3.28                      | 1,041            |
| MH          | 3      | 6 up to 12 mths   | 1.52       | 1.2    | 3.45                      | 1,105            |
| MH          | 4      | 12+ months        | 1.52       | 1.22   | 3.37                      | 1,345            |

## Long Term Clients: Medicaid Utilization

A third means of analysis examines potential client characteristics associated with long term treatment, using Medicaid data. A broader review of this analysis is located under the “Research” section of this document. An overview of focus and findings is presented here.

Medicaid information including all recipients in a year and payments are discussed. The focus then moves to adult recipients served by DBH Grantees. These adults are largely long term adults in treatment for mental health. Two analyses of adults and costs are provided, 1) for adults with schizophrenia and other psychotic disorders, and 2) adults with co-occurring medical conditions. Both of these conditions help provide explanations for long term treatment. Health conditions are categorized based on diagnoses using a system developed as part of the Healthcare Cost and Utilization Project (HCUP) sponsored by the Agency for Healthcare Research and Quality.<sup>8</sup>

<sup>8</sup> Health conditions <http://www.hcup-us.ahrq.gov/toolssoftware/chronic/chronic.jsp>

For the total number of Medicaid Recipients (in SFY2011) and total payments, almost one-half recipients are adults (48%), about one third youths (32%), and the remaining 20% were children under age 13. Most of the payments to children and youth are for behavioral health, with relatively little for physical health. The situation is very different for adults where more than half the payments go to physical health conditions. The average payment for physical health is \$15,540 and the total average \$24,303. For adults then, 64% of payments are for physical health.

Alaska Medicaid data indicate that almost one third of adult grantee clients have a diagnosis categorized as 'Schizophrenia and other psychotic disorders' in SFY2011. These 1,521 adults had the highest behavioral health payments of any behavioral health category at \$16,956,101. Total payments for these clients, adding in physical health claims, are \$43,194,187. Over 60% of payments for these clients are for health services.

Findings support the need for long term treatment for a substantial proportion of clients.

In addition, three medical conditions are analyzed for adults with co morbid behavioral health and physical health conditions (diabetes, cardiovascular disease (CVD) or pulmonary disease. These three medical conditions were selected based on a study indicating that "...more than half of disabled Medicaid enrollees with psychiatric conditions also had claims for diabetes, cardiovascular disease (CVD) or pulmonary disease, substantially higher than rates of these illnesses among persons without psychiatric conditions..."<sup>9</sup>

Findings indicate that clients of grantees have higher rates of cardiovascular disease (CVD) than non behavioral health recipients (21% v 15%). They have higher rates of pulmonary disease than non behavioral health recipients (19% v 15%). And rates of diabetes are higher for clients as well (12% v 10% respectively).

28% of Medicaid adult recipients have one or more of the conditions. 34% of adults with a behavioral health condition have one or more compared with 26% without.

Payments increase for recipients with a higher count of these three medical conditions, that is, each co-morbid medical condition adds to average payments. The average cost of persons with one of the conditions is twice the cost of persons with none. The addition of each medical condition adds over \$10,000 to the average cost.

Findings from this analysis of Medicaid data support the need for long term treatment for a substantial proportion of clients.

## **Developmental Performance Indicators**

Ideally, a Performance Management System would report on all clients accessing a treatment system. In this report, it is noted that two cohorts are excluded from initial performance indicators, Cohort 1 (Intake Only) and Cohorts 4 (Long Term Clients). This section discusses potential ways to include performance measures for these client groups.

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<sup>9</sup> Druss, Benjamin, Reisinger Walker, Elizabeth. Mental disorders and medical comorbidity. Research Synthesis Report no. 21, February 2011. Funded by the Robert Wood Johnson Foundation.

## Clients with an Intake Only

For Cohort 1, two ideas provide a basis for discussion of indicators. Generate a relative comparison of providers on 1) the proportion of clients with only an Intake CSR, and 2) the average client scores on CSR measures at Intake.

A significantly larger proportion of clients in Cohort 1 for one provider compared with the statewide average increases the concern for lack of engagement. There may be legitimate reasons for this difference that should be discussed prior to making it a performance measure.

A provider with significantly higher average client scores on CSR measure at Intake than the statewide average in this cohort also increases the concern for lack of engagement. Again, there may be legitimate reasons for this difference that should be discussed prior to making it a performance measure.

## Long Term Adults

For Cohort 4, long term clients, analyses of CSR episode data reveal little improvement on average CSR measures after initial gains. This group is predominately adults in treatment for mental health. Several potential explanations have been discussed that help explain the long term in treatment for some of these clients. These explanations include more serious mental health conditions and co-occurring medical conditions that complicate treatment for some clients. No explanation has been found in data available for long term treatment for some other clients.

Questions have been raised in the OISP advisory group for some of these long term clients. Are some perhaps 'languishing' in treatment; or could an alternative treatment be tried? Do some clients require ongoing support to maintain their current level of functioning? How good is their current level of functioning, and might it be good enough?

The last question can be addressed to some extent with CSR indicators from the most recent CSRs of long term clients. Mean scores from long term clients are compared with adult population data from the BRFSS on three measures, physically unhealthy days, mentally unhealthy days, and activity limitation days.

**Table 9 BRFSS Scores Compared with Long Term Clients**

| Mean days                 | Alaska Adults<br>BRFSS 2006-2010 | Long Term Clients<br>2013 CSRs | Difference |
|---------------------------|----------------------------------|--------------------------------|------------|
| Physically Unhealthy Days | 3.30                             | 9.30                           | 2.8        |
| Mentally Unhealthy Days   | 3.00                             | 9.50                           | 3.2        |
| Activity Limitation Days  | <b>2.00</b>                      | 9.00                           | 4.5        |

Long term clients report many times the days as adults in households on each of these indicators. They report 2.8 times as many physically unhealthy days, 3.2 times the mentally unhealthy days, and 4.5 times the activity limitation days. The question remains "Is it good enough?"

These three scores and CSR data as a whole are useful as indicators of client quality of life on average however they are more screening than assessment level indicators. It would be useful to obtain more information about these long term clients. This could be obtained through a utilization

review process that included structured chart reviews. The purpose would be to ascertain how well these long term clients are doing and answer the questions raised above.

## Alaska Medicaid Research

Analyses of Alaska Medicaid data are relevant to performance indicators however the interest is even broader than performance indicators. Medicaid background information including all recipients in a year and payments are discussed. The focus then moves to adult recipients served by DBH Grantees. These adults are largely long term adults in treatment for mental health. This is the group of interest for developing performance indicators. Two analyses of adults and costs are provided, 1) for adults with schizophrenia and other psychotic disorders, and 2) adults with co-occurring medical conditions. Both of these conditions help provide explanations for long term treatment.

### Medicaid Background

Health conditions are categorized based on diagnoses using a system developed as part of the Healthcare Cost and Utilization Project (HCUP) sponsored by the Agency for Healthcare Research and Quality.<sup>10</sup> 'Mental Illness' is defined in the HCUP system to include mental health, substance use, and developmental disorders. Three observations are relevant to the categorization of '5 Mental illness' in Medicaid:

- The Division of Behavioral Health does not typically use the term "mental illness" and does not typically include as broad a group of conditions. Nevertheless, the term 'Behavioral Health' is used here instead of 'Mental Illness'.
- Two levels in the HCUP scheme are for Developmental Disability and they have the highest average payments: Disorders usually diagnosed in infancy (\$20,220) and Developmental disorders (\$19,147)
- 'Alcohol-related disorders' and 'Substance-related disorders' are included in '5 Mental Illness'

Table 10 shows the total number of Medicaid Recipients in SFY2011 and payments. Almost one-half recipients are adults (48%), about one third youths (32%), and the remaining 20% were children under age 13.

**TABLE 10. MEDICAID CLIENTS OF DBH GRANTEES SFY 2011**

| Age Group | Client Count | Percent Clients | Total PAYMENTS | % Pay | Avg. Pay  | Medical Payments | Average Medical |
|-----------|--------------|-----------------|----------------|-------|-----------|------------------|-----------------|
| Child     | 1,907        | 19%             | \$ 38,844,680  | 15%   | \$ 20,370 | \$ 9,768,368     | \$ 5,122        |
| Youth     | 3,181        | 32%             | \$ 102,309,249 | 40%   | \$ 32,163 | \$ 24,152,793    | \$ 7,593        |
| Adult     | 4,727        | 48%             | \$ 114,878,619 | 45%   | \$ 24,303 | \$ 73,456,889    | \$ 15,540       |
| Total     | 9,815        | 100%            | \$256,032,548  | 100%  | \$26,086  | \$ 107,378,050   | \$ 10,940       |

<sup>10</sup> Health conditions <http://www.hcup-us.ahrq.gov/toolssoftware/chronic/chronic.jsp>

Most of the payments to children and youth are for behavioral health, with relatively little for physical health. A similar pattern is seen for youths. The situation is very different for adults where more than half the payments go to physical health conditions. The average payment for physical health is \$15,540 and the total average \$24,303. For adults then, 64% of payments are for physical health. That is the reason for focusing only on adults in the remainder of the report.

## Schizophrenia and Other Psychoses

Alaska Medicaid data indicate that almost one third of adult grantee clients have a diagnosis categorized as ‘Schizophrenia and other psychotic disorders’ in SFY2011 (**Reference Table 11**). These 1,521 adults had the highest behavioral health payments of any behavioral health category at \$16,956,101. Total payments for these clients, adding in physical health claims, are \$43,194,187. Over 60% of payments for these clients are for health services.

Findings support the need for long term treatment for a substantial proportion of clients.

**TABLE 11. MEDICAID MENTAL ILLNESS DIAGNOSES FOR ADULT GRANTEE CLIENTS FY11**

COUNT OF CLIENTS AND PAYMENTS BY LEVEL 2  
SORTED BY NUMBER OF CLIENTS IN LEVEL

|        | '5 Mental Illness' Level 2 Grouping                              | Adults | % Clients | Payments            | % Pay | Avg Pay          |
|--------|--|--------|-----------|---------------------|-------|------------------|
| '5.8'  | Mood disorders   | 2,560  | 55%       | \$10,241,094        | 25%   | \$ 4,000         |
| '5.10' | <b>Schizophrenia and other psychotic disorders</b>               | 1,521  | 32%       | <b>\$16,956,101</b> | 41%   | \$ 11,148        |
| '5.2'  | Anxiety disorders  | 1,370  | 29%       | \$2,612,059         | 6%    | \$ 1,907         |
| '5.11' | Alcohol-related disorders  | 588    | 13%       | \$1,949,749         | 5%    | \$ 3,316         |
| '5.12' | Substance-related disorders                                      | 536    | 11%       | \$1,435,407         | 3%    | \$ 2,678         |
| '5.1'  | Adjustment disorders   | 347    | 7%        | \$ 339,674          | 1%    | \$ 979           |
| '5.15' | Miscellaneous mental disorders                                   | 239    | 5%        | \$ 587,535          | 1%    | \$ 2,458         |
| '5.3'  | Attention deficit  | 235    | 5%        | \$2,048,823         | 5%    | \$ 8,718         |
| '5.14' | Screening and history of mental health and substance abuse codes | 182    | 4%        | \$70,536            | 0%    | \$ 388           |
| '5.4'  | Delirium   | 120    | 3%        | \$901,012           | 2%    | \$ 7,508         |
| '5.9'  | Personality disorders  | 108    | 2%        | \$ 327,668          | 1%    | \$ 3,034         |
| '5.5'  | <b>Developmental disorders</b>                                   | 90     | 2%        | \$1,723,210         | 4%    | <b>\$ 19,147</b> |
| '5.13' | Suicide and intentional self-inflicted injury                    | 85     | 2%        | \$71,901            | 0%    | \$ 846           |
| '5.6'  | <b>Disorders usually diagnosed in infancy</b>                    | 65     | 1%        | \$1,314,273         | 3%    | <b>\$ 20,220</b> |
| '5.7'  | Impulse control disorders not elsewhere classified               | 51     | 1%        | \$827,294           | 2%    | \$ 16,221        |
|        | Total '5 Mental Illness'   | 4,690  | 100%      | \$41,406,337        | 100%  | \$ 8,829         |

The literature informs us that people with schizophrenia die earlier than the rest of the population. A Swedish study finds:

This early mortality was not due to suicide, but to cardiovascular disease, cancer, and pulmonary disease... in the Swedish study, people with schizophrenia were seen nearly twice as often for medical care as the general population. Yet even with these extra visits, heart disease and cancer went undetected: only 26.3 percent of people with schizophrenia who died of heart disease and 73.9 percent who died of cancer had been diagnosed previously.

What's the lesson for the United States? The authors end this new report with this reflection: "Under detection of important causes of mortality in schizophrenia patients in Sweden, despite universal health care, raises the question of whether it may be an even larger problem in countries without universal health care."<sup>11</sup>

Alaska data support the Swedish finding of these recipients receiving more medical care than the general population. The under-detection issue remains to be explored.

## Co-morbid Medical Conditions

Three medical conditions are analyzed for adults with co morbid behavioral health and physical health conditions (diabetes, cardiovascular disease (CVD) or pulmonary disease). (Note: these include two of the three in the Swedish study referenced above.) These three medical conditions were selected based on a study indicating that "...more than half of disabled Medicaid enrollees with psychiatric conditions also had claims for diabetes, cardiovascular disease (CVD) or pulmonary disease, substantially higher than rates of these illnesses among persons without psychiatric conditions..."<sup>12</sup>

Diagnoses on Medicaid claims were analyzed to identify adults with one of these categorizations. Brief descriptions of these conditions are followed rates Medicaid recipients with each condition. Then an analysis is done of costs for persons with one or more condition.

**Diabetes.** A disease characterized by an inability to process sugars in the diet, due to a decrease in or total absence of insulin production. May require injections of insulin before meals to aid in the metabolism of sugars.<sup>13</sup>

**Cardiovascular disease.** Any abnormal condition characterized by dysfunction of the heart and blood vessels. In the United States, cardiovascular disease is the leading cause of death. Some common kinds of cardiovascular disease are atherosclerosis, myocardopathy, rheumatic heart disease, syphilitic endocarditis, and systemic venous hypertension.

**Pulmonary disease.** Any abnormal condition of the respiratory system, characterized by cough, chest pain, dyspnea, hemoptysis, sputum production, stridor, or adventitious sounds.

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<sup>11</sup> Insel, Thomas. NIMH Directors Blog: Schizophrenia as a health disparity.

<http://www.nimh.nih.gov/about/director/2013/schizophrenia-as-a-health-disparity.shtml>

<sup>12</sup> Druss, Benjamin, Reisinger Walker, Elizabeth. Mental disorders and medical comorbidity. Research Synthesis Report no. 21, February 2011. Funded by the Robert Wood Johnson Foundation.

<sup>13</sup> A brief definition is from the online medical dictionary <http://medical-dictionary.thefreedictionary.com/pulmonary+disease>

Q. (COPD) chronic obstructive pulmonary disease the main causes of?

A. Mainly smoking, although ambient air pollution and industrial exposure to dust have also been implicated as causes.

Clients of grantees have higher rates of cardiovascular disease (CVD) than non-behavioral health recipients (21% v 15%). They have higher rates of pulmonary disease than non-behavioral health recipients (19% v 15%). And rates of diabetes are higher for clients as well (12% v 10% respectively).

28% of Medicaid adult recipients have one or more of the conditions. 34% of adults with a behavioral health condition have one or more compared with 26% without.

Payments increase for recipients with a higher count of these three medical conditions, that is, each co-morbid medical condition adds to average payments. The average cost of persons with one of the conditions is twice the cost of persons with none. The addition of each medical condition adds over \$10,000 to the average cost.

Findings support the need for long term treatment for a substantial proportion of clients.

## **Recommendations for Future Development**

The DBH recognizes the necessity and value of applying a continuous quality improvement process to the Performance Management System. From this research, four recommendations present themselves based on analyses to date: 1) continue data quality improvement, 2) develop performance indicators for clients not included currently, 3) refine CSRs specifically for Children and Youths, and 4) expand the research capacity.

### **Continue Data Quality Improvement**

The ability for data to inform decisions is dependent on good quality data. The Division has improved the quality of data and it is important that this work continue.

### **Develop Performance Indicators for Clients Not Currently Included**

Two groups have been identified as excluded from current performance indicators, Cohort 1 and Cohort 4. It is important to develop indicators for these groups in order to include all clients.

Change measures are not relevant to Cohort 1 since they do not report a Time 2. This significant group of clients (26%) is largely comprised of substance use/abuse adults. The concern is adults who may be lost to treatment due to lack of engagement. Most of these adults have a legal referral source and many are court ordered for evaluation only. For this reason it is difficult to identify the number who may be lost to treatment due to lack of engagement. Additional analysis is warranted to pinpoint these differences.

Two strategies are available to develop performance indicators for Cohort 1. Both strategies entail comparing scores for each provider with the statewide average on 1) the percent of adults in Cohort 1, and 2) the initial scores on measures. Generating these figures will lead to a discussion of outliers and potential reasons. This may lead to some groups of clients being excluded (such as court ordered evaluation only), and some specialty providers excluded.

Long term clients present a different problem for performance indicators. This significant group of clients (32%) is comprised largely of adults in mental health treatment. A large proportion of these

clients have co-morbid medical conditions, and a large proportion have schizophrenia and other psychoses. Additional analysis is warranted with the eye toward potentially dividing it into two groups based on tenure in treatment (perhaps 1-5 years, and 5+ years). Utilization review is also warranted given the duration and cost of treatment. A structured chart review could lead to clarification of sub-groups and treatments provided to clients in Cohort 4.

Reasonable performance measures could be developed for Cohort 4 based on their assessment of the quality of services provided.

## **Refine the Child and Youth CSR Instruments**

The analysis of CSR data has identified valid performance measures for children and youths however they are not as firm as the measures for adults. There are fewer measures that show improvement or gain, and fewer yet that show meaningful gain. A CSR instrument for children and a separate CSR for youth have the potential to offer significant improvements. At a minimum, each instrument could eliminate irrelevant questions and use more appropriate language for the target population.

A revision might also open the door to replacing existing questions and focusing on different measures. If new measures are going to be used they should be taken from existing instruments that have already demonstrated their usefulness. They should also focus on the domains of interest in the existing CSR.

## **Expand Research Capacity**

AKAIMS data provides a rich source of data for learning about who receives what services, from which providers, at what cost. The addition of the CSR adds a rich source of data on the outcome of those services. OISPP has created a foundation for studying those five issues and there is a lot of opportunity to learn more in order to improve services and outcomes. This entails expanding the research capacity of the Division. Several areas of research include studying

**CSR Measures.** Additional measures from the CSR need to be developed. Analyses of employment and residential variables on the CSR indicated some confusion on the selections clients made and a large proportion of clients not responding. A revision of the CSR was intended to resolve these problems. These measures need to be analyzed again after the revision to determine their value as performance indicators.

One measure that was found useful is Life Satisfaction as described in this report. This is calculated as the average across nine subjective quality of life measures. The nine measures were intended in the revision of the CSR to include two domains important in their own right, that is, Safety, and Support. These two concepts warrant additional analysis.

**Clients.** There are different ways to count clients depending on the application. For performance indicators, it is necessary to count clients in a provider. An individual client may be in multiple providers and is counted in each. Another useful way to count clients is unduplicated across all providers. This provides a more accurate count of clients statewide and a better way to compare across regions. One potential avenue of inquiry considers clients in multiple providers. How many clients are in multiple providers and what is the client flow between providers. One example is movement between inpatient or residential care and community care. For instance, how long does it take from inpatient/residential discharge to community treatment?

**Services and Costs.** OISPP has done some preliminary analyses of Medicaid costs, including both behavioral health and medical care. The analysis of co-occurring chronic conditions is informative and there is much more that could be done. A concern has already been raised about under-identification of some chronic health conditions among persons with schizophrenia and other psychoses. Additional research is warranted concerning the value of integration of behavioral health and medical care and the effectiveness of the various models available.

The research could go also into the types of services and amount of services that go into different levels of improvement for client cohorts.

**Other AKAIMS Data.** More work is needed on grouping and understanding client characteristics within cohorts. Several sources of information are available that could inform this including diagnoses, source of referral, and ASAM ratings.

## Summary

The Division has developed a solid foundation for a *Performance Management System*. The refinement of this *Performance Management System* has involved an ongoing collaboration of research and analysis including the Outcomes Identification & Systems Performance (OISP) provider advisory group, The Advisory Board on Alcoholism and Drug Abuse and the Alaska Mental Health Board and the Alaska Mental Health Trust Authority, with support and expertise from the Western Interstate Commission on Higher Education (WICHE). Over time, this has contributed to significant improvements in the instruments used to define data sets<sup>14</sup>, as well as the process and methods of data collection, analysis and reporting to inform the measurement of performance.

The purpose of this report is to provide a synopsis of multiple research and analysis conducted to inform and refine the Division's *Performance Management System* through a continuous quality improvement process. The focus of this document is on performance measures for providers based on client self-report, reflecting change over time. The client self-reports are reported within the Client Status Review (CSR) -- completed at admission to treatment and every four months as long as the client is in treatment, and at discharge from services. This report includes a review of research on:

- The validity of CSR Measures
- Case mix adjustment by client mix
- Client tenure in treatment
- Aligning performance indicators with client mix and tenure in treatment

CSR measures have been established as valid using three criteria. 1.) The instrument was created through statewide stakeholder collaboration for use as a clinical tool and for performance indicators. 2.) Measures perform as expected. 3.) Findings are useful for clinical use as well as for performance measures.

In order to develop performance indicators it is necessary to account for differences in clients served by providers. This is referred to as case mix adjustment or risk adjustment. It is also necessary to identify appropriate performance indicators for different groups of clients based on length of time or tenure in treatment.

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<sup>14</sup> The Alaska Screening Tool (AST), The Client Status Review (CSR), The Behavioral Health Consumer Survey (BHCS).

Case-mix adjustment methods are applied to account for differences between clients with characteristics that affect treatment outcomes as well as the indicators used to measure their respective outcomes. The background research of the DBH Performance Management System validates the need to measure treatment outcomes by the following specific populations:

- A. Severely Mentally Ill Adults (SMI)
- B. Severely Emotionally Disturbed Children/Youth (SED)
- C. Substance Use – Adults & Youth (SU)
- D. Co-occurring Disorders (COD)
- E. General Mental Health (GMH)

The primary performance indicators relevant to these populations and measuring change over time include:

- *“Life Satisfaction”* (9 items) for all populations (A, B, C, D, and E).
- *“Mentally Unhealthy Days”* for all populations except Substance Use (A, B, D, and E).
- *“Days Consumed Alcohol or Drugs”* for Substance Use and Co-occurring Disorders populations (C, D).

In order to develop performance indicators for providers it is necessary to identify appropriate performance indicators for different groups of clients based on length of time or tenure in treatment. Foundational research validates the differences between clients with different lengths of time in treatment, including different measures for each group. The following “cohorts” or groups, based on tenure in treatment have been identified:

- Assessment only: Includes clients who have only accessed assessment services.
- Cohort I: Includes clients who enter treatment, complete a CSR, and drop out of service without having been in treatment long enough to complete a second follow-up CSR.
- Cohort II: Includes clients entering treatment who have an Intake at Time 1 and a Time 2 CSR four months later and no additional CSRs. These client episodes are less than 6 months.
- Cohort III: Includes clients entering treatment who have an Intake at Time 1, a Time 2 CSR four months later, and a Time 3 CSR. These clients are in treatment from 6-12 months.
- Cohort IV: Includes clients in treatment for over one year. In the state-wide analysis these clients did not report improvement that extended and continued to 8 and 12 month intervals.

While valid performance measures are in place for a significant portion of clients, additional measures need to be developed for others.

This document provides recommendations for further development including:

- 1) Continue data quality improvement.
- 2) Develop performance indicators for clients not currently covered.
- 3) Refine CSR instruments specifically for Children and Youths.
- 4) Expand the research capacity.

## Appendix 1: Rules for Creating Episodes

CSR data indicate that agencies follow different rules for generating CSRs. This makes identifying cohorts using CSR data not straight-forward. For example, clients in Cohort 2 cannot be identified simply by an Intake CSR followed by a subsequent CSR. The data show several reasons for this. There may be multiple Intake CSRs in a short period of time, intermixed with multiple Ongoing and/or Discharge CSRs. For this reason rules were developed for identifying episodes based on time between CSRs.

1. If there is an Intake after an Intake or Continuing (without discharge before) is changed to continuing if the Intake or Ongoing is no more than 8 months previous.
2. If there is a Discharge before a Continuing or a Discharge, it is changed to Ongoing if the gap is no more than 8 months.

Here is an example of CSR records for one client that would be categorized as a single episode:

| Review Date | Review Type                  |
|-------------|------------------------------|
| 2/2/12      | Initial                      |
| 4/27/12     | Ongoing                      |
| 8/18/12     | Ongoing                      |
| 11/22/12    | Ongoing                      |
| 3/20/13     | Ongoing                      |
| 6/8/13      | Ongoing                      |
| 10/21/13    | Initial (changed to Ongoing) |
| 11/29/12    | Discharge                    |

## Appendix 2: SFY2013 Counts and Percents by Age Group

**TABLE 12 COHORT COUNTS AND PERCENTS**

| Cohort       | Description  | Episodes SFY2013 |              |               |               | Percent in Each Cohort |             |             |             |
|--------------|--------------|------------------|--------------|---------------|---------------|------------------------|-------------|-------------|-------------|
|              |              | Child            | Youth        | Adult         | Total         | Child                  | Youth       | Adult       | Total       |
| 1            | Intake Only  | 372              | 595          | 3,624         | 4,591         | 17%                    | 27%         | 28%         | 26%         |
| 2            | Short Term   | 92               | 295          | 1,534         | 1,921         | 4%                     | 13%         | 12%         | 11%         |
| 3            | Intermediate | 753              | 821          | 3,734         | 5,308         | 35%                    | 37%         | 29%         | 31%         |
| 4            | Long Term    | 959              | 520          | 4,090         | 5,569         | 44%                    | 23%         | 32%         | 32%         |
| <b>Total</b> |              | <b>2,176</b>     | <b>2,231</b> | <b>12,982</b> | <b>17,389</b> | <b>100%</b>            | <b>100%</b> | <b>100%</b> | <b>100%</b> |

**TABLE 13 ACTIVE ON FIRST DAY COUNTS AND PERCENTS**

| Active or Start in Year | Episodes SFY2013 |              |               |               | Percent in Each Cohort |             |             |             |
|-------------------------|------------------|--------------|---------------|---------------|------------------------|-------------|-------------|-------------|
|                         | Child            | Youth        | Adult         | Grand Total   | Child                  | Youth       | Adult       | Total       |
| Active on First Day     | 1,050            | 741          | 5,119         | 6,910         | 48%                    | 33%         | 39%         | 40%         |
| Start in Year           | 1,126            | 1,490        | 7,863         | 10,479        | 52%                    | 67%         | 61%         | 60%         |
| <b>Grand Total</b>      | <b>2,176</b>     | <b>2,231</b> | <b>12,982</b> | <b>17,389</b> | <b>100%</b>            | <b>100%</b> | <b>100%</b> | <b>100%</b> |

**TABLE 14 ADULTS BY COHORT AND REASON FOR TREATMENT**

| Adults       |                     | Clients SFY2013        |              |              |               | Percent in Each Cohort |             |             |             |
|--------------|---------------------|------------------------|--------------|--------------|---------------|------------------------|-------------|-------------|-------------|
| Cohort       | Description         | SA                     | MH           | COD          | Total         | SA                     | MH          | COD         | Total       |
| 1            | Intake Only         | 1,465                  | 1,645        | 514          | 3,624         | 34%                    | 23%         | 32%         | 28%         |
| 2            | Short Term (<6 mth) | 1,137                  | 187          | 210          | 1,534         | 27%                    | 3%          | 13%         | 12%         |
| 3            | Intermediate (6-12) | 1,297                  | 1,844        | 593          | 3,734         | 30%                    | 26%         | 37%         | 29%         |
| 4            | Long Term (1+ year) | 383                    | 3,431        | 276          | 4,090         | 9%                     | 48%         | 17%         | 32%         |
| <b>Total</b> |                     | <b>4,282</b>           | <b>7,107</b> | <b>1,593</b> | <b>12,982</b> | <b>100%</b>            | <b>100%</b> | <b>100%</b> | <b>100%</b> |
| Adults       |                     | Percent in Each Cohort |              |              |               |                        |             |             |             |
| Cohort       | Description         | SA                     | MH           | COD          | Total         |                        |             |             |             |
| 1            | Intake Only         | 34%                    | 23%          | 32%          | 28%           |                        |             |             |             |
| 2            | Short Term (<6 mth) | 27%                    | 3%           | 13%          | 12%           |                        |             |             |             |
| 3            | Intermediate (6-12) | 30%                    | 26%          | 37%          | 29%           |                        |             |             |             |
| 4            | Long Term (1+ year) | 9%                     | 48%          | 17%          | 32%           |                        |             |             |             |
| <b>Total</b> |                     | <b>100%</b>            | <b>100%</b>  | <b>100%</b>  | <b>100%</b>   |                        |             |             |             |