# Outcome Data for 2011

Jasper Mountain Psychiatric Residential Program
February 2012

**Executive Summary**

The following outcome data reports on the children discharged from the intensive residential treatment program during calendar 2011. The fourteen graduates were given post-tests to compare with data obtained from pretests at the start of treatment generally nine to twelve months earlier. The results of data provided by parents, caseworkers, clinical team as well as child self reports on eight measures over the last year reflected the following:

- Most of the major problem behaviors the children entered the program with were eliminated, and the majority of the remaining problem behaviors were much improved. Major behavior improvement occurred in 90% of the problem areas.
- The data resulted in a 66% average improvement for clinical treatment goals and objectives for all children.
- The children were downgraded in impairment from severe to moderate.
- As measured by the CAFAS, this cohort of children were the second most seriously impaired coming into the program and showed the best improvement of any group of children (43% lower score).
- Children with attachment disorders can be very difficult to treat, but these children at discharge showed improved relationship skills at the end of treatment. There was improvement in relationship skills and ability to attach and bond in 92% of the graduates.

The report ends with a discussion of what is viewed overall as very positive improvement for the 201 graduates coming out of the program the last fourteen years.

**Introduction**

Since the last fourteen years Jasper Mountain has conducted a comprehensive assessment of the children in its programs. The two primary outcome assessment components are what the organization calls outcomes, consisting of pre and post testing while in the program, and follow-up reflecting the child's progress after discharge for up to five years. The information reported here is based upon data regarding the fourteen children who were discharged from the intensive residential treatment program during calendar 2011, with some reference to all 201 children discharged since 1998.

Outcome data essentially indicates the changes that occur during the process of the treatment program. While very useful, outcome data has limitations. It does not say if the changes are temporary or lasting, for this purpose a longitudinal follow-up study is needed. If the two data sets are compared, it is easy to see that lasting changes are of more practical importance than short-term changes. However, it is extremely unlikely that lasting changes are possible without the foundation of initial changes. Because of this, and the ability to identify improvement of children in a particular year, outcome data is very important.

Another reason outcome data is important is to determine if the treatment program is in fact accomplishing what it intends to accomplish during the time the child is in residence. Based upon the answer to, "Do children in the program improve over time?" decisions can be made to improve specific aspects of the program. Follow-up data does not indicate if the child made changes while in the program; to answer this question, outcome data is required. The best outcome data is a comparison of two snap shots--at the point treatment begins and again when it ends. The difference between the two measures indicates changes the child has made during treatment.

The third value of outcome data is to consider the cohort of children the program has been asked to work with over the last year and the years previously. In this regard the trends in the children will be discussed since 2004. This time period has been picked because the Oregon mental health system changed the way it uses intensive residential treatment in 2005. Continuing a theme since 2005, most of the children in this sample are from states other than Oregon.

It must be mentioned that all changes made by children cannot be immediately attributed to the treatment provided. Particularly with young children, there is a developmental or maturational expectation that the learning curve of young children is greater than for other periods of life. This is one reason that treatment can be most efficient (highest return for the investment) at younger developmental ages. Maturation indicates an expectation that some children would have matured even without treatment. An experimental research design with tightly controlled variables and

random assignment would be necessary to indicate exactly what caused the changes. Such a design is impractical with the multitude of intervening variables in residential treatment. With such a research design, there would need to be a control group and random assignment of children to our program and other emotionally disturbed children who would intentionally receive no treatment. This creates ethical problems denying children who seriously need treatment from obtaining it just so a research project can be conducted. The agency has opted to collect outcome data that can measure the changes themselves without definitively identifying the cause of the changes. This type of design is called outcome assessment and is a recognized approach in the outcome literature. Our priority is to help children heal and grow regardless of whether we can take any specific credit for the improvement.

There are three types of data or observations of change that have been used. The first is quantified standardized data, the second is personal subjective judgments, and the third is objective behavioral tracking. One or more of these approaches is commonly used in outcome studies, with the most complete assessment coming from a combination of all three. All three have something to add to the reflection of changes the child has or has not made during treatment. Multiple sources of data and observers can provide a more complete picture.

One of the unique aspects of our agency's outcome study is the child has an opportunity to contribute to the process and provide a subjective point-of-view. The child's observations of himself or herself are combined with the observations of parents and the clinical team. All aspects of the outcome data have been quantified to enable measuring various important objectives of treatment.

**Measurement Tools**

The following eight standardized, judgment, and behavioral tracking measures are used for outcome data:

- State of Oregon Level 5 Criteria—this behavior tracking instrument is used by the State to screen which children need intensive treatment. The instrument identifies eleven areas of serious behavior disorder.
- The Vineland Adaptive Behavior Scales (Sparrow, Balla and Cicchetti, 1984)—this standardized instrument reviews the important skill areas of Communication, Daily Living Skills, Socialization and Maladaptive Behavior. Information on this instrument primarily comes from parents.
- The Personal Inventory of Kid's Optimal Capacities (Ziegler, 1998)—this scale allows children to assess their own development in multiple areas of skills and capacities.

- Clinical improvement—each child's individualized treatment plan forms the basis of rating improvement on very specific areas that are pertinent to the child. The observations of improvement come from the clinical team in each area of the measurable treatment objectives.
- The Attachment Disorder Assessment Scale—Revised (Ziegler, 2006)—this standardized scale has been used for two decades and recently published with the results of independent psychometric research from six states. It has been shown to be useful in determining the presence and severity of attachment issues.
- Child and Adolescent Functional Assessment Scale/CAFAS (Hodges, 1990)—this is a standardized assessment instrument to determine the level of functioning in multiple areas of the child's life including home, school, community, behavior, emotions and others.
- LaneCare Clinical Evaluation Instrument (Scheck, 2000)—this is a standardized assessment instrument to reflect the overall psychiatric and behavioral functioning of the child in fourteen domains.
- Child and Adolescent Service Intensity Instrument (AACAP, 2005)—This measure of mental health acuity has been chosen by the State of Oregon to help determine the level of need for treatment intensity.

**Data Results**

**State of Oregon Level 5 Criteria**

The State Department of Human Services uses this instrument to determine if children have a high level of need and are appropriate for intensive residential services. This information is completed by the caseworker or referral source at the time of admission, which represents the major behavioral concerns or target problem behaviors necessitating the referral. This form includes the following behaviors: aggressive, assaultive, abusive, destructive, depressed or suicidal, firesetting, sex offending, feces smearing or soiling, other inappropriate sexual behavior, psychosis, self-abuse, running away, mental retardation or developmental delays. The significance of these issues and behaviors is that they can often prevent a child from living in a family. This measure is more objective than other measures since the child either exhibits the behavior or does not.

As has been the case every year, graduates of the program in 2011 overall showed the most significant improvement on this particular scale of the eight measurements obtained. The fourteen graduates this year came into the program with an average of 4 major problem areas each, this is similar to previous years. This indicates that at admission the children in our program have multiple serious problem areas. At the end

of treatment the average child reduced the serious behavior areas significantly. Significant improvement was noted at graduation in 90% of the problem areas, with 10% of specific problem behavior remaining the same (no deterioration was indicated on this measure). This rate of improvement is similar but somewhat higher than the average since 2004. Our data over the years has found a correlation between length of stay and improvement. Oregon children are given shorter lengths of stay by funding priorities, however with the majority (75%) of children from states other than Oregon the lengths of stay have increased. The result is that improvement has not improved to pre-2004 levels of around 90%. This data further underscores the program's track record of having most of the children leaving this intensive program much improved and most children are able to be maintained in the community.

In addition to the overall improvement of 90%, 51% of the problem areas were completely eliminated, 49% of problems that remained were much improved, and 10% of problem areas persisted. Overall the children reflect significant improvement in the behaviors that brought them to intensive residential treatment.

**The Vineland Adaptive Behavior Scales II**

The Vineland Adaptive Behavior Scales II is a standardized instrument rating several adaptive "life skills"—communication, daily living skills, and socialization. It provides a reliable and validated means to compare children in the program with children in the general population. This instrument uses the opinions of the family, which is important since a family will be the most likely next step for the child.

The results of the Vineland II for the children discharged in 2011 varied by area. Coming into the treatment program, the children were quite delayed in all three domains, particularly socialization. This has been the pattern every year. At the beginning of treatment, the children collectively were the lowest functioning in the area of socialization averaging at the 1st %ile, which is the lowest of any previous year. This means that on average these fourteen children would be last in line of 100 children in proficiency of socialization skills. Beginning treatment the children averaged the 9$^{nd}$ %ile for daily living skills and 13$^{th}$ %ile for communication. These scores are somewhat higher in communication but lower in daily living skills than previous years. At the end of treatment the children showed improvement in all three areas. Consistent with most previous years the area of socialization improved the most from the 1$^{st}$%ile to the 21$^{st}$%ile. Said another way the children during treatment caught up much ground with their nationally normed peers and passed 20 children in that line of 100. Communication improved from 13$^{th}$ %ile to the 17$^{th}$ %ile. Daily living skills improved from the 9$^{th}$%ile to the 11$^{th}$%ile. Of the overall Vineland measurements, 57% indicated improvement, 40% showed some decline and 3% remained the same. These are on the low end of gains made by children for a single year. These modest gains overall may continue to reflect children removed from the program for financial reasons before

more subtle gains are made. However, adaptive skills can be learned and improved in less restrictive treatment settings if more serious behavior is under control. Although better than last year, this year's graduates showed minor improvement overall but they remain significantly behind most peers of their age.

Research is often cited that congregate care can have adverse results with the contagion of child learning problem behaviors. This may occur in some settings but is not indicated in the data on graduates of Jasper Mountain over time. First of all the vast majority of serious problem behaviors are extinguished and it appears significant opportunities in a residential setting to interact and develop social skills, communicate with peers and adults, and learn daily living skills (although these areas showed less improvement than in the past with shorter stays) has helped these children gain ground on their normal peers. Some research has postulated that shorter lengths of stay in residential settings show the same gains or improve gains. This has not been found in our outcome studies over the years. Longer stays have reflected better improvement than shorter stays in all areas measured.

**The Personal Inventory of Kid's Optimal Capacities—The PIKOC**

The PIKOC provides a unique tool currently available only to our program. This instrument brings an important component of growth to the overall consideration of improvement—the child's opinion. Although some would question the value or truthfulness of the child's self-opinion, research on the PIKOC has shown that children tend to rate themselves more evenly than parents or teachers, in that they rate their weakness slightly higher and their strengths slightly lower than adults (parents and teachers). With this in mind, the self-reflection of the children is of interest given that most have shown significant growth and improvement on several other measures. Consistent with all previous years, the opinions of the children were less positive about their own progress than the opinions of adults. Overall the children rated themselves on average 7% improved, which is somewhat lower than previous years.

Overall the "health integrity index" or total score on the PIKOC gives a picture of how the child views his/her overall functioning in eleven areas. In 1998 there was not a significant change in the pre and post test, in 1999 there was a 6% improvement, in 2000 a 13% improvement, in 2001 a 4% improvement, in 2002 a 3% improvement, in 2003 a 15% improvement, in 2004 a 12% increase, 18% in 2005, 15% in 2006, 18% in 2007, 11% in 2008, 16% in 2009, 8% in 2010 and 7% in 2011.

Overall the rate of improvement indicates that the children see themselves modestly better in overall health. Since other measures indicate that children improved more than this area, this modest effect may be caused by several factors. Although it can't be determined from this data exactly what each child was thinking, there are a couple useful clues. First, a major aspect of the treatment program is on honest self-reflection

(some children gave lower post scores which were more accurate in the opinion of adults). Peer feedback has been built into the program on a daily basis aiding in accurate self awareness. Second, children tend to understate strengths on the instrument. It is conceivable that many of the children may be cautious about their own improvement. It is possible that children have both adjusted their self-perceptions (accurately lowered their scores based on improved self-awareness) as well as raised other scores based on awareness of self-improvement. As with the data from previous years, the children's self-reports of improvement are the most conservative of any of the outcome measures. Although this surprises some adults, this pattern is consistent with research findings that children are conservative when rating personal improvement.

**Clinical Improvement**

The clinical improvement is the data that is most specific to the individualized treatment issues of each child. Improvement on clinical treatment issues rounds out the outcome data by adding the opinion of the clinical team who are responsible to develop, implement, and evaluation the treatment plan. Because treatment issues go right to the heart of the child's problems, they can be some of the more difficult improvements for the child to make.

Each of the treatment goals was assessed for the percent of improvement based on the manageable objectives in the treatment plan. Each child's treatment issue scores were averaged, as were the average overall scores for each child's clinical improvement. The result was significant improvement across the board in clinical treatment areas. The average percent increase was 66%, higher than the last two years. Since treatment issues are some of the more difficult and intractable concerns for each child, this rate of improvement is considered good given the intensive population it reflects.

**The Attachment Disorder Assessment Scale—Revised**

This instrument was given to all the children this year where in the past it was only given to children with a primary diagnosis of reactive attachment disorder. Assessing the severity of attachment problems involves consideration of the child's developmental history, the quality of relationships with others and problematic behaviors. The instrument has now been given to 133 of 201 graduates, or 66% of the children discharged.

Although some children rated in the "severe attachment disorder" range, the average of the children at the beginning of treatment was rated "moderate attachment disorder." After residential treatment, the average score dropped 42%, which is consistent with previous years. 92% of the children improved in their ability to develop attachment relationships this year. In considering these results it is important to keep in mind that of the three areas that determine the child's score, one cannot be lowered--the child's

history. Therefore the gains came in the child's behavior and quality of relationships, which are important gains and will be needed in the family placements most of the children transitioned into.

**The Child and Adolescent Functional Assessment Scale/CAFAS**

The next instrument was the Child and Adolescent Functional Assessment Scale. To obtain aggregate data, the overall score for the instrument was compared pre and post treatment. On the scale, the higher the score, the higher the dysfunction. The cohort mean score upon entering the program was 145, or the second highest score of any previous year (the average was 154 in 2008). When these same children were discharged from the program the mean score dropped to 83. 2010 has the highest CAFAS discharge score in our program's history indicating that funding sources removed children with very serious existing disorders. This year lengths of stay increased and so did CAFAS improvement. The improvement rate of 43% is significantly higher that improvement for past years. 100% of the children improved for the first time ever. On the CAFAS this reflects that the children on average left the program with a score of 83 reflecting moderate impairments for the combination of the four areas of Role Performance, Behavior toward others, Moods/self harm, and Thinking. The change in scores reflects improvement for many of the children and most were able to transition to families. The discharge CAFAS reflects that children continue to be a challenge in a family setting which is an issue addressed by the treatment foster care program.

**The LaneCare Clinical Evaluation Instrument**

The fourteen domains of the LCEI are: hospitalizations, medications, recent problems, severity of symptoms, intensity of service need, symptom management, duration of symptoms, school/work functioning, daily living activities, family support, stability of housing, community support, quality of life, and self-efficacy.

The highest (most severe) score possible is 52. The fourteen children were very consistent on this scale at the beginning of treatment ranging from a low of 27 and high of 49. On the LCEI range, the mean pretest score of graduates was 41, which equates to the higher range between serious and severe problems in overall functioning. The posttest mean was 31, which equates to moderate problems in overall functioning. This is an average improvement of 24% on this measure. Considering the full group, 93% improved, 7% stayed the same. As a group, the children improved in functioning from serious/severe problems to moderate problems. The overall result was that the program's residents exhibited significant psychiatric and behavioral problems in the beginning of treatment but much less so at the end.

**Child Assessment of Service Intensity Instrument (CASII)**

This is the sixth year that this instrument has been included in the outcome measures. This instrument was designed by psychiatrists to determine the level of intensity of treatment the child needs. It was included due to the fact that the new intensive mental health system now uses it on all children. On the pretest the children averaged a score of 25. On the post test they improved to 20. 84% of the children improved on this measure, 8% stayed the same and 8% showed deterioration of psychiatric acuity at discharge. At times a child can decompensated due to anxiety of transitioning out of the program.

**Comparison of the Last Six Years**

Comparing Oregon children discharging for the program the last seven years reflects more similarities than differences. The children over this period are remarkably similar in overall functioning on several measures. The exceptions are Vineland scores, CAFAS scores and clinical improvement. On the Vineland, the children are much more delayed in the last four years and the discharge CAFAS scores the last three years were the highest in our history. There is no question looking at this data that the system of care in Oregon is referring more damaged children and requiring that they discharge with more severe issues than in the past. Because of both of these factors the level of clinical improvement for Oregon children, while good, is far lower than the decades before the mental health system changed in 2005. Children from other states on the average stay in the program longer and have better outcomes. While Jasper Mountain has its view of the Oregon system changes, system change advocates have their own view--higher levels of disturbance indicate the right children are receiving help, while the children are being discharged at higher levels of disturbance the shorter stays mean more children are given the intensive treatment they need.

**[+ indicates improvement, - indicates deterioration]**

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|
| **PIKOC** | +18% | +15% | +18% | +11% | +16% | +08% | +07% |
| **LCEI** | +21% | +20% | +09% | +20% | +15% | +14% | +24% |
| **Clinical** | +62% | +56% | +63% | +58% | +45% | +59% | +66% |
| **Level 5** | +82% | +74% | +77% | +80% | +64% | +76% | +90% |
| **CAFAS** | +34% | +36% | +33% | +38% | +29% | +25% | +43% |
| **VIN. Com.** | +71% | +14% | +36% | +40% | +160% | +100% | +31% |
| **DLS** | +130% | -22% | +30% | +111% | +13% | -59% | +22% |
| **Soc.** | +1000% | +22% | +60% | -40% | -50% | -19% | +2000% |
| **ADAS-R** | +17% | +37% | +51% | +34% | +22% | +58% | +42% |
| **CASII** | -- | +20% | +16% | +19% | +12% | +19% | +20% |

**Discussion**

This year's data, when considered with data from all children discharged from the program since 1998, and utilizing several sources of observations, provides evidence that children improved most substantially in these areas: serious behavior, overall disturbance as rated by the LCEI and by the CAFAS, clinical improvement, and relationship skills. As can be seen in the multi-year data, 2011 showed the largest improvement of any year in the following areas: socialization, Level 5 serious behavior, clinical improvement, stability rated by the LCEI, and CAFAS improvement. When their overall impairment is measured, they were downgraded from severe to moderate.

There was strong agreement across measures reflecting improvement. All ten measurements reflected modest to strong improvement. Most notable were the five measures mentioned above that had the strongest improvement of any of the last six years.

The impact of the changes in the Oregon mental health system are also being monitored. There appear to be three impacts we observe in our data. There is no question that shorter stays have resulted in more children entering and discharging from the program than in previous years. The second impact is with fewer children in the residential programs in Oregon, the population is anticipated to be more disturbed. The data from our program would support this impact, with the children from the last three years showing the highest level of disturbance of any previous years.

The final impact of the new intensive mental health system is somewhat less clear. The trend to shorter stays among Oregon children was counterbalanced with out of state children with longer stays in treatment. Over the last four years shorter residential stays for Oregon children have coincided with a lower level of improvement on some measures. This result may be due to the clearly more serious cohort of children coming into the program, but with all other factors within the program being approximately the same, the only specific change is that children now are removed from the program by funding sources at a more serious level than in the past. Although research is sometimes referenced that shorter stays have not hindered outcomes or may even improve outcomes, this has not been the case at Jasper Mountain since the system changed in 2005. Despite our challenges with changes in the system of care, if the program could guarantee to parents at the point of intake for new children, the following track record reflected in the above outcomes, it would undoubtedly be received with enthusiasm:

- 90% improvement in serious behavior.
- Significant improvement in relationship skills.
- An improved self-perception of health by the child.
- Improvement in global functioning.
- Reduction in severity from severe to moderate.

We are now fourteen years into the process of outcome measurements with all 201 children who have been discharged since 1998. However, the results to date are showing an emerging and consistent trend toward significant improvement in all areas. The data to date provides a strong positive reflection of the improvement made by these children at the point they left the program compared to when they began treatment.