



Providing Community-Based Treatment to Young Adults with Mental Illness

Outcome Report

J U N E 2 0 1 7

Prepared by:
Kristin Dillon, Ph.D.

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Introduction

One in five youth age 13 through 18 lives with a serious mental health condition.¹ In addition, half of all lifetime cases of mental illness begin by age 14, while three-quarters begin by age 24. However, most young people wait an average of 8 to 10 years before accessing treatment for their mental illness. To address the gap in support for this young adult population, Guild Incorporated launched an Assertive Community Treatment (ACT) service specifically focused on individuals age 16 through 20 who have a diagnosis or symptoms of a serious mental illness that is impeding their ability to meet their everyday needs. This initiative is called Equilibrium (EQ). One goal of EQ is to intervene after the first episode of a mental health crisis or psychotic episode.

ACT is a community-based service model that provides mobile, comprehensive psychiatric treatment and rehabilitation to allow individuals with a serious mental illness to live independently. The ACT services are offered 24/7 by a team of professionals and peers available to help across different areas of life, including mental health, physical health, housing, education, and employment. ACT team members are trained in the areas of psychiatry, psychotherapy, social work, nursing, substance abuse, education, and vocational rehabilitation. In addition, each ACT team includes a certified peer recovery specialist.

This report describes outcomes from 84 participants with at least 45 days of enrollment as of April 15, 2017. The report also compares results for participants who meet the traditional diagnostic eligibility for ACT services (i.e., those with a psychosis or bipolar diagnosis) and those who do not in order to determine whether the program has differential benefits for these two groups. Please see the Appendix for more information about the sample and methods included in this report.

¹ National Institute of Mental Health. (2017). Prevalence Statistics. Retrieved April 15, 2017 from: <https://www.nimh.nih.gov/health/statistics/index.shtml>

Participant characteristics at enrollment

As of April 15, 2017, 84 participants in the Equilibrium (EQ) initiative have been enrolled for between 1.5 and 36 months (average of 15 months). Of these participants, half (50%) were still enrolled on April 15, 2017. Of those no longer enrolled, the most common reasons for discharge were: transfer to another program or provider (19%), participant declining services (14%), participant moving (5%), and participant no longer needing services (5%).

Diagnoses

Participants were placed into two groups based on their International Statistical Classification of Diseases and Related Health Problems (ICD-10) mental health diagnosis, a medical classification list by the World Health Organization (WHO). The first group includes 41 participants with a traditional ACT diagnosis, including schizophrenia, schizoaffective, delusional disorders, and bipolar 1. The other group includes the remaining 43 participants, most of whom have a diagnosed mood disorder (46%) or neurotic, stress-related and somatoform disorder (31%). The reason for this grouping is to identify whether the initiative differentially benefits participants who meet the traditional ACT diagnostic criteria compared to those who do not. See Appendix for more information about the sample and these groupings.

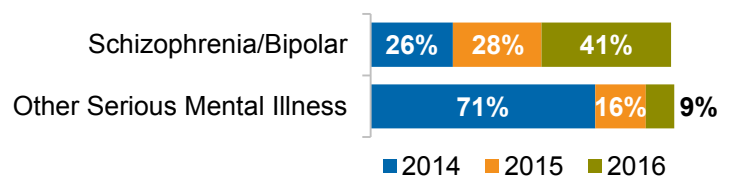
Throughout this report, those with a traditional ACT diagnosis are referred to as “those with a Schizophrenia/Bipolar spectrum diagnosis” and those who do not are referred to as “those with another serious mental illness (SMI).” It should be noted that all participants have a diagnosed mental illness that is impairing their daily living, so all are eligible for ACT services.

Timing of enrollment

- The initiative has evolved over time, there may be differences due to when participants enrolled. Overall, half of all participants (50%) enrolled in EQ in 2014, the first year of the program. Roughly 20 percent enrolled in both 2015 (21%) and 2016 (24%). In 2017, four participants (5%) had been enrolled for 45 days or longer as of April 15, 2017.

- **There were significant differences in when participants from each group enrolled in the program.** Most participants with a Schizophrenia/Bipolar spectrum diagnosis enrolled in 2015 or 2016 (69%), while most with another SMI enrolled in 2014 (71%; $p=.000$; Figure 1).

1. Year of enrollment by group***

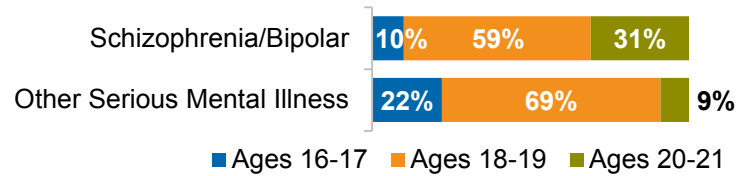


Note. Significance tests were conducted using chi-square tests. Differences are significant at * $p < .05$, ** $p < .01$, or *** $p < .001$.

Age

- Aligned with the program design, all participants were between age 16 and 21 at enrollment into EQ. Eighty-three percent of participants were age 18 or older.
- **Participants with a Schizophrenia/Bipolar spectrum diagnosis tended to be older.** These participants had a significantly higher average age (Average = 19 years) compared to those with another serious mental illness (Average = 18 years; $p=.005$; Figure 2). This may be due, in part, to the later onset of psychosis diagnoses, such as schizophrenia.

2. Participant age by group**

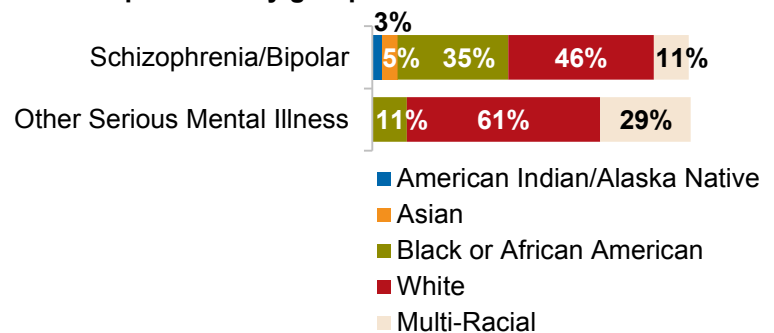


Note. Significance tests were conducted using chi-square tests. Differences are significant at * $p < .05$, ** $p < .01$, or *** $p < .001$.

Race

- Over half of participants, overall, identified as white (52%), while one-quarter identified as Black or African American (25%) and one-in-five identified as multi-racial (19%).
- **Participants with a Schizophrenia/Bipolar spectrum diagnosis were significantly more likely to identify as Black or African American (35% compared to 11%) and significantly less likely to identify as white (46% compared to 61%; $p=.049$; Figure 3).**

3. Participant race by group*



Note. Significance tests were conducted using chi-square tests. Differences are significant at * $p < .05$, ** $p < .01$, or *** $p < .001$.

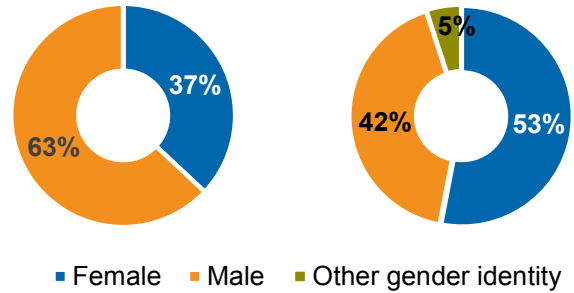
Gender

- Just over half of participants identified as male (52%) and the rest identified as female (45%) or another gender identity (2%).
- **There were also gender differences between groupings.** The majority of participants with a Schizophrenia/Bipolar spectrum diagnosis identified as male (63%) while the majority of participants with another SMI identified as female (53%). This difference is not statistically significant, but it is trending toward significance ($p=.052$; Figure 4).

4. Gender differences

Schizophrenia/Bipolar

Other Serious Mental Illness



Participant service use

All participants received consistent face-to-face visits

- Consistent, in-person visits with participants and/or their families are an important aspect of ACT services, to address comprehensive continued and emerging needs and build a trusting relationship. Overall, participants and/or their families tended to have an average of one (44%) or two (45%) face-to-face visits per week during enrollment.
- **Those with a Schizophrenia/Bipolar spectrum diagnosis tended to have slightly more frequent visits**, though the difference was not statistically significant. Over half of those with a Schizophrenia/Bipolar spectrum diagnosis had an average of two visits per week (54%), while over half of those with another SMI had an average of one visit per week (51%).

Most face-to-face visits took place in a community or home setting

- Another important function of ACT services is that they are mobile and community based, to allow participants to access treatment and learn coping strategies in a familiar setting that affords them optimal independence. In aggregate, 87 percent of face-to-face visits took place either in the community (35%) or their home (53%), while 10 percent took place in an out-of-home placement setting (e.g., Intensive Residential Treatment Services, Regional Treatment Center, hospital, or Adult Foster Care). Only 3 percent of visits were in the Guild office.
- Rates were similar for those with a Schizophrenia/Bipolar spectrum diagnosis and those without in terms of community (33% versus 37%) and home (52% versus 53%) visits. However, **those with a Schizophrenia/Bipolar spectrum diagnosis were significantly more likely to be seen in an out-of-home placement setting (13%)** compared to those without (7%; $p=.000$). Only 3 percent of visits for either group were in the Guild office.

EQ helped all participants obtain preventative dental and/or physical health care

- In order to promote improved health, all participants enrolled for at least three months had dental and/or physical health wellness checks. Sixty-two percent had at least one check within the first three months of enrollment, and 77 percent had at least one check after the first three months. Participants had an average of two dental and/or physical wellness checks per year, with a range of one to five per year.

- **Participants with a Schizophrenia/Bipolar spectrum diagnosis were more likely to have their preventative checks within the first three months of enrollment.** Three-quarters of participants with a Schizophrenia/Bipolar spectrum diagnosis had a dental and/or wellness check in the first three months, which is a statistically significant difference from those with another SMI (49%; $p=.041$). Both groups had an average of two visits per year of enrollment.

EQ staff followed up with participants after nearly all mental health hospital discharges

- EQ staff aim to follow up with participants within one week of a mental health hospitalization discharge to check on functioning, assess needs, and help implement the treatment plan. Overall, EQ staff followed up with participants within 7 days for 81 percent of mental health hospitalizations. In addition, EQ staff followed up on 10 percent of hospitalizations more than one week after discharge. Only 9 percent did not receive a follow-up contact.
- **Rates of follow-up were similar for those with and without a Schizophrenia/Bipolar spectrum diagnosis.** EQ staff consistently followed up with both groups within a week of hospital discharge (78-83%).

Participant outcomes

The EQ initiative supports participants to achieve several key outcomes, including:

- Improving stability
- Increasing safety
- Optimizing recovery environment
- Ensuring housing stability
- Increasing community tenure, or their time living in the community rather than a residential program
- Achieving educational goals of obtaining a high school diploma or GED, and possibly further education
- Increasing employment opportunities

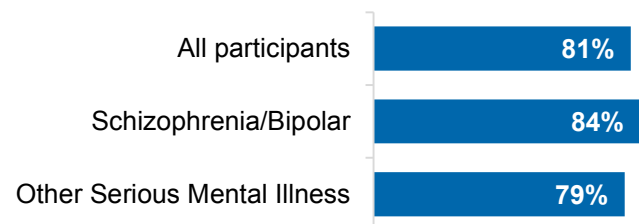
Key metrics addressing each of these outcomes is described below.

Improving stability: 81 percent of participants improved or maintained a stable level of functioning

- Functional status is measured by the Child and Adolescent Service Intensity Instrument (CASII) and it identifies the degree to which participants are functioning socially, hygienically, and biologically as appropriate for their age and developmental level. It is measured on a 5-point scale from minimal or mild impairment to moderate impairment to serious or severe impairment. Serious or severe impairment are usually associated with a referral to a residential setting.
- In the EQ initiative, 43 percent of participants improved their functional status from enrollment to the most recent assessment, while 38 percent maintained a moderate level of functional impairment.

- **Functional status ratings were similar between those with and without a Schizophrenia/Bipolar spectrum diagnosis.** Eighty-four percent of those with a Schizophrenia/Bipolar spectrum diagnosis either improved (46%) or maintained a moderate functional status

5. Improved or maintained stable functional status



(34%). Similarly, 79 percent of those with another SMI either improved (41%) or maintained a moderate functional status (38%; Figure 5).

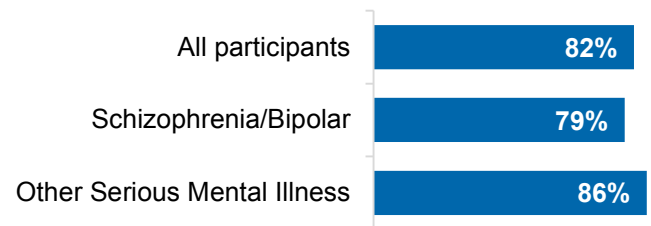
Increasing safety: 82 percent of participants either improved or maintained a manageable risk of harm

The CASII also assesses the degree to which individuals pose a risk of harm to themselves, to others, or from others. It is measured on a five point scale ranging from low or some risk to significant risk to serious or extreme risk of harm. A serious or extreme risk of harm would often be associated with a referral to residential psychiatric monitoring.

- Overall, 44 percent of participants improved their risk of harm from enrollment to the most recent assessment, while 4 percent maintained some or low risk of harm, and 34 percent maintained a significant risk of harm. A significant risk of harm indicates serious risk factors for harm, but a lack of consistent, imminent threat.

- Risk of harm was similar between those with and without a Schizophrenia/Bipolar spectrum diagnosis.** Seventy-nine percent of those with a Schizophrenia/Bipolar spectrum diagnosis either improved (41%) or maintained significant, some, or low risk of harm (38%). Similarly, 86 percent of those with another SMI either improved (48%) or maintained significant, some, or low risk of harm (38%; Figure 6).

6. Improved or maintained a manageable risk of harm



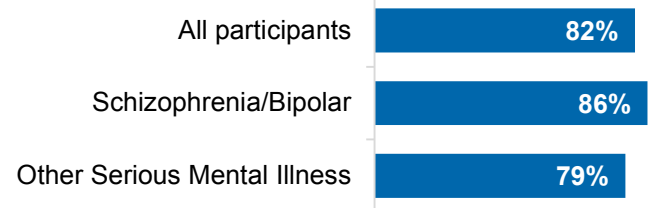
Optimizing recovery environment: 82 percent of participants either improved or maintained a moderately safe and stable recovery environment

The CASII also assesses an individual's environmental or life stress (e.g., family disruption, traumatic events, illness or injury, dangerous home or neighborhood, exposure to substance abuse) that may impede their safe and stable recovery. This is measured on a five-point scale from absent or mild to moderate to serious or severe based on the magnitude of the stress and the degree to which it threatens their recovery.

- Overall, 44 percent of participants improved their recovery environment, while 38 percent maintained a moderately safe and stable recovery environment.

- **Participants with a Schizophrenia/Bipolar spectrum diagnosis are more likely to improve their recovery environment (51%),** compared to those with another SMI (38%), though the difference is not statistically significant. Participants were similarly likely to maintain a moderately safe and stable recovery environment (35% compared to 41%; Figure 7).

7. Improved or maintained a moderately safe and stable recovery environment

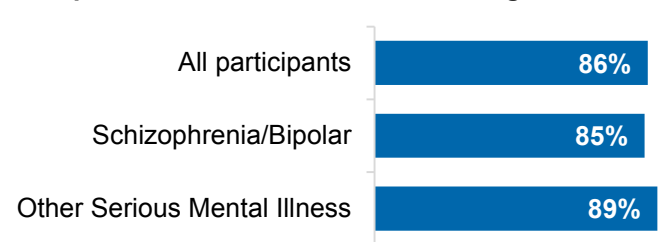


Ensuring housing stability: 86 percent of participants either improved or maintained stable housing after enrollment

- Over three-quarters of participants (77%) were housed at the time of intake. Even more were housed at program exit or the time of the data pull (86%).
- Between intake and last housing, most participants maintained their housing (69%), while 18 percent improved their housing situation.

- **Participants without a Schizophrenia/Bipolar spectrum diagnosis were significantly more likely to be housed at intake (86%)** compared to those with a Schizophrenia/Bipolar spectrum diagnosis (67%; $p=.039$). However, housing rates at exit or the cut-off for this study were similar for those with (83%) and without (88%) a Schizophrenia/Bipolar spectrum diagnosis.

8. Improved or maintained stable housing



- **Participants with a Schizophrenia/Bipolar spectrum diagnosis were slightly more likely to improve housing stability (23% compared to 14%),** while participants with another SMI were more likely to maintain housing (75% compared to 62%). None of these differences were statistically significant (Figure 8).

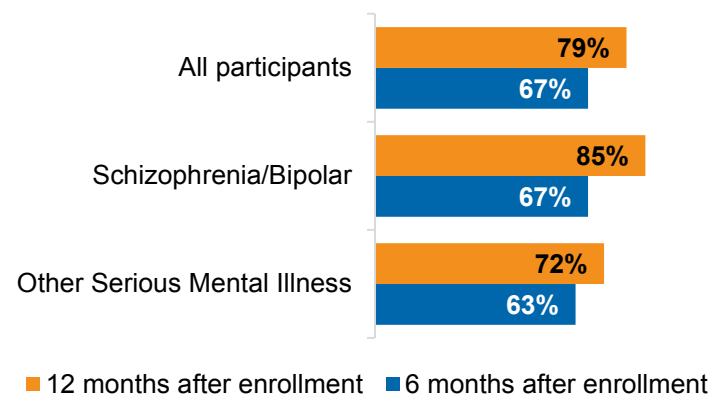
Increasing community tenure: Two-thirds of participants spent more time living at home after enrollment than before enrollment

An ACT team is committed to keeping individuals in their home and community as much as possible. This includes avoiding any preventable out-of-home placements for a mental or chemical health issue, such as inpatient hospitalization, Intensive Residential Treatment Services, or Regional Treatment Center. For this study, out-of-home placements were tracked for the six months prior to enrollment and in six month intervals after enrollment.

- Two-thirds of participants (67%) who experienced a mental or chemical health out-of-home placement prior to enrollment decreased the number of days spent in placement during the six months after enrollment. One-third of these participants did not have any out-of-home placements in the six months after enrollment.
- The longer participants remained in the EQ, the less likely they were to have an out-of-home placement. Of those participating for one year, 79 percent had fewer days in out-of-home placement 6 to 12 months after enrollment compared to before enrollment, and 69 percent did not have any out-of-home placements during that time.

- **Participants with and without a Schizophrenia/Bipolar spectrum diagnosis both tended to decrease the number of days spent in out-of-home placement (67% compared to 63%) from the six months before to the six months after enrollment. However, participants with a Schizophrenia/Bipolar spectrum diagnosis were more likely to avoid out-of-home placements 6 to 12 months after enrollment (75%) compared to those with another SMI (61%). The difference was not statistically significant (Figure 9).**

9. Decreasing out of home placement days



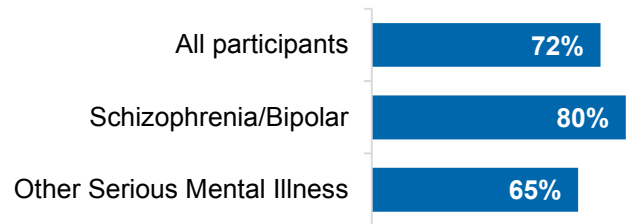
Achieving educational goals: 72 percent of participants either had a diploma or GED or were still in school

- Overall, 72 percent of participants either obtained their high school diploma or GED (59%) or were currently in school (13%). Over half of participants (52%) obtained their diploma or GED after enrollment.

- **Participants with a Schizophrenia/Bipolar spectrum diagnosis were more likely to obtain their high school diploma or GED after enrollment (59%)** compared to those with another SMI (47%), though the difference is not statistically significant.

Participants with and without a Schizophrenia/Bipolar spectrum diagnosis were similarly likely to be currently enrolled in school (15% compared to 12%; Figure 10).

10. Earned or working toward a diploma or GED

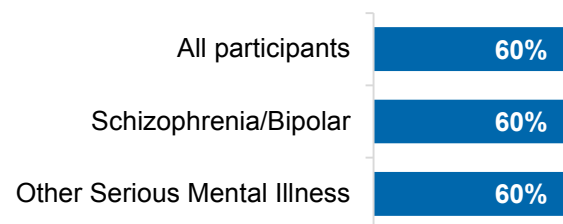


Increasing employment opportunities: 60 percent of participants were either employed or working toward employment

- At exit or most recent follow-up, 25 percent of participants were employed at least part time. In addition, 35 percent were taking steps toward employment, including improving employment skills and application materials, applying for jobs, and interviewing for jobs.
- One-quarter of participants (25%) maintained employment from intake to exit or most recent assessment, while 40 percent maintained unemployment. In addition, 12 percent improved their employment situation, such as seeking openings or refining skills. However, 23 percent decreased their employment situation, including discontinuing job seeking or pursuing fewer job opportunities. It should be noted that over one-quarter of those who maintained unemployment (27%) or decreased their employment situation (35%) were students, which may inhibit their ability to seek work.

- **Participants with a Schizophrenia/Bipolar spectrum diagnosis were more likely to be employed at most recent assessment (31%)** compared to those with another SMI (21%), though the difference was not statistically significant.

11. Earned or working toward employment



- Participants without a Schizophrenia/Bipolar spectrum diagnosis were slightly more likely to be working toward their employment (39% compared to 29%). None of these differences were statistically significant (Figure 11).

Conclusions

Overall, the EQ initiative has made significant progress toward meeting its goals with the participants they serve. This includes progress in improving participant safety, stability, and goal attainment.

This study explored whether the benefits of the EQ initiative differentially affected participants with a Schizophrenia/Bipolar spectrum diagnosis versus participants with another type of diagnosis. Importantly, these two groups were significantly different from each other demographically, as well as diagnostically. The group with a Schizophrenia/Bipolar spectrum diagnosis was more likely to be older, male, and a race other than white. This group was also more likely to enroll more recently. Therefore, any differences between groups are likely attributed to a combination of characteristics, rather than solely due to the type of diagnosis presented.

With that said, both groups were similarly likely to achieve most of the initiative's intended outcomes. There were some notable, albeit not statistically significant, exceptions. Specifically, participants with a Schizophrenia/Bipolar spectrum diagnosis were somewhat more likely to:

- Improve their recovery environment
- Improve their housing stability
- Obtain their high school diploma or GED after enrollment
- Be employed at most recent assessment

The initiative has achieved its goals through intensive services, including engaging participants weekly, usually in a community or home setting. While all participants had a high intensity of services, those with a Schizophrenia/Bipolar spectrum diagnosis tended to have greater involvement. In particular, participants with a Schizophrenia/Bipolar spectrum diagnosis tended to have more frequent face-to-face visits from staff and more visits in an out-of-home placement setting. In addition, participants with a Schizophrenia/Bipolar spectrum diagnosis were more likely to have preventative dental or physical health care check-ups early in their enrollment.

EQ's ability to help participants maximize their stability, manage their mental health conditions, improve their safety, and achieve their vocational goals has the potential to make a lasting impact on participants and on the broader society. By serving young adults near the onset of their mental health symptoms, the initiative can offer treatment that many individuals wait up to a decade to find. This initiative treats young adults whose mental illness is impeding their ability to meet their everyday needs. It has demonstrated that initiative

can help them transform into young adults who are independent in their communities and contributing as stable, safe students and employees.

This transformation has considerable potential economic benefits as well. Conducting a full cost-benefit analysis was outside the scope of the current report, but there is evidence to support some specific areas of monetized gain. All participants on the EQ program are eligible for Medical Assistance, based on income or disability status. Therefore, all are supported by public funds. EQ has demonstrated it can reduce out-of-home placements, increase preventative care, and maintain hospital follow-up, all of which have been associated with decreased public healthcare costs. In addition, the improvements in housing stability, education, and employment all include potential economic benefits through reduced need for social services or increased tax revenue.

Recommendations

Based on the results of this study, Wilder Research identified the following recommendations.

- **Target outreach and treatment to intended participants.** As required for ACT a high risk services, the participants in this study presented many challenges at enrollment, including of harm, a low functional status, and barriers to education and employment. This supports the importance of this initiative. However, there were two distinct groups served, and these groups varied significantly demographically, so this targeted outreach and treatment may need to look different for each group of participants.
- **Continue to address a broad range of diagnoses.** Both groups included in this study saw consistent benefits from this initiative. As both groups clearly benefit from the services, the initiative can have a broad impact by continuing to serve both groups, if feasible.
- **Tailored treatment is essential.** While both groups included in this study saw consistent benefits, the group with a Schizophrenia/Bipolar spectrum diagnosis tended to receive more face-to-face visits with staff and earlier interventions with regard to preventative care and hospital discharge follow-up. This may mean that the group with a Schizophrenia Bipolar spectrum diagnosis requires more intensive services to achieve the same outcomes as those with another SMI.
- **Address additional employment barriers.** While the majority of participants demonstrated improvements or stable functioning across all outcome areas, fewer had improvements specifically in the area of employment. This age group may have many barriers to employment, such as school enrollment, a lack of a degree, and a lack of job experience, in addition to their mental illness. This is an area which could benefit from increased examination of participant barriers and options for addressing those barriers.

Appendix - Overview of evaluation

This evaluation was conducted using existing data currently collected by the Guild Incorporated Equilibrium team. The data from Guild Incorporated was transferred to Wilder through encrypted email for analysis.

The following data sources were used for the evaluation:

- Participant characteristics:
 - Enrollment date
 - Exit date
 - Diagnoses (ICD-10 and ICD-9 – Axis 1)
 - Birthdate
 - Race/Ethnicity
 - Gender
- Child Adolescent Services Intensity Instrument (CASII):
 - Functional Status scale at baseline and most recent assessment
 - Recovery Environment scale at baseline and most recent assessment
 - Risk of Harm scale at baseline at baseline and most recent assessment
- Program records:
 - Date, duration, and location of EQ face-to-face services
 - Date, duration, and location of out-of-home placements, including hospitalizations
 - Housing movement at baseline and every six months
 - Educational attainment at baseline and every six months
 - Employment status at baseline and every six months
 - Date of preventative physical health or dental check-ups

The CASII is a standardized tool used by a broad range of clinicians. The American Academy of Child and Adolescent Psychiatry has established that the tool is reliable and valid.²

² Fallon, T., & Pumariega, A. (2001). Child and Adolescent Service Intensity Instrument: Background information and initial data analysis. American Academy of Child and Adolescent Psychiatry: Washington, D.C.

Only participants enrolled in the initiative for at least 45 days, as of April 15, 2017, were included in the study. However, some indicators required longer enrollment in order to detect change. This includes the CASII and preventative check-up indicators that required at least three months of enrollment and the out-of-home placement indicators that required at least six months of enrollment.

The analysis began by grouping participants based on their diagnoses. This includes two primary groups: those with a psychosis or bipolar I diagnosis and those with any other type of diagnosis. The breakdown of these groups is as follows:

A1. Diagnoses associated with analysis groupings

With a psychosis diagnosis (N=41)	
Bipolar I	32%
Schizophrenia, schizotypal and delusional disorders	68%
Without a psychosis diagnosis (N=43)	
Mental and behavioral disorders due to psychoactive substance abuse	2%
Mood (affective) disorders (other than Bipolar I)	49%
Neurotic, stress-related and somatoform disorders	33%
Disorders of adult personality and behavior	9%
Disorders of psychological development	5%
Behavioral emotional disorders with onset usually occurring in childhood or adolescence	2%

The analysis began by determining the degree to which participants in each group differ from each other with regard to individual characteristics such as age, race, and gender. Because there were several demographic characteristics that differed significantly by grouping, and the sample sizes were not sufficient to control for all of the significant demographic characteristics, we were unable to control for demographic grouping in the analysis.

For the final analysis of program outcomes between groups, we primarily employed chi-square and t-test analysis. Guild Incorporated identified the key indicators of success examined in this study prior to the analysis. Statistical significance was determined by a p-value of less than .05, as is standard practice in social science research.