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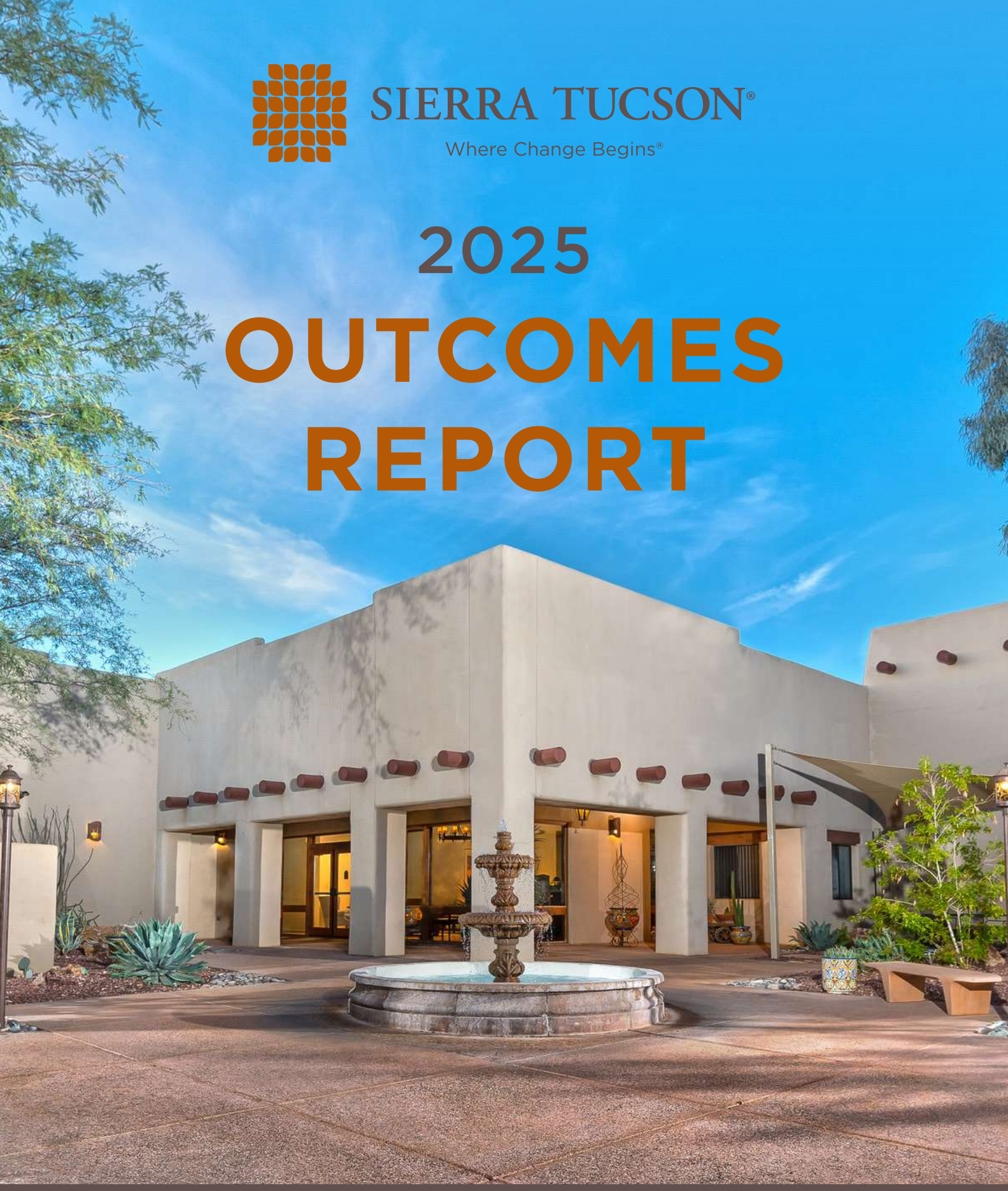
2025 OUTCOMES REPORT



PREPARED BY

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WELCOME! 2025 INTRODUCTION LETTER

Sierra Tucson has a whole-person treatment model, which involves healing mind, body, and spirit. Data helps us foreground important parts of a person's experience, including the way they describe their psychological state changing over time. We use data as a way to help understand this interplay of healing factors, asking people to think not just about their depression or anxiety symptoms, but about their physical health and sense of meaning in life. Every person is more than the sum of what we measure about them, but without measurement, we can't know what is reliably working—and what needs improvement.

This report lets you know how we are doing in helping our residents decrease their mental health symptoms and increase their coping skills and satisfaction with life. It answers the question, "How effective is treatment at Sierra Tucson?"

It also showcases the continual innovation going on at Sierra Tucson, including new research presented at national and international psychology conferences. We strive to continually improve our care, and using data is an important way for us to do that.

Read on!

Alex Danvers, Ph.D.
Director of Treatment Outcomes
Sierra Tucson

OUTCOMES HIGHLIGHTS AT A GLANCE

Sierra Tucson sees complex cases, gets great outcomes, and uses data to innovate.

WHO DO WE TREAT?

Sierra Tucson sees people dealing with substance use disorders, mood disorders, and trauma—and often complex combinations of these.

77% of residents screened positive for three or more diagnoses.

81% of our residents had high levels of childhood trauma.

Sierra Tucson also sees people from many different backgrounds:

We treated residents from **18 to 83** in 2025.

20% of our residents identified as gay, lesbian, bisexual, queer, or some orientation other than heterosexual.

13% of our residents were U.S. military veterans.

13% of our residents were first responders, like police officers, firefighters, or paramedics.

HOW DO RESIDENTS IMPROVE?

Our residents have large improvements in their mental health:

of depressed people had a clinically significant improvement.

of anxious people had a clinically significant improvement.

of people with PTSD had a clinically significant improvement.

Our residents also report improvements in broader, positive aspects of their functioning:

of people with low satisfaction with life had a significant improvement.

of people who struggled to cope with negative emotions had a significant improvement.

of people who reported being lonely had a significant improvement.

Our outcomes for veterans and first responders were strong. Despite having higher levels of PTSD and childhood trauma, these residents showed large improvements:

79% of veterans with PTSD had a clinically significant improvement.

77% of first responders with depression had a clinically significant improvement.

WHAT IS OUR IMPACT?

In 2025, we added a "Recovery Opportunity Cohort" tracking system that notifies providers when a resident is having a slower-than-usual response to treatment so that we can better address their needs.

In 2025, members of our outcomes program presented research at national and international psychology conferences.

- We validated a new short measure of coping for a clinical population.
- We presented analyses finding that different factors are important for predicting suicidal ideation in veterans and first responders, as compared with civilians.

IMPROVEMENTS TO MEASUREMENT-BASED CARE IN 2025

The Measurement-Based Care Program at Sierra Tucson collects data on residents at baseline—within a couple of days of their starting residential treatment—and every two weeks throughout their stay. This allows us to get a comprehensive overview of symptoms at the start of treatment, and to monitor their progress here.

This year, we have introduced a new feature: automated reporting of individuals who are responding more slowly than usual to treatment.

Whenever an individual completes an assessment two or more weeks into treatment, we check if their scores in key clinical areas—including depression symptoms, anxiety symptoms, trauma symptoms, insomnia symptoms, and chronic pain symptoms—have fallen to a typical degree.

If one of our residents isn't improving quickly enough, we add them to our "Recovery Opportunity Cohort." Clinical and medical leadership are notified so that they can direct extra attention or resources to cases that may need them.

We believe this has improved our care this year, helping clinicians understand when treatment plans may need to be adjusted. Sierra Tucson is continually looking for ways to leverage our strengths in measurement into better care for our residents!

WHO WE SEE AT SIERRA TUCSON

In 2025, the Sierra Tucson Measurement-Based Care Program collected data on 1,251 individuals. The demographics of people we provide care for include:

AGE

<30 | 30 to 50 | >50

The average age of our residents was 41 years old, but we treated people from 18 to 83 last year. Additionally, 11% of our residents were retired people.

SEXUALITY

Heterosexual or Straight | Bisexual

Homosexual, Gay, or Lesbian | Another Sexual Orientation

Other sexual orientations our residents identified with include asexual, pansexual, queer, and questioning.

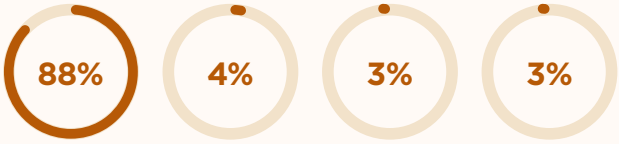
GENDER

Female | Male | Nonbinary or "Other"

ETHNICITY

Hispanic or Latino/a | Not Hispanic or Latino/a

RACE



White | Black | American Indian | Asian

Other races our residents identified as include Alaska Native, Hawaiian, and Samoan.

VETERAN & FIRST RESPONDER POPULATIONS

13% of our residents were veterans of the U.S. armed forces.

13% of our residents were first responders, including police officers, firefighters, paramedics, and other professionals.

This translates to 165 veterans and 167 first responders served in 2025.

OTHER COMPLICATING FACTORS

40% of our residents were divorced or had gone through separation from a long-term partner.

17% of our residents were unemployed and looking for work.

8% of our residents were unable to work due to disability.

4% of our residents were homeless.

SYMPTOM DISTRIBUTION

The Measurement-Based Care Program uses screening surveys to help identify when an individual is likely to have a mental health diagnosis. Based just on the symptoms our residents self-report (without a more complex psychological evaluation), here are the proportions of residents with multiple different disorders:

of our residents screen positive for depression.

of our residents screen positive for anxiety.

of our residents screen positive for PTSD.

of our residents screen positive for insomnia.

of our residents screen positive for ADHD.

of our residents screen positive for bipolar I disorder.

Many of our residents also have multiple diagnoses. Based on their self-report:

85% of our residents screen positive for two or more diagnoses.

77% of our residents screen positive for three or more diagnoses.

62% of our residents screen positive for four or more diagnoses.

Childhood trauma was also a common experience among our residents. Using the Adverse Childhood Events (ACEs) scale to assess childhood trauma, we found that **81% of our residents had elevated levels of childhood trauma.**

It is common in mental health treatment to see people with more than one working diagnosis or symptoms of multiple diagnoses. Sierra Tucson excels in treating these individuals. Our integrative treatment model can address complex cases and overlapping conditions by providing care across multiple modalities, including medical care, primary therapy care, and specialty therapy care (using modalities such as Somatic Experiencing® or EMDR).

SUBSTANCE USE

Sierra Tucson has long been known for its leadership in treating substance use disorders.

In 2025, we treated people with cravings for the following substances:

Alcohol (41% of residents)

Marijuana/THC (29% of residents)

Sedatives, such as benzos (14% of residents)

Stimulants, such as cocaine (13% of residents)

Painkillers, such as opiates (11% of residents)

Crack cocaine (9% of residents)

Hallucinogens (7% of residents)

Club drugs, such as ecstasy (5% of residents)

Meth (3% of residents)

Heroin (2% of residents)

Inhalants (2% of residents)

OVERALL IMPROVEMENTS IN MENTAL HEALTH AT SIERRA TUCSON

The Measurement-Based Care Program looks at five key symptom measures:

- Depression scores (PHQ-9)
- Anxiety scores (GAD-7)
- Trauma symptoms (PCL-5)
- Insomnia symptoms (ISI)
- Chronic pain interference with daily life (PROMIS SF 6b)

Among the individuals who started with clinically significant levels of symptoms, the following proportion had a clinically significant improvement:

83% of depressed people had clinically significant improvements in depression.

80% of anxious people had clinically significant improvements in anxiety.

81% of people with PTSD had clinically significant improvements in trauma symptoms.

73% of people with insomnia had clinically significant improvements in insomnia symptoms.

60% of people with chronic pain had clinically significant improvements in chronic pain symptoms.

OVERALL IMPROVEMENTS IN PSYCHOLOGICAL FUNCTIONING AT SIERRA TUCSON

There were significant improvements across multiple areas of positive functioning:

Satisfaction with Life increased by 29% on average.
Among people with low life satisfaction, 61% had a clinically significant increase.

Loneliness decreased by 18% on average.
Among people with high loneliness, 64% had a clinically significant decrease.

Resilience increased by 15% on average.
Among people who reported low resilience, 43% had a clinically significant increase.

Confidence in Coping with Negative Emotions increased by 43% on average.
Among people who struggled with Coping with Negative Emotions, 72% had a clinically significant increase.

Confidence in Coping with Daily Life Problems increased by 19% on average.
Among people who struggled with Coping with Daily Life Problems, 73% had a clinically significant increase.

Confidence in Coping Through Community increased by 20% on average.
Among people who struggled with Coping Through Community, 62% had a clinically significant increase.

Existential Beliefs, which capture feelings of meaning in life, increased by 35% on average.
Among people who had low sense of meaning, 66% had a clinically significant increase in Existential Beliefs.

Focus on attachment:

Among people who were high on avoidance in attachment, **57%** had a clinically significant improvement.

Among people who were high on anxiety in attachment, **52%** had a clinically significant improvement.

SUBSTANCE USE TREATMENT OUTCOMES

To better understand outcomes of our addictions and co-occurring disorders program, we tracked changes in cravings for substances while at Sierra Tucson. Analyses indicate that, over the course of treatment:

- Alcohol cravings fell by 43%.
- Marijuana cravings fell by 37%.
- Sedative cravings fell by 56%.
- Stimulant cravings fell by 53%.
- Painkiller cravings fell by 54%.
- Hallucinogen cravings fell by 55%.

Among the people who started with strong cravings for a substance, the following proportion had a clinically significant drop in their cravings:

67% of people saw a significant decrease in alcohol cravings.

67% of people saw a significant decrease in marijuana cravings.

82% of people saw a significant decrease in sedative cravings.

73% of people saw a significant decrease in stimulant cravings.

77% of people saw a significant decrease in painkiller cravings.

78% of people saw a significant decrease in hallucinogen cravings.

Overall, 78% of people saw a significant decrease in their highest craving.

ONE-YEAR OUTCOMES FOR SIERRA TUCSON ALUMNI

Sierra Tucson's Connect 365 Program provides access to recovery coaches who help residents find resources in their community to continue their recovery journeys. Our recovery coaches also are able to get a subset of Sierra Tucson alumni to answer follow-up questions about their recovery. This provides us with insights into long-term outcomes from treatment at Sierra Tucson.

In 2025, we collected data on 203 Sierra Tucson alumni. Some details about them:

- **45** — Average Age
- **19–83** — Age Range
- **43%** — Female
- **56%** — Male
- **1%** — Nonbinary
- **8%** — Hispanic or Latino/a
- **85%** — White
- **1%** — Black
- **1%** — American Indian
- **13%** — Mixed Race
- **15%** — First Responders
- **14%** — Veterans

Using this data, we can track the trends in the first year after leaving Sierra Tucson. Results of our statistical models tell us what we expect someone to look like right after they left Sierra Tucson, and one year later.

SUBJECTIVE OUTCOMES

The Connect 365 team asked alumni to report, on a scale of 1 to 5:

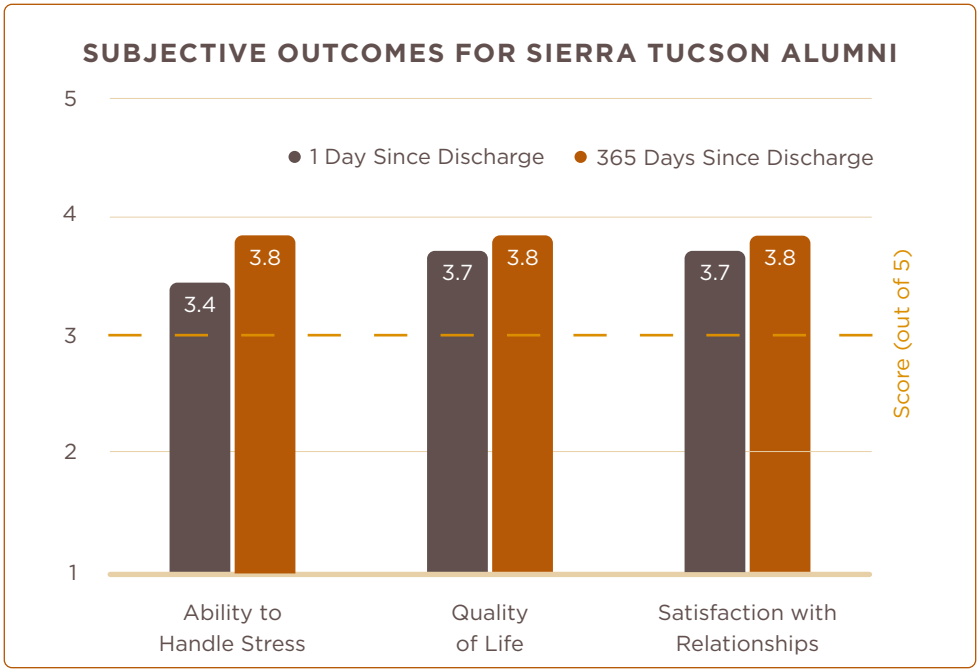
- How well they could **handle stress**
- Their **quality of life**
- Their **satisfaction with important relationships** in their lives

For all these measures, our predicted ratings were higher one year later than they were the day after discharge.

Ability to Handle Stress increased from 3.4 to 3.8.

Quality of Life increased from 3.7 to 3.8.

Satisfaction with Relationships increased from 3.7 to 3.8.

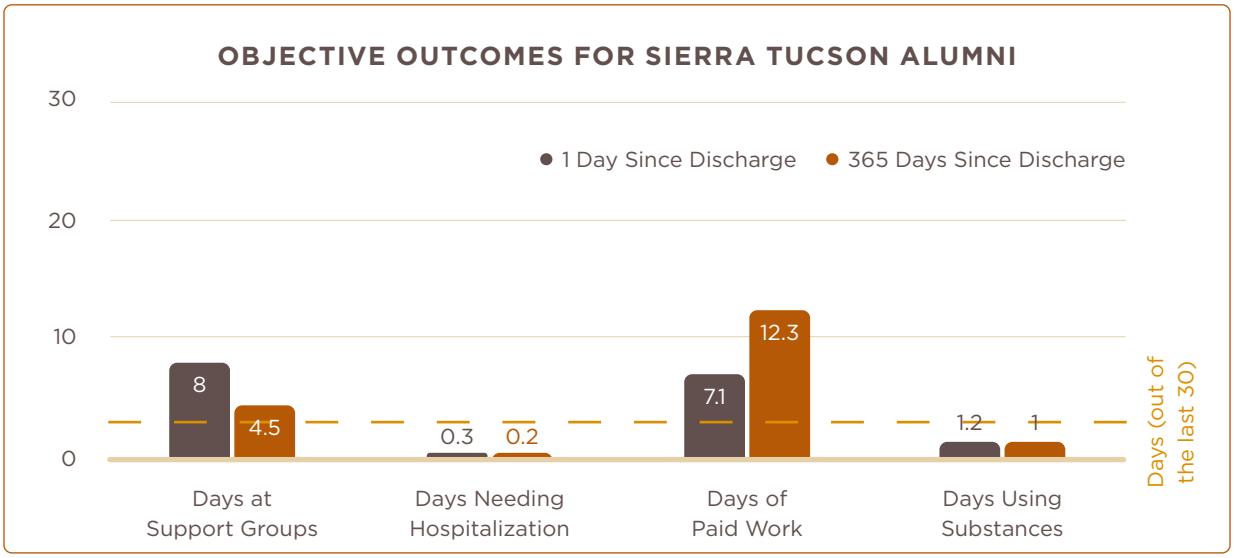


OBJECTIVE OUTCOMES

The Connect 365 team also asked alumni to report on concrete behaviors, like using substances. For these questions, they asked residents to say how many days, out of the past 30, they had done the key behavior.

For these behaviors, we saw several positive trends:

- Days at support groups started at 8 per month (two a week) and ended at 4.5 per month (just over once a week).
- Days needing hospitalization started at 0.3 days a month and stayed low, ending at 0.2 days a month.
- Days of paid work started at 7.1 days per month (about a week and a half) and improved, ending at 12.3 days a month (over two work weeks).
- Days using substances started at 1.2 days a month and stayed low, ending at 1 day a month.



SUMMARY OF LONG-TERM OUTCOMES

After leaving Sierra Tucson, residents continued to feel better, reporting slight increases in all subjective measures.

Residents also reported positive trends in behavior:

- They continued to go to support groups a year later.
- They were able to return to work more often.
- They did not need extra hospitalizations or ER stays.
- They rarely ever used substances after leaving.

TREATMENT OUTCOMES BY PROGRAM

ADDICTIONS AND CO-OCCURRING DISORDERS PROGRAM

Improvements in mental health symptoms, among those who started at high levels:

of residents in this program saw a significant decrease in **depression**.

of residents in this program saw a significant decrease in **anxiety**.

of residents in this program saw a significant decrease in **trauma symptoms**.

of residents in this program saw a significant decrease in **insomnia**.

of residents in this program saw a significant decrease in **chronic pain symptoms**.

Focusing on attachment styles, among those who started at high levels of dysfunction:

66% of residents had a significant decrease in **attachment avoidance**.

54% of residents had a significant decrease in **attachment anxiety**.

Improvements in functioning and positive indicators of mental health, among those who started at low levels:

63% of residents in this program saw a significant increase in **satisfaction with life**.

84% of residents in this program saw a significant increase in **feeling meaning in life**.

48% of residents in this program saw a significant increase in **resilience**.

81% of residents in this program saw a significant increase in **Coping with Negative Emotions**.

93% of residents in this program saw a significant increase in **Coping with Daily Life Problems**.

63% of residents in this program saw a significant increase in **Coping Through Community**.

70% of residents in this program saw a significant decrease in **loneliness**.

MOOD RECOVERY PROGRAM

Improvements in mental health symptoms, among those who started at high levels:

80% of residents in this program saw a significant decrease in **depression**.

76% of residents in this program saw a significant decrease in **anxiety**.

80% of residents in this program saw a significant decrease in **trauma symptoms**.

68% of residents in this program saw a significant decrease in **insomnia**.

59% of residents in this program saw a significant decrease in **chronic pain symptoms**.

Focusing on attachment styles, among those who started at high levels of dysfunction:

52% of residents had a significant decrease in **attachment avoidance**.

46% of residents had a significant decrease in **attachment anxiety**.

Improvements in functioning and positive indicators of mental health, among those who started at low levels:

62% of residents in this program saw a significant increase in **satisfaction with life**.

63% of residents in this program saw a significant increase in **feeling meaning in life**.

39% of residents in this program saw a significant increase in **resilience**.

66% of residents in this program saw a significant increase in **Coping with Negative Emotions**.

65% of residents in this program saw a significant increase in **Coping with Daily Life Problems**.

58% of residents in this program saw a significant increase in **Coping Through Community**.

60% of residents in this program saw a significant decrease in **loneliness**.

TRAUMA RECOVERY PROGRAM

Improvements in mental health symptoms, among those who started at high levels:

82% of residents in this program saw a significant decrease in **depression**.

76% of residents in this program saw a significant decrease in **anxiety**.

80% of residents in this program saw a significant decrease in **trauma symptoms**.

75% of residents in this program saw a significant decrease in **insomnia**.

57% of residents in this program saw a significant decrease in **chronic pain symptoms**.

Focusing on attachment styles, among those who started at high levels of dysfunction:

63% of residents had a significant decrease in **attachment avoidance**.

52% of residents had a significant decrease in **attachment anxiety**.

Improvements in functioning and positive indicators of mental health, among those who started at low levels:

57% of residents in this program saw a significant increase in **satisfaction with life**.

67% of residents in this program saw a significant increase in **feeling meaning in life**.

40% of residents in this program saw a significant increase in **resilience**.

76% of residents in this program saw a significant increase in **Coping with Negative Emotions**.

74% of residents in this program saw a significant increase in **Coping with Daily Life Problems**.

64% of residents in this program saw a significant increase in **Coping Through Community**.

59% of residents in this program saw a significant decrease in **loneliness**.

TREATMENT OUTCOMES FOR VETERANS AND FIRST RESPONDERS

Sierra Tucson has created an exceptional and effective program for U.S. armed forces veterans and first responders, called the Service Resiliency Unit (SRU) at Sierra Tucson.

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SRU
SERVICE RESILIENCY UNIT

Previously known as the Red, White, and Blue Program, the Service Resiliency Unit was developed to understand the unique experiences of veterans and first responders. Our whole-health model integrates multiple treatment modalities—from medication to therapy to integrative services—to treat the complete person.

The SRU creates a community for those who are struggling with the unique challenges that come from being a veteran or first responder. Dedicated process groups help our residents feel like they can share their experiences with staff and peers who have gone through similar struggles.

Sierra Tucson has been certified as well-equipped to treat veterans by Psych Armor, which provided training to our staff on the culture, values, and experience of veterans as they relate to mental health.

VETERAN POPULATION

- **13% of our residents were veterans of the U.S. armed forces.**
  - This translates to 165 veterans served in 2025.

In line with national data, our veteran population typically deals with higher levels of trauma than broader civilian populations.

86% of the veterans we treat report elevated trauma symptoms consistent with PTSD.

73% of the veterans we treat report symptoms consistent with four or more overlapping diagnoses.

89% of the veterans we treat report high levels of childhood trauma.

VETERAN OUTCOMES

Improvements in mental health symptoms, among those who started at high levels:

83% of residents in this program saw a significant decrease in **depression**.

71% of residents in this program saw a significant decrease in **anxiety**.

79% of residents in this program saw a significant decrease in **trauma symptoms**.

69% of residents in this program saw a significant decrease in **insomnia**.

52% of residents in this program saw a significant decrease in **chronic pain symptoms**.

Focusing on attachment styles, among those who started at high levels of dysfunction:

63% of residents had a significant decrease in **attachment avoidance**.

52% of residents had a significant decrease in **attachment anxiety**.

Improvements in functioning and positive indicators of mental health, among those who started at low levels:

57% of residents in this program saw a significant increase in **satisfaction with life**.

54% of residents in this program saw a significant increase in **feeling meaning in life**.

44% of residents in this program saw a significant increase in **resilience**.

76% of residents in this program saw a significant increase in **Coping with Negative Emotions**.

68% of residents in this program saw a significant increase in **Coping with Daily Life Problems**.

61% of residents in this program saw a significant increase in **Coping Through Community**.

64% of residents in this program saw a significant decrease in **loneliness**.

FIRST RESPONDER POPULATION

- **13% of our residents were first responders, including police officers, firefighters, paramedics, and other professionals.**
  - This translates to 167 first responders served in 2025.

First responders, like veterans, typically confront higher levels of trauma.

86% of the first responders we treat report elevated trauma symptoms consistent with PTSD.

86% of the first responders we treat report high levels of childhood trauma.

69% of the first responders we treat report symptoms consistent with four or more overlapping diagnoses.

FIRST RESPONDER OUTCOMES

Improvements in mental health symptoms, among those who started at high levels:

77% of residents in this program saw a significant decrease in **depression**.

70% of residents in this program saw a significant decrease in **anxiety**.

74% of residents in this program saw a significant decrease in **trauma symptoms**.

70% of residents in this program saw a significant decrease in **insomnia**.

52% of residents in this program saw a significant decrease in **chronic pain symptoms**.

Focusing on attachment styles, among those who started at high levels of dysfunction:

58% of residents had a significant decrease in **attachment avoidance**.

56% of residents had a significant decrease in **attachment anxiety**.

Improvements in functioning and positive indicators of mental health, among those who started at low levels:

58% of residents in this program saw a significant increase in **satisfaction with life**.

59% of residents in this program saw a significant increase in **feeling meaning in life**.

38% of residents in this program saw a significant increase in **resilience**.

75% of residents in this program saw a significant increase in **Coping with Negative Emotions**.

72% of residents in this program saw a significant increase in **Coping with Daily Life Problems**.

69% of residents in this program saw a significant increase in **Coping Through Community**.

66% of residents in this program saw a significant decrease in **loneliness**.

RESEARCH AT SIERRA TUCSON

Research Spotlight: Understanding Suicidal Ideation in Veterans, First Responders, and Civilians

Sierra Tucson is dedicated to creating a safe environment that deals effectively with concerns about suicide and self-harm for all our residents. We also acknowledge that there is broader concern with suicide in U.S. military veterans across the country, and that U.S. military veterans are at an increased risk for suicide attempts. We therefore place special emphasis on understanding suicidal ideation in our veteran population.

We track thoughts of suicide and self-harm closely, through our clinical departments and our treatment outcomes program. This information helps us innovate and learn from our data.

In a conference talk at the Association for Psychological Science (APS) in 2025, Dr. Danvers presented the results of an analysis of Sierra Tucson's data on suicidal ideation in veterans and first responders.

Dr. Danvers developed machine learning models to predict when residents would report thinking about suicide or self-harm. He used all the information they provided about themselves at their baseline outcomes assessment to predict whether they would report thoughts of being better off dead or of self-harm at their next evaluation, two weeks into treatment.

He built three models: one for civilians, one for veterans, and one for first responders.

Each of these models had moderate success in predicting how often a person would be thinking about suicide or self-harm during treatment.

The key question he wanted to answer, however, was whether there were different indicators of suicidal ideation in these different groups. In other words, are the "warning signs" or "risk factors" different for civilians, veterans, and first responders. By examining what are called "variable importance" measures, he was able to see when a possible predictor of suicidality was more or less important for one group versus another.

Some key findings:

- As expected from decades of prior work, among civilians, having had thoughts of suicide in the past was the strongest predictor of having them again in the future.
- Among veterans, this relationship wasn't as strong. Instead, existential beliefs were the strongest predictor of future suicidal ideation. This means that feeling a sense of meaning in life was especially important for veteran mental health.
- Among first responders, childhood trauma had a stronger relationship with future suicidal ideation than it did in the other groups. This means that having many negative events in childhood was especially important for understanding first responder mental health.
- Among civilians, generalized anxiety had a stronger relationship with future suicidal ideation, as compared with first responders and veterans. This means that anxiety is more important to monitor in civilians with suicidal ideation.

This research helps us better understand warning signs of suicidal ideation in the different populations we serve.

Research Spotlight: Validating a Brief Clinical Coping Scale

In 1980, psychologist Marvin Goldfried wrote that the goal of therapy is imparting coping skills on clients. These are the skills that clients carry forward with them in life, and that they return to again and again to guide them through difficult periods. After all, good therapy should leave you able to thrive long after the therapy has ended.

Supporting this, researchers like Susan Folkman have spent years documenting that better coping skills are generally associated with better mental health. At Sierra Tucson, we asked: can we develop a tool to quickly capture information about a person's coping skills when they are receiving mental health treatment?

One of the best-known measures of coping, the Coping Self-Efficacy (CSE) scale, is a bit long—21 items—and was validated using generally healthy people—as opposed to people who need mental health treatment.

We developed a new measure based on what we know about coping, that is short—nine items—and can be used with people receiving mental health treatment.

At the 2025 Global Psychological Science Summit, hosted by the Association for Psychological Science, Alex Danvers and Sandra Norman-Smith presented a scientific poster supporting this new brief coping scale's validity.

How do we know that it's valid?

We showed that our new measurement tool had two kinds of validity: internal, structural validity and external, predictive validity.

For internal validity, we showed that data from our coping scale was best thought of as capturing three types of coping:

- Coping with Negative Emotions
- Coping with Daily Life Problems
- Coping Through Community

For external validity, we showed that these types of coping had strong, reliable relationships with other clinical measures we care about. Better coping in any of the three styles was associated with less depression, anxiety, and PTSD symptoms, and with a better quality of life.

This evidence gives us confidence that our scale does a good job in tracking this important facet of mental health in our residents.

CONCLUSION

Measuring people—in all their messy complexity—is a difficult but important way to get a reliable picture of what is really going on with us.

Our Measurement-Based Care Program works hard to collect important pieces of information about treatment outcomes so that we can understand our strengths and find ways to continue to grow.

I hope this report answers most of your questions about Sierra Tucson's mental health treatment outcomes, but if it doesn't, don't hesitate to reach out!

Thank you,

Alex Danvers PhD

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METHODS APPENDIX

WHAT WE MEASURED

The following scales were used:

Construct	Measure
Depression	Patient Health Questionnaire – 9-Item (PHQ-9)
Anxiety	Generalized Anxiety Disorder Questionnaire – 7-Item (GAD-7)
PTSD	PTSD Checklist for the DSM-5 (PCL-5)
Insomnia	Insomnia Severity Index (ISI)
Chronic Pain Interference with Daily Life	PROMIS Pain SF-6b
Satisfaction with Life	Satisfaction with Life Scale (SWLS)
Resilience	Brief Resilience Scale (BRS)
Loneliness	UCLA 3-Item Loneliness Scale (UCLA-3)
Attachment Anxiety	Experience in Close Relationships - Relationship Structures Revised (ECR-RS)
Attachment Avoidance	Experience in Close Relationships - Relationship Structures Revised (ECR-RS)
Existential Beliefs	Internally Developed
Coping with Negative Emotions	Internally Developed
Coping with Daily Life Problems	Internally Developed
Coping Through Community	Internally Developed
Bipolar Disorder Screener	Mood Disorder Questionnaire (MDQ)
ADHD Screener	Adult ADHD Self-Report Scale (ASRS)
Childhood Trauma Screener	Adverse Childhood Events Questionnaire (ACEs)

Note that scale validation information for the three coping scales developed internally was presented at the 2025 Global Psychological Science Summit, organized by the Association for Psychological Science.

WHEN WE MEASURED

To measure change over the course of treatment, we examined the first rating of mental health outcomes and compared this with the last rating of outcomes taken for each individual. The first rating was taken within the first three days in residential care, and follow-up measures were taken every two weeks. Stays in residential treatment are often two to four weeks, so by capturing measures every two weeks, we typically have a start-to-end measure whenever an individual discharges.

CLINICALLY SIGNIFICANT CHANGE

What is a clinically significant change in outcomes? We use the Minimal Clinically Important Difference (MCID) statistic to determine when someone has had a clinically significant change in outcomes. There are several different ways of estimating the MCID statistic. We use a common and widely accepted calculation: if a change score was at least half of a standard deviation in magnitude, this was considered clinically significant. We estimated the standard deviation from our full dataset at baseline.

This means that we normed based on our own internal data, as opposed to using an approximate cutoff from in the literature. The advantage of this method is that it is geared specifically to the population we serve—individuals from the community who enter residential mental health treatment—as opposed to having a general number that is typically based on outpatient care.

When we estimated the proportion of people with a clinically significant change in outcomes, we also restricted our analysis to only those who reported a clinically elevated score at baseline. For example, when we estimated what proportion of people had a clinically significant improvement in depression scores, we only looked at those who were depressed at the start of treatment. Depression, for these purposes, was defined as an elevated score on our depression measure, the PHQ-9. Standard clinical cutoffs were used for scales that are well established in the literature, such as the PHQ-9. For measures of positive qualities, like Quality of Life, or internally developed scales, we used best estimates of a meaningful cutoff. The cutoffs used are presented below:

Variable	Cutoff
Anxiety (GAD-7)	10
Attachment Anxiety (ECR)	4
Attachment Avoidance (ECR)	4
Chronic Pain (PROMIS Pain SF6b)	2.5
Coping Through Community	2.5
Coping with Daily Life Problems	2.5
Coping with Negative Emotions	2.5

Variable	Cutoff
Depression (PHQ-9)	10
Existential Beliefs	2.5
Insomnia (ISI)	14
Loneliness (UCLA-3)	4
PTSD (PCL-5)	33
Resilience (BRS)	3
Satisfaction with Life (SWLS)	3

MISSING DATA

There can be missing data in our outcomes for a few reasons: sometimes residents refuse to take the outcomes surveys, and sometimes scheduling conflicts arise internally. People who refuse to do an outcomes assessment once are rescheduled, but after more than one refusal, we typically let the refusal stand. Out of the 1,251 individuals who took an initial assessment, 956 (76%) completed a follow-up and were therefore able to be part of the outcomes calculation.

ANALYSIS OF LONG-TERM OUTCOMES

To estimate outcomes in Sierra Tucson alumni after one year, statistical models were fit to the follow-up data collected by the Connect 365 recovery coaches. The recovery coaches contacted residents at one, three, six, and 12 months postdischarge to ask about long-term outcomes. The follow-up questions were adapted from the National Outcomes Measures (NOMs).

The predicted value from these statistical models at Day 1 postdischarge and Day 365 postdischarge were calculated. These predicted values are used in the section of this report on alumni outcomes one year postdischarge. The statistical modeling technique used was hierarchical linear modeling. Random intercept models were used, with a separate random intercept for each individual alumnus. These models can handle missing data well, in case an individual did not complete all the follow-up assessments with the Connect 365 recovery coaches.

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