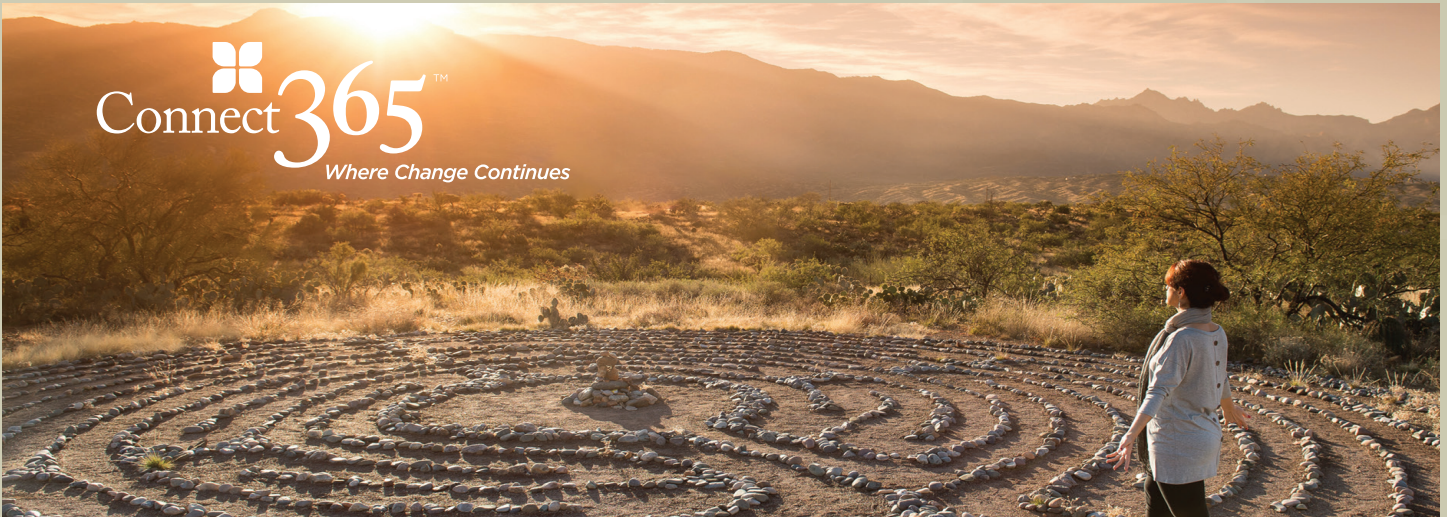


SIERRA TUCSON®

Where Change Begins®



A REPORT ON RECOVERY PROGRESS | Q1 2018

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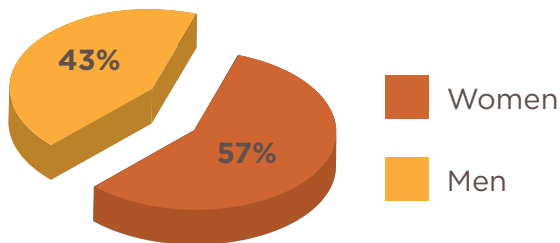
National Outcomes & Measures

In 2018, Sierra Tucson's Connect365™ Program entered its third year of operation. During this time, we have proudly supported and coached over 2,500 participants.

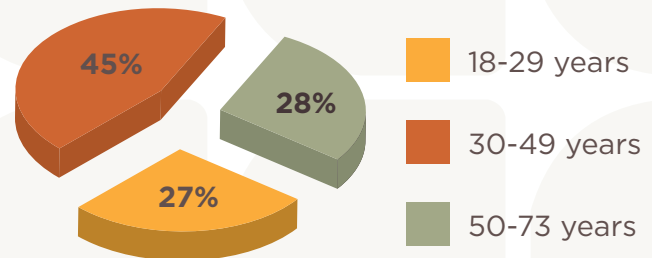
Beginning mid-year 2017, Connect365's recovery coaches (who are nationally certified, NCRC-I and NCRC-II) surveyed each Connect365™ participant on various national outcomes measures (NOMS) as set forth by SAMHSA (Substance Abuse and Mental Health Services Administration). Survey questions focused on gathering information about the "whole" person to provide a clear snapshot of participants' progress in recovery during the past 30 days. NOMS domains queried included topics such as abstinence, relationship satisfaction, continuing care compliance, general quality of life, and number of days utilizing hospital services or attending support groups.

Two hundred and thirty Connect365™ participants agreed to speak with our recovery coaches during one of their weekly support phone calls, to share their NOMS progress in the year following treatment at Sierra Tucson. Of the 230 surveyed, about half of them were in their first 100 days post-discharge (50.4%), and the other half between 100 and 300 days (49.6%). The sample included slightly more women than men (57%), and participants were categorized into three age cohorts (see graphs below).

Distribution of Gender 2017 NOMS Study



Age Cohorts 2017 NOMS Study



During the year following treatment, a majority of participants reported not using any substances or hospital services, and nearly all participants were compliant with their continuing care plans. Additionally, 83% of Connect365™ participants continued to attend weekly support groups. Chi-square analyses found these behaviors to be statistically significant at the $p < .001$ level.

Table. Crosstabulation of Recovery Engagement (N=230)

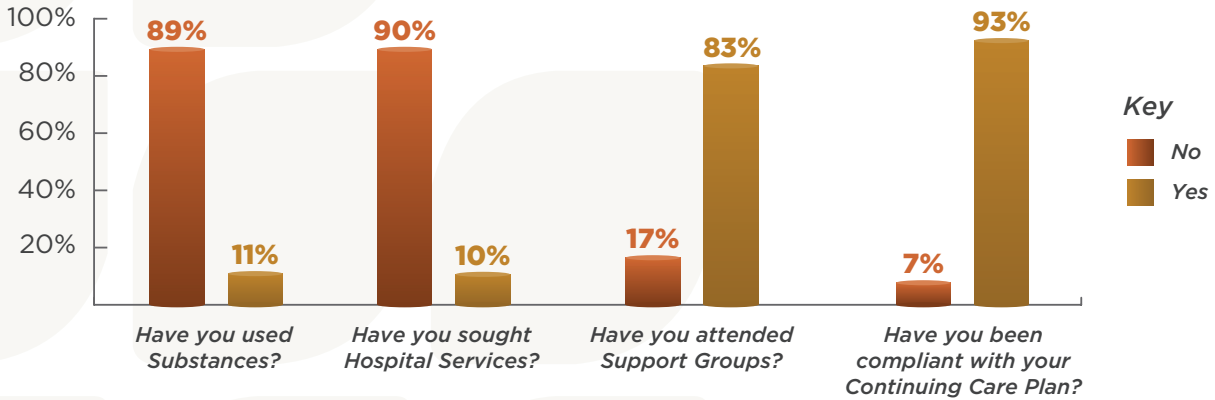
	Response		X ² df(1)
	No	Yes	
"During the past 30 days..."			
...have you used Substances?	204	26	137.76***
...have you sought Hospital Services?	208	22	150.41***
...have you attended Support Groups?	39	191	100.45***
...have you been compliant with your Continuing Care Plan?	17	213	167.02***

Note: The NOMS data presented in this report are preliminary. Further cross-check analyses are in progress and once finalized, will be published accordingly.
*** $p < .001$



National Outcomes & Measures

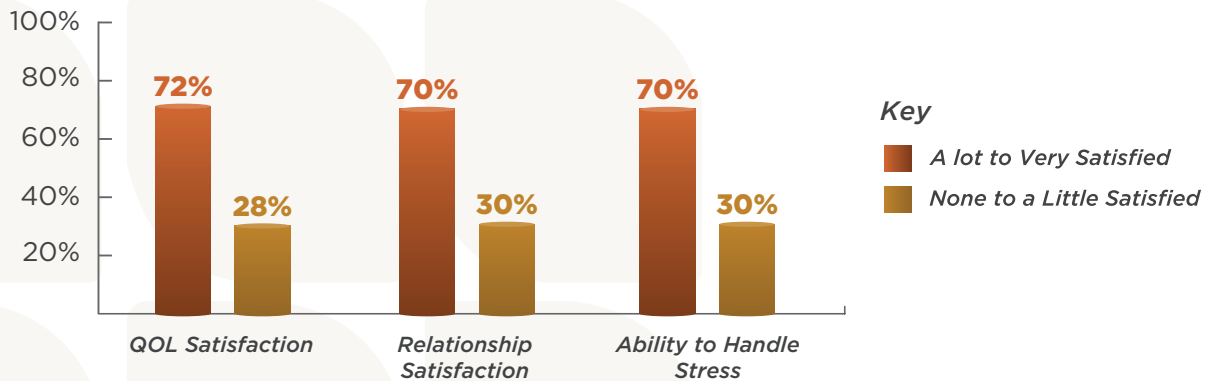
Recovery Engagement



Quality of Life

With respect to participants' quality of life (QOL) satisfaction, a majority reported feeling a great deal of satisfaction with their overall quality of life and primary relationships, as well as a great deal of confidence in managing daily stressors.

QOL Satisfaction



The preliminary data from these national outcomes measures are compelling; but equally important to the team at Sierra Tucson is that residents' recovery sustains over time. Therefore, we further evaluated whether the extent of time from their treatment at Sierra Tucson was related to recovery behaviors over time. Two-tailed correlational analyses were conducted, in addition to independent samples t tests comparing NOMS between the two groups (i.e., those who were recently discharged from treatment [first 100 days] and those who were 100-300 days post discharge). The data revealed there were no significant differences in reported recovery behaviors or quality of life between these two groups. Only with regard to attending support groups did we observe that the recently discharged participants were 1.4 times more likely to attend in comparison to those who were 100-300 days post discharge ($t(115)=2.99$, $r(230)=-0.140$, $p=.003$). Nevertheless, participants who were 100-300 days post-discharge were still attending an average of nine support groups per month.

Coping with Stress | Connect365™ Pilot Study

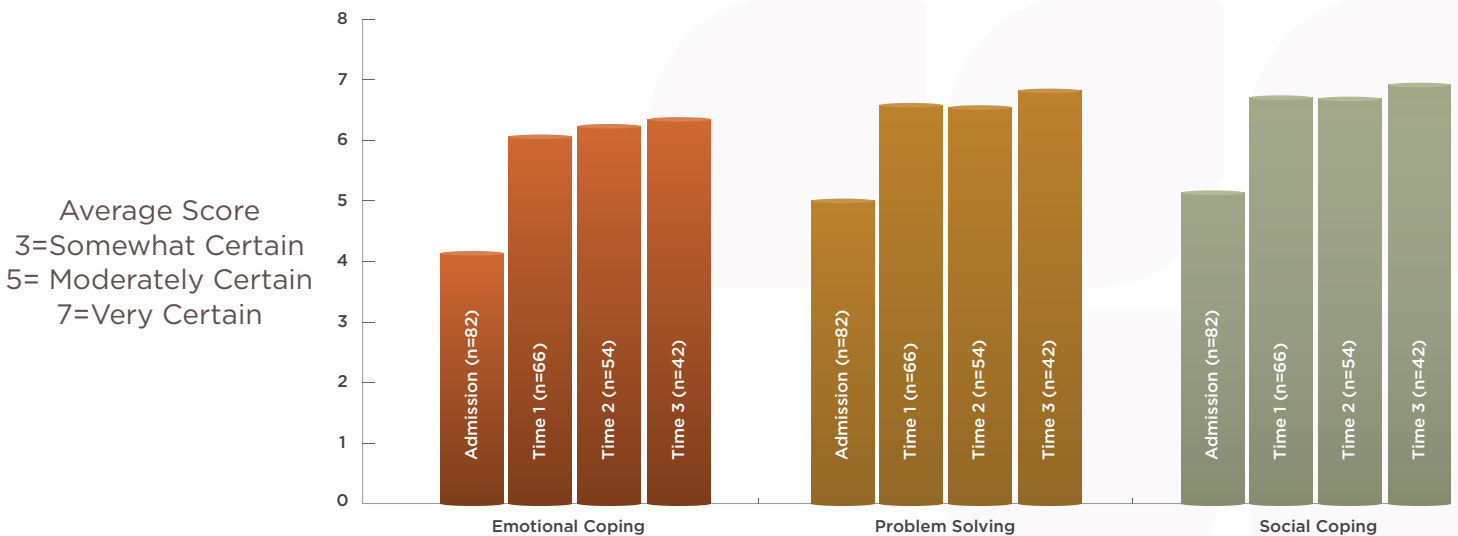
As part of standard assessment during the first few days after admission to Sierra Tucson, residents complete a comprehensive psychological profile (CPP). After treatment completion, Connect365™ participants are asked to complete one of the measures found in the CPP packet on a monthly basis. This measure, the Coping Self-Efficacy Scale (CSE, 2006), examines the degree of certainty on a 0-10 scale – the extent to which one is confident in coping with life stressors. The CSE yields three coping domains, specifically: 1) Problem Solving, 2) Emotional Coping, and 3) Reliance upon Social Support.

A total of 82 Connect365™ participants completed the CSE at varying times throughout 2017. The time in which participants responded was organized based on meaningful sample size groupings to maintain statistical power for analyses. Three groups were determined:

Group Name	Sample Size	Description	Range of Days
Time 1	66	CSE completed within the first month after discharge	1-31
Time 2	54	CSE completed during second to fourth month after discharge	32-92
Time 3	42	CSE completed during fourth to ninth month after discharge	93-291

The data graph below illustrates residents' progress with respect to reported confidence in coping with life stressors from the beginning of treatment, up through nine months after discharge. The axis on this graph is adjusted to best depict the CPP certainty scoring, where a 0 indicates having no confidence and a 10 indicates the highest degree of certainty.

Coping Confidence





Coping with Stress | Connect365™ Pilot Study

A paired samples *t* test was conducted to assess for change in reported coping at each of the three time periods. Results indicated that for each of the three time periods post-discharge, Connect365™ participants reported improved coping skills on all three domains than they had prior to treatment at Sierra Tucson. All findings were statistically significant at $p < .001$, and effect size analyses were found either to be medium (Cohen's $d = 0.5$) or large (Cohen's $d = 0.8$). Reliable Change Index (RCI) was conducted to further assess whether real change was likely. For all three time periods, confidence to cope utilizing emotional coping strategies (such as acceptance of what can/cannot be changed, visualization, or stopping negative thoughts) had consistently yielded RCI above 1.96. Scores above 1.96 indicate that post-treatment emotional coping was likely reflecting real change in these particular groups.

Table. Coping Confidence Paired Samples *t* test Results and Effect Size (Cohen's *d*)

Confidence to Cope	Paired <i>t</i> *		
	Time 1 (<i>df</i> =65)	Time 2 (<i>df</i> =53)	Time 3 (<i>df</i> =41)
Emotional Coping	6.17‡	6.28†	6.23†
Problem Solving Coping	5.72‡	13.78†	11.57‡
Social Support Coping	4.18‡	3.85‡	5.07†

Note: The coping data presented in this report are preliminary. Further cross-check analyses are in progress and once finalized, will be published accordingly.

**All two-tailed, paired-samples *t* scores are significant at $p < 0.001$*

*†Cohen's *d* large = .80; ‡Cohen's *d* medium = .50*

The emotional coping strategies that participants reported using to help them cope throughout the year following treatment are some of the many strategies instilled at Sierra Tucson, specifically:

- Visualization
- Stopping negative thoughts
- Redirection
- Positive self-talk
- Focusing on what can be changed versus what cannot (Serenity Prayer)

The data from this preliminary pilot study are promising. Not only are participants reporting improved coping strategies one month after completing residential treatment at Sierra Tucson, but it is likely that these improvements in coping are sustained throughout their first year in recovery as well. This is important because it is widely known that stress is a predictor of relapse in addictive behaviors and can exacerbate mental health issues. Empowering residents to shed their ineffective coping behaviors while they embrace insightful profound growth during treatment will fortify the strong foundation needed for a successful and lasting recovery.

Where Do We Go From Here?



When I first joined Sierra Tucson in 2008, I was enamored by the extent of testimonials revealing how residents found their “miracle” and how Sierra Tucson saved their lives. As a scientist/practitioner in clinical health psychology, I also was captivated by how Sierra Tucson genuinely approached mental health treatment utilizing integrative therapies. Individuals were recovering and getting their lives back through this remarkable treatment facility! Ever since, I have had a deep desire to implement a process that collects measurable quantitative progress to further substantiate all the qualitative claims and testimonies.

To develop such a process is ambitious. There are many moving parts to integrative mental health that must be carefully considered if we are to correctly operationalize, analyze, and, ultimately, report outcomes. Measurement-based care has become a high-profile issue in the behavioral health care field, and Sierra Tucson has embraced these standards using well-established and valid measures through sophisticated and robust methods. We implemented this system to collect ongoing progress data through the interdisciplinary collaboration of our Psychology Department, Clinical Department, and Connect365™ Program. Our plan is

to collect data at the beginning of treatment, mid-treatment, and discharge, and then via Connect365's infrastructure—six months and one year post-discharge.

Many researchers regard data as a source best utilized to tell a story; therefore, our primary goal to utilize data outcomes is to quantify each resident's story of struggle, resiliency, hope, and recovery. At various time points during residential treatment, residents have the opportunity to review their data with their treatment team. Discussing one's progress with his or her treatment team through measurable outcomes serves to enhance overall planning, recognize potential oversights, celebrate growth, and deepen therapeutic alliance. Through Connect365™, this outcomes process will continue and will complement the existing structure of support and advocacy our Connect365™ recovery coaches offer participants through weekly contact during the first year after residential treatment.

The second goal for establishing a process to collect outcomes is to enhance the efficacy of our programming so that we remain cutting-edge in our approach to healing and recovery. At the aggregate level, the implementation of an ongoing data collection system will build a repository of bio-psycho-social functioning that will provide information on programmatic efficacy, treatment approaches, and overall resident progress. Additionally, analyzing the multifactorial nature of veritable integrative mental health approaches, through systematic and robust multivariate statistical analyses, will provide deeper insight into the mediational, interactive, and predictive nature of treatment and its outcomes.

We understand that emotional suffering and addictions do not occur in vacuums; therefore, the treatment of these afflictions should not take place in vacuums either. Implementing a viable outcomes process is the next step in defining the multivariate nature of complicated mental health issues. It is the new paradigm that Sierra Tucson will lead the field toward cutting-edge and evidence-based clinical care.

We are responsible to our residents, their families, and the referring caregivers. We are responsible to our community, our third-party payers, and ourselves. The data from our outcomes research will tell the story of each individual's success, just as it will tell the story of how integrative approaches to healing are viable and necessary for the future of mental health care.

We look forward to sharing these outcomes—and these stories—with you on a regular basis.

Sincerely,



Antoinette Giedzinska, PhD

Director of Behavioral Medicine, Sierra Tucson