



## CLIENT OUTCOMES AND DEMOGRAPHICS REPORT

Annually, Skyland Trail monitors key client demographic and clinical indicators to assess the impact of treatment and program effectiveness. Demographically, data is recorded on client age and age distribution, gender, diagnosis, and length of stay. Demographic changes in our client population are important to recognize and respond to as this often dictates treatment.

Skyland Trail measures clinical changes in our patients' symptom severity, attitude toward medication adherence, hope for their futures, and level of functioning. In looking at clinical indicators, favorable responses to treatment are reflected by statistically significant changes on various assessment scales between admission and discharge.

Medical Director Raymond J. Kotwicki, MD, MPH and the clinical team created and instituted a new clinical model of care in June 2007 called the **Skyland Trail Integrative Recovery Model**. Between 2007-2010 using the new clinical model, outcome data showed statistically and clinically significant improvement on many levels. We attribute these significant gains to the individualized, evidence-based, respectful model of care offered, as well as the expertise afforded to patients in services by our outstanding, dedicated clinical staff. More information on the innovative model of services provided appears below.

Several of the assessment scales used at Skyland Trail are as follows:

### Measures reduction in symptoms

- Behavior & Symptom Identification Scale-32 (BASIS-32)
- Beck Hopelessness Scale (BHS)

### Measures improvement in functioning

- Behavior & Symptom Identification Scale-32 (BASIS-32)
- Medication Attitude Inventory (MAI)

### Measures satisfaction with services

- Client satisfaction survey
- Family satisfaction survey

The symptom and functional scales are administered at admission and discharge, while satisfaction surveys are administered annually or at the time of discharge. Skyland Trail is committed to continuous quality improvement by utilizing these outcomes results and other program indicators to improve the quality of service delivery, and the longitudinal impact of the evidence-based care offered.

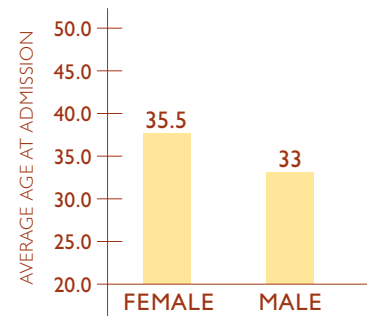
# CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2010

## BACKGROUND DEMOGRAPHICS

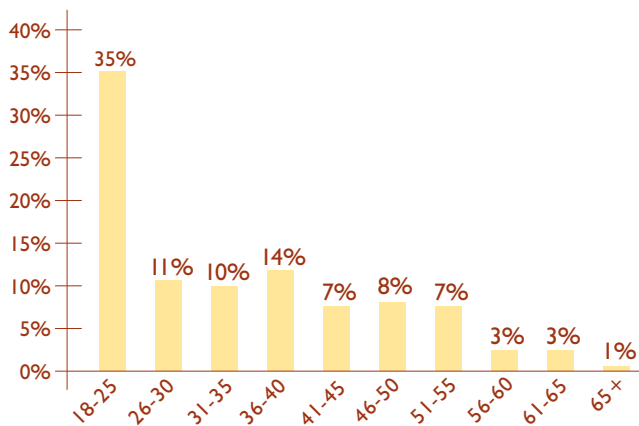
### Age/Gender

Year 2010 totaled more admissions to any level of service at Skyland Trail than ever before in our 21-year history (N=211). Of all patients who both admitted and discharged within the year (N=165) close to fifty percent were women. The average age at admission for women was 35 years; 33 for men. Reflecting a trend Skyland Trail has experienced over the past several years, 35 percent of all admissions were aged 18-25.

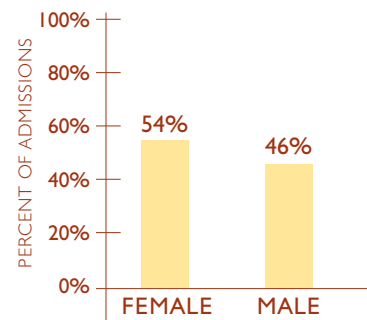
AVERAGE AGE AT ADMISSION  
(N=165)



PERCENT OF ADMISSIONS BY AGE COHORT (N=165)



PERCENT OF ADMISSIONS BY GENDER (N=165)



## CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2010

### Diagnosis

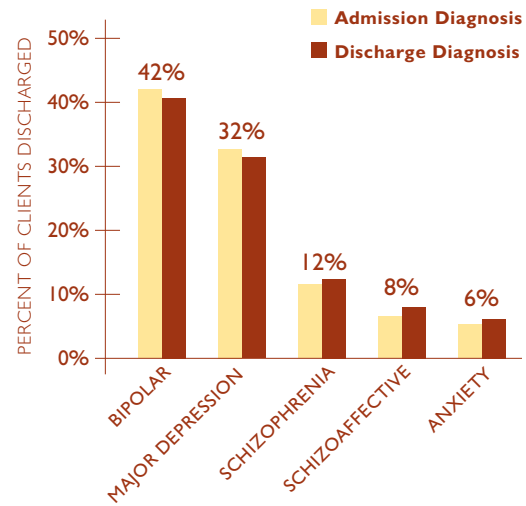
Nearly three-quarters of patients treated at Skyland Trail in 2010 had a primary mood disorder (either major depression or bipolar affective disorder). Of these clients, many (nearly 40 percent) also had a history of substance misuse and benefited from our dual-diagnosis treatment track. That team is headed by a board-certified addiction medicine physician.

Twenty percent of patients treated in 2010 had a primary thought disorder (schizophrenia or schizoaffective disorder). These patients employed cognitive remediation and cognitive behavioral therapies in addition to pharmacotherapy to work on their recovery goals. Life-skills training such as social skills, hygiene, nutrition, exercise, and vocational services are part of all individuals' recovery plans.

### Length of Stay

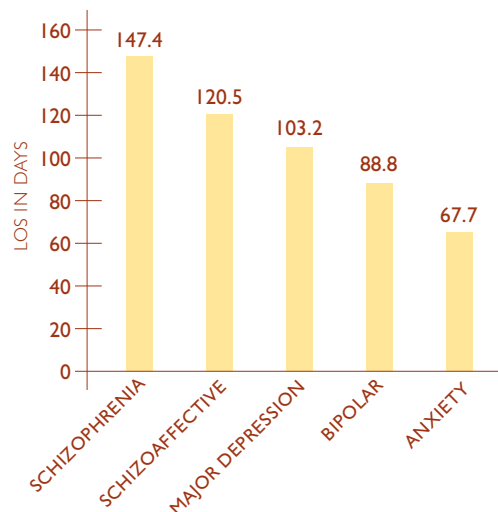
Recent economic factors have driven the average lengths of stay shorter since 2007; however, various opportunities including our need-based Financial Aid Program, in-house insurance review specialists, and various financing options allow patients to complete their recovery programs while prudently utilizing health care and economic resources. Engagement in programs positively influences overall outcomes, and is also measured weekly and used as an incentive to maximize the benefit of services offered at Skyland Trail.

ADMISSION BY DIAGNOSIS (N=204)



AVERAGE LENGTH OF STAY (LOS) BASED ON DISCHARGES (N=142)

(excludes outliers where LOS is <30 days and >730 days)



# CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2010

## SYMPTOMOLOGY

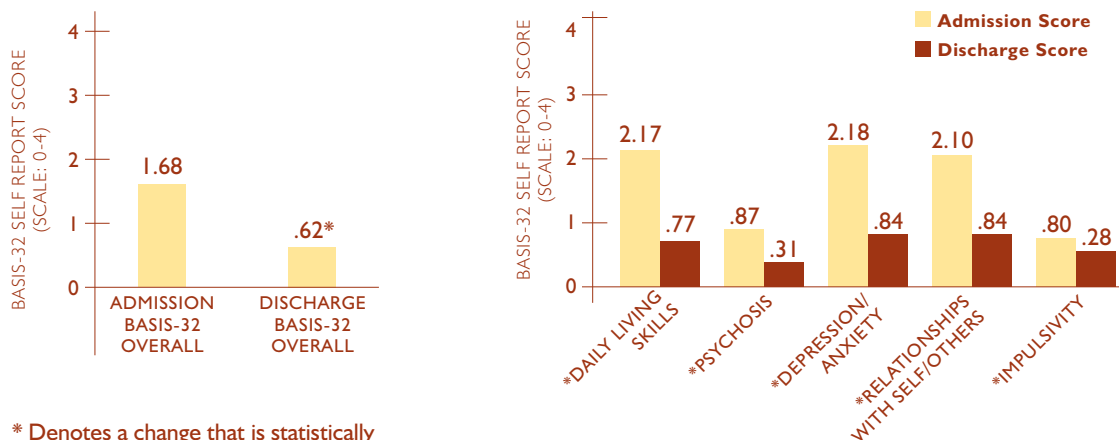
### Behavior and Symptom Identification Scale (BASIS-32)

The Behavior and Symptom Identification Scale-32 (BASIS-32) is a 32-item client self-report inventory that measures reduction in feelings of anxiety, depression, impulsivity, and psychosis as well as improvement in relationships with others, in performing daily activities and in feelings of hopelessness and depression. A decreasing score from admission to discharge is desirable.

In 2010, clients with all diagnoses reported statistically significant improvements in many aspects of life, including symptoms of mental illness like depression and anxiety, ability to complete daily living skills, improved relationships, and decreased impulsivity.

These outcomes speak to the evidence-based Skyland Trail Integrated Medical Recovery Model of care which was developed using current best medical practices. Individualized treatment plans are carefully crafted based on individuals' diagnoses, perceived goals, and thorough analyses of medical research literature that best matches specific therapies with patients' circumstances. In total, all patients who completed their recovery programs at Skyland Trail in 2010 improved 63 percent in symptomatic and functional domains measured by the BASIS-32.

CLINICAL OUTCOMES: BASIS-32 SUB-SCALE SCORES (Paired-Sample Correlation) (2010, N=105)\*



\* Denotes a change that is statistically significant with  $p < 0.05$ .

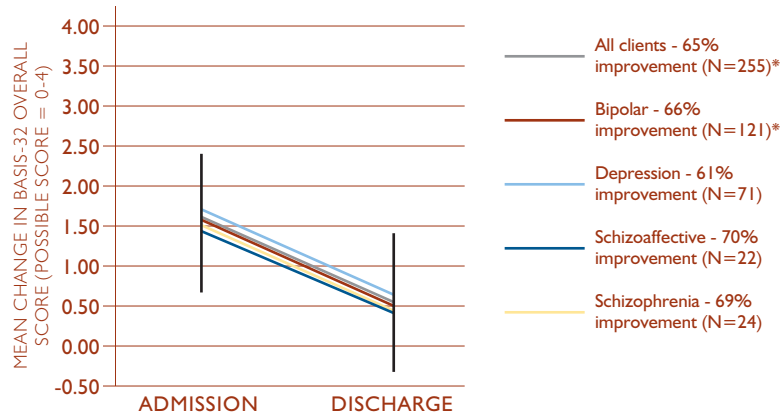
# CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2010

## CLINICAL OUTCOMES: BASIS-32 SCORES BY DIAGNOSIS

Mean change in paired sample correlations (IMRM population):

BASIS-32 Overall scale scores by diagnosis at admission and discharge between 2007 and 2010.

\* Mean change in BASIS-32 Overall scale scores from admission to discharge are statistically significant ( $p < 0.05$ ).



## Beck Hopelessness Scale (BHS)

The Beck Hopelessness Scale (BHS) is a client self-report inventory that measures the degree to which an individual feels depressed and hopeless. It can also be used to measure suicidal ideation. A decreasing score from admission to discharge is desirable.

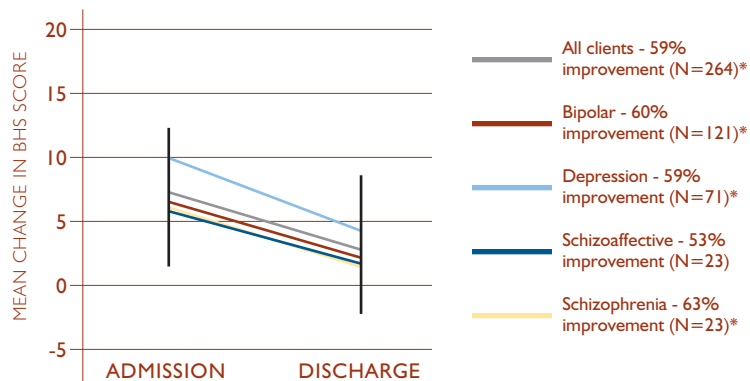
At the time of discharge, all patients report nearly 60 percent more hope for recovery and meaningful, happy lives compared to the time of admission.

## CLIENT OUTCOMES

Mean change in paired sample correlations (IMRM population):

Beck Hopelessness Scale (BHS) scores by diagnosis at admission and discharge between 2007 and 2010.

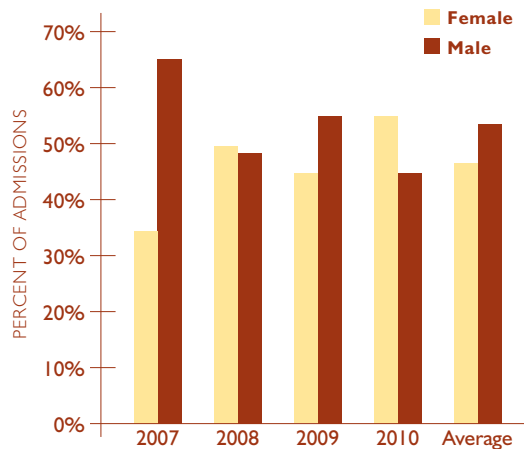
\* Mean change in Beck Hopelessness Scale scores from admission to discharge are statistically significant ( $p < 0.05$ ).



## CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2007-2010

Over 500 patients have completed their treatment programs at Skyland Trail since 2007 when the Integrated Medical Recovery Model of Care was launched. This model of care employs peer-based “affinity groups” of 10-15 clients with similar recovery needs who are available to support one another – along with expert staff – during treatment. Furthermore, each recovery community focuses on the psychotherapeutic modality best suited for each group (cognitive behavioral therapy, dialectic behavioral therapy, dual diagnoses treatment, first-episode of psychosis, and an emphasis on community reintegration for older clients). The age/gender for the 2007 year was unusual in that many more young men were in treatment than in subsequent years. Typically gender distribution among males and females is approximately 50 percent each.

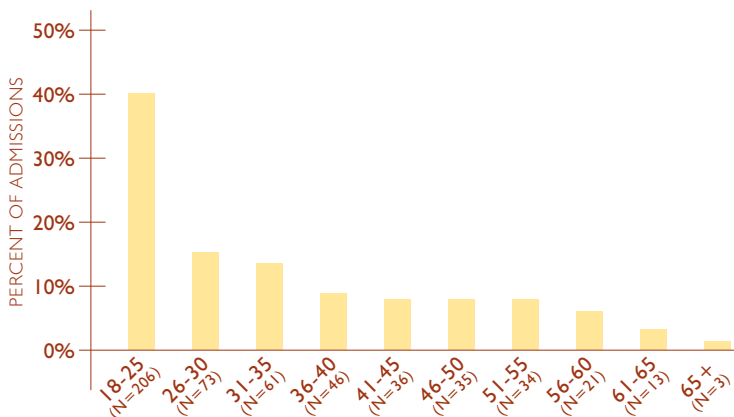
PERCENT OF ADMISSIONS BY GENDER (N=528)



### Admission by Age

While all are welcome at Skyland Trail, we have developed particular excellence in treating “transitional age” adults between the ages 18-25 years old, as seen in the graph below. Close to 40 percent of all admissions during the 2007-2010 time frame were between 18-25. This young adult program is being further developed as a stand-alone campus by 2015, based on recent evidence that suggests sequestering this age group yields superior outcomes compared to mixing people of all ages and diagnoses in one program.

PERCENT OF ADMISSIONS BY AGE COHORT (N=528)

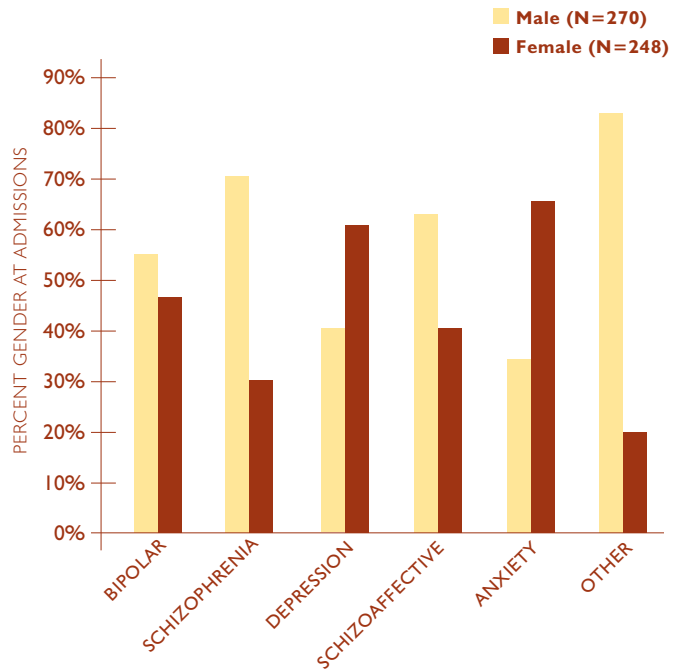


## CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2007-2010

### Diagnosis/Gender

Since 2007, Skyland Trail has become a destination treatment facility for many adults from across the country. Men newly diagnosed with a psychotic illness (schizophrenia or schizoaffective disorder) and women suffering from depression and anxiety, have found Skyland Trail's unique services a good recovery model for their needs.

ADMISSIONS BY DIAGNOSIS AND PERCENT GENDER (N=518)

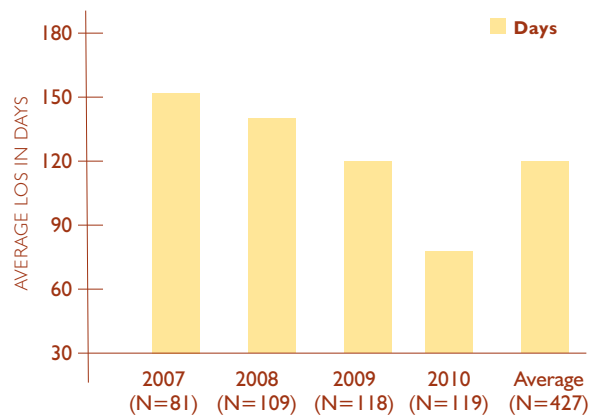


### Length of Stay

Individuals with schizophrenia stayed in services on average almost five months. This time period included residential treatment, partial hospitalization, intensive outpatient, case management vocational services, and social and adjunctive therapies. The levels of services are individually determined by the multi-disciplinary team experts, who titrate support and intensity of services to individuals' progress in treatment. Recommended lengths of stays based on predictive outcomes are available for patients with any diagnosis.

A novel engagement strategy that considers engagement in treatment in pricing structure was implemented in 2011. This tool links investment in recovery with financial incentives. Outcomes from this initiative will be published as part of our robust research and scholarship programs.

AVERAGE LENGTH OF STAY (LOS) AT DISCHARGE (OUTLIERS EXCLUDED (N=427))



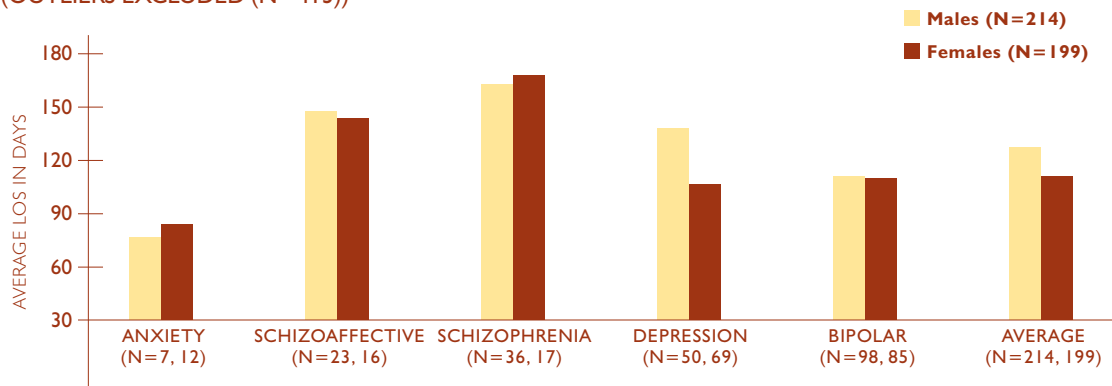
## CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2007-2010

### Length of Stay by Diagnosis

Depressed women who may be missing work and family due to mood problems have overall shorter (and less-than-ideal) average lengths of stays compared to others.

Incorporating support systems such as on-site family therapy and orientation, weekly education and support groups, and periodic progress updates may mitigate this treatment inequity.

**AVERAGE LENGTH OF STAY (LOS) AT DISCHARGE BY DIAGNOSIS AND GENDER  
(OUTLIERS EXCLUDED (N=413))**



### PSYCHOPHARMACOLOGY

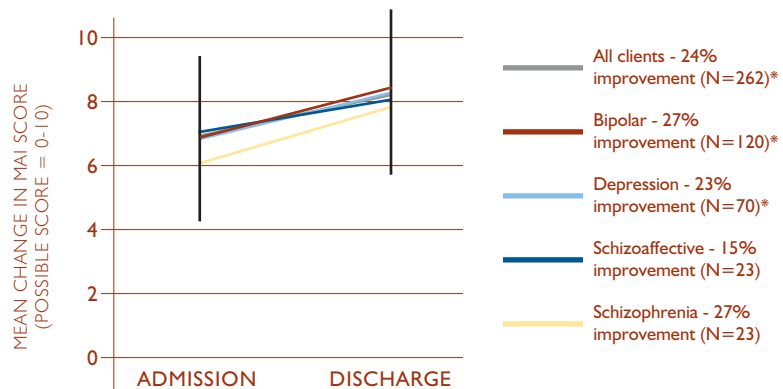
Psychopharmacology is one powerful tool in the armamentarium of recovery from mental illness, yet medication adherence rates are known to be quite low (Lieberman, et. al. 2005). Skyland Trail clients report a statistically significant understanding and positive outlook on their prescribed medications after treatment compared to when they admitted to the program.

#### CLIENT OUTCOMES

Mean change in paired sample correlations (IMRM population):

Medication Attitude Inventory (MAI) scores by diagnosis at admission and discharge between 2007 and 2010.

\* Mean change in Medication Attitude Inventory scale scores from admission to discharge are statistically significant ( $p < .01$ ).

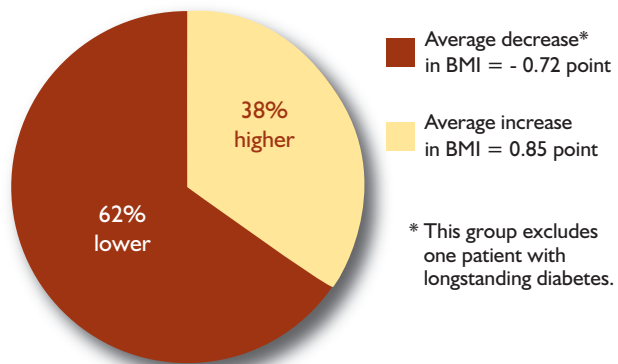


## CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2007-2010

### HEALTH PROMOTION

In addition to the evidence-based psychiatric services provided at Skyland Trail, our on-site medical clinic employs best practices from the medical literature for health promotion and disease prevention. One example is the “Cardiometabolic Syndrome Prevention Track” through which patients at high risk of development of cardiometabolic syndrome (hyperglycemia, weight gain, cholesterol abnormalities, vital sign concerns, etc.) use exercise, nutrition, stress reduction, and other tools to decrease their body mass indices (BMIs) and prevent development of subsequent metabolic illnesses. In 2010, most patients enrolled in this program had improvement in their risk factor for developing the syndrome, as measured by change in BMI. We value holistic health, and integrate complex medical, psychiatric, spiritual, familial, social, and behavioral wellness into every treatment plan.

PERCENTAGE OF PATIENTS WITH CHANGED  
BMI'S DURING COURSE OF TREATMENT



## CLIENT OUTCOMES AND DEMOGRAPHICS REPORT 2007-2010

### SATISFACTION

The respect and efficacy of treatment at Skyland Trail not only yields outstanding results, but leads most patients to highly appreciate and value their time in the program. With such high rates of satisfaction, our hope is that alumni will be more likely to act quickly to prevent relapse or other problems. In the event services are needed in the future, current research projects are assessing long-term outcomes of clients living in the community to ensure that former patients continue to benefit from treatment after they leave Skyland Trail.

In June 2010 Skyland Trail staff collected satisfaction surveys from all clients, reflecting clients' attitudes and thoughts about programming and services. Ninety-six percent of clients completed surveys. Of those, 97 percent say they've been helped by the care they received, 98 percent say staff listened carefully to them, 93 percent say they received enough time with staff members, and 100 percent report that they were treated with respect and dignity while they were at Skyland Trail.

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### CLIENT FUNCTIONING (CLIENT SELF-REPORT AT DISCHARGE)

Item (Scores represent "yes" response):	(N=269)
Are you taking all your medications as prescribed?	97.7 percent
Do you think that you have social support (i.e. family, friends, providers)?	94.0 percent
Have you had any difficulty accessing the care that you need?	87.7 percent (said no)
Would you recommend Skyland Trail to someone else who needed mental health care?	94.4 percent

*Footnote One: Data presented here were collected by Skyland Trail's clinical team and analyzed by a third-party statistician, Scott Rothermel of Rothermel and Associates, Inc.*

*Footnote Two: Lieberman JA, Stroup TS, McEvoy JP, Swartz MS, Rosenheck RA, Perkins DO, Keefe RS, Davis SM, Davis CE, Lebowitz BD, Severe J, Hsiao JK; Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) Investigators. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. N Engl J Med. 2005 Sep 22;353(12):1209-23. Epub 2005 Sep 19.*