Community Treatment Teams in Allegheny County: Service Use and Outcomes

Presented by

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October 2005

AHCI is a contract agency for the Allegheny County Department of Human Services' HealthChoices Program.

About HealthChoices and AHCI

HealthChoices, Pennsylvania's managed care program for Medicaid, provides physical health care and behavioral health care services to both children and adults. The goals of Pennsylvania's HealthChoices program are to improve:

- Access to services;
- Quality of care;
- Continuity of the care provided in a multi-system environment; and
- Coordination and distribution of finite Medical Assistance resources.

Under HealthChoices, Allegheny County contracts with the Commonwealth of Pennsylvania to implement the behavioral health services portion of the program. Allegheny County has delegated responsibilities for managing the behavioral health program to two other organizations:

- The County contracts with Community Care Behavioral Health Organization (Community Care) to manage behavioral health services for the HealthChoices program.
- Allegheny County also contracts with Allegheny HealthChoices, Inc. (AHCI) to carry out the County's oversight and monitoring responsibilities required under the HealthChoices program.

This report is one of a series published by AHCI as part of its oversight and monitoring responsibilities. All AHCI reports can be downloaded from our Web site at www.ahci.org. For more information or additional copies of this report, please visit our Web site, contact us by phone at 412.325-1100, or email eheberlein@ahci.org.

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EXECUTIVE SUMMARY

Community Treatment Teams (CTTs) provide community-based, comprehensive, and intensive mental health and addiction treatment to persons with serious and persistent mental illnesses in Allegheny County. CTTs go beyond helping consumers to manage the symptoms of their illness to supporting consumers in defining their hopes and goals and pursuing their personal recovery.

The four Allegheny County CTTs are designed to follow the Assertive Community Treatment (ACT) model, an evidence-based practice in behavioral health treatment. Evidence-based practices (EBPs) are treatments that have demonstrated positive treatment outcomes in scientific research studies.

Through the end of March 2005, the four Allegheny County CTTs have served 390 consumers. This report examines data structured to follow the CTT consumers' experiences on the teams over time. Team staff provided assistance in interpreting the data. AHCI staff also spent time with various staff members to gather further insight and input. Findings include:

Consumer characteristics. Enrollment on community treatment teams is targeted for consumers with serious and persistent mental illnesses who have not benefited from more traditional types of services. Most of the consumers on the four Allegheny County CTTs have a diagnosis of schizophrenia, bipolar disorder, or major depression/depressive disorders, which are appropriate for participation on teams. Consumers enrolled on teams commonly have histories of long-term or frequently recurring psychiatric hospitalizations in state or community facilities and/or co-occurring substance abuse disorders.

Services used by CTT consumers. CTTs are designed to be intensive, long-term community-based behavioral health services. The teams have been very successful in providing long-term services to consumers. Teams have experienced relatively few discharges. Because CTTs work with consumers who have generally not engaged with or benefited from traditional services, this retention in treatment is a very positive outcome. However, teams have not yet enrolled the expected number of total consumers (currently 100 consumers per team, based on a ratio of ten consumers per one staff member).

Tools for measuring how well teams follow the ACT model indicate that a team operating in full adherence to the model will provide, on average, two hours of service per consumer per week, and, on average, four face-to-face contacts per week. Individual consumers will receive more or less than this average, based on their individual need.

Teams are meeting the targeted number of service hours for each consumer per week. However, the teams are falling short of the goal of four contacts, on average, per consumer per week. Not all consumers need four contacts with the CTT per week (some will need more contacts, while others will require fewer contacts). There is concern that some consumers have received very few services per week and the teams do not appear to be receiving and responding to the expected number of mobile crisis interventions. High staff turnover has certainly been a factor.

Consumer Outcomes. Research has demonstrated that ACT model programs have led to increased community tenure (time spent in the community), improvements in consumers' housing stability, and increased independent living. Also, when specifically incorporating a vocational component, CTT programs can also lead to positive employment outcomes for many consumers. The Allegheny County CTTs should be commended for their work in helping consumers stay out of the hospital and live independently:

- In the six months preceding their enrollment with CTT, consumers spent an average of 63% of their days in the community. In their first six months with CTT, consumers spent an average of 75% of their days in the community. After consumers have been with CTT for more than one year, consumers spent an average of 85% of their days in the community.
- During the first six months on CTT, hospitalization costs decreased 28% compared to pre-CTT. During the second six months on CTT, hospitalization costs decreased 51% when compared to pre-CTT. For later periods, hospitalization costs remained 64% to 70% below pre-CTT costs.
- Overall, many CTT consumers experienced positive outcomes related to their housing status by either maintaining independent living status or moving toward more independent housing.

Even with these positive outcomes, the data analysis and discussion with teams indicate service delivery, and consequently consumer outcomes, could improve further. While many consumers do not get admitted to the hospital or spend time in jail, there are opportunities to increase community tenure, primarily through the reduction of community hospitalizations. Also, the teams have identified several shortfalls in available housing, which limit consumers' abilities to move to less restrictive settings. Furthermore, the majority of consumers has not made improvement toward employment and has not developed supports outside of the CTT. Recommendations based on the analysis and follow-up discussions include:

1. **Technical assistance is needed in managing a CTT caseload on a daily basis.** Data analysis indicates that some consumers receive small amounts of service, and teams are not providing the recommended average amount of contacts with consumers. The teams have provided their perspective on barriers to providing more frequent or intensive services. These barriers need to be assessed further and solutions implemented in order to insure overall service provision meets the standards of an ACT program.
2. **Training and technical assistance is needed to implement other best practices within the ACT model.** Teams would benefit from training in implementing dialectical behavior therapy, dual diagnosis treatment and supportive employment best practices within the teams.
3. **Teams must work to follow the ACT model.** The teams must be staffed with specialists (substance abuse, vocational, peer, and forensics). The specialists need to be trained in their specialties and given time to focus on these areas with consumers. Furthermore, teams must take the time to complete individualized assessments, crisis plans and treatment plans. Focusing on housing, vocational and supports goals is essential for consumers as they move toward recovery.
4. **System barriers need to be addressed.** Teams and consumers have identified unmet housing needs. Hopefully, the implementation of the Allegheny County Office of Behavioral Health Permanent Supported Housing Strategic Plan will help meet some of these needs. Peer programs also should be supported by the system and funds for activities should be secured. Finally, teams have limited influence in diverting hospital admissions. Inpatient units need to be educated on CTTs. More proactive and direct communication between team staff, Community Care, and inpatient units must be instituted to allow CTTs to take responsibility for diversions.

In order to implement these recommendations, AHCI, the County and Community Care need to develop a detailed plan to support and monitor the teams. As the plan is implemented, data reports should be used to develop priorities and interventions. CTTs provide an essential service with positive outcomes demonstrated extensively in research. The teams need to be trained, supported, monitored and held accountable if we are to expect continued and additional positive outcomes in Allegheny County.

INTRODUCTION

Community Treatment Teams (CTTs) provide community-based, comprehensive, and intensive mental health and addiction treatment to persons with serious and persistent mental illnesses in Allegheny County. The goal of CTTs is to help people stay out of the hospital and develop skills and supports to lead meaningful lives in the community. CTTs go beyond assisting consumers manage the symptoms of their illness to support consumers in defining their hopes and goals and pursuing their own personal recovery.

The four Allegheny County CTTs are designed to follow the Assertive Community Treatment (ACT) model, an evidence-based practice in behavioral health treatment. Evidence-based practices (EBPs) are treatments that have demonstrated positive treatment outcomes in scientific research studies.

An extensive body of research provides evidence that CTT participation leads to more positive consumer outcomes than other forms of treatment. The most consistent finding in CTT research involves hospital use. In a review of the literature published in 2001, Bond et al. described 17 studies in which CTT consumers experienced a signficiant reduction in hospital admissions and lengths of stay. See the Appendix for other sources of information on the ACT model.

What does the research show?

Assertive Community Treatment (ACT) has demonstrated numerous positive outcomes including:

- Retention in treatment
- Fewer hospitalizations and hospital days
- Increased community tenure
- Improved housing stability and increased independent living
- Positive employment outcomes

While studies have been inconclusive regarding the effect of CTT participation on the amount of time consumers spend in jail (Lewin Group 3), the sizeable decrease in time spent in mental hospitals has significantly increased the average time consumers spend in the community. This increase in community tenure is important from a quality-of-life perspective as well as in considerations of cost effectiveness. Though CTT services are fairly expensive, they are still less costly than hospitalizations (Essock 179).

Research has also demonstrated ACT model programs have led to improvements in consumers' housing stability and increased independent living (Mueser et al. 37). When specifically incorporating a vocational component, CTT programs can also lead to positive employment outcomes (Becker 104).

While the effects of CTT treatment on other outcomes have been studied to a lesser degree, available research also indicates such treatment can lead to positive effects on such factors as engaging and retaining consumers (Herinckx et al. 1304) and addressing co-occurring substance use disorders (Drake et al. 201).

When programs are designed to follow the model used in the research cited above, the same positive treatment outcomes can be expected. Following the ACT model is therefore very important. The Allegheny County CTTs are monitored both in treatment outcomes and in how well they follow the model. Key aspects of the ACT model include:

- **Flexible, assertive, and intensive community-based services.** CTT services are provided by team members who are on-call 24 hours per day, seven days per week, and 365 days per year. Staff increase or decrease duration and frequency of contacts with

individual consumers based on consumer needs. Seventy-five percent or more of the services provided by the teams should occur in the community (i.e., outside the CTT office). The teams work proactively with consumers to help them engage in treatment, live independently, and move through the recovery process.

- **Comprehensive, long-term services.** The teams provide a wide array of services directly to consumers, including psychiatric evaluations, mental health and drug and alcohol therapy, medication management, case management, peer support, assistance with housing, crisis and hospital diversion services, vocational assessments and supported employment, and assistance in managing personal finances.

- **Multidisciplinary staff.** To provide these comprehensive services, the CTTs must operate as a multidisciplinary team. The teams therefore include a Team Leader, Peer Support Counselors, a Psychiatrist, Nurses, Mental Health Professionals, Drug and Alcohol Specialists, and Vocational Specialists. The expected ratio is one team member to ten consumers with a total capacity per team of 100 to 120 consumers. Both of these factors allow the teams to provide most services with minimal referrals to other services or providers.

Allegheny County currently has four CTTs. Mercy Behavioral Health, Residential Care Services, and Western Psychiatric Institute and Clinic each operate a team for adult consumers. Western Psychiatric Institute and Clinic also operates a team for transition-age consumers (ages 16-25 years). Community Care Behavioral Health pays for the service for consumers who are enrolled in Medical Assistance, and Allegheny County Office of Behavioral Health pays for the service for consumers not eligible for Medical Assistance. Community Care manages all authorizations and referrals, regardless of whether Community Care or Allegheny County pays for the service.

"CTT saved my life"

M. believes that he would have died living on the street without CTT. While he was resistant to the team at first, they were able to help him get into rehab to treat his alcoholism and find him a place to live. M. is now the house manager of a sober-living house and has maintained his sobriety for many months.

M.'s experience and appreciation of CTT are far from unique. When consumers are asked to explain how CTT helped them, consumers talk about the teams' assistance in finding housing and helping them meet their daily needs. Consumers talk about their trust in staff, and how accessible the team is (especially the psychiatrists, when compared to other services). They value staff's ability to see them quickly in the community, and staff's persistent efforts to reach consumers.

The Allegheny County CTTs began accepting referrals late in 2001, and have served 390 consumers from 2001 through the end of March 2005. This total number of consumers includes both individuals still involved in the teams and those who have been discharged. While 81% of the consumers who have been enrolled in CTT treatment continue to receive services, 19% of the consumers have been discharged from the program or are deceased.

This report examines the CTTs from the perspective of the consumers' experiences on the teams over time. Rather than focusing on a specific year of teams' operations, the data is presented in terms of the time consumers have spent on the teams, and changes they have experienced while on the teams.

This report examines three areas:

- **CTT consumer characteristics.** CTTs are designed to serve consumers with specific diagnoses, histories, and service needs. Therefore, examining the population served on the Allegheny County teams can show if Allegheny County CTT consumers are similar to clients served in other ACT programs.

- **Services used by CTT consumers.** CTTs are expected to provide comprehensive and frequent services for consumers. Services used by CTT consumers are examined in this context.

- **Consumer outcomes.** When the model is followed, it is expected that programs will demonstrate the positive outcomes associated with the ACT model. In this report, community tenure (time spent in the community), housing, employment, education, and non-behavioral health supports are examined to develop an understanding of consumers' progress over time.

The report includes data from the year prior to consumers' enrollment with a CTT through March 30, 2005. A number of different data sources were used in the development of this report, including:

- **HealthChoices claims.** Providers submit claims for payment to Community Care for the services they have provided to consumers. The claims that are approved and paid by Community Care are included in this report. Both CTT and non-CTT services are considered.

- **County service utilization records.** Service utilization for behavioral health services (both CTT and non-CTT services) funded by the County are included in the report.

- **Admissions data.** Admissions data for community psychiatric hospitalizations and state mental hospitalizations are analyzed in the report.

- **CTT application data**. Each CTT is responsible for tracking changes in a variety of domains through an online database.

- **Input from team staff and consumers**. AHCI staff visited each CTT and shared data with team staff. The teams provided very helpful input. Also, AHCI staff spent time with various staff members in the field to gather further insight and input.

AHCI would like to thank all of the CTT staff and consumers who provided their feedback during the development of this report.

A note about reporting terms

The **mean** and the **median** are measures most commonly used to describe a group's characteristics. The **mean** is the result of adding up all the observations, then dividing by the number of observations. If the data is skewed (meaning there are a few extremely high or low values, in comparison to most values), the mean will be pulled up or down by these extreme values. In these cases, the median may provide a more accurate description. The **median** is the middle value in the group. Half of the values in the group fall above the median, and half the values fall below the median.

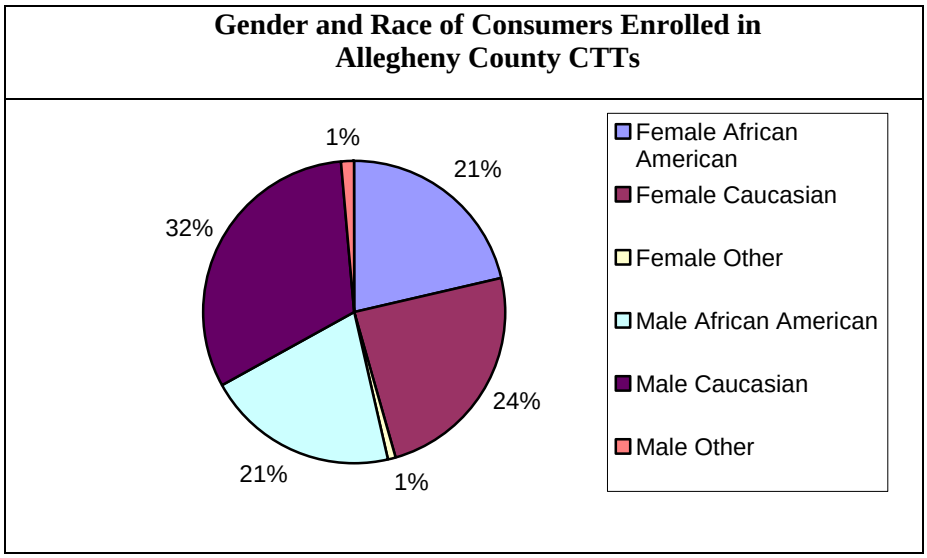
WHO DO TEAMS SERVE?

The four Allegheny County CTTs have served 390 consumers since they began in late 2001. This section summarizes the demographic characteristics of these consumers, including age, gender and race, and their distribution around the County. Diagnoses and hospitalization histories are also described.

Age, Gender and Race

Over time, each team has served between 91 and 102 consumers. The mean age for consumers at time of enrollment on the three adult teams has been 43.9 years, with a range of 23 to 84 years. For the consumers on the WPIC Transition Team, the mean age at enrollment has been 21.7 years. Chart 1 illustrates the overall gender and racial mix of the consumers who have been enrolled in the four CTTs.

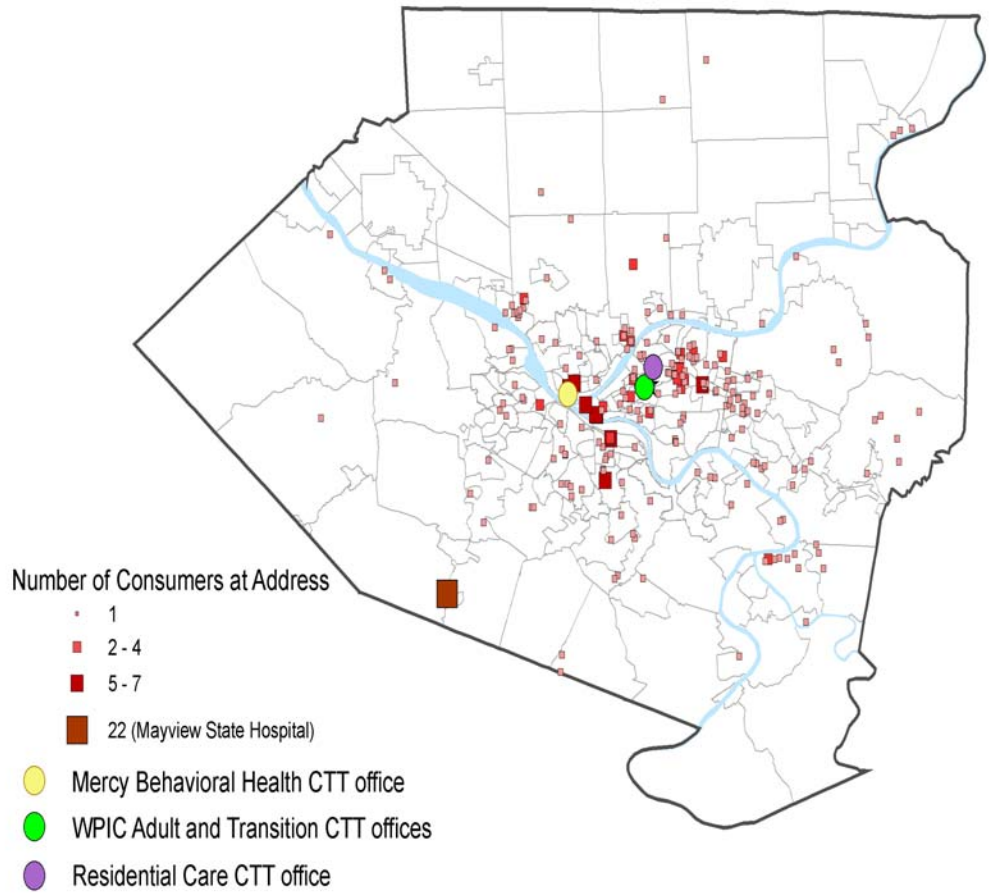
Chart 1



Geography

The CTTs have served consumers throughout Allegheny County. Of the 317 currently active consumers (through March 2005), 159 or 59% live within the City of Pittsburgh. Many CTT consumers live in the city neighborhoods of East Liberty, Point Breeze/Homewood, and the South Side Slopes. Outside of the city, a large number of consumers reside in municipalities such as Wilkinsburg, Millvale, and Bellevue. Additionally, many consumers currently reside in Mayview State Hospital in the municipality of Bridgeville. The following map shows the addresses of consumers currently enrolled on teams.

Location of Consumers and CTT Offices



Because the majority of CTT contacts are expected to take place in the community, it is important for staff to have geographic accessibility to consumers' homes. Based on the most recent addresses of active consumers, the following table illustrates the number of consumers living within 1 mile, 5 miles, and 10 miles of their team offices.

Table 1

Proximity of Consumers to CTT Offices							
	Active Consumers	# of cons. within 1 mile of office	% of cons. within 1 mile of office	# of cons. within 5 miles of office	% of cons. within 5 miles of office	# of cons. within 10 miles of office	% of cons. within 10 miles of office
Mercy	84	9	11%	50	60%	66	79%
ResCare	78	1	1%	31	40%	56	72%
WPIC Adult	75	8	11%	57	76%	62	83%
WPIC Trans.	80	6	8%	40	50%	60	75%
Total	317	24	8%	178	56%	244	77%

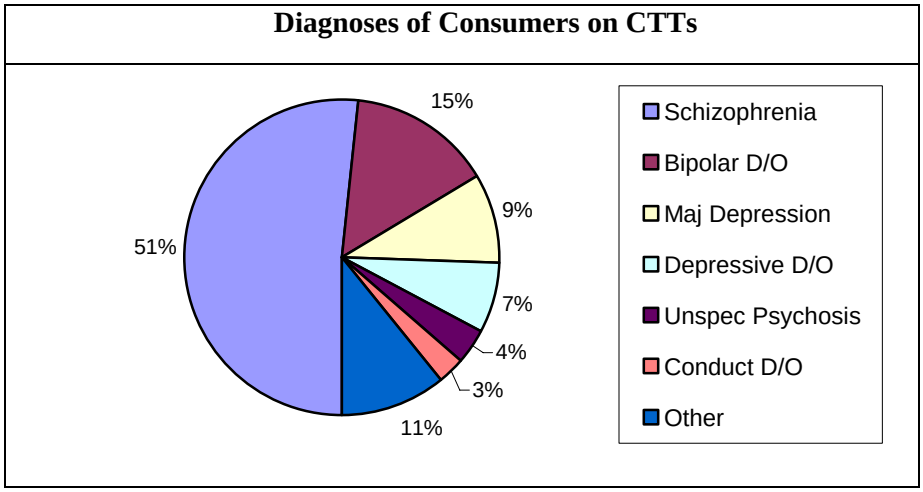
The distance between residence and office does not necessarily reflect the time required to travel between the team offices and consumers' residences. However, it does provide an approximation. It should be noted that:

- 44% of active consumers live more than five miles from their team offices
- 23% of active consumers live more than ten miles from their team offices

Diagnosis

CTTs are designed to provide intensive community-based treatment for consumers with serious and persistent mental illnesses who have not benefited from more traditional behavioral health services. As such, teams have predominantly enrolled consumers with a primary diagnosis of schizophrenia or other psychotic disorders, or a chronic, major mood disorder. The following chart shows the primary diagnosis of CTT consumers based on the most frequently received primary diagnosis found on a consumer's claims record.

Chart 2



The most common diagnosis for consumers is schizophrenia (51%), followed by bipolar disorder (15%) and major depression/depressive disorders (16%, combined). Because of their younger age, consumers on the WPIC-Transition Team have a different diagnostic pattern, with some consumers having conduct and adjustment disorders. When this team is excluded, 62% of the consumers on the three adult teams had a primary diagnosis of schizophrenia and 27% had a primary diagnosis of bipolar disorder or major depression/depressive disorder.

Research has shown that as many as 50% of individuals with serious mental illnesses will develop a co-occurring substance use disorder at some point during their lives (Surgeon General's Report). Determining an accurate count of the number of consumers with co-occurring substance use disorders on the CTTs using claims or authorizations data is difficult.[*] According to the CTTs, the majority of CTT consumers have substance use disorders. For example:

- Based on a review of their current caseload, the Mercy Team estimated that 75% of their consumers have a co-occurring substance use diagnosis.
- The WPIC-Transition Team estimated that closer to 50% of their consumers have substance use issues.
- The WPIC Adult Team estimated that 60% to 65% of their consumers have a co-occurring substance use diagnosis. In fact, the primary diagnosis for some consumers has changed over time. For example, as consumers have addressed their substance abuse issues, the team has determined that previously received mental health diagnoses of psychosis-related disorders are not appropriate (e.g., psychotic symptoms occur only when the consumer is abusing drugs or alcohol).

By all reports, the substance abuse issues are significant and impact treatment greatly. Each team is required to include one substance abuse counselor for each 50 consumers on the team to insure that the teams have the expertise and capacity to provide substance abuse treatment.

The teams also think that Axis II diagnoses, which are not captured in claims data, strongly influence consumers' success on the teams as well as their utilization of services. For example, some CTT staff has cited particular challenges in working with consumers who have borderline personality disorders or traits.

Other ACT programs have added specific treatment components, notably dialectical behavior therapy (DBT), to work with people who have borderline personality disorder diagnoses or traits. Managing this specific therapy program within the structure of an ACT team is challenging, but can be very successful if implemented consistently. Based on the difficulties the teams report having with people in this diagnostic subcategory, they would benefit from additional training and technical assistance in this area.

[*] Using care management data from Community Care, consumers can be counted as having a co-occurring substance use disorder if they ever had a documented substance use diagnosis for any episode of treatment while in the HealthChoices program. This only includes consumers whose CTT service was paid for by Community Care. Because this same data isn't available for County-funded consumers, this results in an under-representation of the number of consumers with substance abuse issues. Also, because consumers' mental illness may often be the *focus* of treatment, the substance use/abuse diagnosis may not be documented. Therefore, team-reported information is more reliable in this instance.

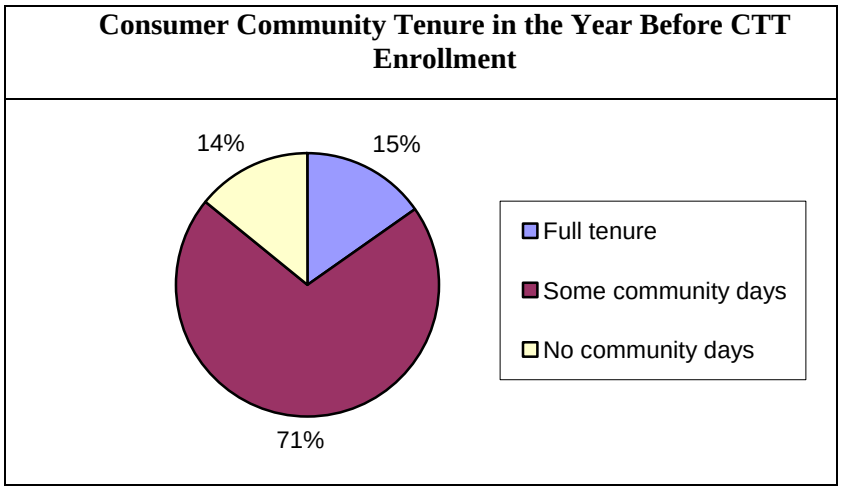
Psychiatric Hospitalizations and Community Tenure

In addition to the diagnosis of a serious and persistent mental illness, CTT services are designed to meet the needs of consumers with long-term or frequently recurring psychiatric hospitalizations in state or community facilities. Of the 390 CTT consumers served in Allegheny County:

- 36% spent some amount of time in the state hospital during the year prior to their enrollment on a team. These consumers spent an average of 246 days in the state hospital in the year prior to CTT enrollment.
- Consumers often enroll with teams while still residing in the state hospital. Almost 27% of Allegheny County's CTT consumers were in the state mental hospital at the time of their enrollment on a team. Because of their young age, consumers on the WPIC Transition team were much less likely to have been in the state hospital at the time of their enrollment. Only 14% of WPIC Transition consumers enrolled with the team while in the state hospital.
- In addition to state hospital stays, many consumers spent significant amounts of time in community mental hospitals before enrolling with the teams. In the year prior to their enrollment on a team, 64% of consumers had at least one inpatient admission.
- Many individuals had more than one inpatient hospitalization. Consumers had as many as 20 separate admissions in the year prior to their enrollment on the teams. Consumers who had at least one hospitalization in the year prior to CTT had a mean of four hospital discharges, with a mean of 50 hospital days.

Community tenure is calculated by subtracting the number of days a consumer has spent in a state or community hospital from the total number of days the consumer could have lived in the community. Overall, the mean community tenure for CTT consumers in the year prior to their enrollment was 245 days. The following chart shows the percent of consumers in the following categories of community tenure: full community tenure (365 days without inpatient hospitalizations), some days in the community, and no days in the community.

Chart 3



Participation in Community Treatment Teams is intended for consumers who have experienced significant amounts of time removed from community settings. Therefore, most CTT consumers will have less than full community tenure in the time prior to their enrollment on teams. In Allegheny County, 85% of CTT consumers experienced less than full community tenure in the year prior to their enrollment on teams. However, the analysis of community tenure is affected by the community tenure history of the younger WPIC Transition consumers.[*] In comparison to the adult CTT consumers, those on the WPIC Transition Team spent more time in the community and less time hospitalized. When considering only consumers on the adult teams, 90% had less than full community tenure.

Summary and Discussion

Because of the intensive nature of its services, enrollment on community treatment teams is targeted for consumers with serious and persistent mental illnesses who have not benefited from more traditional types of services. The data indicate most of the consumers on the four Allegheny County CTTs have an Axis 1 diagnosis appropriate for participation on teams. Those consumers without a diagnosis of schizophrenia or mood disorders are the exception. Furthermore, consumers enrolled in teams are likely to have a history of low community tenure and/or co-occurring substance abuse disorders.

[*] Residential treatment facilities (RTFs) were not included in the community tenure calculation. Inclusion of these programs, where adolescents are placed for an average of six months, would have decreased the community tenure for some adolescents in the year prior to their CTT enrollment.

SERVICES USED BY CTT CONSUMERS

CTTs are designed to be intensive, long-term community-based behavioral health services. Services are tailored to the individual, and primarily provided in the community. Based on the ACT model, teams are designed to:

Provide time-unlimited services.
Consumers will generally be served by the teams for long periods of time, and teams will consequently have few discharges. Examining discharges and consumers' lengths of stay indicates the degree to which CTTs are providing time-unlimited services.

Provide intensive and comprehensive services based on individual client needs. In order to address the comprehensive needs of consumers, available services include psychiatric evaluations, mental health and drug and alcohol therapy, medication management, case management, peer support, assistance with housing, crisis and hospital diversion services, vocational assessments and supported employment, and assistance in managing personal finance.

The data used in this report does not permit analysis of the nature of CTT services provided. For example, we are unable to determine whether CTT services provided during a particular contact were related to drug and alcohol therapy, vocational counseling, etc. However, we are able to measure consumers' use of non-CTT behavioral health services and thereby gain some indication of whether or not the teams are the primary service providers for consumers.

Furthermore, the data provides important information regarding the frequency and duration of contacts consumers have with the CTTs. Additionally, we can examine how often teams are providing crisis interventions. These streams of information are helpful in identifying the degree to which the teams are providing an intensive and comprehensive level of service.

CTT: A Pragmatic Approach

CTTs are intended to be assertive and creative in their work with consumers. Teams often make adjustments in treatment based on the principles of harm reduction and through discussions and negotiations with consumers.

For example, CTT consumers are often prescribed complicated medication regimes to address their psychiatric illnesses. Many times, consumers struggle to follow through with medications, often because it is difficult to remember the instructions or because of adverse side effects.

CTT psychiatrists generally realize that taking medications in the real world is different from on the inpatient unit. A psychiatrist may decide to prescribe one pill, once a day (at least initially), if a consumer will take it consistently.

Staff will deliver medications to some consumers daily if they need this level of support. Other consumers will receive weekly deliveries; staff may assist consumers by packing pill boxes and/or teaching consumers to pack pill boxes. As the teams work with consumers around medication education, consumers take fuller responsibility for managing their medications and discussing their needs with the psychiatrist and other staff members.

Time-unlimited Services

Consumers have been involved with the teams for varying amounts of time. Enrollment has been gradual. Enrolling clients gradually is important because many consumers will need intensive engagement and may have many immediate and significant needs at the time of their enrollment (diversion from the state hospital or unstable housing, for example). However, it is important to note that the teams remain below the current maximum enrollment of 100 consumers (based on a ratio of 10 consumers to one staff member). The pace of enrolling new consumers has been raised as an issue with the teams.

In this report, a consumer's total length of stay on the team depends on his or her date of enrollment and whether he or she remains active or has been discharged. For instance, an active consumer who joined a team in 2004 has a shorter length of stay than an active consumer who was enrolled in 2003. Similarly, two consumers with the same enrollment date may have different lengths of stay if one of them has been discharged and the other is still active or was discharged at a later date.

Of the 390 consumers who have been enrolled with one of the CTTs, 73 (19%) have been discharged. Table 2 shows the median lengths of stay for both active and discharged consumers.

Table 2

Lengths of Stay for Active and Discharged CTT Consumers			
Discharge status	Number of consumers	Percent of consumers	Median number of years on teams
Currently enrolled / active	317	81%	2.6
Discharged			
Death	20	5%	1.1
Moved	16	4%	1.0
Voluntary	37	9%	1.1
Total	390	100%	2.2

Overall, the median number of years consumers have been enrolled is 2.2 years. In other words, half of consumers have been enrolled less than 2.2 years, and half have been enrolled longer than 2.2 years. Consumers who have been discharged from the team for any reason were enrolled with CTT for about half this time, 1.1 years. Because CTTs work with consumers who have generally not engaged with or benefited from traditional services, this retention in treatment is a positive outcome.

Of the 20 deaths, four were ruled accidental (all were related to drug overdoses), two were suicides, 12 were from natural causes, and two were undetermined. The sources for this information are coroner's reports (if available), significant member incident forms from Community Care, and Community Care clinical case notes.

Voluntary discharges include consumers who:

- Were never successfully engaged by the team (approximately ten consumers, two who remained in the state hospital).
- Received lengthy jail terms and were therefore discharged (four consumers).
- Moved on to other, often less intensive, behavioral health services like intensive case management or outpatient services (approximately 18 consumers).

Based on this information, the CTTs have been providing time-unlimited services. The teams have had few discharges, and consumers have remained on the teams for several years.

CTT: Medical Care

Many consumers, adult consumers in particular, have significant physical health concerns. Common health problems include diabetes, hepatitis, HIV, congestive heart failure, and pulmonary diseases. Many consumers are overweight and/or heavy smokers, factors which contribute to other health complications. And, similar to the rest of the population, many consumers have difficulty managing their chronic illnesses.

CTTs play an essential role in assisting consumers with their medical care. While team members share responsibilities, the registered nurses and psychiatrists use their medical expertise to take the lead in tracking physical health issues. This includes many activities: prescribing and packaging medications, insuring consumers make appointments with other health providers, attending appointments, coordinating and following up with other health providers, and educating consumers and other staff on the health concerns consumers face. This will range from talking about medication side effects to exercise, nutrition, and dental hygiene.

Length of Stay Reporting

For the purposes of this report, length of stay is categorized in six-month periods. Table 3 presents the number of CTT consumers for each length of stay category. Consumers who have been discharged are included. In this report, these categories were used to compare how CTT service utilization and community tenure outcomes changed for consumers as they spent more time on the teams.

Table 3

Length of Stay Categories	
Length of stay on team	Number of consumers
Any amount of time	390
At least 6 months	362
At least 1 year	310
At least 1.5 years	255
At least 2 years	217
At least 2.5 years	172
At least 3 years	98
At least 3.5 years	18

Intensive and Comprehensive Services

The ACT model differs from traditional behavioral health services in many ways: contact with consumers is more frequent, more contacts take place in the community, and staff share responsibilities, instead of having individual caseloads. The teams can rapidly adjust the frequency and intensity of contact with individual consumers, based on consumers' individual needs. The amount of time teams spend with individual consumers *and* the number of days consumers are seen are both important.

CTT service levels are expected to vary by consumer and over time. For instance, intensity of service may be low for some consumers when they initially are referred to a CTT. Locating a consumer and engaging them in services may take several months. Other consumers may need a lot of assistance from the team when they are initially referred, especially if they have immediate housing needs. Some consumers may not have had acute needs (e.g. housing) immediately upon their CTT enrollment, but the consumer and team may spend significant time on the comprehensive assessment process during the first 90 days of treatment.

CTT: A Day in the Life

Each weekday begins with a team meeting. During the meeting, the entire list of consumers on the team is reviewed. This is a chance for staff to briefly describe the previous day's contacts, any crisis interventions from the previous night, and discuss each consumer's status and needs for the day.

As a group, they prioritize the work for the day and make assignments. The team members share responsibility for seeing consumers. Some consumers will have regular visits in the community and some consumers will come into the office for regularly scheduled appointments or groups. The team needs to make decisions every morning, and often throughout the day, to make sure the consumers needing support from the team are contacted that day.

When monitoring CTT services at the team level, the amount of services provided per consumer is examined in two ways:

- Mean billable time consumers have with the team per week
- Mean number of contacts* consumers have with the team per week

Different patterns of contact may result in the same mean number and lengths of contact. It is therefore important to determine if most consumers receive the average amount of services or some consumers receive very little service while others receive intensive services.

Tools for measuring how well teams follow the ACT model indicate that a team operating in full adherence to the model will provide, on average, two hours of service per consumer per week, and, on average, four face-to-face contacts per week. *Individual consumers will receive more or less than this average, based on their individual need.* Table 4 shows the mean hours and contacts per week with the CTTs over the course of time with the team. Days are counted as contacts if the consumer has a paid CTT claim.

* A contact is defined as a day with at least one paid claim for CTT services. The minimum value is zero, which means that on average for each week, the consumer was not seen by the team any day. The maximum value is seven, which means that on average for each week, the consumer was seen by the team every day.

Table 4

Mean Hours per Week and Mean Contacts per Week for Consumers on CTTs			
Time period on CTT	Number of consumers included in mean (Based on length of stay)	Mean number of hours per week	Mean number of contacts per week
6 months	362	2.1 hours	1.3 contacts
6 months to 1 year	310	2.8 hours	1.9 contacts
1 year to 1.5 years	255	3.2 hours	2.1 contacts
1.5 years to 2 years	217	3.1 hours	2.1 contacts
2 years to 2.5 years	172	2.8 hours	2.1 contacts
2.5 years to 3 years	98	2.3 hours	2.0 contacts
3 to 3.5 years	18	2.2 hours	1.9 contacts

Table 4 summarizes service intensity and frequency over the time consumers were on the CTTs. This allows different treatment time periods to be compared. For example, we can compare the average amount of services consumers received during their first six months on the team to their second six months on the team. Because consumers joined the teams gradually, the number of consumers gets smaller in later treatment time periods. For example, 362 consumers were on a CTT at least six months, while 310 consumers have been on a CTT at least one year.

For the 362 consumers who have been on a CTT at least six months, they received a mean of 2.1 hours of CTT service per week during their first six months on the team. These services were provided in less than two contacts (1.3 contacts), on average, per week. For the 310 consumers on a team at least one year, they received a mean of 2.8 hours of CTT service per week, with about two contacts (1.9) per week, during their second six-month period on the teams.

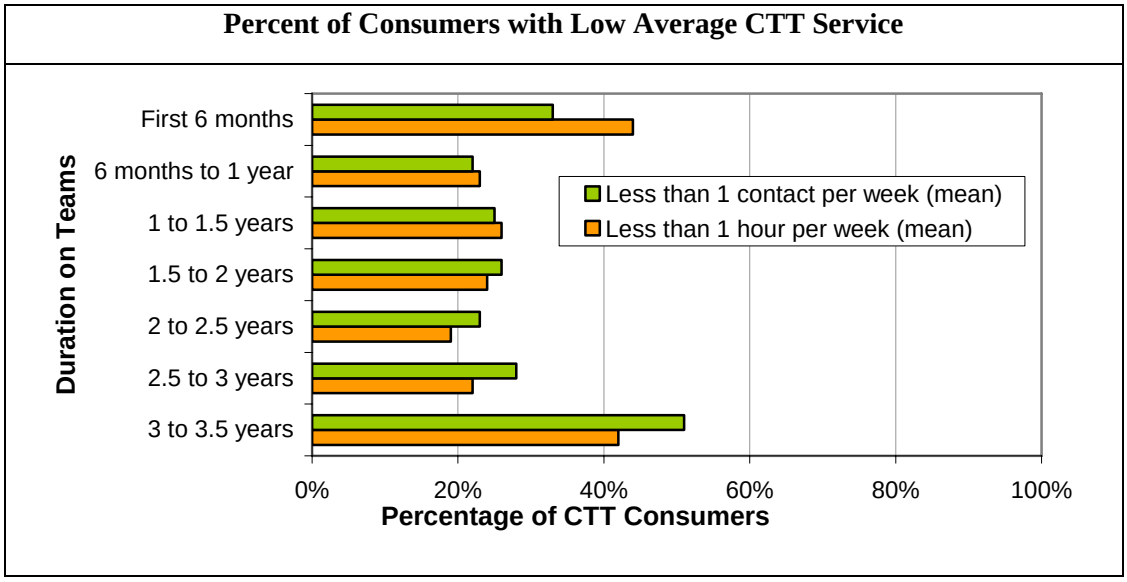
So, Table 4 shows that the CTTs have been meeting the expectation of providing two hours of service, on average, per consumer per week.* During their first six months on the CTTs, consumers receive a smaller amount of services than in later periods. The teams may have had difficulty engaging some consumers in the service, resulting in this lower average.

Table 4 also shows that the CTTs have not been meeting the expectation of providing four contacts, on average, per consumer per week. This data suggests that consumers are spending time with the team, but that this time is concentrated into fewer days during the week.

*It is important to note that the number of hours includes the travel time involved in reaching the consumer. In other words, if the staff member spends 30 minutes in travel time to reach a consumer, and then spends 30 minutes with the consumer, the contact is recorded as lasting one hour.

As mentioned above, understanding the patterns behind the numbers provides additional information about consumers' experiences on the teams. Chart 4 shows the percent of consumers with low average amounts of CTT services over their tenure on the teams. Consumers who had less than one hour of CTT service per week, on average, for the time period are represented in orange. Consumers who had less than one contact per week, on average, with their CTT, are represented in green.*

Chart 4



During the first six months on the CTTs, over 40% of consumers averaged less than one hour of CTT service per week. Low CTT service is expected for some consumers in the early weeks and months of their involvement with the teams because it is difficult to engage some individuals in treatment. On the other hand, CTTs should be working on comprehensive assessments with consumers over the first three months of treatment, as specified in the ACT model. While teams generally completed initial assessments of consumers' needs and strengths, comprehensive assessments (including historical and recent evaluations of multiple areas) were not systematically completed. Providing this level of assessment during consumers' initial months on the teams could have increased the average amount of service per week. The teams have since been trained and should be implementing comprehensive assessments.

Chart 4 shows that between 20% and 28% of consumers have low average CTT services after being enrolled on the teams for more than six months. While weekly contacts may be *very* appropriate for consumers who are doing well, the proportion of consumers who average less than one billable contact per week is of concern.**

*Claims data is a very reliable data source. However, several data limitations should be noted. Claims data does not distinguish between phone and face-to-face contacts. Location of services provided (office or community) was not tracked until April of 2004, so we are not able to include this factor in this report. Also, several billing issues have been discovered and corrected over time, but there is certainly some under-reporting of service provision in this report.

**Eighteen consumers have been on the CTTs more than three years. Because this group includes a small number in comparison to other time periods, the results are less reliable and are not included in this comparison.

The CTTs have cited a number of barriers as to why they have not seen some consumers more frequently. First and foremost, many of the teams have experienced high staff turnover, like many other behavioral health services. When positions are vacant, it is difficult to see consumers frequently in the community. One or two crisis interventions can prevent staff from checking in with other consumers in the community. Also, the teams say that travel time involved in reaching consumers is a challenge. Some contacts will take an entire day (e.g. helping a consumer move, taking a consumer to medical appointments).

Working on a team is a challenging and often stressful job. Some staff are troubled by the ACT model's requirement that the teams have face-to-face contact with consumers an average of four times per week. They think that this expectation is unrealistic given the barriers they face, and meeting the standard will come at the expense of good clinical judgment (for example, seeing some consumers who don't need or want frequent contact with the team at their home in order to "boost the average"). The WPIC-Transition Team believes that their population is better served by longer contacts that may occur less frequently. They suggested that longer contacts allow staff to be more helpful in working with clients; many consumers are involved with multiple systems (education, Office of Children, Youth and Families, welfare) and need support in navigating these systems.

At the same time, some staff members acknowledge frustration with how the team's limited resources are divided across their caseload:

- Some consumers are seen more often than their treatment plan would indicate is necessary; these consumers may frequently come into the office and demand a significant amount of staff attention, or use on-call resources more than staff think is appropriate.
- Some consumers could be working toward additional goals but are refusing more involvement with the team.
- Some consumers are stable and are regularly engaged with the team but they could be making even more progress with more staff involvement.
- Some consumers could benefit from more frequent contacts, but are generally doing well.

CTT: A day in the life

Staff members assist consumers with a wide variety of issues related to living in the community. For instance, in the course of eight contacts with consumers, one staff member provided assistance and supportive counseling related to:

- Medications
- Physical health
- Housing
- Money, budgeting, and shopping
- Stress management
- Employment
- Family issues
- Diet and nutrition

Staff members tend to be very invested in their jobs, and while they know they are helping many consumers, they believe they could do more if they were fully staffed and could use their time differently. Kim Patterson, a consultant with the teams, is currently working with staff to identify barriers and provide technical assistance to help teams better manage their caseloads and provide more frequent contacts to those consumers who need them.

Crisis Interventions

Crisis intervention and hospital diversions are critical services provided by the CTTs. The CTTs are responsible for operating an after-hours crisis on-call system, where on-call staff responds to consumers experiencing crises either via telephone or face-to-face contact. Table 5 shows the total number of each type of crisis event tracked by the teams since they began providing services, and the average number of interventions per month and per consumer. Because they keep track of face-to-face mobile crises and diversions that occurred after hours, any diversions occurring during normal program hours are not reported.

Table 5

Crisis Interventions				
Category*	Number of consumers	Total interventions	Interventions per month (1/2002 – 3/2005 included)	Interventions per consumer
Crisis calls	390	7765	199.1	19.9
CTT mobile face-to-face	390	754	19.3	1.9
Hospital ER visits	390	535	13.7	1.4
Diversions	390	430	11.0	1.1

**Please see the appendix for complete definitions of the crisis categories.*

Table 5 shows that the CTTs have received close to 200 crisis telephone calls per month. Crisis calls are logged when consumers call the on-call staff after hours,* regardless of the reason for their call. The mean number of calls for all the treatment time periods (first six months, second six months, etc.) was between four and six calls in a six month time period. More than half of all consumers had none or one call in any time period, while a few consumers had a large number of crisis calls. The teams provided additional information in reaction to the crisis calls data:

- Some staff were unclear about what qualifies as a crisis call. Therefore, the actual use of on-call services is probably under-reported for the Mercy and Residential Care teams. The WPIC Adult Team did not identify this as a concern.
- Consumers on the WPIC-Transition Team have relied on the on-call system significantly more often than the adult teams. In fact, team staff has worked with some individuals on coping skills and the use of natural support so they can be more independent and use on-call less frequently.

Because many consumers did not need CTTs to provide face-to-face crisis interventions, emergency room interventions, or hospital diversions after hours in a six month period, the mean number of these events per month in Table 5 is lower than the total number of crisis calls.

Psychiatric hospitalizations continue to be a concern for some CTT consumers (see page 25). Therefore, the low number of documented mobile crisis interventions by the teams raises some concern that the teams may not be visiting consumers face-to-face after hours during crisis situations to attempt diversions.

* Teams vary somewhat in their operating hours. All teams are required to provide services seven days per week, including a minimum of three 12-hour days per week and eight hours each weekend day and holiday. Teams provide on-call crisis support beyond these operating hours.

Other Behavioral Health Services

CTTs are expected to provide comprehensive, long-term services. Generally, consumers should not need or use other behavioral health services outside of the teams. However, some non-CTT services may be used while consumers are transitioning on or off a team, and some services may be appropriate to supplement CTT services. Table 6 shows the service utilization for the most frequently used non-CTT services, excluding hospitalizations (see pages 25-28 for hospitalization data). Both behavioral health services covered by Medicaid and non-Medicaid services paid for by Allegheny County Office of Behavioral Health are included.

Table 6

Use of Non-CTT Services During Participation on CTT		
	Number of consumers	Median time service was used by consumers **during** participation on CTT (Hours or days)
Category 1: Services appropriate while consumers are transitioning to/from CTT or the state hospital		
Case Management	172	9.1 hours
Administrative Case Mgmt.	328	8.5 hours
Outpatient MH	150	0.8 hours
Residential Treatment Facilities (adolescents)	5	13.0 days
Category 2: Behavioral health services appropriate for consumers in crisis and/or with acute and severe substance abuse issues		
RTF-Adult	9	21.0 days
Respite/DAS	106	22.5 days
Residential D&A	51	29.0 days
Non-Residential D&A	58	20.8 hours
Category 3: Supportive services, including housing and peer supports		
Housing Support Services	58	67.9 hours
Community Residential Services	144	211.5 days
Social Rehabilitation	70	26.1 hours

Category 1

The first category in Table 6 includes services appropriate while consumers are transitioning to/from CTT. Median use of outpatient mental health services and residential treatment facilities for adolescents both appear appropriate. Case management services are appropriately used by consumers as they transition onto or off a CTT. According to the data, the median use of case management by consumers while they were enrolled in CTT is 9.1 hours. The Allegheny County CTT performance standards allow for up to six hours of case management to be authorized over a

three month transition phase. This suggests that consumers may be overlapping services for longer than expected.

Administrative case managers provide coordination services for CTT consumers. For CTT consumers, much of this work is done by the County's hospital liaison staff. These liaison staff members participate in discharge planning activities. Most (84%) of the CTT consumers have received this service, with median usage of 8.5 hours. Once consumers are involved with CTT, administrative case management is a duplication of services. Administrative case management services for CTT consumers should be evaluated more closely.

Category 2

The second category in Table 6 includes behavioral health services appropriate for consumers in crisis and/or with acute and severe substance abuse issues. CTT consumers use RTF-Adult and respite/DAS* services when their treatment needs are acute and they are at risk of hospitalization. These services are also used as a step-down from psychiatric hospitalizations. The RTF-Adult is a relatively new program with a limited number of beds, accounting for the small number of CTT consumers who have used the service. About 27% of CTT consumers have used respite/DAS services during their time on a team. The median usage for these services is 22.5 days.

About 14% of CTT consumers have used residential or non-residential drug and alcohol services. Residential services include residential detoxification and rehabilitation services (both medically managed and medically monitored) and halfway houses. Non-residential drug and alcohol services include outpatient, intensive outpatient, and partial drug and alcohol services. The median usage for these services is approximately 21 hours.

Category 3

The third category in Table 6 includes supportive services paid for by the Office of Behavioral Health. These services complement CTT, and provide additional support to consumers in housing and peer relationships. Housing support services are provided to CTT consumers enrolled in supported housing. For some in supported housing, consumers live in agency-run housing, where the consumer essentially rents from the agency and receives supports. For others, consumers live in independent housing. In both situations, staff visits with consumers every week to two weeks. Staff assists with shopping, budgeting and other daily living skills, check to see if consumers are taking their medications, and serve as an emergency contact. These services are appropriate for consumers who have independent living skills but need some additional supports. Some consumers also receive rent subsidy payments. CTT and supported housing staff should be communicating with each other and coordinating services.

Community residential services include long-term structured residences (LTSRs), personal care homes, supervised apartments, and group homes. Many CTT consumers need the structure and support these housing programs provide in order to live in the community. See pages 31-33 for additional discussion of housing outcomes for CTT consumers.

Social rehabilitation programs provide informal programming giving consumers opportunities to interact with peers and develop social supports. About 18% of CTT consumers have used social rehabilitation programs while enrolled with CTT.

* DAS = diversion and acute stabilization services.

Summary and Discussion

The frequency and intensity of services should vary for each individual over time. Many factors will determine the nature of CTT services for an individual at a given point in time, including stage of involvement in treatment (engagement, stabilization, rehabilitation), diagnoses and psychosocial issues, and life events. Immediately after crises, short and frequent contacts would generally be appropriate; during big transitions (e.g. moving) or crises (e.g. death of a family member) longer, more intensive contacts would be appropriate. Planning to meet these individual needs while balancing the entire consumer caseload is the essential role of a CTT.

The data indicates the teams are successfully implementing many components of the ACT model, while falling somewhat short on other dimensions. The teams have been very successful in providing long-term services to consumers. Teams have experienced relatively few discharges. Because CTTs work with consumers who have generally not engaged with or benefited from traditional services, this retention in treatment is a very positive outcome. However, teams have not yet enrolled the expected number of total consumers (currently 100 consumers, based on a ratio of ten consumers per one staff member).

According to the ACT model, teams should be providing intensive, frequent and comprehensive services to their consumers. Teams are meeting the targeted number of hours of service by providing, on average, more than two hours of service for each consumer per week. Also, teams are the primary service provider for consumers; consumers are generally using acceptable amounts of other non-CTT services.

However, the teams are falling short of the goal of four contacts, on average, per consumer per week. Certainly many consumers do not need four contacts with the CTT per week (some might need more contacts, while others might require fewer contacts). There is concern that many consumers have received very few services per week and the teams do not appear to be receiving and responding to the expected number of mobile crisis interventions. The teams have provided their perspective on barriers to providing more intensive or frequent services. These barriers need to be investigated further and solutions implemented in order to insure overall service provision meets the standards of an ACT program.

CONSUMER OUTCOMES

CTT consumers in Allegheny County have been receiving CTT services for an average of over two years. The goal of CTTs is to help consumers maintain their tenure in the community and develop skills and supports to lead meaningful lives. The progress consumers have made with the support of the teams is covered in the following sections.

Community Tenure

The most widely documented successes with the ACT model have involved increased time in the community (community tenure). Consumers have less frequent hospitalizations and spend shorter periods of time in the hospital when compared to time periods before enrolling with a team. Chart 5 shows community tenure for CTT consumers in the year prior to their enrollment with CTT and the time periods while they have been on the teams.

Chart 5

Community Tenure for CTT Consumers Before and During CTT Enrollment

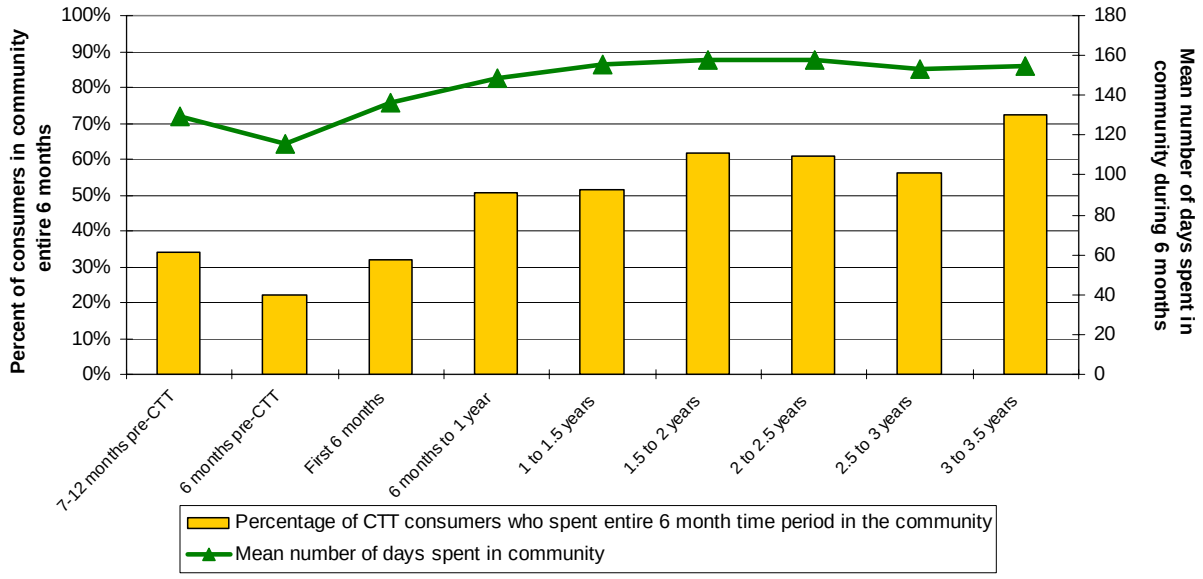


Chart 5 shows that an increasing proportion of consumers spent entire 6 month periods in the community after they enroll with CTT. In the six months prior to CTT enrollment, only 22% of consumers spent the entire six month period in the community.* During their first six months with CTT, about 32% of consumers stayed in the community the entire time period. During their second six months with CTT, 51% of consumers lived in the community the entire time period. For consumers who have been with CTT for longer periods of time, an even higher proportion spent entire 6 month periods in the community.

* Many of these consumers are on the WPIC Transition-Team, where state hospital stays and frequent community psychiatric hospitalizations prior to CTT enrollment are not as common because of consumers' young ages.

Chart 5 shows that CTT consumers, on average, spend more days in the community after they have been enrolled with CTT for more than six months. In the six months before their CTT enrollment, consumers averaged 115 days in the community. Mean tenure increased to 136.7 days during consumers' first six months with CTT, continued to increase over the next six months, and then remained steady at between 153 and 157 days after consumers had been with CTT more than 1 year.

What does other research show?

In a 1995 study, McGrew et al. found that the mean number of hospital admissions for consumers in a set of CTT programs decreased from 1.61 admissions before enrollment to 1.07 admissions in the year after enrollment. The mean number of days consumers spent in the hospital also decreased from 85.6 to 40.1 days.

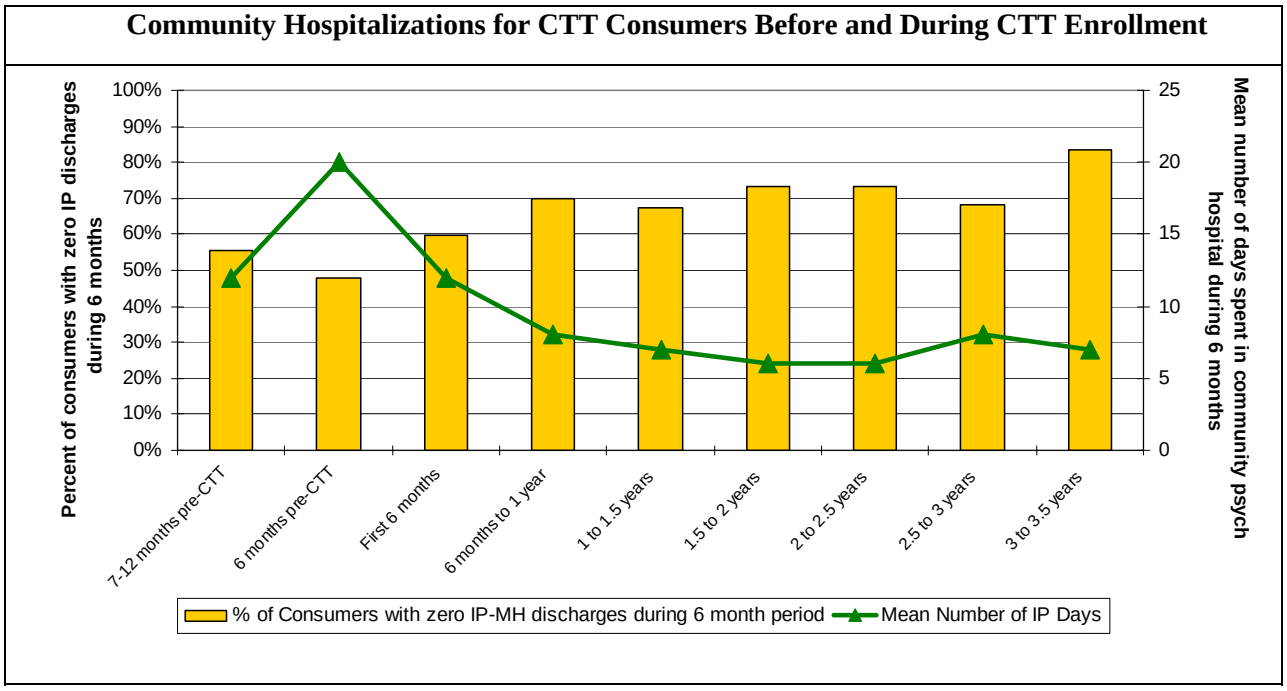
Similarly, Essock et al. found that after enrollment, ACT clients spent approximately half as many days hospitalized as consumers in a control group receiving standard case management services.

These improvements in community tenure are certainly significant, especially when the six months immediately prior to CTT enrollment are compared to the six months after CTT enrollment. However, this paints an incomplete picture. The following sections discuss psychiatric hospitalizations, state mental hospitalizations, and jail time in order to provide additional insight into what has driven the improvements in community tenure and where further interventions are needed to increase community tenure.

Community Psychiatric Hospitalizations

Chart 6 summarizes hospitalizations for CTT consumers over time. Psychiatric hospitalizations are certainly appropriate at times when consumers need the intensity and restrictiveness of a hospital setting despite the CTT's interventions. Therefore, it is expected that on occasion, consumers enrolled with CTT will still need to use hospitalizations for mental health treatment.

Chart 6



The teams should be commended for helping consumers maintain their tenure in the community; between 68% and 73% of consumers with longer (1 or more years) CTT tenures were not hospitalized during their most recent six month period on the team. However, between 27% and 33% of consumers had at least one hospitalization during this period.

The mean number of inpatient discharges and days increased in the 6 months immediately before CTT enrollment (1.68 discharges, 20 days), then decreased significantly (0.85 discharges, 12 days) in the six months after CTT enrollment. The mean number of inpatient discharges and days has remained about the same for consumers with longer tenures on CTTs (.56 to .59 discharges, 6-8 days). Similarly, the percent of consumers without *any* inpatient stays within a six month period increased during the first six months with CTT, and then remained relatively steady over time.

Inpatient admissions were discussed with the teams at length to learn their impressions of why admissions stay at this level for consumers who have been enrolled for longer periods of time.

The three adult teams suggested that:

- Consumers abusing substances often end up in the ER.
- Medication adherence is an issue.
- Consumers with Axis II personality disorders frequently go to the hospital. Going to the hospital is often a learned coping behavior that takes much effort and intervention to unlearn.

The WPIC Transition Team suggested that:

- Hospitalizations primarily occur when consumers experience serious mental health symptoms (rather than substance abuse).
- Consumers with schizophrenia and bipolar disorder were more likely to frequently use the hospital.
- Consumer medication adherence was also cited as an important issue.

CTT: Hospital Diversions

When a consumer presents at an emergency room and the hospital calls Community Care for an authorization for admission, Community Care alerts the CTT. The CTTs should meet with the consumer face-to-face at the hospital and work with the hospital staff on possible diversion. While this communication has improved over time, the team may not learn of admissions for consumers with primary Medicare insurance before they occur (because Community Care is not authorizing these stays). Also, CTT is often alerted after the admission is underway.

Dr. Raj Narayan, the Residential Care team psychiatrist, has disagreed with many of the psychiatric hospitalizations that have occurred in 2005. Some consumers may routinely go to the hospital when they have spent all their money, lack stable housing, or are intoxicated; the hospital is their way of coping. Consumers know what to say in order to be admitted. For these consumers, the hospital's decision to admit the consumer undermines progress in changing consumer behavior. He believes that CTTs should have much more influence in the decision to admit a consumer.

His suggestions include direct communication with the care manager at Community Care authorizing the admission, and discussions with the admitting doctor. An admission should not be a foregone conclusion without the approval of the CTT psychiatrist and staff.

Some staff on other CTTs agreed that they do not have enough influence to successfully divert inpatient admissions with which they disagree. Many hospital staff do not have enough understanding of CTT. In particular, hospital staff do not realize how well CTTs know their consumers, and how frequently CTTs can see consumers to provide support.

AHCI cannot verify these impressions with the data used in this report. However, in support of the teams' impressions, there are clearly some consumers who have frequently been admitted to community hospitals throughout their time with CTT. About 7% of consumers with CTT for more than one year have had at least one hospitalization in each 6 month period; a larger percent of consumers with CTT for more than one year have not had any community hospitalizations since enrolling with CTT.

Based on the data and the teams' input, the teams still have opportunities to reduce hospitalizations. Interventions that should be evaluated and discussed include:

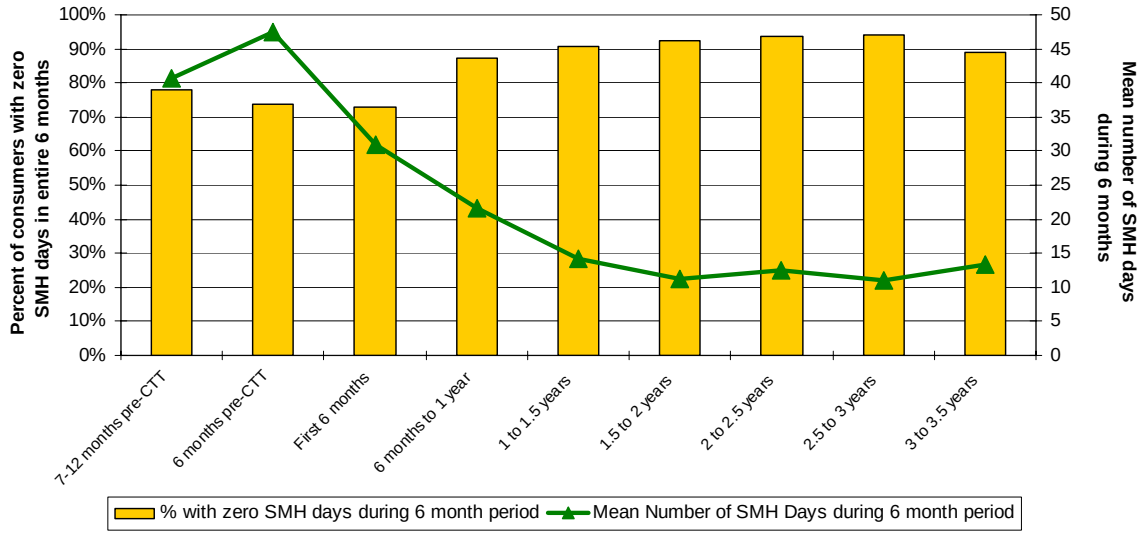
- Providing hospital staff with education on CTT services and responsibilities.
- Providing incentives for hospitals to work with CTTs to divert consumers whenever possible.
- Improving communication between the CTTs, particularly the psychiatrists, and staff at Community Care responsible for authorizing hospitalizations.
- Performing more targeted and collaborative treatment planning. Quarterly hospitalization reports distributed by AHCI should be used by the CTTs to review their caseload, identify patterns in hospitalizations, and develop individual plans accordingly. Teams should work with consumers to develop advance directives. Community Care should also more closely monitor admissions for CTT consumers and problem-solve with the CTTs.
- Reviewing existing crisis/diversion services and research evidence-based practices for implementation in Allegheny County. The lack of a crisis system outside of emergency rooms and inpatient facilities certainly restricts the teams' options in handling crises and diverting psychiatric admissions.

State Mental Hospitalizations

The ACT model was originally developed to support consumers in the community who had been treated in state mental hospitals for long periods of time. As described earlier, 27% of consumers joined CTTs while in the state mental hospital. Chart 7 summarizes state hospital days for CTT consumers over time.

Chart 7

State Mental Hospitalizations (SMH) for CTT Consumers Before and During CTT Enrollment



The percent of consumers without *any* state hospital days within a six month period increased during the first six months with CTT, and then remained relatively steady over time at between 91% and 94%. Similarly, the mean number of state hospital days increased in the six months immediately before CTT enrollment (47.5 days), then decreased significantly (31 days) in the six months after CTT enrollment. The mean number of state hospital days has remained about the same for consumers on the teams for longer periods (11-14 days). Again, the teams should be commended for supporting a large percent of consumers in maintaining tenure in the community.

Consumers have state hospital days *after* CTT enrollment for two reasons: the consumer joined the team while in the hospital and has not yet been discharged, or the consumer lived in the community for a period of time while on the team but was then admitted to the state hospital. For consumers who were in the state hospital at the time of their CTT enrollment, they spent an average of 158 days in the state hospital before being discharged.[*] Forty consumers (about 11%) had state hospital stays after they enrolled with the team.[**] Some of these admissions occurred early in consumers' tenure with CTT, when the team had not had extensive opportunities for engagement or diversion.

Overall, the teams believe that they have sufficient influence in diverting consumers from being admitted to the state hospital after they have been on the team for a period of time. The CTT has the responsibility (rather than the psychiatric unit) for developing alternatives and supports to the state hospital. In some cases, diversion is not possible because of the severity of the consumer's illness at the time.

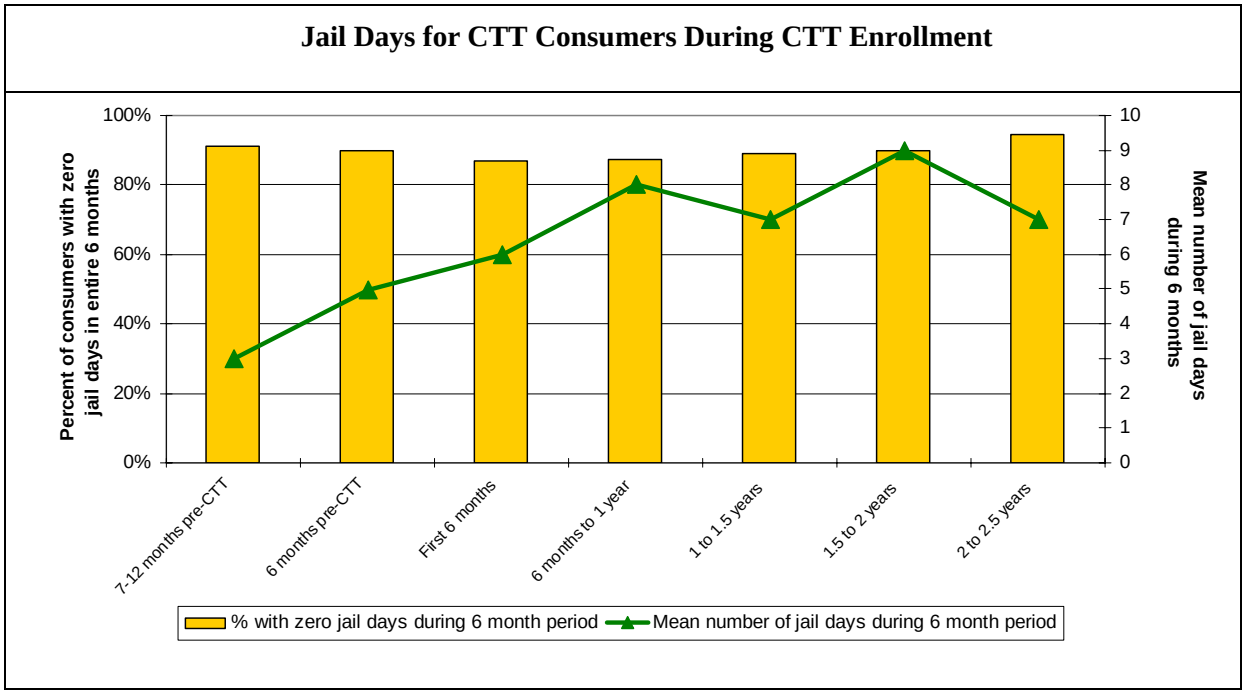
[*] State hospital days were included in this mean if the consumer was in the state hospital at the time of their CTT enrollment and the number of days in the period was the maximum. A few consumers were still in the state hospital at the end of the report period, so the mean reported here is understated.

[**] A consumer was counted as having a state hospital stay after enrolling with a team if the consumer had state hospital days during any time period. Stays that began before CTT enrollment are not counted. However, several consumers who joined a team while in the state hospital and were subsequently discharged did return to the state hospital; these consumers are counted in this figure.

Jail Days

Chart 8 shows jail days for consumers after they have been with CTT. Data for jail days prior to CTT was not available for this report. During each time period while on CTT, 9% to 13% of consumers spent some amount of time in jail.

Chart 8



The mean number of jail days is similar from time period to time period after the first six months on CTT. During the first six months with CTT, the mean number of jail days was three. For later periods, the mean number of jail days ranges from six to nine days. For each time period, between 3% and 7% of consumers spent less than one month in jail, and 3% to 7% spent more than 30 days in jail.

Offenses range from drug charges and prostitution to weapons possession and car theft. The WPIC Transition staff believes that as their consumers have grown up, some have graduated to more serious criminal involvement. Consumers are affected and influenced by their communities, and many consumers live in poor, high crime neighborhoods. For some, staff has concerns about visiting the community after dark or one-on-one.

CTT: Forensic Specialists

Forensics specialists are the primary contact with the criminal justice system for consumers. They work with the mental health court, district attorneys, probation officers and the jail to ensure consumers involved with the courts meet the requirements of their parole. They also serve as advocates when consumers are arrested, visit consumers in jail, keep in touch with probation officers, and attend review hearings. In previous years, visiting consumers in jail had been difficult if not impossible. However, when the forensic specialist positions were created, the jail provided training and currently scheduling visits to the jail is not an issue.

Allegheny County received a grant to fund forensic specialists on the CTTs. This position has not been consistently staffed for some teams. The Mercy Team has had a staff member who specializes in forensics issues. The WPIC teams have shared a forensics specialist. Similar to the other team specialists, the forensics specialist performs many other case management and team roles beyond their "specialty."

Community Tenure and Costs

Community tenure has increased for many consumers during their time with CTT. As shown above, community psychiatric hospitalizations, state mental hospital days, and jail time all impact community tenure for CTT consumers. Increasing the amount of time consumers spend in the community and out of the hospital or jail improves the quality of life for consumers. It also reduces costs. Table 7 shows an estimate of the impact of CTT on hospitalization costs. While these are estimates based on average costs per consumer, the cost savings in state and community hospital days is significant.

Table 7

State and Community Hospitalization Costs for CTT Consumers before and during CTT Enrollment			
Time period	Number of Consumers	Mean Hospitalization Cost per Consumer	% decrease in mean costs (compared to pre-CTT) *
7-12 months before CTT enrollment	390	$24,688	
6 months before CTT enrollment	390	$31,659	
First 6 months on CTT	362	$20,174	28%
6 months to 1 year on CTT	310	$13,667	51%
1 to 1.5 years on CTT	255	$10,257	64%
1.5 to 2 years on CTT	217	$8,467	70%
2 to 2.5 years on CTT	172	$8,675	69%
2.5 to 3 years on CTT	98	$9,348	67%
3 to 3.5 years on CTT	18	$9,788	65%

Table 7 shows the impact of CTT on hospitalization costs. When compared to hospitalization costs in the year before CTT enrollment, hospitalization costs decrease dramatically in the first year on the team, then stabilize for consumers during later periods on the team. During the first six months on CTT, hospitalization costs decreased 28% compared to pre-CTT levels. During the second six months on CTT, hospitalization costs decreased 51% when compared to pre-CTT. For later periods, hospitalization costs remained 64% to 70% below pre-CTT costs.

The cost savings are shared by different systems. During each six month period, between 50% and 70% of estimated hospitalization costs are state hospital costs. Depending on consumers' eligibility, Medicare, Community Care, and Allegheny County pay the costs of community hospitalizations. Approximately 25% to 30% of CTT consumers have Medicare coverage in the course of one year, and consumers are eligible for HealthChoices 75% of the total time enrolled with CTT. Therefore, Medicare and Community Care realize the bulk of the cost savings for community hospitalizations.

*Costs for the two six month periods prior to CTT enrollment were averaged. The percent decrease was calculated using this pre-CTT average and the mean estimated costs. See the Appendix for more details on table calculations.

Housing

Ensuring consumers have adequate housing in the community is an important objective for the teams. Treatment efforts and consumers' recoveries may be hampered by a lack of access to safe and stable living arrangements. Because many consumers have spent significant time in state and community mental hospitals, they often require assistance in both finding and maintaining housing.

At the time of enrollment on teams, many consumers are living in institutional settings. It is expected that these consumers will transition into more independent living arrangements over time. To measure housing outcomes, a consumer's housing status at the time of enrollment was compared to his or her housing status as of March 2005 or his or her date of discharge, if no longer enrolled in CTT. (See the Appendix for more information on the types of facilities included in each category of housing.)

It is important to note that the data only captures consumers' living arrangements at two points in time: housing status at time of enrollment and housing status as of March 2005 or date of discharge. However, it is possible that consumers moved through several categories of housing during their time on the teams. These changes are not reported here. For instance, a consumer who was living in a substantial care setting at time of enrollment may have moved into an independent living situation for a period of time, but returned to a substantial care facility by March 2005. This consumer would therefore be categorized as having no change in living arrangements in this analysis.

What does other research show?

Becker et al. documented an increase in independent living for consumers in a Program of Assertive Community Treatment in Illinois. At the time of enrollment, only 29% of consumers were living independently. Ten years later, 90% of the program's clients were living independently.

In a 1998 review of the CTT literature, Mueser et al. discovered that in 9 out of 12 studies which looked at the role of CTT participation on housing outcomes, the researchers had concluded that consumers experienced a positive change in the independence of their living situations.

Table 8 documents the housing status of CTT consumers at the time of enrollment on a team and their current status or status at discharge. The chart contains information on 359 consumers. Three of the 390 CTT consumers did not have complete housing data. The 28 consumers who had lengths of stay on the teams of less than 6 months were also excluded.

The chart is ordered by increasing level of independence in living. By reading across the rows, the number of consumers who moved from one category (at enrollment) to another category (as of March 2005 or their discharge date) can be determined. The color coding of the chart can be used to evaluate the number of consumers who experience no change, positive change, and negative change:

- The gray cells moving from the upper left hand corner to the lower right hand corner indicate the number of consumers who had the same housing category during their start with the CTT and in March 2005, or at their time of discharge.
- The green cells in the upper right hand portion of the table indicate consumers who have moved toward more independent living categories.

- The orange cells in the lower left-hand portion of the table indicate consumers who have moved toward less independent living categories.

Table 8

Housing Status for CTT Consumers							
		Housing status at discharge or 3/31/05					
		Temporary	Institutional	Substantial care	Semi-independent	Independent	Total
Housing status at CTT enrollment	Temporary	4	2	3	6	22	37
	Institutional	0	29	24	6	27	86
	Substantial care	1	7	38	10	15	71
	Semi-independent	0	1	4	6	15	26
	Independent	0	6	11	10	112	139
	Total	5	45	80	38	191	359

For the 220 consumers who were not in independent housing at their time of enrollment:

- 130 (59%) showed a positive change in their housing status category by moving toward more independent housing.
- 77 (35%) had no change in their housing status category.
- 13 (6%) showed a negative change in their housing status category by moving toward less independent housing. For some consumers, this may be necessary (for example, leaving semi-independent housing for drug and alcohol rehabilitation).

Of the 139 consumers who were in independent housing at the time of their enrollment:

- 112 (81%) remained in independent living situations.
- 27 (19%) showed a negative change in their housing status category by moving toward less independent housing.

Beyond level of independence, it is also important to consider the level of stability consumers have in their living arrangements. On average, consumers moved three times during their time on the teams. A large number of consumers (30%) moved just once; 51% moved two to four times. Because consumers have been on teams for an average of two years, this frequency of consumers moving does not raise concerns.

Overall, many CTT consumers experienced positive outcomes related to their housing status by either maintaining an independent living status or moving toward more independent housing. However, a large number of consumers living in institutional or substantial care situations did not move toward more independent housing. Also, a significant number of consumers (17%) moved from more independent to less independent housing situations. For some consumers, obtaining and remaining in a substantial care setting may be considered a positive outcome; other consumers may be "stuck" in a more restrictive setting because other, less restrictive options are

not available or the teams have not focused on helping the consumer find a more independent setting.

According to the teams, the County housing supply is lacking in two areas: affordable independent housing for consumers and flexible housing programs with a harm-reduction philosophy. CTT staff believes supported housing arrangements with on-site staffing have made a positive difference for many consumers. Consumers consistently raise housing as a concern at CTT Advisory Board Meetings. Housing issues include:

- Many consumers will not pass credit or background checks private landlords perform before offering leases for apartments. In some cases, this means consumers are at the mercy of landlords that charge much higher rents because they do not require credit checks.
- Consumers would benefit from more supported housing arrangements that tolerate some level of substance use ("wet" housing).
- "Tolerant" housing options, particularly for the transition-age population, that provide some structure and staffing and will tolerate some verbal outbursts and non-compliance from consumers.
- There are inadequate options to meet immediate short-term housing needs. The WPIC-Transition Team suggested that an immediately available, short-term supervised program with an open-door policy for team consumers would be very valuable.
- More step-down options from the most restrictive settings are needed.

Allegheny County has recently completed a housing plan that will hopefully address many of these housing concerns.

Employment

For many consumers, identifying and working toward vocational goals are important components of the recovery process. Each CTT is therefore required to include vocational specialists on staff to provide consumers with a number of work-related services, including vocational counseling, training and job support activities.

Table 9 illustrates the employment status of consumers at their time of enrollment and their status as of March 2005 or at their discharge. The chart shows only initial and final employment status. Employment which ended before March 2005 or before a consumer's discharge would not be included in the table. More information on the types of employment can be found in the appendix of this report.

Table 9

Employment Status for CTT Consumers									
		Employment Category at Discharge or 3/31/05							
		Not Employed	Actively Seeking	Volunteer	Training	Sheltered/ Trans./Other	Paid Supported	Paid Competitive	Total
Employment Category at CTT Enrollment	Not Employed	226	28	18	5	18	9	27	331
	Actively Seeking	0	1	0	0	0	0	1	2
	Volunteer	0	0	0	0	0	0	0	0
	Training	1	0	0	0	0	0	1	2
	Sheltered/ Trans/Other	2	2	0	0	7	0	1	12
	Paid Supported	1	1	0	0	0	3	1	6
	Paid Competitive	1	2	1	0	1	0	4	9
	Total	231	34	19	5	26	12	35	362

The table shows the number of consumers by employment category at time of enrollment and employment category as of March 2005 or at time of discharge. The color coding of the table can be used to evaluate the number of consumers who experienced no change, positive change, and negative change regarding their employment status:

- The gray cells moving from the upper left hand corner to the lower right hand corner indicate the number of consumers who had the same employment category at their start with CTT and as of March 2005, or at their time of discharge.
- The green cells in the upper right hand portion of the chart indicate consumers who have moved toward more competitive employment categories.
- The orange cells in the lower left-hand portion of the chart indicate consumers who have moved toward less competitive employment categories.

Most consumers (91%) were not employed when they started with CTT; 68% of these consumers remained unemployed at the end of the report period. Approximately 15% of the consumers who were not employed at the end of the report had had some period of employment or job seeking activities during their tenure on the teams.

Of the 31 consumers who were employed, seeking employment, engaged in training programs or volunteer activities at their time of CTT enrollment, 48% stayed in the same employment category, 13% moved toward more competitive employment categories, and 39% moved into less competitive employment categories, including unemployment.

Teams have implemented some creative strategies to support consumers in working. The WPIC Transition Team uses other employment programs to educate consumers on how to work and keep their benefits. This team has also developed a strong working relationship with the Office of Vocational Rehabilitation (OVR). An OVR representative visits the team once a month to meet with consumers one-on-one to assess consumers' interests, goals and skills and discuss possible programs and placements. The WPIC teams have started a café in their office building to employ consumers; Mercy and Residential Care have created short-term jobs for consumers including car washes, moving, and cleaning services.

Finding and maintaining competitive employment continues to be a challenge for CTT consumers. In order for more consumers to achieve some form of employment, teams will have to address the high turnover rate in vocational specialist staff and ensure adequate resources are made available for vocational training and support. When employment was discussed with the teams, staff shared the following barriers to employment:

- CTT staff thinks many adult consumers are afraid they will lose their benefits if they work. For some of the adolescent consumers who live with their family, the family may be concerned with losing benefits.
- Some CTT staff believe that some consumers have unrealistic expectations for what work they may be qualified for and the salary that can be expected.
- Consumers may have difficulty finding transportation.
- Many consumers have low literacy.
- Substance use interferes with keeping jobs.
- For many consumers, meeting housing, medication, clothing and food needs have been more urgent. Consumers need stability before they are able to focus on maintaining employment.

CTT and Employment

Individuals with serious and persistent mental illnesses and co-occurring substance use disorders often struggle to find and keep jobs. However, when asked if they want to work, most do. Working often improves consumers' satisfaction with their lives and feelings of empowerment.

While a small proportion of consumers are currently working, individual successes show that consumers can work. Consumers' jobs include working at Easter Seals, Giant Eagle, Eat and Park, Schenley Park Café, Ron's Place Café (at WPIC), McDonalds and hairstyling. Some are also involved with training classes at community college or Bidwell Training Center.

These perceived barriers indicate the teams need additional training and technical assistance in supported employment best practices. Research has shown that ACT teams with a strong vocational component can be successful in helping consumers find work they value. Focusing on interim steps to reaching long-term goals will be important for many consumers (for example, starting to work part-time or on a volunteer basis). The team leaders have asked for training of vocational specialists, and this should be made a priority.

Education

Table 10 presents consumers' education status at time of enrollment and current status (as of March 2005) or status at time of discharge. The yellow cells represent data on consumers of the WPIC Transition team; the blue cells represent data on the consumers of the three adult teams.

Interpretation of data related to consumers' education outcomes is somewhat difficult. It is unclear whether transition from secondary or post-secondary categories into the "not in school" category is a positive result (graduation) or a negative result (withdrawing from school).

Table 10

Education status for CTT Consumers				
		Education category at discharge or 3/31/05		
		Not in school	Secondary	Post-secondary
Education category at CTT enrollment: WPIC Transition team	Not in School	52	3	7
	Secondary	19	10	1
	Post-secondary	1	0	0
Education category at CTT enrollment: Adult teams	Not in school	252	4	4
	Post-secondary	0	0	5

Table 10 indicates:

- Over 95% of the consumers on the adult teams were not in school at the start of their time on CTT and as of March 2005 or at their time of discharge.
- Over half of the consumers on the WPIC Transition team were not in school at time of enrollment and were also not in school as of March 2005, or at the time of discharge. Because members of this team are between the ages of 16-25 years, we expected to find a large percent of these consumers enrolled in secondary or post-secondary schools.
- At least 23% of consumers on the WPIC Transition team had positive educational outcomes. These consumers either moved from the "not in school" category to the secondary or post-secondary education categories or remained in the secondary or post-secondary education categories. Additionally, one consumer moved from the secondary to post-secondary category.
- It is unclear whether the remaining 21% of consumers on the WPIC Transition Team graduated or dropped out of the secondary or post-secondary schools they attended at the time of CTT enrollment.

Other Supports

The teams also track data related to a number of non-behavioral health supports consumers have or may develop. These supports include those provided by friends and family as well as consumer peers. Data on recreational supports and self-help supports is also collected. These

activities and contacts help consumers build support networks to assist in their recovery efforts. Developing supports outside of treatment services is a large part of consumers finding an identity for themselves in the community. For many consumers who are moving toward recovery, they want to do "normal" activities in the community, including starting relationships with friends and significant others, attending church, shopping, eating in restaurants, and going to the gym.

Family Supports: Of the 362 consumers who have been on the teams for six months or more, 86% had at least monthly support at the time of enrollment. Furthermore, 146 consumers were reported to have had daily family support at the time of their enrollment and at time of discharge or as of March 2005. Because they were younger than consumers on the adult teams, those involved in the WPIC Transition team were more likely to be living at home and therefore more likely to receive daily family support than those consumers on the other teams. Overall, 88% of consumers did not experience any change in the frequency of their family contacts during their tenure on the teams. Only 7% of consumers had an increase in family support frequency, while 5% moved to a lower category of family support frequency.

Recreational Supports: Most consumers (85%) participated in no daily, weekly, or monthly recreational supports either at the time of their enrollment or at the time of their discharge (or March 2005 if still active). Of those consumers who reported some frequency of recreational support at enrollment, most maintained that level of frequency during their tenure with CTT.

Peer Supports: Few consumers were involved in peer support activities during their time on the teams. Over 76% of consumers had no peer support events. However, 22% of consumers maintained their initial frequency of weekly or daily peer support activities.

CTT: Peer Activities

Peer specialists have expanded their roles on the CTTs over time. In addition to sharing other responsibilities with the team, they organize and run peer activities in the office and community.

Peer specialists work patiently to engage consumers in peer activities. Many consumers feel vulnerable and uncomfortable while in the community; peer activities organized by the teams help consumers to feel more at ease and to develop social skills and relationships.

Teams have started a wide range of activities: spirituality groups, arts and crafts activities, cooking groups, social groups held at Wendy's or Eat 'n Park, bingo, shopping trips, and more. Peer specialists also organize various excursions including trips to Kennywood, baseball games, the zoo, and museum tours.

Teams have also helped individual consumers find peer opportunities, from connecting consumers to AA or NA to getting scholarships for a gym.

Despite these successes, peer specialists feel restricted in the activities they can organize by a lack of funds and transportation. Consumers also feel restricted by a lack of disposable income.

Self-Help Supports: Of the consumers who had been enrolled on teams for at least six months, very few were involved in self-help support activities. Almost 89% had no self-help supports.

Overall, participation on the teams seems thus far to have had very little impact on consumers' development of recreational, peer, and self-help supports outside of the CTT. While teams have had difficulty in accurately tracking these supports, staff generally thought that they and consumers have not yet focused on developing community supports. They have focused more on helping consumers stay out of the hospital and finding suitable housing arrangements.

While maintaining housing and community tenure are critical goals for CTT, addressing these goals should not come at the expense of goals related to developing support systems. Helping consumers find activities to fill their days and developing peer supports will help improve consumers' quality of life and help them stay out of the hospital.

Peer specialists play a unique and essential role on the teams. Because they share common experiences with consumers, many consumers feel very comfortable in talking over their concerns with peer specialists. Peer specialists also provide a different perspective to other staff. As with other specialist roles, peer specialists often are unable to focus on their specialties when there are staff vacancies.

Summary and Discussion

This report does not include several important outcomes, including consumers' opinions on their quality of life, physical well-being, and their satisfaction with services. However, this report does address outcomes related to community tenure, housing, employment, education and peer supports.

While many consumers do not get admitted to the hospital or spend time in jail, there are opportunities to increase community tenure, primarily through the reduction of community hospitalizations. Decreasing the time consumers spend in the state hospital after CTT enrollment provides an additional opportunity for increasing community tenure. Ensuring that the teams keep forensic specialists on staff and that these specialists are able to focus on forensic issues could result in fewer jail days.

A large number of consumers have moved to more independent housing arrangements or remained living independently since they enrolled with the teams. However, the teams have identified several shortfalls in available housing, limiting consumers' ability to move to less restrictive settings.

Last but certainly not least, the majority of consumers has not made improvement toward employment and has not developed supports outside of the CTT. The teams need training in supported employment and psychiatric rehabilitation. Additional financial resources for peer activities and focus on peer goals would improve consumers' development of other supports.

RECOMMENDATIONS

The four CTTs in Allegheny County should be commended for their hard work. The teams have been providing long-term services to consumers with serious mental illnesses and co-occurring substance use disorders and medical issues. Consumers have experienced improvements in community tenure with a reduction in both community hospital and state mental hospital days. Many consumers are living independently, and some have made steps toward competitive employment. However, the data analysis and discussion with teams indicate service delivery, and consequently consumer outcomes, could improve further.

Our recommendations can be categorized into four areas:

1. **Technical assistance is needed in managing a CTT caseload on a daily basis.** Data analysis indicates that some consumers receive small amounts of service, and teams are not providing the recommended average amount of contacts with consumers. Many staff are concerned with how the team uses their resources on a daily basis. Also, some staff believe that barriers prevent them from meeting contact standards. A thorough analysis of these barriers needs to be completed, and CTTs need training in the daily management of contacts and crisis interventions.

2. **Training and technical assistance is needed in implementing other best practices within the ACT model.** When reviewing hospitalization and CTT service use with the teams, many staff identified difficulties in working with consumers who have borderline personality disorders or traits and/or substance use disorders. Teams would benefit from training and technical assistance in implementing DBT within the ACT model and in implementing dual diagnosis treatment best practices. Training in supported employment is essential as well. SAMHSA has identified integrated dual diagnosis treatment and supported employment as two evidence-based programs, and the teams should be trained in implementing these practices on the team.

3. **Teams must work to follow the ACT model.** The specialists (substance abuse, vocational, peer, and forensics) must be trained in their specialties and given time to focus on their specialties on a daily basis. Furthermore, teams must take the time to complete individualized comprehensive assessments, crisis plans, advance directives, and treatment plans. Developing and working toward housing, vocational, and supports goals is essential for consumers as they move toward recovery.

4. **System barriers need to be addressed.** Teams and consumers have identified unmet housing needs. Hopefully, the implementation of the Allegheny County Office of Behavioral Health Permanent Supported Housing Strategic Plan will help meet some of these needs. Peer programs should be supported by the system and funds for activities should be secured. Finally, teams have limited influence in diverting hospital admissions. Inpatient units need to be educated on CTTs. Incentives for diversions should be considered. More proactive and direct communication between team staff, Community Care, and inpatient units must be instituted to allow CTTs to take responsibility for diversions.

In order to implement these recommendations, AHCI, the County and Community Care need to develop a detailed plan to support and monitor the teams. As the plan is implemented, data reports should be used to develop priorities and interventions. CTTs provide an essential service with positive outcomes demonstrated extensively in research. The teams need to be trained, supported, monitored and held accountable if we are to expect continued and additional positive outcomes in Allegheny County.

APPENDIX

Other Sources of Information on the ACT Model and CTTs

- SAMHSA's ACT Toolkit: http://www.mentalhealth.samhsa.gov/cmhs/communitysupport/toolkits/community/
- NAMI ACT Technical Assistance Center: http://www.nami.org/Template.cfm?Section=ACT-TA_Center
- Assertive Community Treatment Association: http://www.actassociation.org/

Notes on Cost Calculations used in Table 8

- State hospital costs were calculated by multiplying the actual number of days by an averaged per diem rate of $434.
- Community hospital costs were calculated by multiplying the actual number of days by an averaged per diem rate of $567. Because Medicare covers some inpatient stays, all of these hospital costs are not borne by Community Care.
- The mean hospitalization cost per consumer divides the total costs (the sum of state hospital and community hospital costs) by the number of consumers in the time period.
- Costs for the two six month periods prior to CTT enrollment were averaged to derive a more accurate picture of hospitalization use prior to CTT enrollment. The percent decrease was calculated using this pre-CTT average and the mean estimated costs.
- Costs for other behavioral health services prior to and after CTT are not considered in these estimates. Jail costs are also not estimated. Cost comparisons can be calculated in many different ways. Because this table is based on comparison of mean costs, and uses averaged per diem hospital rates and median CTT costs, the actual change in hospitalization costs for individual consumers will vary widely.

Crisis intervention categories

- **Telephone by CTT:** Contact with consumer during after hours and weekend CTT crisis coverage or daytime use of the on-call number.
- **CTT Mobile Face-to-Face:** Contact with consumer *only* during after-hours and weekend CTT crisis coverage.
- **Hospital ER:** Consumer use of a hospital emergency room (medical or psychiatric) during a crisis and the team attempts to intervene.
- **Non-CTT Mobile Face-to-Face:** Consumer use of any non-CTT mobile face-to-face mental health or emergency personnel community crisis service.
- **Diversion:** Face-to-face and/or emergency room encounters that result in successfully stabilizing a client and deterring an inpatient admission during after hours.

Housing status categories

- **Temporary**: Shelter, mission, homeless
- **Institutional**: Institutional setting, Long term structured residence (LTSR), Nursing Home
- **Substantial Care**: Community Residential Rehabilitation (CRR), D&A Community-based Residential, Enhanced personal care home, D&A Rehab, Community MR Residential (MR-CLA), Personal Care Home
- **Semi-Independent**: D&A Halfway House, Other Community-Based, Single Room Occupancy, Supported Apartment
- **Independent**: Family setting, Living independently

Employment categories

- **Volunteer**: Unpaid work or employment.
- **Training**: A specialized, time-limited paid work training program conducted at work sites that provide job readiness and placement assistance in order to facilitate transition into competitive employment consistent with such training.
- **Paid Shelter Employment:** A community rehabilitation program that is engaged in a production or service operation and which is operated for the primary purpose of providing gainful employment or professional services to individuals with disabilities as an interim step in the rehabilitation process for those who cannot be competitively employed.
- **Paid Transitional Employment:** A program which provides remunerative work experiences on a regular daily basis to persons with disabilities at a business or industry for the purpose of providing evaluation, training, and supervision to the person.
- **Paid Supported Employment:** Competitive work/employment in integrated work settings, with the assistance of ongoing support services and other appropriate services as needed while individuals are working toward competitive employment.
- **Paid Competitive Employment:** Gainful work in self-employment or for a private or public employer in the competitive labor market for which the individual receives wages, salary, commission, tips or other compensation.
- **Actively Seeking:** Currently seeking work or employment whether paid or volunteer.
- **Other:** Option not found in list.

Non-behavioral health supports categories

- **Friends/Family (daily, weekly or monthly):** A relative or non-relative support that the consumer knows and has an interpersonal relationship, but who is *not* a provider of treatment or rehabilitation services to the consumer.
- **Recreational (daily, weekly or monthly):** A neighborhood, community or privately sponsored structured activity solely for the purpose of providing entertainment, exercise, relaxation, or socializing.

- **Peer Activities (daily, weekly or monthly):** Supports sponsored by an external non-professional and peer led group or organization for persons with a mental disorder for the purpose of providing social, mentoring, peer counseling, and educational services.
- **Self-Help (daily, weekly or monthly):** A support group that is non-professional and peer led and focuses on personal recovery.
- **None (daily, weekly or monthly):** No current involvement in non-behavioral health activities.
- **Other (daily, weekly or monthly):** Any other community-based, non-behavioral health supported or sponsored activity.

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