Assertive Community Treatment in the District of Timiskaming and the City of Timmins: A Longitudinal Study of Client Outcomes

By

Cindy L. Welsh

A thesis presented to Lakehead University in partial fulfillment for the degree of

Master of Public Health – Health Studies

and

Graduate Diploma in Health Services and Policy Research

Thunder Bay, Ontario

April 2009

ABSTRACT

Assertive Community Treatment (ACT) is a community based program designed to treat persons with serious mental illness by offering treatment and supports in a community setting rather than a hospital. Previous studies of ACT have tended to focus on outcomes regarding reduced hospitalization days and improved quality of life outcomes of ACT clients in well established programs. The purpose of this study was to determine the effectiveness of assertive community treatment on reduced hospitalization days and quality of life outcomes of clients admitted to a rural and an urban ACT program using a longitudinal approach.

The present study is an analysis of data collected using the *Community Mental Health Common Data Set – Mental Health (CDS-MH) Manual* (Ministry of Health and Long-Term Care, 2004) for two ACT programs. Forty-two clients in two ACT teams in Northeastern Ontario were followed from program entry for 33 months. Pre and post hospitalization data and quality of life data on seven outcome measures were compared using Paired sample t-tests, McNemar tests and Wilcoxon Signed Ranks test for both ACT teams combined, and then separately, for comparisons.

The results showed improvements in terms of reduced hospitalization days. The mean reduction of hospitalizations days was 105 for combined teams. Results were similar for the rural and urban teams. Additional findings in terms of experiencing improved quality of life outcomes over time suggest no improvements in quality of life indicators for legal status, living arrangement, employment status, educational status and primary income source. Improvements were made in residence type and residence status. For rural and urban ACT program clients the results are comparable. The findings of this study should be interpreted with caution due to the

relatively small number of clients in the study. The study did show the ACT model is still effective at treating persons who have a serious mental illness and require ongoing intensive treatment.

ACKNOWLEDGMENTS

I would like to take the opportunity to thank a number of individuals who contributed their time and effort to this thesis. First and foremost, I would like to thank my thesis supervisor, Dr. Michel Bédard (Lakehead University) who provided ongoing guidance, patience, encouragement and commitment during this "extended" process. I truly appreciate all you have done and will be forever indebted.

I would also like to thank Dr. Michael Stones (Lakehead University) for being an internal examiner, Dr. John Jamieson (Lakehead University) for being a second reader and Dr. Janet Durbin from the Centre for Addiction and Mental Health for being an external examiner. I would also like to extend a thank you to Dr. Bruce Minore (Lakehead University) for providing kind words throughout this process. A sincere thank you to Dr. Alba DiCenso and Miguel Pérez of the OntarioTraining Centre in Health Services and Policy Research, which has lead me to obtain a Graduate Diploma in Health Services and Policy Research as part of my studies at Lakehead University.

I would also like to thank Ms. Liz Ditullio from the Canadian Mental Health Association - Cochrane Timiskaming Branch for providing me with the data needed for this study. I am also very grateful to Mr. Peter Deane (former Executive Director, Northern Shores District Health Council), who I will always consider both a friend and mentor, and who provided me with motivation to continue with my graduate studies at a time when great change was taking place in both our lives.

Finally, sincere gratefulness is given to my family and friends for all of their moral support, especially my father Carl, my mother Catherine (who passed away before this was

completed), my sister and brother-in-law, Sharon and Reg Fournier and everyone else (you know who you are). I would also like to thank Bailey (the Golden Retriever dog), for enduring a lot of days without walks but who is now resting with his Grandmother.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

Introduction

Assertive Community Treatment (ACT) Teams have been established in the District of Timiskaming and the City of Timmins and no formal evaluation of client outcomes has been undertaken for either program. The purpose of this study was to determine the effectiveness of ACT on outcomes of clients admitted to the ACT Team Timiskaming and the ACT Team Timmins, using a longitudinal approach.

Assertive Community Treatment Model

Assertive Community Treatment originated in Madison, Wisconsin, and was known as the Program of Assertive Community Treatment (PACT). Allness and Knoedler (1998) described the history and development of PACT as a service-delivery model for providing comprehensive community based treatment to persons with severe and persistent mental illnesses. The PACT model evolved out of work lead by Arnold Marx, M.D., Leonard Stein, M.D., and Mary Ann Test, Ph.D., on an inpatient research unit of Mendota State Hospital, Madison, Wisconsin, in the late 1960's. Noting that the gains made by clients in the hospital who had been discharged to the community often did not transfer, they hypothesized that the hospital's round-the-clock care that helped clients lessen their symptoms of mental illness was just as important after discharge.

In 1972, Marx, Leonard and Stein moved a hospital ward treatment staff into the community to test their assumption, thus beginning the Program of Assertive Community Treatment. The multidisciplinary, 24-hour staffing of a psychiatric inpatient ward was

maintained and PACT staff began to provide intensive treatment, rehabilitation and support services to clients in their homes. Since the PACT concept was developed, it has been widely replicated in the United States and developed as ACT in a number of countries, including Australia, Canada, Japan, Great Britain, Singapore, Sweden and the Netherlands. A number of these countries have developed ACT programs not only for urban areas but rural areas[1] have also developed ACT teams (Dixon, 2000).

Beginning in the 1950's a number of countries began the process of deinstitutionalization where fewer patients with severe and persistent mental illnesses would reside in a hospital setting or receive treatments in such a venue (Drake, 1998). This process was moved along by a number of factors, including the introduction of psychotropic medications in the 1950's which aided in symptom management, better treatments and the desire to offer an improved quality of life (Guy, 1997). A number of people with serious mental illnesses were discharged to community settings and treated in outpatient clinics, day centers or community mental health centers. Many people were ill-equipped to live in the community and received very few social supports to ensure their needs were being met including adequate housing and income supports (Clark & Samnaliev, 2005). As Freeman (2001) observed, the result was high relapse and readmission rates.

---

[1] An urban area is defined as an area with a population of at least 1,000 and no fewer than 400 persons per square kilometre. A rural area is defined as all communities that have less than 10,000 residents (Statistics Canada, *2006 Census Dictionary*). These two definitions are used throughout this study.

A new phenomenon known as the "revolving door patient" emerged, as a large group of vulnerable people expected to cope with difficult and challenging community settings, failed to do so and were repeatedly readmitted to hospital. It was at that time that ACT was seen as a promising service approach in treating persons who were discharged from psychiatric hospitals into the community. Typically, ACT clients are persons who are high users of hospitals and have difficulty in receiving treatment from community based services (Essock, Drake, and Burns, 1998).

Mental Health Reform in Ontario

In 1998, the Government of Ontario initiated a reform process within the Province's mental health care to change the way these services were to be provided. This process had actually started much earlier. The Northeast Mental Health Implementation Task Force reported in 2002 that mental health reform had been occurring across Ontario for over 20 years. According to George, Durbin and Koegl (2008) mental health reform is about downsizing inpatient psychiatric beds while at the same time improving community mental health services in an attempt to assist people with serious mental illness to live within a community setting.

The Northeast Mental Health Implementation Task Force (2002) stated the goal of mental health reform was to ensure people who have a serious mental illness have easy access to a range of person-centered services and supports as close to home as possible. People with mental illness are encouraged to set their own personal goals and acquire the skills and resources needed to increase independence and well-being. The reform process has been guided by the Ministry of Health and Long-Term Care.

An increase in community capacity is expected to reduce reliance on hospital services. The divestment of specialty resources in provincial psychiatric hospitals (PPHs) was intended to serve as the catalyst for the shift from hospital to community care.

Through the mental health reform process, the MOHLTC had shifted to a flexible, coordinated and accountable system of community based services to deliver needed services and supports to persons with serious mental illness as close to home as possible. As part of this, the Ministry had adopted ACT as a "best practice". Best practices are defined as those "activities and programs that are in keeping with the best possible evidence about what works" (Ministry of Health and Long-Term Care, 1999, p. 37).

Assertive Community Treatment in Ontario

The first ACT Team in Ontario began at the Brockville Psychiatric Hospital in 1991. Up until 1997, there were only ten ACT teams developed and funded by the Province (George et al., 2008). Beginning in 1998, the Ministry of Health and Long-Term Care began to develop and fund a number of ACT Teams throughout Ontario, with a total of 59 developed and funded by 2004 (George et al., 2008).

Of these 59 teams, 12 were located within Northern Ontario. Of these 12 teams, eight were classified as urban, three were considered rural/remote and one was mixed. Two of the ACT teams geographically located in Northern Ontario were important to this study and are located in the Districts of Timiskaming and Cochrane.

Standards for Assertive Community Treatment Teams in Ontario

In October 1998, the Ministry of Health (MOH) developed and released the first set of ACT team Standards in Ontario. The Standards were adapted from the PACT Program in the United States and were based on experiences gained since its inception. The Standards have been modified for Ontario while preserving the essential philosophy of the PACT model and are provided in Appendix A.

The Standards define an ACT Team as a cost-effective alternative to hospitalisation for persons with serious, long-term mental illness. Service is provided by a multidisciplinary team on a 24-hour, seven day a week basis. Support is given in the community rather than in an office based practice and combines skill teaching with clinical management. Outreach, client choice and individual service are emphasized.

The Standards differentiate between urban and rural communities which may be serviced by ACT. According to the Ministry of Health and Long-term Care (2004) the distinguishing factor between an urban and rural team "is that in a rural area there may be fewer individuals with serious mental illness who can benefit from the program. Therefore, it is not practical to have a full size team" (p. 38). Urban teams are fully staffed and are expected to follow all standards. Rural teams are to follow modified standards due to lack of population density of seriously mentally ill clients and geographical distances.

Assertive Community Treatment Teams – Timiskaming and Cochrane Districts

The Timiskaming District is served by the ACT Team Timiskaming (ACT Team Timiskaming) and is classified as rural/remote. The Cochrane District has in place one Assertive Community Team that services the City of Timmins. The Team is referred to as the ACT Team

Timmins (ACT Team Timmins) and is classified as urban. For the purpose of this study the City of Timmins is referenced as the location of the Cochrane District ACT Team. Both ACT Teams are sponsored by the Canadian Mental Health Association – Cochrane Timiskaming.

The ACT Team Timmins was established in February 1999, and began admitting clients in October 1999. The ACT Team Timiskaming was established in January 2001, and began admitting clients on July 1, 2001. The ACT Team Timiskaming is located in two offices, one in Kirkland Lake and the other in Temiskaming Shores (formerly New Liskeard). The ACT Team Timmins has one office location in the City of Timmins.

Both ACT Teams accept referrals from designated Schedule 1 facilities (North Bay campus of the Northeast Mental Health Centre and the Timmins and District Hospital), community mental health providers, family physicians and/or self referrals. Clients accepted must be 16 years of age and older, frequent users of mental health services and have significant functional impairment coupled with continuous high service needs due to a serious mental illness.

As of October 2004, the combined total number of active clients on both ACT Teams was 51. In terms of individual Teams, Timiskaming had 25 active clients as of October 2004, Timmins reported an active client caseload of 26.

Purpose of the Study

The purpose of this study was to determine the effectiveness of ACT (ACT) on reducing hospitalization days and improving outcomes of clients admitted to the ACT Team Timiskaming and the ACT Team Timmins, using a longitudinal approach.

CHAPTER 2

Literature Review

There have been many studies undertaken to evaluate ACT as a program for service delivery. Research on ACT has a focus on three areas: hospitalization, clinical outcomes and cost effectiveness. The focus of this literature review is on hospitalization and clinical outcomes.

Evaluation of ACT

The literature finds that many ACT studies undertaken had a focus on hospitalizations and clinical outcomes and were compared to other mental health services including standard inpatient treatment or outpatient community care. In terms of mental health programs available to provide treatment to clients, ACT is the most studied form of case management (Rosen, Mueser, & Tesson, 2007). The clinical outcomes frequently studied include rates of hospitalization admissions, the number of days spent in hospital and quality of life outcome measures. Latimer (1999) found that the most consistent effect of ACT was to reduce the time clients spent in hospital. Assertive Community Treatment also has substantive improvements on a number other of outcomes, most notably being "improved housing stability" (George et al., 2008, para. 2).

The Ministry of Health and Long-term Care (2003) defines an outcome as "a change in health status or health determinants of clients that can be attributed to a program or service" (p. 29). Quality of life is only one of several outcome measures used in the evaluation of mental health programs (Basu, 2004).

The literature lacks in research devoted to longitudinal studies which exceed 18 months or longer. This is coupled with the fact that most of the studies which have been undertaken tend to compared ACT to other outpatient community care programs. The literature reveals that ACT programs can be developed in a number of geographical areas, including both urban and rural areas, however there are differences in each that can affect quality of life for clients.

Further some studies have provided information pertaining to the personal characteristics and clinical factors of ACT clients as well as psychiatric hospitalizations. The most consistent of these findings are as follows.

Personal Characteristics

Personal characteristics include demographic information pertaining to gender and age. In terms of gender, a number of studies undertaken found that males were more likely to be clients of ACT than women (Bond et al., 1990; McGrew, Bond, Dietzen, McKasson, & Miller, 1995; Becker, Meisler, Stormer, & Brondino, 1999; Jones, 2002; Nieves, 2002; Ben-Porath, Peterson, & Piskur, 2004; Udechuku et al., 2005; Yang et al., 2005).

As for age, ACT clients generally are between the ages of 23 to 65 (Bond et al., 1990; McGrew et al., 1995; Lafave et al., 1996; Becker et al., 1999; Tibbo, Chue & Wright, 1999; Jones, 2002; Nieves, 2002; Ben-Porath et al., 2004; Udechuku et al., 2005; Yang et al., 2005; Fam, Lee, Lim & Lee, 2007).

Clinical Factors

With regards to clinical factors, Bond and colleagues (1990) found schizophrenia to be the primary diagnosis of ACT clients (36.0%). The same finding was recorded by McGrew and colleagues. (1995) who found schizophrenia was the primary diagnosis of ACT clients (65.0%). Further research studies have found that schizophrenia is the primary diagnosis of ACT clients (Lafave et al., 1996; Becker et al., 1999; Tibbo et al., 1999; Jones, 2002; Nieves; 2002; Ben-Porath et al., 2004; Udechuku et al., 2005; Yang et al., 2005; Fam et al., 2007).

Psychiatric Hospitalizations

One method to determine the success of ACT is to examine this treatment in terms of reducing psychiatric hospitalizations. The results of several studies have proved that ACT effectively reduces hospitalization readmission rates as well as a reduction in the number of days that clients spend in hospital (Bond et al., 1990; McGrew et al., 1995; Lafave et al., 1996; Tibbo et al., 1999; Salkever et al., 1999; Jones, 2002; Ben-Porath et al., 2004; Udechuku et al., 2005; Yang et al., 2005; Fam et al., 2007).

Reduction in Hospital Admission Rates

Preventing the rehospitalization of clients who are members of an ACT team by keeping them in the community is one of the consistent findings of ACT studies. In a study conducted by Bond and colleagues (1990), one-year outcomes for 82 clients with serious mental illness who were randomly assigned to an ACT program or a drop-in center in Chicago, Illinois, were assessed. Of the 42 clients who were assigned to the ACT program, the study found a

statistically significant reduction in the number of hospital admissions between the year prior to being an ACT client (M=3.48, SD=2.57) and year one (M=1.24, SD=1.17).

A pre-post ACT study was conducted by McGrew and colleagues (1995), at six sites in Northeastern Indiana with a total of 212 clients. Results found that the frequency of hospitalization for clients was reduced by one-third after admission to an ACT program over an 18-month period. Tibbo and colleagues (1999) examined the effects of hospital outcomes in Edmonton, Alberta, on 295 clients one year pre and one year post ACT registration. Results indicated that of the 295 clients, 200 were hospitalized one year pre whereas only 144 were hospitalized one year post ACT registration.

In a pre-post ACT study conducted on 55 clients of a team located in London, England, Jones (2002) reported that following acceptance into ACT, the number of admissions to hospital decreased to 0.6 per year from 2.9 for clients. In another similar study Udechuku and colleagues (2005) undertook a pre-post study on 43 clients receiving services from an ACT located in Melbourne, Australia. The results indicated there was a 41.7% decrease in the mean number of hospital readmissions after the introduction of ACT.

Yang and colleagues (2005) assessed one-year outcomes on 66 clients with serious mental illness who were assigned to an ACT program developed to serve ethnic minority groups in Toronto, Ontario. The study found the number of inpatient hospital admissions declined significantly from 106 to 43. Fam and colleagues (2007) assessed one-year outcomes on 100 clients admitted to an ACT program launched by the Institute of Mental Health in Singapore in 2003. Results indicated the mean reduction in number of hospital admissions at one-year post ACT was 57.1%.

Reduced Hospitalization Days

ACT has been found to be a mechanism which helps to consistently reduce the number of hospital days that clients spend in hospital once admitted as clients of ACT. In a study conducted by Bond and colleagues (1990), one-year outcomes for 82 clients with serious mental illness who were randomly assigned to an ACT program or a drop-in center in Chicago, Illinois, were assessed. Of the 42 clients who were assigned to the ACT program, the study found a statistically significant reduction in the number of days hospitalized between the year prior to being an ACT client (M=84.1, SD=68.0) and year one (M=26.1, SD=47.2).

In a pre-post ACT study conducted at six sites in Northeastern Indiana and a total of 212 clients, the number of hospitalization days experienced by clients was reduced by 50.0% after admission to the program (McGrew et al., 1995). Lafave and colleagues (1996) assessed one-year outcomes on 110 clients with serious mental illness who were randomly assigned to an ACT program or to hospital based rehabilitation programs in Brockville, Ontario. ACT clients were hospitalized for a mean of 39 days compared to 265 days for the comparison group.

Tibbo and colleagues (1999) examined the effects of hospital outcomes in Edmonton, Alberta, on 295 clients one year pre and one year post ACT registration. The average number of hospitalization days for each client pre ACT registration was 72 days whereas with post ACT registrations, the average was 32 days. Salkever and colleagues (1999) found in a randomized study undertaken in Charleston, South Carolina, that over an 18-month timeframe, the clients assigned to ACT had a 68.8% decline in the number of hospitalization days compared to the control group who experienced a decline of 40.1%.

More recently, Ben-Porath and colleagues (2004) assessed three-year outcomes for 55 clients who were enrolled on an urban ACT in Northeast Ohio and found a statistically

significant reduction in the number of hospital days between the year prior to being an ACT client (M=74.66, SD=12.40) to year one (M=40.44, SD=9.95) and to year two (M=15.16, SD=4.82).

In a pre-post study Udechuku and colleagues (2005) studied 43 clients receiving services from an ACT located in Melbourne, Australia. The study found there was an 85.0% decrease in the mean number of days spent in hospital after the introduction of ACT (71 to 10 days).

Yang and colleagues (2005) assessed one-year outcomes on 66 clients with serious mental illness who were assigned to an ACT program developed to serve ethnic minority groups in Toronto, Ontario. The study found a significant reduction in the number of hospital days from baseline (M=108.0, SD=113.0) to one-year follow-up (M=19.0, S=39.0).

Fam and colleagues (2007) assessed one-year outcomes on 100 clients admitted to an ACT program launched by the Institute of Mental Health in Singapore in 2003. Results indicated the mean reduction in total length of stay in hospital days one-year post ACT was 61.9%.

Quality of Life Concept

The concept of quality of life had its beginnings in the 1960's however it was not until the 1980's that many clinical trials began to include quality of life as an important outcome measure which helped provide evidence of the effects of treatments (Basu, 2004). It was during this time that quality of life increased in importance as an outcome. Up until the early 1990's there was no standard definition of quality of life. The World Health Organization (WHO) recognized this and developed a definition in 1995:

> Quality of Life as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment. (p.1)

Basu (2004) report that this definition is "the most widely used and comprehensively derived definition" (p. 37). Quality of life as an outcome measure is now recognized as important. There are a number of items such as education, employment, housing and income which can be used to measure the quality of life for a person.

Health Related Quality of Life

The literature makes reference to health related quality of life (HRQOL) as a term but there are few actual definitions presented. Hay, Anderson, and Revicki (1993) define health related quality of life as "how well an individual functions in daily life and his or her perceived well-being" (p. 441). Another health related quality of life definition is "conceptualized as those aspects of life quality or function which are impacted by one's health status" (Atkinson & Zibin 1996, para. 1). The fundamental aspect of health related qualify of life is that it only focuses on health and how it relates to an individual's quality of life (Lehman, 1995). There is also the aspect that the health of an individual can also be attributed to one's mental health.

Quality of Life in Mental Health

With respect to quality of life and mental health, the main focus of this research area began when patients were discharged from psychiatric institutions into the community and

offered intensive supports at that level. Mental health service providers began to question if service types in the community were leading to an increase in life satisfaction for the people utilizing it (Basu, 2004). As Lehman (1995) stated persons with mental illness usually have a number of problems associated with quality of life which lead to certain service needs. A number of these problems can include very little family or social supports, unemployment, poverty, low self-esteem and housing issues.

Measuring Quality of Life

According to Basu (2004) two basic instruments exist for measuring quality of life, being either disease specific or generic. Disease specific quality of life instruments study one disease or related disorders. Generic quality of life instruments can be used when studying a large range of health problems (Basu, 2004). In terms of different medical treatments and interventions, generic quality of life instruments are widely used, including mental health research. As enunciated by Prince and Gerber (2001), quality of life measures are used to compare the quality of life that persons with serious mental illness have to other populations, as well as demonstrating that living in a community setting is more favourable than a hospital setting.

Measuring Quality of Life in Mental Health

Measuring qualify of life in mental health has become an important concept for assessing changes in persons who are being treated for a mental illness. Over time there have been a number of instruments developed to measure quality of life. Atkinson and Zibin (1996) undertook research to identify quality of life instruments that could be used within a mental health population. Their research identified 28 such instruments covering a wide range of

dimensions including "health status, psychiatric symptomatology, financial situation, living arrangement, family, social/love relationships, leisure/creativity, community productivity, religion and self-esteem/well-being" (Atkinson & Zibin, 1996, para. 10). One important aspect that Lehman (1995) emphasized is that no single quality of life measurement tool will meet the needs of all. There is consensus within the literature that quality of life is an outcome and that there are have been difficulties with trying to measure improvements (Health Systems Research Unit, Clarke Institute of Psychiatry, 1997). A number of studies pertaining to ACT have utilized data which have been collected by various agencies using any number of the quality of life measurements available depending on the ultimate use and evaluation of the data after collection.

Quality of Life Outcome Studies Pertaining to ACT

The literature has provided numerous studies which present indicators of quality of life outcomes for ACT clients and have presented varied results of either improved or unchanged. Many of the studies are cross sectional in nature, compare ACT clients to other treatment program clients or are pre-post designs. A number of these studies have utilized data collected by various quality of life measurements available. The intent within this study, however, is not to list these measurements but rather to review these studies in terms of outcomes.

A number of factors which may influence the quality of life outcomes for ACT clients can be characterized as housing, employment, educational, legal and income sources. Assertive Community Treatment research studies with an emphasis on quality of life outcome measures are varied in terms of what is researched and presented as findings. The most consistent ACT research findings in terms of quality of life outcomes other than hospitalizations are as follows.

Housing

One of the key features of ACT is to help support clients in terms of housing. Assertive Community Treatment appears to increase the number of clients who live independently (Latimer, 1999). In a pre-post ACT study which examined outcomes at six sites in Northeastern Indiana, 46.0% of clients, who were living independently in their own apartment, were still doing after 18 months of ACT (McGrew et al., 1995).

A 10-year retrospective evaluation was conducted on a rural Illinois rehabilitation program modeled after the original PACT. Between 1984 and 1994, Becker and colleagues (1999) found 90.0% of clients were living independently after 10 years of service in the program compared to 29.0% of clients living independently at program entry. Nieves (2002) found that 62.0% of the ACT clients enrolled in an urban program in the South Bronx, New York, were living independently at both baseline and remained stable over a twelve month period.

In a pre-post study of a Japanese ACT program that begun in 2003, 43 clients were evaluated one year after entry. Horiuchi and colleagues (2006) found that the number of clients living by themselves at baseline was 18.2% and increased to 30.3% after 12 months.

Employment

One of the basic principles of ACT is to encourage clients to participate in community employment (Ontario ACT Association, 2008). Studies undertaken which look at employment as having influences on quality of life for ACT clients have presented positive results in this area. Although some employment outcomes are variable, ACT generally identifies promise in this area (Kirsh & Cockburn, 2007).

McGrew and colleagues (1995) found in a pre-post study that the number of clients with employment at baseline did not increase at follow-up. In another pre-post study conducted by Fam and colleagues (2007) on 100 clients admitted to an ACT program administered by the Institute of Mental Health in Singapore, the employment status of clients showed significant improvements where 37 clients were employed post compared to six before entry into ACT.

A ten-year retrospective evaluation was conducted on a rural Illinois rehabilitation program modeled after the original PACT. Between 1984 and 1994, Becker and colleagues (1999) found that none of the clients admitted at program entry were employed. Over the 10 years, however, the average rate of employment for participating clients was 33.0%. Nieves (2002) found in a study that employment rates for ACT program clients were very low from baseline to the one-year follow-up (6.7% to 10.0%).

Education

Educational attainment can help contribute to a better quality of life for individuals. This is viewed as an important factor. In a pre-post ACT study which examined outcomes at six sites in Northeastern Indiana, the mean number of educational years was 11.2 for ACT clients (McGrew et al., 1995). Of the 30 ACT clients enrolled in an urban program in the South Bronx, New York, of the highest education attained, 50.0% reported having less than high school, 20.0% a high school diploma and 30.0% postsecondary education (Nieves, 2002). Similarly of the 55 clients who were enrolled on an urban ACT in Northeast Ohio, 47.3% reported high school as the highest level of education (Ben-Porath et al., 2004). Horiuchi and colleagues (2006) found the mean number of educational years was 12.4 for clients beginning to receive services from a Japanese ACT program.

Legal

One of the goals of ACT is to help improve the quality of life for ACT clients. If clients are involved with the legal system, advocacy may be required. In a pre-post ACT study which examined outcomes at six sites in Northeastern Indiana, legal problems per client increased significantly between program admission (M=0.14, SD=0.36) to 12 months post ACT enrolment (M=0.35, SD=0.48).

Income Sources

Income sources are a good indication of the quality of life that ACT clients have. In terms of income sources, McGrew and colleagues (1995) found that the percentage of ACT clients receiving a regular income after one year of treatment increased from 3.1% to 11.3% with this income being provided by government. Horiuchi and colleagues (2006), in a pre-post study undertaken of a Japanese ACT program, found a statistically significant increase in income from baseline (M=74.4, SD=49.4) to 12 months post ACT enrolment (M=103.6, SD=61.9).

Urban and Rural Quality of Life Differences

A review of the literature was undertaken to examine the differences between urban and rural areas which can affect quality of life for ACT clients. Advantages of living in a rural area may include more social and family support systems and informal networks (McDonel et al., 1997). The disadvantages of rural areas include long and frequent travel times and greater transportation barriers (George et al., 2008; McDonel et al., 1997). The availability of community services may be less in rural areas including housing along with greater

unemployment and poverty levels compared to urban areas (McDonel et al., 1997). These issues are of importance to this study in terms of urban and rural ACT client differences.

Urban and Rural Assertive Community Treatment

As mentioned previously, little research has been conducted longitudinally on the effects of ACT between different urban and rural teams. A group of researchers, however, undertook a three-year controlled study measuring two integrated service agencies formulated on the ACT concept. In February 1996, Chandler, Meisek, McGowen, Mintz and Madison (1996) reported the first-year results of this study. In December 1996, Chandler, Meisek, Hu, McGowen and Madison (1996) released the three-year results built upon the earlier work done using the same two integrated services in this area. Results of both of these studies are of importance.

Of the two integrated services, one of the ACT programs was located in the urban area of Long Beach, California while the second was located in a small city within a rural area of California. Depending on the geographical location, clients were randomly assigned to the ACT programs or a comparison group in the same location. A total of 102 clients were enrolled in the urban ACT program with 115 clients enrolled in the rural ACT program.

At baseline, in terms of personal characteristics, both the urban (27.5%) and rural (28.7%) ACT programs had approximately one-quarter of clients who were over 45 years old. The urban program reported a higher percentage of males as clients (63.7%) whereas the rural program reported a higher number of females as clients (52.2%) (Chandler, Meisek, McGowen, et al., 1996; Chandler, Meisek, Hu, et al., 1996). Both ACT programs reported schizophrenia as the primary diagnosis with the rural program having a higher percentage of clients with this

diagnosis (68.70%) compared to the urban program (52.0%) (Chandler, Meisek, McGowen, et al.; Chandler, Meisek, Hu, et al.).

At the end of the first year, study results as reported by Chandler, Meisek, McGowen and colleagues (1996) were as follows. The percentage of rural ACT program clients who had a hospitalization admission from baseline to one-year follow-up was reduced from 39.8% to 20.9%. For the urban ACT program clients hospitalization rates did not change significantly from baseline (16.9%) to one-year follow-up (17.6%).

Quality of life outcome measures as reported by Chandler, Meisek, McGowen, (1996) are as follows. With regards to employment, more urban ACT program clients (36.3%) reported to be employed at one-year follow-up than at baseline (10.8%), similarly 18.3% of rural ACT clients were employed at one-year follow-up compared to 15.7% at baseline. There were no significant differences reported from baseline to one-year follow-up for living arrangements, legal status or income sources.

Results for the three-year study period as reported by Chandler, Meisek, Hu, et al (1996) found the percentage of rural ACT program clients who had a hospitalization admission from baseline to three-year follow-up was reduced from 39.8% to 27.6%. For the urban ACT program client hospitalization rates did not change significantly from baseline (16.9%) to the three-year follow-up period (15.0%).

Other quality of life outcome measures reported by Chandler, Meisek, Hu and colleagues (1996) were as follows. At the three-year follow-up there was an increase in the number of urban clients living independently from baseline (89.2% compared to 84.2%). At baseline, 57.4% of rural clients were living independently with that number increasing at the three-year follow-up to 69.6%. After three years, 72.6% of urban clients had paid employment compared to

10.8% at baseline. Similarly 28.7% of rural clients were working after three years compared to 15.7% at baseline. Income in the urban program was reported as higher compared to the rural program however no statistics were provided. Additionally there were no statistical differences in legal status between the urban and rural program clients, however, no statistics were provided.

Meyer and Morrissey (2007) conducted a study in which ACT was compared to intensive case management for rural area clients. Comments pertaining to the Chandler, Meisek, Hu and colleagues (1996) study include "no significant difference in consumer outcomes were noted between the urban and rural program sites, which suggests that fully serviced ACT teams in rural and urban areas can produce similar results" (p. 123) (Meyer & Morrissey, 2007).

Summary

In summary, studies related to ACT have had a major focus on determining if the intervention effectively reduces the number of hospital readmissions after clients have been admitted to the program as well as the length of stay of hospital days. Many of the studies indicated that the clients were diagnosed with schizophrenia, with the majority being male and within a particular age group. Quality of life outcome measurers are important factors to measure but not all studies focused on the same measures. Most studies focused on only one or two factors after reporting hospitalization data first. There are few studies which examine ACT client outcomes between programs for over 18 months. There are even fewer studies which examine ACT client outcomes between urban and rural program teams.

Relevance of Study

The purpose of this study is to determine the effectiveness of ACT on reducing hospitalization days and improving outcomes of clients admitted to the ACT Team Timiskaming (a rural team) and the ACT Team Timmins (an urban team) using a longitudinal approach. Few studies to date have been designed to compare two ACT teams to each other in terms of reduced hospital days and client outcomes, as well as between urban and rural teams. This study will take a longitudinal approach and will exceed the average18 months follow-up study periods characteristic of the literature. Being able to determine if ACT is having a positive effect by reducing the number of hospital days and positive client outcomes will be useful for program planners and mental health service providers.

CHAPTER 3

Environmental Scan

The first section of this chapter presents information pertaining to demographics and institutional services within the District of Timiskaming and the City of Timmins. The second part of this chapter provides an overview of mental health in Northern Ontario as well as serious mental illness (SMI) prevalence and expected mental health system demand rates for the District of Timiskaming and the City of Timmins.

Demographics

Both the District of Timiskaming and the City of Timmins are located in Northeastern Ontario. There are three main urban centres within the Timiskaming District, the municipalities of Kirkland Lake, Englehart and New Liskeard (renamed the City of Temiskaming Shores as of January 1, 2004). Most of the population resides within relative proximity to Ontario Provincial Highway Number 11, with the balance living in small communities and townships in the western portion of the District. Except for the three urban areas, the district is considered predominantly rural.

The City of Timmins is located north of the Timiskaming District. Timmins is the largest urban centre located in the District of Cochrane and is located approximately 135 kilometres northeast of the Town of Kirkland Lake. In terms of area the Timiskaming District is 13,280 km^2 while the City of Timmins has a smaller land mass, at 2,962 km^2.

The Timiskaming District is a primarily English speaking area, however there is a significant French speaking population. Within the Cochrane District, including the City of

Timmins, French is much more widely used. Both the Timiskaming and Cochrane Districts are designated under the *French Language Services Act.* The Act places responsibility on identified services funded by the Ontario Provincial Government to ensure French language capacity.

Statistics Canada 2001 Census information reported the following information. The total population for the Timiskaming District was 34,442 compared to 43,686 for the City of Timmins and 11,410,046 for Ontario as a whole. Timiskaming District's population density was 2.6 persons/km^2 compared to 14.8 persons/km^2 for the City of Timmins and 12.6 persons/km^2 for Ontario as a whole. The Timiskaming District experienced an 8.9% population decline between 1996 and 2001. During the same time period, the City of Timmins experienced a population decline of 8.0%. Ontario, however, experienced population growth during the same period of 6.1%.

In terms of age characteristics of the population the greatest number of people were between the ages of 20 and 54 in both the Timiskaming District (Table 1) and the City of Timmins (Table 2). Both the Timiskaming District and the City of Timmins had a higher number of people with less than a Grade 9 education than Ontario as a whole as well as a lower number of people with a post secondary education by highest level of schooling (Table 3).

The Timiskaming District unemployment rate for persons 15 years of age and over was 10.0% and for the City of Timmins it was 11.2%. This was higher than the provincial unemployment rate at 6.1%. The average family income in the Timiskaming District $45,885 and $56,781 in the City of Timmins. This was lower than for Ontario at $61,024. Additionally residents of both the Timiskaming District (18.1%) and the City of Timmins (14.0%) relied more heavily on pensions than did their Ontario counterparts (9.8%).

Table 1
Timiskaming District – Population by Age and Sex, Census 2001

Age	Timiskaming District					
	Total	%	Males	%	Females	%
Total	34,440	100.0	16,915	100.0	17,530	100.0
0 to 4	1,825	5.3	955	5.7	875	5.0
5 to 14	4,580	13.3	2,435	14.4	2,145	12.2
15 to 19	2,560	7.4	1,310	7.8	1,250	7.1
20 to 24	1,675	4.9	855	5.1	815	4.6
25 to 44	8,845	25.7	4,235	25.0	4,610	26.3
45 to 54	5,310	15.4	2,680	15.8	2,625	15.0
55 to 64	3,955	11.5	1,940	11.5	2,015	11.6
65 to 74	3,165	9.2	1,555	9.2	1,610	9.2
75 to 84	1,940	5.6	765	4.5	1,175	6.7
85 and Over	585	1.7	180	1.1	405	2.3

Table 2
City of Timmins – Population by Age and Sex, Census 2001

Age	City of Timmins					
	Total	%	Males	%	Females	%
Total	43,685	100.0	21,645	100.0	22,045	100.0
0 to 4	2,550	5.8	1,325	6.1	1,225	5.6
5 to 14	6,420	14.7	3,275	15.1	3,145	14.3
15 to 19	3,200	7.3	1,630	7.6	1,570	7.1
20 to 24	2,615	6.0	1,300	6.0	1,315	6.0
25 to 44	13,395	30.7	6,650	30.7	6,745	30.6
45 to 54	6,520	14.9	3,325	15.4	3,190	14.5
55 to 64	3,930	9.0	1,985	9.2	1,945	8.8
65 to 74	2,890	6.7	1,370	6.3	1,520	6.8
75 to 84	1,680	3.8	650	3.0	1,035	4.7
85 and Over	485	1.1	130	0.6	355	1.6

Table 3
Total Population 20 to 64 Years by Highest Level of Schooling as a Percentage, Census 2001

Level of Schooling	Ontario	Timiskaming District	City of Timmins
Total Population Aged 20 to 34	2,263,910	5,110	8,135
Less Than Grade 9	13.2	18.5	17.5
High School Diploma	33.7	33.5	33.4
Post Secondary	53.1	48.0	49.1
Total Population Aged 35 to 44	1,949,840	5,360	7,775
Less Than Grade 9	17.3	26.3	24.5
High School Diploma	25.6	26.4	24.4
Post Secondary	51.1	47.3	51.1
Total Population Aged 45 to 64	2,684,705	9,225	10,400
Less Than Grade 9	27.5	37.9	39.2
High School Diploma	22.9	20.7	18.4
Post Secondary	49.6	41.4	42.4

Institutional and Agency Services

The Timiskaming District is serviced by three general hospitals under the *Public Hospitals Act.* These hospitals include Kirkland and District Hospital (62 beds) located in Kirkland Lake, Englehart and District Hospital (30 beds) located in Englehart and Temiskaming Hospital (74 beds) located in Temiskaming Shores. Mental health hospital services for the Timiskaming District are provided at the North Bay campus of the Northeast Mental Health Centre, a designated Schedule 1 psychiatric facility under the *Mental Health Act.* The North Bay campus consists of 202 adult inpatient beds, 40 of which are district mental health program beds.

The City of Timmins is serviced by the Timmins and District Hospital, a 167 bed general hospital under the *Public Hospitals Act.* The hospital has a Mental Health Acute Care Program with 20 beds which serves as the designated Schedule 1 psychiatric facility under the *Mental Health Act* for the District of Cochrane.

Community mental health care encompasses a wide variety of programs and services designed to meet local needs. These programs are delivered primarily by community agencies. Within the District of Timiskaming, there are two community mental health agencies, the Canadian Mental Health Association - Cochrane Timiskaming and the Timiskaming Health Unit. The Canadian Mental Health Association -Cochrane Timiskaming provides a continuum of services for clients with a serious mental illness and their families. These services include intensive case management, community support, crisis housing, social recreation, 24-hours crisis intervention and court diversion. The Northern Star Consumer/Survivor and Family Network is also sponsored by the Branch, and provides self-help support groups, education programs, family support groups and resource material. The CMHA houses two offices; one in Kirkland Lake servicing the north part of the District, and one in Temiskaming Shores, servicing the south end.

The Timiskaming Health Unit's Adult Mental Health Program provides a range of services by appointment and by drop in, through office, home and outreach visits. The services include health promotion, education, family supports, assessment, case management and coordination, social recreation programs, community support, counselling, crisis response, psychiatric services, psychological consultation and testing and psychogeriatric and dual diagnosis consultations and referrals. The services are targeted at individuals over 18 years of age and are provided in all three office locations being Englehart, Kirkland Lake and Temiskaming Shores.

Within the City of Timmins, there is one community mental health agency, the Canadian Mental Health Association - Cochrane Timiskaming. Services include intensive case management, community support, crisis housing, social recreation, 24-hours crisis intervention and court diversion.

At times general physicians may be the sole source of mental health services for patients. In 2001, the Northern Shores District Health Council reported there were a total of 32 general physicians practicing within the District of Timiskaming. In 2004, the Timmins and District Hospital reported there were a total of 44 general physicians practicing within the City of Timmins.

Overview of Mental Health in Northern Ontario

In January 2005, the Northern Health Information Partnership (NHIP) released the report *Mental Health in Northern Ontario*. The information contained in the Report provided an overview of mental health in Northern Ontario and examined selected indices as well as hospitalizations and deaths related to mental health diagnoses and issues. As such, key findings

of the Report are provided here and include data for the geographical areas of Ontario and Northern Ontario.

Northern Ontario mental health hospitalization rates for males and females were approximately twice that of Ontario. Northern Ontario males had a higher mental health hospitalization rate than the Province (149.6 per 10,000 compared to 91.0 per 10,000 respectively). Northern Ontario females had a higher mental health hospitalization rate than Ontario (154.2 per 10,000 compared to 90.1 per 10,000 respectively).

Northern Ontario mental health diagnosis rates for males and females were approximately twice that of Ontario. Northern Ontario males had a higher mental health diagnosis rate than the Province (207.9 per 10,000 compared to 134.3 per 10,000 respectively). Northern Ontario females had a higher mental health diagnosis rate than Ontario (218.1 per 10,000 compared to 133.9 per 10,000 respectively).

Northern Ontario hospitalizations for attempted suicides were occurring at more than double the provincial rate (19.2 per 10,000 compared to 8.3 per 10,000 respectively). In 2000 and 2001, the Northern Ontario suicide mortality rate was higher than the Province (for 2000, 12.8 per 100,000 compared to 7.9 per 100,000 respectively, and for 2001, 11.5 per 100,000 compared to 8.0 per 100,000 respectively).

Serious Mental Illness (SMI) Prevalence and Expected Mental Health System Demand

In December 2001, the Ministry of Health and Long-Term Care (MOHLTC) recommended the use of 2.5% as the prevalence rate for people with serious mental illness for planning purposes. This rate is based on analyses of Ontario data from the *Mental Health Supplement to the Ontario Health Survey, 1990*, and takes into consideration the population

institutionalized in general hospital psychiatric units and provincial psychiatric hospitals. Below is the serious mental health prevalence rate and expected demand rate for the Timiskaming District, and the City of Timmins, which has been calculated using data from Statistics Canada Census 2001.

As Table 4 illustrates, the Timiskaming District will experience a serious mental health prevalence rate of 861 and expected demand rate of 431. The City of Timmins will experience a serious mental health prevalence rate of 1,092 and an expected demand rate of 546.

Table 4
Serious Mental Illness (SMI) Prevalence and Expected Mental Health System Demand for the District of Timisakming and the City of Timmins

Location	Total Population 2001	% of District Total	Population with an SMI (2.5% prev. rate)	Expected Demand on System
Timiskaming District	34,442	100	861	431
City of Timmins	43,686	100	1,092	546

Note. Data for Expected Demand on System is determined by the widely accepted assumption that 50.0% of the target population access the system. From "District of Timiskaming Mental Health Population Prevalence, Morbidity and Hospitalization Data" by Northern Shores District Health Council, 2002.

CHAPTER 4

Methods

This section outlines information pertaining to the study design and methology, including data source and type along with ethical considerations.

Data

Data were collected from the Canadian Mental Health Association – Cochrane Timiskaming Branch (CMHA) on individuals who were registered as clients of the ACT Team Timiskaming and the ACT Team Timmins which the agency sponsors. Data were collected on individuals who were registered as clients of either program, beginning July 1, 2001, and ending March 31, 2004 (33 months). Even though ACT Team Timmins began treating clients earlier than the ACT Team Timiskaming, persons requiring service in the Timiskaming District did not begin to register until July 1, 2001. Therefore July 1, 2001, is to be considered as the starting date for this study.

The total number of clients registered on both teams during the time period is 42. Within the City of Timmins, there were 19 individuals registered as clients on the ACT Team Timmins during the recording period. Within the District of Timiskaming, 23 individuals were registered as clients of the ACT Team Timiskaming during the same period. Clients of the study did not participate directly.

Data Type

The Ministry of Health and Long-Term Care requires all mental health transfer payments agencies in Ontario to collect data on program implementation and outcomes. On April 1, 2004, the Ministry released the *Community Mental Health Common Data Set – Mental Health (CDS – MH) Manual.* This manual developed and defined a set of key questions and data elements that took into account current MOHLTC mental health initiatives, including ACT Teams (see Appendix B).

The *CDS-MH* is intended to provide a foundation for data collection in the Ontario mental health sector. The manual includes elements that capture basic clinical data as well as a limited number of outcome measures. The MOHLTC's collection of *CDS-MH* data is limited to an aggregate level due to privacy and system infrastructure issues. The data set applies to the following mental health service agencies: community and hospital sponsored community mental health programs (sponsorship is generally for specific program(s), not whole agency); community based functions sponsored by specialty psychiatric and divested provincial psychiatric hospital sites; and ACT Teams.

As the sponsor for both ACT Teams, the Canadian Mental Health Association – Cochrane Timiskaming Branch must collect and submit these data under the method established to the Ministry of Health and Long-Term Care. This could lead to some biases in the data reporting however this information is the most reliable in terms of collection that is presently available pertaining to this study.

Collection

There are a number of *CDS-MH* elements that are to be reported for every function provided by community mental organizations. In total, there are 37 elements that are listed within the *Community Mental Health Common Data Set – Mental Health (CDS –MH) Manual.*

A review of the 37 elements was done to consider each element's importance to the study. The elements considered for the study included basic demographic, clinical and outcome data.

Of the 37 elements, 24 are applicable to the study, whereas 13 are not. CMHA was made aware of the elements that were of interest to the study and agreed to release the data for the purposes of this study. Due to confidentially issues and the complexity of the CMHA's database which houses the *CDS-MH* data, the agency offered to gather the data elements on all 42 clients. Data collection took place between January 24 and February 4, 2005. Each ACT Team has a Team Leader and these two individuals oversaw the data collection with regards to their respective teams.

Within the *CDS*-MH the term *Service Recipient* refers to persons who are being served or supported by the functions provided by community mental health programs. For the purposes of this study, the term *Service Recipient* was changed to *Client.* Clients who are registered on either the ACT Teams in the District of Timiskaming and the City of Timmins have been assigned a Client Number between one and 42. CMHA collected the 24 data elements on all 42 clients. On February 23, 2005, CMHA supplied a Microsoft Excel spreadsheet file with information pertaining to the 42 clients and 24 data elements to the study.

Elements

The 24 data elements that CMHA provided to the study were coded according to the *CDS-MH*. A review of all 24 data elements was conducted to determine the nature of the variables in terms of demographics, hospitalization days and quality of life outcomes. In terms of the nature of the elements, information presented in the literature review indicated which elements should be considered for demographic, hospitalization days and quality of life outcomes.

For demographic, data elements representing gender, age, preferred language, community treatment orders (CTOs), diagnostics categories, source of referral and exit disposition were included. For hospitalization days, data elements representing baseline psychiatric hospitalizations - 2 years prior and psychiatric hospitalization - year 1, were included. For quality of life, the following data elements (baseline and current) were included: legal status; living arrangement; residence type; residence status; employment status; educational status; and primary income source.

Data Entry

The data had been coded numerically using the Statistical Program for the Social Sciences (SPSS) package, Version 11.0 software. It was necessary, however, to recode a number of the data elements contained in the *CDS-MH* data received from CMHC in order to allow for evaluation. The data elements recoded were demographic and quality of life. Table 5 presents the recoded demographic data. The quality of life data elements were recoded in that only two responses could be utilized for data analysis. The potential responses from the *CDS-MH* are presented in Table 6 as the recoded data. Data pertaining to the hospitalization days element

were divided into two separate groupings being baseline psychiatric hospitalizations - 2 years prior and psychiatric hospitalization - year 1. The number of days in hospital was used. This information was recorded as a continuous variable.

Table 5
Demographic Elements

Data Elements	Description	Coding
Demographic		
Gender	Male	1
	Female	2
Age	16 to 17	1
	18 to 24	2
	25 to 34	3
	35 to 44	4
	45 to 54	5
	55 to 64	6
Preferred Language	English	1
	French	2
Community Treatment Orders (CTO)	On CTO	1
	Not on CTO	2
Diagnostic Categories	Mood Disorder	1
	Schizophrenia and Other Psychotic Disorders	2
Source of Referral	General Hospital	1
	Psychiatric Hospital	2
	Community Mental Health Organization	3
	Family Physicians	4
	Self, Family or Friend	5
Exit Disposition	Suicide	1
	Relocation	2

Table 6
Quality of Life Elements

Data Elements	Description	Coding
Quality of Life		
Baseline and Current Legal Status	No Legal Problems	1
	Legal Problems (pre-charge diversion, court diversion program, conditional discharge, fitness assessment, criminal responsibility Assessment, awaiting trial/bail, awaiting sentencing, on probation, on parole, incarcerated or other criminal/legal problems)	2
Baseline and Current Living Arrangement	Self	1
	Living with Others (spouse, partner and/or others, children, parents, relatives or non-relatives)	2
Baseline and Current Residence Type	Hospital/Supportive Housing (general, psychiatric or other specialty hospital, assisted or congregate supportive housing, non-profit housing, room and board housing, retirement home or long-term care facility)	1
	Private House	2
Baseline and Current Residence Status	Independent	1
	Dependent (assisted, supported or supervised non-facility)	2
Baseline and Current Employment Status	Employed	1
	Not Employed (independent, competitive, assisted, supportive, alternative businesses, sheltered workshop, non-paid work experience, casual or sporadic)	2
Baseline and Current Educational Status	High School or Less (no formal schooling, elementary, secondary or high school)	1
	Post Secondary (trade school, vocational training, adult education, community college or university)	2
Baseline and Current Primary Income Source	Pension (pension, social assistance or disability assistance)	1
	Family/Other (family, employment or employment insurance)	2

Data Spreadsheet

Inputting the data into the SPSS spreadsheet occurred as follows. As there were 42 clients, these people were considered the subjects and entered in column one. This column had been named "Client Number". The 24 data elements, named according to the name given to each from the *CDS-MH*, had been given their own column. There were a total of 26 columns (data element 21 had two responses). As for rows, there were 42. This is known as a subject by variable matrix. If a data point was missing for a client, the cell was left blank. Additionally, the number 0 was not used in the coding of the valid categories.

Data Analysis

Management and analysis of data were preformed by the Statistical Program for the Social Sciences (SPSS) package, Version 11.0 software. Significance for all procedures was determined at the .05 probability level. Data analysis required procedures that took account of the paired nature of the assessments at baseline (July 1, 2001) until March 31, 2004. This is considered pre and post measurements. Descriptive statistics, including counts and percentages were presented for both groups as well as combined regarding the demographic elements.

The first objective of this study was to determine if clients of both ACT Teams in the District of Timiskaming and the City of Timmins were experiencing reduced hospitalization days over time. For this test the two groups were combined to form one. The statistical test computed to accomplish this was the Paired Sample T-test (parametric test). This test was chosen to compare responses between the one combined group to test for significant pre to post changes and is a commonly used technique for doing this (Munro 2001).

The second objective of this study was to determine if clients of both ACT Teams in the District of Timiskaming and the City of Timmins were experiencing improved quality of life outcomes over time. For this, the two groups were combined to form one. The quality of life indicators include legal status, living arrangement, residency type, residency status, employment status, educational status and primary income source. The statistical test used to determine this for each quality of life indicator was the McNemar test, a non-parametric test which examines the extent of change in the dichotomous variable from pre to post (Munro 2001).

The third objective of this study was to determine if clients registered on rural and urban ACT Teams experience reduced hospitalization days over time and improved quality of life outcomes over time between the two team types. For reduced hospitalization days the statistical test that was computed to accomplish this was the Wilcoxon Signed Ranks test. This test was chosen as it is a frequently used nonparametric test for paired data where *n* for each group is less than 25 and consists of pre and post measurements (Stamatis, 2002). Separate tests were conducted for each group.

In terms of quality of life outcomes over time between the two team types, the indicators used were legal status, living arrangement, residency type, residency status, employment status, educational status and primary income source. The statistical test used to determine this for each quality of life indicator was the McNemar test (nonparametric test), a test which examines the extent of change in the dichotomous variable from pre to post (Munro 2001).

Ethical Considerations

Ethical considerations of both Lakehead University and the Canadian Mental Health Association – Cochrane Timiskaming Branch were reviewed and adhered to during the course of

this study. Of primary concern to the research was the ability of maintaining client confidentially. As such, in terms of data collection, CMHA was willing to provide 24 data elements on 42 clients, thus ensuring that no personal identifying factors were released to the study.

All considerations of the Research Ethics Board of Lakehead University were adhered to during the course of this study. All data were entered into a password protected computer database program. Furthermore, data are presented in aggregate fashion.

The Canadian Mental Health Association – Cochrane Timiskaming Branch has in place a policy and procedure entitled *Research and Research Ethics* (Document Number CSMH-019), approved by its Board of Directors on March 22, 2006 (see Appendix C). A review of the document was undertaken to ensure this study is in keeping with the agency's procedure and protocols. Additionally, a formal letter dated January 7, 2005, was submitted to CMHA ensuring compliance with the agency's research and research ethics.

CHAPTER 5

Results

This chapter describes the study sample and presents the results of the analyses that were performed in order to meet the three objectives of this study.

Table 7 presents information on the 42 clients who were admitted to the ACT Team Timiskaming and the ACT Team Timmins. A total of six clients were not receiving services at the end of the study date. Of the six clients lost to the study, five clients moved out of the catachment area (four clients moved from the City of Timmins and one individual moved from the Timiskaming District) and one client committed suicide.

Table 7
Exit Disposition

Exit Disposition	Combined		Timiskaming District		City of Timmins	
	Total	Percent	Total	Percent	Total	Percent
Suicide	1	16.7	1	50	0	0
Relocation	5	83.3	1	50	4	100.0
Total	6	100.0	2	100.0	4	100.0

Demographics

The following is a summary of the study participants' demographics. Table 8 presents information pertaining to gender. For both combined ACT Teams 72.2% of clients were males and 27.8% were females. As for the Timiskaming District 81.0% of clients were male and 19.0% were female. The City of Timmins also reported a higher percentage of male clients (60.0%) compared to females (40.0%).

Overall the age range with the highest number of clients was the 45 to 54 age range (30.6%). This was also true for the individual district (28.6% for Timiskaming and 33.3% for the City of Timmins). Table 9 presents age range information.

The preferred language for day-to-day communication was English in both the combined ACT Team areas (66.7%) and within the Timiskaming District (76.2%) and the City of Timmins (53.3%), presented in Table 10. None of the clients were the subject of community treatment orders.

Table 11 presents diagnostic categories. Ninety-two percent clients had a diagnosis of schizophrenia or other psychotic disorders combined; whereas the proportion was 90.5% for Timiskaming and 93.3% for Timmins.

In terms of source of referral, presented in Table 12, the highest percentage of combined clients were referred from general hospitals (33.3%). In Timiskaming District the highest percentage of referral rates came from psychiatric hospitals (38.1%) and community mental health organizations (38.1%). The City of Timmins reported the highest referral rates as being from general hospitals (80.0%).

Table 8
Gender

Gender	Combined		Timiskaming District		City of Timmins	
	Total	Percent	Total	Percent	Total	Percent
Male	26	72.2	17	81.0	9	60.0
Female	10	27.8	4	19.0	6	40.0
Total	36	36	21	100.0	15	100.0

Table 9
Age Range

Age Range	Combined		Timiskaming District		City of Timmins	
	Total	Percent	Total	Percent	Total	Percent
16 to 17	1	2.8	1	4.8	0	0
18 to 24	5	13.9	3	14.3	2	13.3
25 to 34	4	11.1	2	9.5	2	13.3
35 to 44	8	22.2	4	19.0	4	26.7
45 to 54	11	30.6	6	28.6	5	33.3
55 to 64	5	13.9	4	19.0	1	6.7
65 to 74	2	5.6	1	4.8	1	6.7
Total	36	100.0	21	100.0	15	100.0

Table 10
Preferred Language

Language	Combined		Timiskaming District		City of Timmins	
	Total	Percent	Total	Percent	Total	Percent
English	24	66.7	16	76.2	8	53.3
French	12	33.3	5	23.8	7	46.7
Total	36	100.0	21	100.0	15	100.0

Table 11
Diagnostic Categories

Diagnostic Category	Combined		Timiskaming District		City of Timmins	
	Total	Percent	Total	Percent	Total	Percent
Mood Disorder	3	8.3	2	9.5	1	6.7
Schizophrenia and Other Psychotic Disorders	33	91.7	19	90.5	14	93.3
Total	36	100.0	21	100.0	15	100.0

Table 12
Source of Referral

Source of Referral	Combined		Timiskaming District		City of Timmins	
	Total	Percent	Total	Percent	Total	Percent
General Hospital	12	33.3	0	0	12	80.0
Psychiatric Hospital	10	27.8	8	38.1	2	13.3
Community Mental Health Organisation	9	25.0	8	38.1	1	6.7
Family Physicians	2	5.6	2	9.5	0	0
Self, Family or Friend	3	8.3	3	14.3	0	0
Total	36	100.0	21	100.0	15	100.0

Objective One

Objective one was to determine if clients of both ACT Teams in the District of Timiskaming and the City of Timmins were experiencing reduced hospitalization days over time. A paired sample t-test was conducted to determine if clients were experiencing reduced hospitalization days over time within the combined ACT Teams for baseline psychiatric hospitalizations - 2 years prior and psychiatric hospitalization - year 1.

As Table 13 shows, in terms of the duration of hospitalization days, the test was found to be statistically significant, $t(35)=4.12$, $p=.001$. There was a significant difference in the number

of hospitalization days, 2 Years Prior (M=106.72, SD=153.83) and the number of hospitalization days, Year 1 (M=0.83, SD=3.63) (see Table 14).

Table 13
Combined (Both ACT Teams) Paired Sample Tests

Hospitalization Days	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
2 Years Prior and at Year 1	105.89	154.24	25.71	53.70	158.08	4.12	35	.001

Table 14
Combined (Both ACT Teams) Paired Samples Statistics

Hospitalizations Days	Mean	N	Std. Deviation	Std. Error Mean
2 Years Prior	106.72	36	153.83	25.64
Year 1	0.83	36	3.63	0.61

Objective Two

Objective two was to determine if clients were experiencing improved quality of life outcomes over time. The quality of life indicators were: legal status; living arrangement; residency type; residence status; employment status; educational status; and primary income source. The McNemar test was the statistical test used. Table 15 presents the comparison results.

Table 15
Changes in Quality of Life Elements Assessed at Baseline and at Current – Combined District of Timiskaming and the City of Timmins

Quality of Life Elements					
			Current		*p*
Legal Status			No Legal Problems	Legal Problems	
	Baseline 36	No Legal Problems	30	1	0.625
		Legal Problems	3	2	
			Current		*p*
Living Arrangement			Self	Living With Others	
	Baseline 36	Self	13	4	0.388
		Living With Others	8	11	
			Current		*p*
Residence Type			Private House	Hospital/ Supportive Housing	
	Baseline 36	Private House	22	0	0.016
		Hospital/ Supportive Housing	7	7	
			Current		*p*
Residence Status			Independent	Dependent	
	Baseline 36	Independent	10	0	0.001
		Dependent	13	13	
			Current		*p*
Employment Status			Employed	Not Employed	
	Baseline 36	Employed	1	1	0.219
		Not Employed	5	29	
			Current		*p*
Educational Status			Post Secondary	High School or Less	
	Baseline 35	Post Secondary	7	0	1.000
		High School or Less	0	28	
			Current		*p*
Primary Income Source			Family/Other	Pension	
	Baseline 36	Family/Other	2	1	1.000
		Pension	0	33	

Legal Status

There was no significant difference between ratings of baseline legal status and current legal status (McNemar test, p=0.625). Of the 36 individuals included in the analysis three clients who had legal problems at baseline did not have any at the end of the study. One client who had no legal problems at baseline had a legal issue at the end of the study.

Living Arrangement

There was no significant difference between ratings of baseline living arrangement and current living arrangement (McNemar test, p=0.388). Of the 36 individuals included in the analysis eight clients who lived with others at baseline were living by themselves at the end of the study. Four clients, however, who were living by themselves at baseline were living with others at the end of the study period.

Residence Type

In terms of residence type, there was a significant difference between ratings of baseline residence type and current residence type (McNemar test, p=0.016). Of the 36 individuals included in the analysis seven clients made the transition from the more restrictive environment (hospital/supportive housing) to a less restrictive environment (private house) while no clients experienced the reverse.

Residence Status

Of the 36 individuals included in the analysis 13 clients shifted from living dependently at baseline to living independently after but none reported the reverse. This was a significantly significant finding (McNemar test, p=0.001).

Employment Status

There was no significant difference between ratings of baseline employment status and current employment status (McNemar test, p=0.219). Of the 36 individuals included in the analysis five clients who were not employed at baseline found employment during the study whereas one client employed at baseline was not working after.

Educational Status

There was no significant difference between ratings of baseline educational status and current educational status (McNemar test, p=1.000). Of the 35 individuals included in the analysis no clients moved from an educational level of high school or less to post secondary during the study.

Primary Income Source

There was no significant difference between ratings of baseline primary income source and current primary income source (McNemar test, p=1.000). Of the 36 individuals included in the analysis two clients reported have a primary income source from family/other at baseline and during the study and 33 clients reported receiving a pension at baseline and during the study.

One client who was receiving income from family/other at baseline was receiving a pension at the end of the study period.

Objective Three

Objective three was to determine if clients registered on rural and urban ACT Teams experience reduced hospitalization days over time and improved quality of life outcomes over time between the two team types. The Timiskaming District serviced by the ACT Team Timiskaming is classified as rural. The Cochrane District serviced by the Assertive Community Team in the City of Timmins is classified as urban.

Reduced Hospitalization Days

Two Wilcoxon Signed Ranks tests were performed. The first statistical test was done to determine if clients serviced by the rural team were experiencing reduced hospitalizations over time. The second statistical test was done to determine if clients serviced by the urban team were experiencing reduced hospitalizations over time. Tables 16 and 17 present the results.

A Wilcoxon test was conducted to evaluate whether clients on the rural ACT team had reduced hospitalization days from 2 Years prior and at Year 1. The results indicated a significant difference, z=-3.408, p<.05. The mean of the ranks at 2 Years prior was 0.00, while the mean of the ranks at Year 1 was 8.00. This is statistically significant.

For the urban ACT Team, a Wilcoxon test was conducted to evaluate whether clients had reduced hospitalization days from 2 Years prior and at Year 1. The results indicated a significant difference, z=-2.971, p<.05. The mean of the ranks at 2 Years prior was 7.33, while the mean of the ranks at Year 1 was 3.00. This is statistically significant.

Table 16
Wilcoxon Signed Ranks test - Rural and Urban
Ranks

			N	Mean Rank	Sum of Ranks
Rural	Hospitalizations – 2 Years Prior and at Year 1	Negative Ranks	15[a]	8.00	120.00
		Positive Ranks	0[b]	0.00	0.00
		Ties	6[c]		
		Total	21		
Urban	Hospitalizations – 2 Years Prior and at Year 1	Negative Ranks	12[a]	7.33	88.00
		Positive Ranks	1[b]	3.00	3.00
		Ties	2[c]		
		Total	15		

a. year 1 < 2 years prior
b. year 1 > 2 years prior
c. year 1 = 2 years prior

Table 17
Wilcoxon Signed Ranks test – Rural and Urban
Test Statistics[b]

		Hospitalizations – 2 Years Prior and at Year 1
Rural	Z	-3.408[a]
	Asymp. Sig. (2-tailed)	0.001
Urban	Z	-2.971[a]
	Asymp. Sig. (2-tailed)	0.003

a. Based on positive ranks.
b. Wilcoxon Signed Ranks Test

Quality of Life

Quality of life indicators are presented and include: legal status; living arrangement; residency type; residence status; employment status; educational status; and primary income source. The McNemar test was the statistical test used in this section. Table 18 presents the comparison results.

Table 18
Changes in Quality of Life Elements Assessed at Baseline and at Current - District of Timiskaming and the City of Timmins

Quality of Life Elements	District					
Legal Status				Current		*p*
				No Legal Problems	Legal Problems	
	Timiskaming 21	Baseline	No Legal Problems	19	1	1.000
			Legal Problems	1	0	
				Current		*p*
				No Legal Problems	Legal Problems	
	Timmins 15	Baseline	No Legal Problems	11	0	0.500
			Legal Problems	2	2	
Living Arrangement				Current		*p*
				Self	Living With Others	
	Timiskaming 21	Baseline	Self	11	1	0.625
			Living With Others	3	6	
				Current		*p*
				Self	Living With Others	
	Timmins 15	Baseline	Self	2	3	0.727
			Living With Others	5	5	
Residence Type				Current		*p*
				Private House	Hospital/ Supportive Housing	
	Timiskaming 21	Baseline	Private House	17	0	1.000
			Hospital/Supportive Housing	1	3	
				Current		*p*
				Private House	Hospital/ Supportive Housing	
	Timmins 13	Baseline	Private House	5	0	0.031
			Hospital/Supportive Housing	4	4	

Quality of Life Elements	District					
Residence Status				Current		*p*
				Independent	Dependent	
	Timiskaming 21	Baseline	Independent	6	0	0.016
			Dependent	7	8	
				Current		*p*
				Independent	Dependent	
	Timmins 15	Baseline	Independent	4	0	0.031
			Dependent	6	5	
Employment Status				Current		*p*
				Employed	Not Employed	
	Timiskaming 21	Baseline	Employed	1	1	1.000
			Not Employed	2	17	
				Current		*p*
				Employed	Not Employed	
	Timmins 15	Baseline	Employed	0	0	*
			Not Employed	3	12	
Educational Status				Current		*p*
				Post Secondary	High School or Less	
	Timiskaming 21	Baseline	Post Secondary	4	0	1.000
			High School or Less	0	17	
				Current		*p*
				Post Secondary	High School or Less	
	Timmins 14	Baseline	Post Secondary	3	0	1.000
			High School or Less	0	11	
Primary Income Source				Current		*p*
				Family/Other	Pension	
	Timiskaming 21	Baseline	Family/Other	1	1	1.000
			Pension	1	18	
				Current		*p*
				Family/Other	Pension	
	Timmins 15	Baseline	Family/Other	1	0	1.000
			Pension	0	14	

Note. * No measures of association are computed for the crosstabulation of baseline employment status 1 * current employment status for split file district=cochrane. At least one variable in each 2-way table upon which measures of association are computed is a constant.

Legal Status

For the rural team, there was no significant difference between ratings of baseline legal status and current legal status (McNemar test, p=1.000). Of the 21 individuals included in the analysis one client had legal problems at baseline but not at the end of the study, while one client experienced legal problems during the study period.

For the urban team there was no significant difference between ratings of baseline legal status and current legal status (McNemar test, p=0.500). Of the 15 individuals included in the study, two clients had legal problems at baseline but did not after while no clients experienced legal problems during the study period.

Living Arrangement

For the rural team there was no significant difference between ratings of baseline living arrangement and current living arrangement (McNemar test, p=0.625). Of the 21 individuals included in the analysis three clients who lived with others at baseline were living by themselves at the end of the study. One client, however, who was living by themselves at baseline was living with others at the end of the study period.

For the urban team there was no significant difference between ratings of baseline living arrangement and current living arrangement (McNemar test, p=0.727). Of the 15 individuals included in the analysis five clients who lived with others at baseline were living by themselves at the end of the study. Three clients, however, who were living by themselves at baseline were living with others at the end of the study period.

Residence Type

For the rural team there was no significant difference between ratings of baseline legal status and current legal status (McNemar test, p=1.000). Of the 21 individuals included in the analysis one client made the transition from the more restrictive environment (hospital/supportive housing) to a less restrict environment (private house) while no clients experienced the reverse.

For the urban team there was a significant difference between ratings of baseline residence type and current residence type (McNemar test, p=0.031). Of the 13 individuals included in the analysis four clients made the transition from the more restrictive environment (hospital/supportive housing) to a less restrictive environment (private house) while no clients experienced the reverse.

Residence Status

For the rural team there was a significantly significant finding (McNemar test, p=0.016). Of the 21 individuals included in the analysis seven clients shifted from living dependently at baseline to living independently after but none reported the reverse. For the urban team there was a significantly significant finding (McNemar test, p=0.031). Of the 15 individuals included in the analysis six clients shifted from living dependently at baseline to living independently after but none reported the reverse.

Employment Status

For the rural team there was no significant difference between ratings of baseline employment status and current employment status (McNemar test, p=1.000). Of the 21

individuals included in the analysis two clients who were not employed at baseline found employment during the study whereas one client employed at baseline was not working after. For the urban team no measures of association were computed as the measures were constant.

Educational Status

For the rural team there was no significant difference between ratings of baseline educational status and current educational status (McNemar test, p=1.000). Of the 21 individuals included in the analysis no clients moved from an educational level of high school or less to post secondary during the study. For the urban team there was no significant difference between ratings of baseline educational status and current educational status (McNemar test, p=1.000). Of the 14 individuals included in the analysis no clients moved from an educational level of high school or less to post secondary during the study.

Primary Income Source

For the rural team there was no significant difference between ratings of baseline primary income source and current primary income source (McNemar test, p=1.000). Of the 21 individuals included in the analysis one client reported have a primary income source from family/other at baseline and during the study whereas 18 clients reported receiving a pension at baseline and during the study. One client who was receiving income from family/other at baseline was receiving a pension at the end of the study period whereas one client who was receiving a pension at baseline was receiving income from family or others during the study period.

For the urban team there was no significant difference between ratings of baseline primary income source and current primary income source (McNemar test, p=1.000). Of the 15 individuals included in the analysis one client reported have a primary income source from family/other at baseline and during the study whereas 14 clients reported receiving a pension at baseline and during the study. The primary income source for clients in the urban team did not change over the course of the study.

CHAPTER 6

Discussion

People who suffer from serious mental illness and who receive treatment through ACT tend to experience reduced days in hospital along with improvements in quality of life. The Ministry of Health and Long-Term Care has recognized the positive impacts associated with ACT and identified this treatment as a component of mental health reform within the Province. As a result, the MOHLTC has developed and funded a number of ACT Teams throughout Ontario (George et al., 2008). These teams are located throughout Ontario, in both urban and rural areas. As of 2004, the MOHLTC had developed 12 ACT Teams within Northern Ontario.

The purpose of this study was to determine the effectiveness of ACT on reducing hospitalization days and improving outcomes of clients admitted to the ACT Team Timiskaming (a rural team) and the ACT Team Timmins (an urban team) using a longitudinal approach. There have been few studies done within the literature which compare two ACT teams to each other in terms of reduced hospital days and client outcomes, longitudinally exceeding the average 18 months of study between urban and rural teams.

Study Area

It is important to realize that the study does recognize that the District of Timiskaming does not represent all of rural Ontario and that the City of Timmins does not represent all of the the urban areas of the Province. Both of these areas are geographically located within Northern Ontario and there are marked differences with other parts of Ontario, and the Province, as a whole. Noted observations include the following.

Both the Timiskaming District and the City of Timmins have experienced gradual declines in their total populations compared to Ontario as a whole which has experienced population growth. Within the Timiskaming District, the majority of the population is concentrated in three key geographical centres with the population being widely dispersed throughout the District whereas the City of Timmins' population is concentrated within the urban area of the city. With regards to age characteristics, the greatest number of people are between the ages of 20 and 54 for both areas.

With regards to educational attainment levels, both areas have a higher number of people with less than a Grade 9 education and a lower number of people with a post secondary education compared to Ontario. Employment and income rates are relatively lower for the two areas when compared to the Province as well. There are also a greater number of residents of both areas that rely heavily on government pensions than their Ontario counterparts.

In terms of institutional and agency services, there are a limited number of mental health services funded by the MOHLTC available in each area to offer services to clients. There is no Schedule 1 psychiatric facility located within the District of Timiskaming, therefore clients needing services at this level have to travel outside of the District. Clients within the City of Timmins have access to psychiatric beds available at the Timmins and District hospital.

Overall in terms of mental health within Northern Ontario, hospitalization rates, mental health diagnosis rates and suicide rates are higher compared to the Province for both sexes.

Characteristics of the Clients in the Study

The clients in this study were comparable to those who were served by other ACT programs. The sample had a greater proportion of males (72.2%) than females (27.8%). When the sample is examined geographically, the Timiskaming District was found to have 81.0% male clients and 19.0% female clients. The City of Timmins also reported a higher percentage of male clients at 60.0% with 40.0% being female. This is in keeping with what has been reported where the proportion of males receiving ACT services was greater than females (Bond et al., 1990; McGrew, Bond, Dietzen, McKasson, & Miller, 1995; Becker, Meisler, Stormer, & Brondino, 1999; Jones, 2002; Nieves, 2002; Ben-Porath, Peterson, & Piskur, 2004; Udechuku et al., 2005; Yang et al., 2005).

In terms of age, the highest number of clients in the study was in the age range of 25 to 64 (77.7%). Geographically the Timiskaming District recorded 76.1% of clients within this age range whereas the City of Timmins also experienced a higher percentage of clients (80.0%) within the age range of 25 to 64. This is similar to what other studies have found where ACT clients are generally be between the ages of 23 to 65 (Bond et al., 1990; McGrew et al., 1995; Lafave et al., 1996; Becker et al., 1999; Tibbo, Chue & Wright, 1999; Jones, 2002; Nieves, 2002; Ben-Porath et al., 2004; Udechuku et al., 2005; Yang et al., 2005; Fam, Lee, Lim & Lee, 2007).

Similar to other ACT studies (Bond et al., 1990; McGrew et al., 1995; Lafave et al., 1996; Becker et al., 1999; Tibbo et al., 1999; Jones, 2002; Nieves; 2002; Ben-Porath et al., 2004; Udechuku et al., 2005; Yang et al., 2005; Fam et al., 2007), the most prevalent diagnostic category of the study sample was schizophrenia (91.7%). When the sample is divided taking

geography into account, 90.5% of ACT Team Timiskaming clients and 93.3% of ACT Team Timmins clients reported schizophrenia as their primary diagnosis.

Objective One

The first objective of this study was to determine if clients of both ACT Teams in the District of Timiskaming and the City of Timmins were experiencing reduced hospitalization days over time. This study found that clients experienced a statistically significant reduction in the number of hospitalization days from two years prior to ACT treatment (M=106.72, SD=153.83) to ACT treatment after two years (M=0.83, SD=3.63). This study finding is similar to other studies.

Tibbo and colleagues (1999) found that prior to clients being treated by ACT, the average number of hospitalization days for each client was 72 days whereas one year post ACT registration, the average was 32 days. In a study conducted in 2004, Ben-Porath and colleagues assessed three-year outcomes for an ACT team and found a statistically significant reduction in the number of hospital days between the year prior to being an ACT client (M=74.66, SD=12.40) to year one (M=40.44, SD=9.95) and to year two (M=15.16, SD=4.82). Similar findings of a pre-post study conducted by Udechuku and colleagues (2005) found a statistically significant decrease in the mean number of days spent in hospitable after being admitted to an ACT program from 71 to 10 days. Yang and colleagues (2005) also found a significant reduction in the number of hospital days from the year before admission to ACT (M=108.00, SD=113.00) to one year after ACT (M=19.00, SD=39.00).

The findings presented in this study indicate the reduction in the number of hospitalization days for clients once admitted to ACT are statistically significant and are in

keeping with similar studies. There are, however, marked differences that should be noted. Yang and colleagues (2005) is the only study where pre ACT clients registered an average of 100 hospitalizations days prior to ACT treatment. This is in keeping with this study where two years pre ACT, clients experienced an average of 106.72 hospitalization days. Other studies presented report the mean number of hospitalization days ranging from 71 to 74 days (Tibbo et al., 1999; Ben-Porath et al.; 2004, Udechuku et al., 2005).

Compared to post ACT treatment and reduced hospitalization days, the clients in this study experienced significant improvements in terms of the number of reduced hospitalization days with a mean of 0.83. When compared to other pre post ACT studies examining reduced hospitalization days, there are few studies which have expressed a marked reduction in the number of hospitalization days similar to this study. Tibbo and colleagues (1999) reported a reduction of 32 days. Ben-Porath and colleagues (2004) found at year two a mean reduction of 15.16 (SD=4.82). Udechuku and colleagues (2005) reported a statistically significant reduction of hospitalization days at 10. Yang and colleagues (2005) also found a significant reduction in the number of hospital days (M=19.00, SD=39.00).

In terms of reduced hospitalization days from baseline to the end of the study, one could speculate the reasons for this as follows. Prior to ACT services being made available to these study clients, hospitalization was the only course of action in terms of treatment made available to them. Once hospitalized, treatment of the client's serious mental illness would begin. A number of treatments would include drug therapies, which, if administered correctly, would lead to improvements in the client's symptoms thus aiding in the discharge from the hospital into a community setting. As part of a client's discharge plan from hospital, if needed, community

supports would be put in place including medical and social. These supports could possibly be provided by ACT programs.

Once ACT programs are established to treat clients, the likelihood of rehospitalizations is reduced now that clients receive treatments and supports from ACT within a community setting. Treatments would include medication compliance. Along with the increase in the establishment of ACT programs, there is a decrease in the number of psychiatric beds allocated within hospitals for clients who have a serious mental illness. This decrease in bed availability and increase in ACT programs means treatment is more likely to take place within a community setting rather than within hospital due to limited bed availability.

Therefore ACT has been found to be a mechanism which helps to consistently reduce the number of hospital days that clients spend in hospital once admitted as clients of ACT and is in keeping with what the literature reports.

Objective Two

The second objective was to determine if clients were experiencing improved quality of life outcomes over time. The quality of life indicators were legal status, living arrangement, residency type, residence status, employment status, educational status and primary income source.

The results presented found there was no statistical difference from baseline to follow-up with regards to legal status, living arrangement, employment status, educational status or primary income source. The study did find there were statistical significant differences from baseline to follow-up in residence type and residence status.

Legal Status

This study found that there were virtually no clients with legal problems at baseline and therefore no significant difference. The clients that did have legal problems at baseline did not have any at the end of the study. One client was found to have legal problems at follow-up. This could be a result of legal advocacy taking place on behalf of the client by ACT staff. McGrew and colleagues (1995) did find in a study where legal problems for clients did increase from the time of admission into the program and at the 12 month period. McGrew and colleagues noted that clients may not be forthright in reporting legal involvements at the time of ACT admission with the potential that the number of legal problems may be underestimated. Once clients are admitted to ACT, legal issues need to be recorded as part of program requirements. With regards to no change in legal status being noted, it could be simply that the ACT clients had very little legal involvement prior to being admitted as a client.

Living Arrangement

In this study, there was no significant difference between ratings of baseline living arrangement and current living arrangement for any of the clients. Living arrangements include whether or not clients were living by themselves or with others. It is not known if there were any inconsistencies in how outcome measures were recorded which resulted in no differences.

Horiuchi and colleagues (2006) did find that the number of ACT clients living by themselves at baseline (18.2%) did increase after 12 months to 30.3%. Caution should be exercised when generalizing the finding about living arrangements in this study. As emphasized in the literature, one of the greatest impacts of ACT is the increase in improved housing stability of clients (George et al., 2008, para. 2). Very little research has been done to determine who

ACT clients are living with, be it by themselves or with others. The majority of research conducted around living arrangements tends to focus on how the client is living, and where the client is living, and not with whom. Research should be undertaken to determine who ACT clients are living with.

Residence Type

In this study, there was a statistically significant difference found between ratings of baseline residence type and current residence type. The types of residences that ACT clients could be living in were hospital/supportive housing or a private house. The study found that clients moved from a more restrictive environment being hospital or supportive housing to a less restrictive environment such as a private house.

In a study conducted by Becker and colleagues (1999) most ACT clients were found to be living on their own. In relation to this study, the significant difference from baseline to follow-up may be related to the reduction of hospitalization days that ACT clients experienced during this study. If ACT clients were not living in hospital, the logical conclusion would be they were living in a private house. Therefore with the number of hospitalization days reduced it would seem appropriate to have a difference in terms of residence type for ACT clients in this study.

Residency Status

Within this study there was a statistically significant difference between residency status at baseline and follow-up. ACT clients were deemed to be living either dependently or independently. Results indicated that more ACT clients were living independently at follow-up

than at baseline. One of the key features of ACT is to help support clients in terms of housing and this study is in keeping with other studies. McGrew and colleagues (1995) found in a pre-post ACT study 46.0% of clients, who were living independently in their own apartment, were still doing so after 18 months of ACT. Nieves (2002) found that 62.0% of ACT clients enrolled in a study were living independently at both baseline and remained stable over the twelve month study period.

In relation to this study, the significant difference from baseline to follow-up may again be related to the reduction of hospitalization days that ACT clients experienced during this study. If ACT clients were not living in hospital, the logical conclusion would be they were living independently and not having to be dependent on other people. Therefore with the hospitalization day reductions it would seem appropriate to have a difference in terms of residence status for ACT clients within this study.

Employment Status

In this study clients did not show significant gains in obtaining employment from baseline to follow-up therefore no significant difference. This is similar to what McGrew and colleagues (1995) found in a pre-post study in that the number of clients with employment at baseline did not increase at follow-up.

The result of this study may be attributed to the following. Even though one of the basic principles of ACT is to encourage clients to participate in community employment, the clients in this study were not engaged in employment with regards to this principle. It is not known if the teams in the study had one or more mental health professional staff designated for the role of vocational specialist as per the ACT Standards. Additionally, staff of the ACT program may

have been concentrating on assisting clients to focus on recovery and not on finding employment. As well employment rates for the study area are relatively lower when compared to the Province as a whole which may pose challenges in finding and securing employment for ACT clients. Research should be done to determine how ACT clients can attain and keep employment while enrolled in the program.

Educational Status

This study found there was no statistically significant change in educational status from baseline to follow-up for the clients from an educational level of high school or less to post secondary. Education is viewed as an important factor in determining quality of life for individuals however no improvements were found with this measure. Most of the studies conducted found ACT clients having attained high school or less in terms of education (McGrew, 1995; Nieves, 2002; Ben-Porath et al., 2004; Horiuchi, et al., 2006.). In terms of the study area, the educational attainment level had been reported as low with a large number of persons between the ages of 35 to 64 reporting less than Grade 9 education.

Educational courses take time to complete. The data for this study was collected over a 33 month period. It may be that some ACT clients may have attainted additional education that was not accounted for during the reporting time. Research should be done to determine if ACT clients attain additional education while enrolled in the program.

Primary Income Source

This study found that there was no statistically significant change in primary income source from baseline to follow-up for the clients. The type of income that ACT clients receive

would have been a pension or from family/other pertaining to this study. Virtually all of the ACT clients were receiving a pension at baseline and follow-up. Other studies have indicated that ACT clients have experienced changes in receiving government income. McGrew and colleagues (1995) reported that after one year of ACT treatment, there was an increase (from 3.1% to 11.3%) in the number of clients receiving income from government.

It could be speculated that the clients within this study are already receiving government income and the demand for more clients to receive this type of income from baseline to follow-up has not changed significantly to be reported. As previously reported, both the District of Timiskaming and the City of Timmins have greater number of residents that rely heavily on government pensions than compared to the rest Ontario. There is a need for more research to be done in terms of why a majority of ACT clients receive their primary income sources from pensions.

Objective Three

The third objective was to determine if clients registered on rural and urban ACT Teams experience reduced hospitalization days over time and improved quality of life outcomes over time between the two team.

Reduced Hospitalization Days

This study found that clients serviced by the rural ACT team experienced a statistically significant reduction in the number of hospitalization days from two years prior to ACT treatment to ACT treatment after two years (mean ranks 0.00 and 8.00). The study also found a similar finding for the urban ACT team where there was a significant reduction (mean ranks 3.00

and 7.33). Both rural and urban ACT clients experienced statistically significant reductions in the number of reduced hospitalization days during the study period.

These findings are in keeping with the literature. In 1996, Chandler, Meiske, Hu and colleagues found reduced hospitalization days from baseline to a three year follow-up for both rural and urban ACT clients. This finding also acknowledges that ACT can be used as a treatment to reduce hospitalization days for clients living in both urban and rural areas.

Quality of Life Outcomes

Legal Status

This study found that there were no significant differences in legal status from baseline to follow-up for either the rural or urban team. Virtually no clients had legal problems at baseline or follow-up. This is the same finding for the combined teams as in Objective Two. Chandler, Meisek, Hu and colleagues (1996) also found no statistical differences in legal status between urban and rural clients. To speculate why there is no change could be simply that the ACT clients had very little legal involvement prior to being admitted as a client. Once admitted, legal involvement would be recorded and dealt with at that time.

Living Arrangement

In this study, there was no significant difference between ratings of baseline living arrangement and current living arrangement for either the rural or urban team. Living arrangements include whether or not clients were living by themselves or with others. It is not known if there were any inconsistencies in how outcome measures were recorded which resulted in no differences. This is the same finding for the combined teams as in Objective Two.

Residence Type

In this study a statistically significant difference between baseline residence type and current residence type for the urban team was identified, a similar finding in Objective Two for the combined teams. The types of residences that ACT clients could be living in were hospital/supportive housing or a private house. The study found that urban ACT clients moved from a more restrictive environment being hospital or supportive housing to a less restrictive environment, being a private house. There was no significant difference in residence type for the rural team as most clients were living in a private house at baseline and at follow-up.

Residency Status

Within this study there was a statistically significant difference between residency status at baseline and follow-up for both the rural and urban clients, a similar finding in Objective Two for the combined teams. ACT clients were deemed to be living either dependently or independently. Results indicated that more ACT clients were living independently at follow-up than at baseline in both the rural and urban areas. One of the key features of ACT is to help support clients in terms of housing and this study is in keeping with other studies. Chaneler, Meisek, Hu and colleagues (1996) found that after a three year follow-up there were more urban clients living independently than rural clients (89.2% compared to 69.6%).

Employment Status

This study found that the employed status did not change from baseline to follow-up for rural ACT clients. This is similar to the finding for the combined teams in Objective Two. Rural clients did not show significant gains in obtaining employment. As for the urban ACT clients

there were no changes calculated due to measurements of data. Findings from a study Chandler, Meisek, McGowen and colleagues (1996) conducted reported that at one year follow-up more rural ACT clients reported being employed (18.3%) compared to baseline (15.7%) whereas (36.3%) more urban ACT clients were reported to be employed than at baseline (10.8%). Over a three year period and using the same study sample, Chandler, Meisek, Hu and colleagues (1999) found a substantial percentage of urban ACT clients (72.6%) employed compared to rural ACT clients (28.7%). The results of this study are not in keeping with other study results. There may need to be an employment emphasis on future ACT studies to determine why the differences between rural and urban teams. The result could also be due to ACT programming issues and a lack of vocational supports provided by ACT.

Educational Status

This study found there was no statistically significant change in educational status from baseline to follow-up for either the rural or urban clients from an educational level of high school or less to post secondary. This is the same finding for the combined teams as in Objective Two.

Primary Income Source

This study found no statistically significant change in primary income source from baseline to follow-up for either the rural or urban clients. The type of income that ACT clients received would have been a pension or from family/other pertaining to this study. Virtually all of the urban and rural ACT clients were receiving a pension at baseline and follow-up. This is the same finding for the combined teams as in Objective Two.

In a study conducted by Chandler, Meiske, Hu and colleagues (1996) it was reported that income for clients of an urban ACT were higher compared to a rural ACT program in the same geographical area, however no statistics were provided.

Study Limitations

The first limitation is the small sample size (N=42) which limited the type of comparison and statistical tests and analysis that could be made between groups. When divided between the two ACT Teams, there were 21 clients in the Timiskmaing District and 15 clients in the City of Timmins. This could also have a significant effect on client quality of life outcome measures over time.

The second limitation was the briefness of the study period. Reduced hospitalization days and positive outcomes for ACT program clients may take several years to realize. The 33-month study period may have been too short to detect improved quality of life outcomes for clients (combined and geographically separated) in the areas of legal status, living arrangement, employment status, educational status and primary income source. There were improved quality of life outcomes for residency type and residence status. Further the number of days of hospitalizations was reduced. Future studies should examine the treatment of ACT clients over longer periods of time to study whether or not positive outcomes can be gained for quality of life outcome measures.

The third limitation is there was no control group with whom comparisons could be made. The fourth limitation is that given the data set developed by the Ministry of Health and Long-Term Care, it was not specifically designed for the research questions posed in this study. These data were collected through the *CDS-MH* was used to provide the Ministry of Health and

Long-Term Care with the basic data needed for funding accountability. This data was the most reliable in terms of collection that was presently available pertaining to this study. The fifth study limitation is the data supplied from the clinical record system of the two ACT Teams sponsored agency were limited due to privacy and system infrastructure issues.

The sixth study limitation is the study did not take into consideration the number of staff hours or frequency of ACT team visits to clients which may have helped determine if treatment intensity affected improvement levels of clients. The seventh limitation was this study did not take into consideration the geography and population in terms of ACT service delivery for Northern Ontario pertaining to the original ACT Standards for urban and rural teams. Lastly, the study did not take into consideration the staffing levels of the ACT Teams or whether or not there were high staff turnovers which could influence treatment coupled with proper staff qualifications to treat clients.

Implications for ACT Planners

The ACT model has economic, clinical and programming implications for the planning of ACT Teams.

Economic

One area this study did not address is the cost effectiveness of ACT. There are funding issues to be resolved within Ontario as ACT is implemented across the province as a treatment program for persons with severe mental illness. Traditional government funding sources may not provide for the full costs of the programs. ACT programs are designed to treat clients who

are high cost users to the health care system, however, there may be competing demands for these dollars in other areas of health care.

Clinical

Clinically it is unclear which aspects of ACT assist in helping to reduce the number of hospital days clients experience or what aspects help assist clients with achieve positive quality of life outcomes. Another clinical aspect of ACT is the willingness of host agencies to implement teams in both rural and urban settings, which leads to programming challenges including staffing issues. Lastly, there may be staff turnover, staff qualifications and professional isolation that make staffing ACT an issue in parts of Ontario, including the rural and urban areas of Northern Ontario.

Programming

In terms of programming, within the District of Timiskaming and between the District and the City of Timmins, harsh winter weather and driving conditions create significant challenges in both accessing and delivering ACT services to clients. Another programming issue is that staff may have issues with adhering to the ACT model within mental health agencies that have been provided funding to administer ACT Teams. A third programming issues is that mental health transfer payment agencies within Ontario that have been funded to develop ACT Teams will need to develop internal policies and programs to cover these activities. There also needs to be adequate training of professional staff to implement ACT within areas. Lastly both clients and families of ACT clients need to be properly educated about the ACT program as a treatment option.

Future Research

There are several areas where future research should be conducted. First, future research should be conducted with larger sample sizes. This study has a small sample size which limited the type of comparisons, statistical tests and analysis that could be made. Second, future research should be conducted over a longer period of time to address longer-term outcomes, including hospitalizations. This study was conducted using data collected over 33-months. Third, future studies should be undertaken which include control groups as this study did not utilize control groups.

Fourth, future research should be done to focus on how the ACT programs in the District of Timiskaming and the City of Timmins can be modified to meet the needs of mental health clients to assist with improving their quality of life. The quality of life outcome results of this study identified that future research should emphasis the following: who ACT clients are living with; how ACT clients can attain and keep employment while enrolled in the program; how ACT clients can attain additional education while enrolled in the program; and why the majority of ACT clients receive their primary income source from pensions.

Additionally, future studies should be undertaken to determine the cost effectiveness of ACT in both the rural and urban areas this study examined as this was not done as part of the study. Future research is need to examine other data types such as hospital utilization, emergency room visits, physician visits and crisis interventions to ensure that ACT continues to be utilized in Ontario.

Lastly, future research should be conducted on urban-rural ACT Team differences within other parts of Ontario.. This type of research will also have economic, clinical and programming implications for planners of future ACT programs. Future research should also determined the

most effective way to treat ACT clients in rural and urban areas in order to produce positive quality of life outcome measures including reduced hospitalization days for clients.

Conclusions

This study provides some important information pertaining to mental health clients receiving treatment in Northern Ontario from ACT teams. The study was found to be consistent with previous studies on ACT which show a significant reduction in the number of days hospitalized for persons admitted to ACT. The study, however, was not consistent with identifying positive quality of life outcomes for ACT clients as found with a number of studies which support the ACT model.

The study found that hospitalization days were reduced for clients after admission to an ACT program, including rural and urban ACT programs, and is consistent with other ACT program studies in this regard. Additional quality of life outcome findings indicate improvements were made in residence type and residence status. For the duration of the study ACT clients reported positive quality of life outcomes for legal status, living arrangement, employment status, educational status and primary income source. These were outcomes where improvements could not be made over the course of the study for clients. Comparable findings for rural and urban ACT program clients were also found. The findings of this study should be interpreted with caution due to the relatively small number of clients in the study.

Future studies, however, are needed that examine other data types such as hospital utilization, emergency room visits, physician visits and crisis interventions as well as other outcome measures, particularly quality of life, to ensure that ACT continues to be utilized in

Ontario, particularly in Northern Ontario urban and rural communities. This type of research will also have economic, clinical and programming implications for planners of future ACT programs. Future research should also determined the most effective way to treat ACT clients in rural and urban areas in order to produce positive quality of life outcome measures including reduced hospitalization days for clients.

The study did show the ACT model is still effective at treating persons who have a serious mental illness and require ongoing intensive treatment.

REFERENCES

Allness, D. J., & Knoedler, W. H. (1998). *The PACT model of community-based treatment for persons with severe and persistent mental illnesses: A manual for PSCT start-up.* Arlington, VA: NAMI Anti Stigma Foundation.

Atkinson, M., & Zibin, S. (1996). *Quality of life measurement among persons with chronic mental illness: a critique of measures and methods.* Ottawa, ON: Public Health Agency of Canada. Retrieved November 23, 2008, from http://www.phac-aspc.gc.ca/mh sm/pubs/quality_of_life-qualite_de_vie/chapter2-eng.php

Atkinson, M., & Zibin, S. (1996). *Quality of life measurement among persons with chronic mental illness: a critique of measures and methods.* Ottawa, ON: Public Health Agency of Canada. Retrieved November 23, 2008, from http://www.phac-aspc.gc.ca/mh-sm/pubs/quality_of_life-qualite_de_vie/preface-eng.php#execsumm

Basu, D. (2004). Quality of life issues in mental health care: Past, present, and future [Electronic version]. *German Journal of Psychiatry, 7*(3), 35-43.

Ben-Porth, D., Peterson, G., & Piskur, C. (2004). Effectiveness of and consumer satisfaction with an assertive community treatment program for the severely mentally ill: A 3-year follow up [Electronic version]. *Psychological Services, 1*(1), 40-47.

Becker, R. E., Meisler, N., Stormer, G., & Brondino, M. J. (1999). Employment outcomes for clients with severe mental illness in a PACT model replication [Electronic version]. *Psychiatric Services, 50*(1), 104-106.

Bond, G. R., Witheridge, T. F., Dincin, J., Wasmer, D., Webb, J., & De Graaf-Kaser, R. (1990). Assertive community treatment for frequent users of psychiatric hospitals in a large city: A controlled study [Electronic version]. *American Journal of Community Psychology, 18*(6), 865-891.

Canadian Mental Health Association - Cochrane Timiskaming Branch. (2003). *Mental health operating plan 2003/2004.* Timmins, ON: Author.

Canadian Mental Health Association – Ontario. (2004). *Mental health in numbers.* Retrieved February 28, 2004, from http://www.ontario.cmha.ca/content.reading_room/factsheets.asp?cID=4135

Chandler, D., Meisel, J., Hu, T. W., McGowen, M., & Madison, K. (1996). Client outcomes in three-year controlled study of an integrated service model [Electronic version]. *Pyschiatric Services, 47*(12), 1337-1343.

Chandler, D., Meisel, J., McGowen, M., Mintz, J., & Madison, K. (1996). Client outcomes in two model capitated integrated service agencies [Electronic version]. *Psychiatric Services, 47*(2), 175-180.

Clark, R. E., & Samnaliev, M. (2005). Psychosocial treatment in the 21st century [Electronic version]. *International Journal of Law and Psychiatry, 28*(2005), 532-544.

Dixon, L. (2000). Assertive community treatment: twenty-five years of gold [Electronic version]. *Psychiatric Services*, 51(6), 759-765.

Drake, R. E. (1998). Brief history, current statue, and future place of assertive community treatment [Electronic version]. *American Journal of Orthopsychiatry, 68*(2), 172-175.

Essock, S. M., Drake, R. E., & Burns, B. J. (1998). A research network to evaluate assertive Community treatment: introduction [Electronic version]. *American Journal of Orthopsychiatry*, 68(2), 176-178.

Fam, J., Lee, C., Lim, B., & Lee, K. K. (2007). Assertive community treatment (ACT) in Singapore: A 1-year follow-up study [Electronic version]. *Annals of the Academy of Medicine, 36*(6), 409-412.

Freeman, J. (2001, November). *The origins of assertive community treatment (Assertive Community Treatment Association).* Retrieved September 4, 2004, from http://www.act association.org/origins/

French Language Services Act. R.S.O. 1990, c.f32. Retrieved January 16, 2009, from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90f32_e.htm

George, L., Durbin, J., & Koegl, C. (2008). System-wide implementation of ACT in Ontario: An ongoing improvement effort. *Journal of Behavioral Health Services & Research.* Retrieved January 15, 2009, from http://www.springerlink.com/content/f65434kj76n0p48v/?p=48548868414e4c4f93523883716beb21&pi=6

Guy, S. (1997). Assertive community treatment of the long-term mentally ill [Electronic version]. *Journal of the American Psychiatric Nurses Association, 3*(6), 185-190.

Hays, R. D., Anderson, R., & Revicki, D. (1993). Psychometric considerations in evaluating health-related quality of life measures [Electronic version]. *Quality of Life Research*, 2, 441- 449.

Health Systems Research Unit Clarke Institute of Psychiatry. (1997). *Review of best practices in mental health reform.* Ottawa, ON: Health Canada.

Horiuchi, K., Nisihio, M., Oshima, I., Ito, J., Matsuoka, H., & Tuskada, K. (2006). The quality of life among persons with severe mental illness enrolled in an assertive community treatment program in Japan: 1-year follow-up and analyses [Electronic version]. *Clinical Practice and Epidemiology in Mental Health*, *2*(18), 1-7.

Kirsh, B., & Cockburn, L. (2007). Employment outcomes associated with ACT: a review of ACT literature. *American Journal of Psychiatric Rehabilitation*, 10, 31-51.

Lafave, C. M., de Souze, H. R., & Gerber, G. J. (1996). Assertive community treatment of severe mental illness: A Canadian experience. *Psychiatric Services*, *47*(7), 757-759.

Latimer, E. A. (1999). Economic impacts of assertive community treatment: a review of the literature [Electronic version]. *Canadian Journal of Psychiatry*, 44, 443-454.

Lehman, A. F. (1995). Measuring quality of life in a reformed health system [Electronic version]. *Health Affairs*, 14(3), 90-101.

McDonel, E., Bond, G. R., Salyers, M., Fekete, D., Chen, A., McGrew, J. H., et al. (1997). Implementing assertive community treatment programs in rural setting [Electronic version]. *Administration and Policy in Mental Health*, *25*(2), 153-173.

McGrew, J. H., Bond, G. R., Dietzen, L., McKasson, M., & Miller, L. D. (1995). A multisite study of client outcomes in assertive community treatment. *Psychiatric Services*, *46*(7), 696- 701.

Mental Health Act, R.S.O. 1990, c.7. Retrieved January 16, 2009, from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90m07_e.htm

Meyer, P. S., & Morrissey, J. P. (2007). A comparison of assertive community treatment and intensive care management for patients in rural areas [Electronic version]. *Psychiatric Services*, *58*(1), 121-127.

Ministry of Health. (1998). *Standards for assertive community treatment teams (ACTT).* Toronto, ON: Author.

Ministry of Health and Long-Term Care. (2004). *Community mental health common data set – mental health (cds-mh) manual.* Toronto: Author.

Ministry of Health and Long-Term Care. (1999). *Making it happen, operational framework for the delivery of mental health services and supports.* Toronto, ON: Author.

Ministry of Health and Long-Term Care. (2003). *Mental health accountability framework.* Toronto, ON: Author.

Ministry of Health and Long-Term Care. (2008). *North Bay psychiatric hospital.* Retrieved February 19, 2008, from http://www.health.gov.on.ca/english/media/news_releases/archives/nr_05/nr_111805.html

Ministry of Health and Long-Term Care. (2004). *Ontario Program Standards for ACT Teams.* Toronto, ON: Author.

Munro, B. H. (2001). *Statistical methods for health care research* (4th ed). Philadelphia, PA: Lippincott.

Nieves, E. J. (2002). The effectiveness of the assertive community treatment model. *Administration and Policy in Mental Health. 29*(6), 461-480.

North Bay Psychiatric Hospital. (2004). *District mental health program.* Retrieved February 28, 2004, from http://www.nbpsych.on.ca/NBPH_Main/NBPH_English/prog_AcuteProgram.htm

North Bay Psychiatric Hospital. (2004). *Hospital profile.* Retrieved February 28, 2004, from http://www.nbpsych.on.ca/NBPH_Main/NBPH_English/admin_nbph-profile.htm

North East Mental Health Implementation Task Force. (2002). *The time for change is now: building a sustainable system of care for people with mental illness and their families in the northeast region.* Parry Sound, ON: Author.

Northeast Mental Health Centre. (2008). *Background.* Retrieved February 19, 2008, from http://www.nemhc.on.ca/files/background_english.pdf

Northern Health Information Partnership. (2005, January). *Mental health in northern Ontario.* Retrieved January 7, 2005, from http://www.nhip.org/Health%20Summary/Mental%20Health.pdf

Northern Shores District Health Council. (2002). *District of Timiskaming mental health population prevalence, morbidity and hospitalization data.* North Bay, ON: Author.

Northern Shores District Health Council. (2004). *Draft - the people and communities of the Muskoka, Nipissing, Parry Sound and Timiskaming districts.* North Bay, ON: Author.

Northern Shores District Health Council. (2000). *Northern shores hospital profile.* North Bay, ON: Author.

Ontario ACT Association. (2008). *ACT model.* Retrieved November 23, 2008, from http://www.ontarioacttassociation.com/act_model.php

Prince, P. N., & Gerber, G. J. (2001). Measuring subjective quality of life in people with serious mental illness using the SEIQoL-DW [Electronic version]. *Quality of Life Research.* 10, 117- 122.

Public Hospitals Act, R.S.O. 1990, c p.40. Retrieved January 16, 2009, from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90p40_e.htm

Rosen, A., Mueser, K., & Teesson, M. (2007). Assertive community treatment – issues from scientific and clinical literature with implication for practice [Electronic version]. *Journal of Rehabilitation Research & Development, 44*(6), 813-825.

Salkever, D., Domino, M. E., Burns, B. J., Santos, A. B., Deci, P. A., Dias, J., et al. (1999). Assertive community treatment for people with severe mental illness: the effect on hospital use and costs [Electronic version]. *Health Services Research, 34*(2): 577–601.

SPSS Advanced Models 11.0 (2001). [Computer software]. Chicago, IL: SPSS Inc.

Stamatis, D. H. (2002). Six sigma and beyond: The implementation process. Boca Rotan, FL: St. Lucie Press. Retrieved January 7, 2009, from http://books.google.ca/books?id=8yB3Md2zzKMC&printsec=frontcover&source=gbs_summary_r&cad=0

Statistics Canada. (2006). *2006 Census dictionary.* Retrieved November 23, 2008, from http://www12.statcan.ca/english/census06/reference/dictionary/geotoc.cfm

Statistics Canada. (2004). *Highlights for Timiskaming district (census division), Ontario.* Retrieved September 25, 2004, from http://www12.statcan.ca/english/profil01/Details/details1.cfm?SEARCH=BEGINS&ID=189&PSGC=35&SGC=3554&DataType=1&LANG=E&Province=35&PlaceName=timiskaming&CMA=&CSDNAME=Timiskaming%20District&A=&TypeNameE=Census%20Division&Prov=

Statistics Canada. (2004). *Highlights for Timmins (city), Ontario.* Retrieved September 25, 2004, from http://www12.statcan.ca/english/profil01/Details/details1.cfm?SEARCH=BEGINS&ID=7533&PSGC=35&SGC=3556027&DataType=1&LANG=E&Province=35&PlaceName=timmins&CMA=&CSDNAME=Timmins&A=&TypeNameE=City%20%2D%20Cit%E9&Prov=

Tibbo, P., Chue, P., & Wright, E. (1999). Hospital outcome measures following assertive community treatment in Edmonton, Alberta [Electronic version]. *Canadian Journal of Psychiatry, 44*, 276-279.

Timiskaming Health Unit. (2003). *Mental health operating plan 2003/2004.* New Liskeard. ON: Author.

Timmins and District Hospital. (2005). *Mental health program.* Retrieved January 8, 2005, from http://www.tadh.com/program_services/mental_health_program/mental_healthframeset.html

Udechuku, A., Olver, J., Hallam, K., Blyth, F., Leslie, M., Nasso, M., et al. (2005). Assertive community treatment of the mentally ill: Service model and effectiveness [Electronic version]. *Australasian Psychiatry, 13*(2), 129-134.

World Health Organization. (1997). *WHOQOL – Measuring quality of life.* Retrieved November 23, 2008, from http://www.who.int/mental_health/media/68.pdf

Yang, J., Law, S., Chow, W., Andermann, L., Steinberg, R., & Sadavoy, J. (2005). Assertive community treatment for persons with severe and persistent mental illness in ethnic minority groups [Electronic version]. *Psychiatric Services, 56*(9), 1053-1055.

APPENDICES

Appendix A. Standards for Assertive Community Treatment Teams
Recommended Standards For Assertive Community Treatment Teams

I. Introduction

An Assertive Community Treatment (ACT) Team is a cost-effective alternative to hospitalisation for persons with serious, long-term mental illness. Service is provided by a multi-disciplinary team on 24-hour, seven day a week basis. Support is given in the community rather than in an office-based practice and combines skill teaching with clinical management. Outreach, client choice and individual service are emphasized.

The standards for this program are largely based on those developed for the Program of Assertive Community Treatment (PACT) in the United States. Deborah Allness, M. S. S.W. and William Knoedler, M.D. wrote the standards after almost 20 years of field-testing in various jurisdictions. They have been adapted for Ontario for implementation in the next 18 months. The Ministry of Health will be monitoring the use of these standards and will review them at several intervals.

There are several changes from the PACT model:

Continuity of care is paramount but we believe that other mental health services may be able to assist in providing care in some circumstances. We will be assisting ACT Teams with integration and coordination with other services where it is appropriate for the client. Treatment in the community rather than in a hospital is only one of a range of mental health services.

The differentiation between rural and urban/remote communities has been emphasized. We have also added a third, temporary category. Certain teams will be classified as developmental until boundary issues are decided or until they are able to proceed with full implementation. At that time they will be formally classified as urban or rural/remote.

Evaluation procedures will not have to be developed by each Team. They will be defined by the Ministry of Health to ensure that the best practices can be used and that they will complement existing procedures.

ACT Teams must include at least 0.5 full-time equivalent (FTE) of paid staff for a peer support position.

The ACT Team shall endeavour to reflect the community it serves so that it can ensure that linguistic and cultural needs are met.

The ACT Team standards are based on "Recommended PACT Standards for New Teams" by Deborah Allness, M.S.S.W. and William Knoedler, M.D. of the Programs for Assertive Community Treatment Inc., Madison, Wisconsin. The PACT standards were derived from the State of Wisconsin Department of Health and Social Services, Division of Community Services, (April, 1989), *Community Support Programs for the Chronically Mentally Ill Standards,* and the State of Rhode Island Department of Mental Health, Retardation, and Hospitals, Division of Mental Health and Management Services (February 3, 1992), *Mobile Treatment Team Standards.*

The Ministry of Health, Province of Ontario, would like to thank the authors for the use of their material.

II. Definitions

These definitions refer to the typical, urban, fully staffed teams except where noted.

Assertive Community Treatment Team (ACCT) is a self-contained clinical team which (1) assumes responsibility for directly providing needed treatment, rehabilitation and support services to identified clients with severe and persistent mental illnesses; in rural/remote areas service contracts may be required with existing case management and crisis response services (2) minimally refers clients to outside service providers; (3) provides services on a long-term care basis with continuity of caregivers over time; (4) delivers 75 percent or more of the services outside program offices; and (5) emphasizes outreach, relationship building, individualization of services and client choice. The clients to be served are individuals who have severe symptoms and impairments not effectively remedied by available treatments or who, because of reasons related to their mental illnesses, resist or avoid involvement with mental health services. The team coordinator, program psychiatrist, program assistant and multidisciplinary staff are to ensure service excellence and courteous, helpful and respectful services to program clients. On average, there should be no more than ten clients to one staff member (excluding the psychiatrist and the program assistant).

ACT Teams are categorized as follows: 1) urban, fully staffed Teams which are expected to follow all standards; 2) rural/remote Teams expected to follow different standards because of lack of population density of seriously mentally ill clients and/or great distances; 3) developmental Teams which are not yet fully implemented but are expected to follow standards negotiated with the Ministry in relation to their current resources.

Note: Teams that cover both rural and urban/remote areas will be classified initially as developmental, until boundaries are negotiated with the Ministry of Health.

Case Management is an organized process of coordination among the multidisciplinary team to provide a full range of appropriate treatment, rehabilitation and support services to a client in a planned, coordinated, efficient and effective manner.

Case Manager is the Team member who coordinates and monitors the activities of the treatment team and has primary responsibility to write the treatment plan, to provide individual supportive

therapy, to ensure immediate changes are made in the treatment plan as clients' needs change and to advocate for client rights and preferences.

Client is a person who has completed the admissions process and is receiving treatment, rehabilitation and support services from the ACT Team.

Clinical Supervision is regular, face-to-face contact between the designated clinical supervisor and a team member to review the client's clinical status and to ensure appropriate treatment and services are provided to the client by the team member. Clinical supervision occurs during daily organizational staff meetings and treatment planning meetings and includes review of written documentation (e.g., assessments, treatment plans, progress notes and correspondence).

Comprehensive Assessment is the organized process of gathering information to evaluate a client's mental and functional status and his or her treatment needs. The results of the assessment are used to develop an individual treatment plan for the client.

Daily Log is a notebook or cardex which the ACT Team maintains on a daily basis to provide (1) a roster of clients served in the program and (2) for each program client, brief documentation of any treatment or service contacts which have occurred during the day and a concise behavioural description of the client's clinical status.

Daily Organizational Staff Meeting is a daily staff meeting held at regularly scheduled times under the direction of the Team coordinator (or designee) to (1) briefly review the service contacts which occurred the previous day and the status of all program clients; (2) review the service contacts which are scheduled to be completed during the current day and revise as needed; (3) assign staff to carry out the day's service activities; and (4) revise treatment plans and plan for emergency and crisis situations as needed. The daily log and the daily staff assignment schedule are used during the meeting to facilitate completion of these tasks. In rural/remote areas, meetings are to be held on a twice-weekly basis at a minimum. These may be by conference call or through a technology network, with face-to-face meetings scheduled at regular intervals.

Daily Staff Assignment Schedule is a written, daily timetable summarizing all client treatment and service contacts to be divided and shared by staff working on that day. The daily staff assignment schedule will be developed from a central file of all weekly client schedules.

Individual Supportive Therapy is verbal therapy in the form of one-to-one conversations with the client and focuses on helping the client understand and identify symptoms, lessen distress and symptomatology, improve role functioning and increase participation in and satisfaction with treatment and rehabilitative services.

Initial Assessment and Treatment Plan is the initial evaluation of a client's mental health status and his or her treatment and practical resource needs (e.g. housing and finances). The initial treatment plan is completed the day of admission and guides team services until the comprehensive assessment and treatment plan is completed.

Medication Administration is the physical act of giving medication to a client by the prescribed method (e.g. oral and/or by injection).

Medication Error is any error in prescribing or administering a specific medication, including errors in writing or transcribing the prescription, in obtaining and administering the correct medication, in the correct dosage, in the correct form and at the correct time.

Medication Monitoring is observation of the client to determine and identify both beneficial effects and inadvertent or undesirable effects secondary to psychotropic medications.

Peer Support is the provision of assistance by a staff member who has experienced mental illness and would be able to establish a supportive relationship with the client.

Psychotropic Medication is any drug used to treat, manage or control psychiatric symptoms or disordered behaviour, including but not limited to antipsychotic, antidepressant, mood-stabilizing or anti-anxiety agents.

Shift Manager is the individual (assigned by the team coordinator) in charge of developing and implementing the daily staff assignment schedule; making all daily assignments; ensuring that all daily assignments are completed or rescheduled; and managing all emergencies or crises that arise during the course of the day, in consultation with the team coordinator and the psychiatrist.

Treatment Plan is the creation of a continuing process involving each client, his or her family and the ACT Team, which individualizes service activity and intensity to meet person-specific treatment, rehabilitation and support needs. The written treatment plan documents the client's goals and the services necessary for the client to achieve them. The plan also delineates the roles and responsibilities of the team members who will carry out the services.

Treatment Plan Review is a written summary describing client progress since the last treatment planning meeting; it outlines client functional strengths and limitations at the time the treatment plan is rewritten.

Treatment Planning Meeting is a regularly scheduled meeting, conducted under the supervision of the team coordinator, to assess individual client needs and problems; to establish measurable long and short-term treatment goals; to plan treatment and service interventions; and to assign staff persons responsible for providing the services.

Weekly Client Schedule is a written schedule of the specific interventions or service contacts (i.e. by whom, when, for what duration and where) which fulfill the goals and objectives in a given client's treatment plan. This schedule shall be developed and maintained for each client enrolled in ACT Team.

III. Admission and Discharge Criteria

A. Admission Criteria

The following criteria should be used by an ACT Team in selecting clients in the greatest need of ACT Team services:

1. Clients with severe and persistent mental illnesses listed in the diagnostic standard (currently the Diagnostic and Statistical Manual, Fourth Edition, or DSM IV-R of the American Psychiatric Association) that seriously impair their functioning in community living. Priority is given to people with schizophrenia, other psychotic disorders (e.g. schizoaffective disorder) or bipolar disorder because these illnesses more often cause long-term psychiatric disability. Those who have a serious mental illness complicated by a concurrent disorder are appropriate).

2. Clients with significant functional impairments as demonstrated by at least one of the following conditions:

a. Inability to consistently perform the range of practical daily living tasks required for basic adult functioning in the community (e.g. maintaining personal hygiene; meeting nutritional needs; caring for personal business
affairs; obtaining medical, legal, and housing services; and recognizing and avoiding common dangers or hazards to self and possessions) or persistent or recurrent failure to perform daily living tasks except with significant support or assistance from others such as friends, family or relatives.
b. Inability to be consistently employed at a self-sustaining lever or inability to consistently carry out the homemaker role (e.g. household meal preparation, washing clothes, budgeting or child-care tasks and responsibilities).
c. Inability to maintain a safe living situation (e.g. repeated evictions or loss of housing).

3. Clients with two or more of the following problems, which are indicators of continuous high-service needs (i.e. greater than eight hours per month):

a. High use of Schedule one hospital services or specialty hospital services, tertiary level services or psychiatric emergency services such as mental health crisis response services.
b. Intractable (i.e. persistent or very recurrent) severe major symptoms (e.g. affective, psychotic and/or suicidal).
c. Coexisting substance use disorder of significant duration (e.g. greater than six months).
d. High risk or recent history of criminal justice involvement (e. g. arrest and incarceration).
e. Inability to meet basic survival needs or residing in substandard housing, homeless or at imminent risk of becoming homeless.
f. Residing in an inpatient bed or in a supervised community residence, but clinically assessed to be able to live in a more independent living situation if intensive services are provided, or requiring a residential or institutional placement if more intensive services are not available.
g. Inability to participate in traditional office-based services.

B. Discharge Criteria

Discharges from the ACT Team occur when clients and program staff mutually agree to the termination of services. This shall occur when clients:

a. Move outside the geographic area of ACT Team's responsibility. In such cases, the ACT Team shall arrange for transfer of mental health service responsibility to a provider wherever the client is moving. The ACT Team shall maintain contact with the client until this service transfer is complete.
b. Demonstrate an ability to function in all major role areas (i.e. work, social and/or self-care) without requiring assistance from the program for at least two years, with this determination to be made by both the client and the ACT Team.
c. Demonstrate a consistent pattern of decreased need/use of ACT Team services.
d. Have an established relationship with a designated community caregiver (i.e. family physician, case manager, etc.).
e. Request discharge, despite the team's best efforts to develop a treatment plan acceptable to them.

2. Documentation of discharge shall include:

a. The reasons for discharge.
The client's status and condition at discharge.
c. A written final evaluation summary of the client's progress toward the goals set forth in the treatment plan.
d. A plan developed in conjunction with the client for treatment after discharge and for follow-up.
e. The signature of the client's primary case manager, team coordinator and psychiatrist.

Policy and Procedure Requirements: *The ACT Team shall maintain written admission and discharge policies and procedures.*

IV. Service Capacity

Each ACT Team shall have the organizational ability to provide a staff-to-client ratio of one full-time equivalent (FTE) staff person, on average, for every ten clients (excluding the psychiatrist and the program assistant). Approximately 80-100 clients are to be served on any given urban Team and on average 60- 80 clients are to be served on any given rural/remote Team.

V. Staff Requirements

The ACT Team shall have among its staff individuals qualified to provide the services described in Section VIII, including case management; crisis assessment and intervention; symptom assessment and management; individual supportive therapy; medication prescription, administration, monitoring, and documentation; substance abuse treatment; work-related services; activities of daily living services; social, interpersonal relationship and leisure-time

activity services; support services or direct assistance to ensure that clients obtain the basic necessities of daily life; and education, support, and consultation to clients' families and other major supports. The team shall endeavour to reflect the community it serves so that it can ensure that linguistic and cultural needs are met.

The urban program shall employ an average of ten to 12 FTE clinical staff persons, one program assistant, and a minimum of 16 hours of psychiatrist time per week for every 50 clients on a mature team. If the ACT psychiatrist does the inpatient work for the ACT clients, then a. 0.8 FTE psychiatrist is required per urban team.

The rural/remote program shall employ a minimum of five to seven FTE clinical staff persons, a half-time program assistant and minimum of 16 hours of psychiatrist time per week for every 50 clients on the team.

Developing teams have a higher per client need for the complex assessments that are done by the psychiatrist since all patients are new to the team.

The following minimum staffing configuration must be met in each ACT Team:

A. A psychiatrist on a full-time or part-time basis for a minimum of 16 hours per week for every 50 clients on a mature team. The psychiatrist provides clinical services to all ACT Team clients, works with the team coordinator to monitor each client's clinical status and response to treatment, supervises staff delivery of services, and directs psychopharmacologic and medical treatment.

B. A minimum of eight to ten FTE mental health professionals on an *urban Team,* or a minimum of three FTE on a *rural, remote Team* (including the team coordinator). These mental health professionals will have professional degrees in one of the core mental health disciplines, clinical training including internships and other supervised practical experiences in a clinical or rehabilitation setting, and clinical work experience with persons with severe and persistent mental illnesses. They are licensed or certified per the regulations of the Province of Ontario, where applicable. Mental health professionals include persons with masters or doctoral degrees in nursing, social work, or psychology; registered nurses; and registered occupational therapists.

Required among the mental health professionals are:

1. On an *urban Team* at least three FTE registered nurses and on a *rural/remote Team,* at least one FTE registered nurse (for either Team, a team coordinator with a nursing degree cannot replace one of these FTE nurses).
2. One or more staff mental health professionals designated for the role of vocational specialist.
3. One staff member with addictions experience/qualifications to deliver these addictions services with the team approach.

C. Remaining clinical staff may be bachelor's level and paraprofessional mental health workers who carry out rehabilitation and support functions. A bachelor's level mental health worker has a bachelor's degree in a behavioural science and work experience with adults with severe and persistent mental illnesses. A paraprofessional mental health worker may have a bachelor's degree in a field other than behavioural sciences or have a high school diploma and has work experience with adults with severe and persistent mental illnesses or with individuals with similar human-services needs. These paraprofessionals may have related training (e.g. recreational therapist, home health care aide or registered practical nurse) or work experience (e.g. teaching) and life experience. ACT Teams must include at least 0.5 FTE of paid staff for a peer support position.

D. A program assistant (one FTE in urban settings or one-half to one FTE in rural/remote settings) who is responsible for organizing, coordinating and monitoring all nonclinical operations of ACT TEAM including: managing medical records; operating and coordinating the management information system; maintaining accounting and budget records for client and program expenditures; and providing receptionist activities including triaging calls; and coordinating communication between the team and clients.

Policy and Procedure Requirements: The ACT Team shall maintain written personnel policies and *procedures and shall maintain personnel files for each Team member, containing job applications, copies of credentials or licenses, job descriptions, annual performance appraisal, and orientation and training plan.*

VI. Program Organization

The team coordinator shall be responsible for ensuring that the ACT Team meets the following organizational requirements:

A. Hours of Operation and Staff Coverage

1. Urban Teams

a. The ACT Team shall be available to provide treatment, rehabilitation and support activities seven days per week, over two eight-hour shifts, and operate a minimum of 12 hours per day on weekdays and eight hours each weekend day and every holiday.
b. The ACT Team operates an after-hours, on-call system. ACT Team staff who are experienced in the program and skilled in crisis intervention procedures shall be on call and available to respond to clients by telephone or in person.
c. Psychiatric backup shall also be available during all off hours periods. If availability of the ACT Team's psychiatrist during all hours is not feasible, alternative psychiatric backup should be arranged (e.g. mental health center psychiatrist, emergency room psychiatrist or psychiatric hospital duty doctor).

2. Rural/remote Teams

a. Staff is scheduled to provide the necessary services on a case-by-case basis in the evenings and on weekends.
b. When a rural/remote team does not have sufficient staff numbers to operate an after-hours, on-call system, it should still provide crisis services during regular work hours. During all other hours, it may arrange coverage through a reliable crisis intervention service. The rural/remote tem communicates routinely with the crisis-intervention service (i.e. at the beginning of the workday to obtain information from the previous evening and at the end of the workday to alert the crisis intervention service to clients who may need assistance and to provide effective ways of helping them). The crisis intervention service should be expected to go out and see clients who need face-to-face contact.

B. Service Intensity

1. The ACT Team shall have the capacity to provide multiple contacts per week to clients experiencing severe symptoms or significant problems in daily living. These multiple contacts may be as frequent as two to three times per day, seven days per week, depending on client need. Many, if not all, staff shall share responsibility for addressing the needs of all clients requiring frequent contacts.

2. The ACT Team shall have the capacity to rapidly increase service intensity to a client when his or her status requires it.

C. Place of Treatment

1. Each new ACT Team shall set a goal of providing 75 percent of service in the community, in non-office- or non-facility based settings, while each rural/ ACT Team shall set a goal of providing 85 percent of service contacts in the community, in non-office- or non-facility-based settings. Each ACT Team will maintain data to verify these goals are being met.

2. Wherever possible, the ACT Team should be physically located in the community, not in a hospital setting.

D. Staff Communication and Planning

1. The ACT Team shall conduct daily organizational staff meetings at regularly scheduled times per a schedule established by the team coordinator. These meetings will be conducted in accordance with the following procedures:

a. The ACT Team will maintain a written daily log, using either a notebook or cardex. The daily log will provide:
i. a roster of the clients served in the program; and
ii. for each program client, brief documentation of any treatment or service contacts which have occurred during the day and a concise, behavioural description of the client's daily status.

b. The daily organizational staff meeting will commence with a review of the daily log, to update staff on the treatment contacts which occurred the day before and to provide a systematic means for the team to assess the day-to-day progress and status of all clients.
c. The ACT Team, under the direction of the team coordinator, shall maintain a weekly client schedule for each client. The weekly client schedule is a written schedule of all treatment and service contacts which staff must carry out to fulfil the goals and objectives in the client's treatment plan. The Team will maintain a central file of all weekly client schedules.
d. The ACT Team, under the direction of the team coordinator, shall develop a daily staff assignment schedule from the central file of all weekly client schedules. The daily staff assignment schedule is a written timetable for all client treatment and service contacts, to be divided and shared by the staff working on that day.
e. The daily organizational staff meeting will include a review by the shift manager of all the work to be done that day as recorded on the daily staff assignment schedule. During the meeting, the shift manager will assign and supervise staff to carry out the treatment and service activities scheduled to occur that day and the shift manager will be responsible for assuring that all tasks are completed.
f. At the daily organizational staff meeting, the ACT Team will also revise treatment plans as needed, plan for emergency and crisis situations and add service contacts to the daily staff assignment schedule per the revised treatment plans.

2. The ACT Team shall conduct treatment planning meetings under the supervision of the team coordinator and the psychiatrist. These treatment planning meetings shall:

a. Convene at regularly scheduled times per a written schedule maintained by the team coordinator.
b. Occur with sufficient frequency and duration to develop written individual client treatment plans and to review and rewrite the plans every six months.

E. Staff Supervision

Each ACT Team shall develop a written policy for clinical supervision of all staff providing treatment, rehabilitation and support services. Clinical leadership of the ACT Team will be provided in a collaborative way by the team coordinator and the psychiatrist in a manner that ensures "best practices" in terms of team collaboration, facilitation and empowerment.

Clinical supervision provided to ACT Team staff shall be documented in writing. This supervision and direction shall consist of:

1. Individual, side-by-side sessions in which the supervisor accompanies an individual staff member to meet with clients in regularly scheduled or crisis meetings to assess performance, give feedback and model alternative treatment approaches.

2. Participation with team members in daily organizational staff meetings and regularly scheduled treatment planning meetings, as described in Section VI.D to review and assess staff performance and provide staff direction regarding individual cases.

3. Regular meetings with individual staff to review cases, assess performance and give feedback. Clinical supervision provided to ACT Team staff shall be documented in writing.

4. Staff orientation and education including skills in dealing with violence, prudent use of extra staff accompaniment as needed, availability of emergency cell phone communication and other security devices where necessary and appropriate.

F. Access to Hospital Beds

The ACT Team should establish a relationship with a local psychiatry in-patient unit for access to beds and staff cross-appointments. This should be done through a formal memorandum of understanding between the parties. It is expected that all alternatives will be exhausted before hospitalization is arranged.

Policy and Procedure Requirements: *The ACT Team shall maintain written program organization policies and procedures including required hours of operation and coverage, service intensity, staff communication and planning, emphasis on team approach and staff supervision, as outlined in this section.*

VII. Assessment and Treatment Planning

A. Initial Assessment

An initial assessment and treatment plan shall be done at the time of the client's admission to ACT by the entire team, including the psychiatrist, with the discussion facilitated by the team coordinator.

B. Comprehensive Assessment

A comprehensive assessment shall be initiated and completed within one month after a client's admission according to the following requirements:

1. Each assessment area shall be completed by ACT Team staff with skill and knowledge in the area being assessed. It shall be based upon all available information, including self-reports, reports of family members and other significant parties and written summaries from other agencies including police, courts and outpatient and inpatient facilities, where applicable.

2. The comprehensive assessment shall include an evaluation of the following areas:
a. Psychiatric symptomatology and mental status (using information derived from the evaluation, a psychiatrist or a clinical or counseling psychologist shall make a diagnosis listed in the American Psychiatric Association's DSM IV-R).
b. Psychiatric history, including adherence to and response to prescribed medical and psychiatric treatment.
c. Medical, dental and other health needs.

d. Extent and effect of drugs or alcohol use.
e Housing situation and activities of daily living (ADL).
f. Vocational and educational functioning.
g. Extent and effect of criminal justice involvement.
h. Social functioning.
i. Recent life events.
j. Social and family history.

3. While the assessment process shall involve the input of most, if not all, team members, the client's psychiatrist and primary case manager will assume responsibility for preparing the written assessment and ensuring that a comprehensive treatment plan is completed within one month of the client's admission to the program.

4. The client's psychiatrist and primary case manager will be assigned by the program director within one week of admission.

C. Treatment Planning

Treatment plans will be developed through the following treatment planning process:

1. The ACT Team shall evaluate each client's needs, strengths and preferences and develop an individualized treatment plan which should identify individual needs and problems and specific measurable long- and short-term goals along with the specific services and activities necessary for the client to meet those goals and improve his or her capacity to function in the community. The treatment plan shall be developed in collaboration with the client or guardian, if any, and when feasible, the client's family. The client's participation in the development of the treatment plan shall be documented.

2. As described in Section VI, ACT Team staff shall meet at a regularly scheduled time for treatment planning meetings. At each treatment planning meeting the following staff should attend: the team coordinator; the psychiatrist; the primary case manager; and all other ACT Team members involved in regular tasks with the client.

3. Treatment team members are responsible to ensure the client is actively involved in the development of treatment and service goals. With the permission of the client, ACT Team staff shall also involve pertinent agencies and members of the client's social network in the formulation of treatment plans.

4. Each client's treatment plan shall identify needs and problems, strengths and weaknesses, goals and specific, measurable treatment objectives. The treatment plan must clearly specify the services and activities necessary to meet the client's needs and who will be providing those services and activities.

5. The following key areas should be addressed in every client's treatment plan: symptom stability; symptom management and education; housing; ADL; employment and daily structure; family; and social relationships.

6. The primary case manager and the treatment team will be responsible for reviewing and rewriting the treatment goals and plan whenever there is a major decision point in the client's course of treatment (e.g. significant change in client's condition) or at least every six months. The revised treatment plan shall be based on the results of a treatment planning meeting. Additionally, the primary case manager shall prepare a summary (i.e. treatment plan review) describing the client's progress since the last treatment planning meeting and outlining the client's current functional strengths and limitations. The plan and review will be signed or acknowledged by the client, the primary case manager, the team coordinator, the psychiatrist and all ACT Team members.

Policy and Procedure Requirement: The ACT Team shall maintain written assessment and treatment *planning policies and procedures incorporating the requirements outlined in this section.*

VIII. Services to Be Provided

Operating as a continuous treatment service, the ACT Team shall have the capability to provide comprehensive treatment, rehabilitation and support services as a self-contained service unit. Services shall minimally include the following:

A. Case Management

Each client will be assigned a primary case manager who coordinates and monitors the activities of the treatment team and has primary responsibility to write the treatment plan, to provide individual supportive therapy, to ensure immediate changes are made in treatment plans as clients' needs change and to advocate for client rights and preferences. The primary case manager is also the first staff person called on when the client is in crisis and is the primary support person and educator to the individual client's family. Members of the client's treatment team share these tasks with the case manager and are responsible to perform the tasks when the case manager is not working.

B. Crisis Assessment and Intervention

Crisis assessment and intervention shall be provided 24-hours per day, seven days per week. These services will include telephone and face-to-face contact and will be provided in conjunction with the local mental health systems emergency services program as appropriate.

C. Symptom Assessment, Management and Individual Supportive Therapy

Symptom assessment, management and individual supportive therapy helps clients cope with and

gain mastery over symptoms and impairments in the context of adult role functioning. This therapy shall include but not necessarily be limited to the following:

1. Ongoing assessment of the client's mental illness symptoms and the client's response to treatment.

2. Education of the client regarding his or her illness and the effects and side effects of prescribed medications, where appropriate.

3. Symptom management efforts directed to help each client identify the symptoms and occurrence patterns of his or her mental illness and develop methods (internal, behavioural or adaptive) to help lessen their effects.

4. Generous psychological support to clients, both on a planned and as-needed basis, to help them accomplish their personal goals and to cope with the stresses of day-to-day living.

D. Medication Prescription, Administration, Monitoring and Documentation

1. The ACT Team psychiatrist shall:

a. Assess each client's mental illness symptoms and behaviour and prescribe appropriate medication.
b. Regularly review and document the client's symptoms of mental illness as well as his or her response to prescribed medication treatment.
c. Educate the client regarding his or her mental illness and the effects and side effects of medication prescribed to regulate it.
d. Monitor, treat and document any medication side effect.
e. Monitor appropriate laboratory tests that are indicated in the follow-up for psychiatric medications or co-morbid medical/psychiatric conditions.

2. All ACT Team members shall assess and document the client's mental illness symptoms and behaviour in response to medication and shall monitor for medication side effects.

The ACT Team program shall establish medication policies and procedures, which identify processes to:

a. Record physician orders.
b. Order medication.
c. Arrange for all client medications to be organized by the team and integrated into clients' weekly schedules and daily staff assignment schedules.
d. Provide security for medications (i.e. long-term injectable, daily and longer term supplies) and set aside a private designated area for set up of medications by the team's nursing staff.
e. Administer medications to team clients.

f. Monitor appropriate laboratory results as indicated for follow-up of psychotropic medications and/or monitoring co-morbid medical/psychiatric conditions.

E. Provision of Substance Abuse Services

As needed, provision of substance abuse service shall include but not be limited to individual and group interventions to assist clients to:

1. Identify substance use, effects and patterns.

2. Recognize the relationship between substance use and mental illness and psychotropic medications.

3. Develop motivation for decreasing substance use.

4. Develop coping skills and alternatives to minimize substance use.

5. Achieve periods of abstinence and stability or reduced risk through the modification of the substance use.

Work-Related Services

Work-related services to help clients find and maintain employment in community-based job sites will include but not necessarily be limited to:

1. Assessment of job-related interests and abilities, through a complete education and work history assessment as well as on-the-job assessments in community-based jobs.

2. Assessment of the effect of the client's mental illness on employment, with identification of specific behaviours that interfere with the client's work performance and development of interventions to reduce or eliminate those behaviours.

3. Development of an ongoing employment rehabilitation plan to help each client establish the skills necessary to find and maintain a job.

4. Individual supportive therapy to assist clients to identify and cope with the symptoms of mental illness that may interfere with their work performance.

5. On-the-job or work-related crisis intervention.

6. Work-related supportive services, such as assistance with grooming and personal hygiene, securing of appropriate clothing, wake-up calls and transportation.

G. Activities of Daily Living

Services to support activities of daily living in community-based settings include: individualized assessment; problem solving; side-by-side assistance and support; skill training; ongoing supervision (e.g. prompts, assignments, monitoring and/or encouragement); and environmental adaptations to assist clients to gain or use the skills required to:

1. Carry out personal hygiene and grooming tasks.

2. Perform household activities, including house cleaning, cooking, grocery shopping and laundry.

3. Find housing which is safe and affordable (e.g. apartment hunting, finding a roommate, landlord negotiations, cleaning, furnishing and decorating, and procuring necessities such as a telephone, furnishings and/or linens.

4. Develop or improve money-management skills.

5. Use available transportation.

6. Have and effectively use a personal physician and dentist.

H. Social, Interpersonal Relationship, and Leisure-Time Skill Training

Services to support social, interpersonal relationship and leisure-time skill training include: supportive individual therapy (e.g. problem solving, role-playing, modeling and support); social-skill teaching and assertiveness training; planning, structuring, and prompting of social and leisure-time activities; side-by-side support and coaching; organizing individual and group social and recreational activities to structure clients' time; increase their social experiences; and provide them with opportunities to practice social skills and receive feedback and support required to:

1. Improve communication skills, develop assertiveness and increase self-esteem as necessary.

2. Develop social skills, increase social experiences and where appropriate, develop meaningful personal relationships.

3. Plan appropriate and productive use of leisure time including linkages with local community resources such as "club houses" and "friendship centres".

4. Relate to landlords, neighbours and others effectively.

5. Familiarize themselves with available social and recreational opportunities and increase their use of such opportunities.

I. Support Services

Support services or direct assistance to ensure that clients obtain the basic necessities of daily life include but are not necessarily limited to:

1. Medical and dental services.

2. Safe, clean and affordable housing.

3. Financial support.

4. Social services.

5. Transportation.

6. Legal advocacy and representation.

J. Education, Support and Consultation to Clients' Families and Other Major Supports

Services provided under this category to clients' families and other major supports, with client agreement or consent, include:

1. Education about the client's illness and the role of the family in the therapeutic process.

2. Intervention to resolve conflict.

3. Ongoing communication and collaboration, face-to-face and by telephone, between the ACT Team and the family.

Policy and Procedure Requirement: *The ACT Team shall maintain written policies and procedures for all services outlined in this section.*

XI. Client Medical Record

A. For each client, the ACT Team shall maintain a treatment record that is confidential, complete, accurate and contains up-to-date information relevant to the client's care and treatment.

B. The record shall sufficiently document assessments, treatment plans and the nature and extent of services provided, such that a person unfamiliar with the ACT Team can identify the client's treatment needs and services received.

C. The team coordinator and the program assistant shall be responsible for the maintenance and security of the client treatment records.

D. The client records are located at ACT Team headquarters and, for confidentiality and security, are to be kept in a locked file and/or a secure place. Electronic files shall also be maintained in a secure manner.

E. For purposes of confidentiality, disclosure of treatment records by the ACT Team is subject to all the provisions of applicable Ontario and Canadian laws.

Policy and Procedure Requirement: *The ACT Team shall maintain written medical records management policies and procedures.*

Appendix A. Ministry of Health. (1998). Standards for assertive community treatment teams (ACTT). Toronto: Author.

Appendix B. Ministry of Health and Long-Term Care: Community Mental Health – Common Data Set Mental Health (CDS- MH) Chart

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
Demographic	Gender	Gender is the biological sex of the client.	Male	Client of male gender.
			Female	Client of female gender.
			Other	Clients who are transsexuals or hermaphrodites.
			Unknown or Client Declined	Data was unavailable or could not be obtained or client declined to provide the data.
	Age	Age is calculated based on actual or estimated date of birth.	0 to 15	Clients up to 15 years of age.
			16 to 17	Between 16 and 17.
			18 to 24	Between 18 and 24.
			25 to 34	Between 25 and 34.
			35 to 44	Between 35 and 44.
			45 to 54	Between 45 and 54.
			55 to 64	Between 55 and 64.
			65 to 74	Between 65 and 74.
			75 to 84	Between 75 and 84.
			85 and over	85 and over.
			Unknown or Client Declined	Data was unavailable, could not be estimated or client declined to provide the data.
	Client Location	Clients whose current residence is in one of the Districts.	Timiskaming District	
			Cochrane District	
	Client Preferred Language	Clients who preferred to use one of the listed languages for day-to-day communication.	English	A client whose native language was English or preferred to speak and write in English.
			French	A client whose native language was French or preferred to speak and write and receive services in French.
			Other	A client whose native language was neither English nor French and would have preferred to speak and write and receive services in a language other than English or French.
			Unknown or Client	Data was unavailable, could not be obtained or client declined to provide the data.
	Baseline Legal Status	Clients based on their baseline legal status by cohort.	No Criminal Legal Problems	
			Pre-charge Diversion	
			Court Diversion Program	
			Conditional Discharge	
			Fitness Assessment	
			Criminal Responsibility Assessment	
			Awaiting Trial/Bail	
			Awaiting Sentencing	
			On Probation	
			On Parole	
			Incarcerated	
			Other Criminal/Legal Problems	
			Unknown or Client Decline	

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
	Current Legal Status	Clients in one of legal status categories based on their legal status collected at the most recent assessment completed within the reporting period.	No Criminal Legal Problems	
			Pre-charge Diversion	
			Court Diversion Program	
			Conditional Discharge	
			Fitness Assessment	
			Criminal Responsibility Assessment	
			Awaiting Trial/Bail	
			Awaiting Sentencing	
			On Probation	
			On Parole	
			Incarcerated	
			Other Criminal/Legal Problems	
			Unknown or Client Declined	
	Community Treatment Orders (CTOs)	Clients who are subject to Community Treatment Orders in the following categories.	Issued CTO	Recipients who were on CTO within the reporting period.
			No CTO	Client who have not been issued a CTO.
			Unknown or Client Declined	Data was unavailable or could not be obtained or client declined to provide the data.
	Diagnostic Categories	Clients with the following one primary diagnosis as identified by licensed mental health professionals or self reported by client.	Adjustment Disorders	
			Anxiety Disorder	
			Delirium, Dementia, and Amnestic and Cognitive Disorders	
			Disorder of Childhood /Adolescence	
			Dissociative Disorders	
			Eating Disorders	
			Factitious Disorders	
			Impulse Control Disorders not elsewhere classified	
			Mental Disorders due to General Medical Conditions	
			Mood Disorder	
			Personality Disorders	
			Schizophrenia and Other Psychotic Disorder	
			Sexual and Gender Identity Disorders	
			Sleep Disorders	
			Somatoform Disorders	
			Substance Related Disorders	
			Developmental Handicap	
			Unknown or Client Declined	

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
Clinical	Source of Referral	New clients by the types of services/sources from which the client were referred.	General Hospital	Includes inpatient and outpatient programs of general public hospitals that may or may not have designated mental health beds.
			Psychiatric Hospital	Includes inpatient and outpatient specialty psychiatric hospital, PPHs and divested PPH beds.
			Other Institution	Includes chronic care, rehabilitation or long-term care facilities.
			Community Mental Health Organisation	Includes organisations providing community-based mental health and addiction functions.
			Other Community Agencies	Includes all community agencies other than specialised in mental health services.
			Family Physicians	Includes family physician only.
			Psychiatrists	Includes psychiatrists.
			Mental Health Worker	Includes mental health workers (regulated and unregulated) including psychologists, social workers, registered nurses and nurse practitioners who specialise in provision of mental health services.
			Criminal Justice System	Includes referrals from police, courts, jails, etc.
			Self, Family or Friend	Includes client, relative or friend.
			Other.	Teachers, priests and others who are not included in the list above.
	Exit Disposition	Clients exited to valid categories of functions/destinations.	Completion without referral	Client has completed planned program/services without referral to a different service/function.
			Completion with referral	Client has completed planned program/services and has been referred to another function.
			Suicides	Discontinuation of service due to client suicide.
			Death	Discontinuation of service due to death (excluding suicide).
			Relocation	Discontinuation of service due to client having moved outside service catchment area.
			Withdrawal	Client has not received services or contacted function for a long period. Also includes clients who left against medical advice or terminated telephone visit. This could also include instances where agency may have terminated service provision since the services offered no longer met the individuals' needs.
Outcome	Baseline Psychiatric Hospitali-zations	Psychiatric hospitalisation history of client. Hospitalisation history period is during the two years prior to client registration to community mental health function.	Not Been Hospitalised	Clients who have not been registered as an inpatient in a psychiatric facility.
			Total Number of Episodes	Total number of times client were registered as an inpatient in a psychiatric facility and stayed one or more nights during the hospitalisation history period.
			Total Number of Hospitalisation Days	Sum of number of days client spend in the psychiatric facility in each of their episodes during the psychiatric hospitalisation history period.

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
			Unknown or Client Declined	Clients whose psychiatric hospitalisation history data could not be obtained or client declined to provide the data.
	Current Psychiatric Hospitali-zations	Psychiatric hospitalisation history of client. Psychiatric hospitalisation history period is from the beginning of the reporting period to end of reporting period or date of exit for client exited in reporting year.	Not Been Hospitalised	Clients who have not been registered as an inpatient in a psychiatric facility.
			Total Number of Episodes	Total number of times client were registered as an inpatient in a psychiatric facility and stayed one or more nights during the hospitalisation history period.
			Total Number of Hospitalisation Days	Sum of number of days client spend in the psychiatric facility in each of their episodes during the psychiatric hospitalisation history period.
			Unknown or Client Declined	Clients whose psychiatric hospitalisation history data could not be obtained or client declined to provide the data.
	Baseline Living Arrangement	Client based on who they lived with during their admission to the function.	Self	Client lives by himself/herself, with pet or is homeless.
			Spouse/Partner	Client lives with spouse/partner, girlfriend or boyfriend, or in a common-law relationship.
			Spouse/Partner and Others	Client lives with spouse/partner and other individuals, family or unrelated.
			Children	Client lives with children and any others but not spouse/partner.
			Parents	Client lives with parents and other family, but not spouse/partner or children.
			Relatives	Client lives with any relative excluding parents, spouse/partner and children
			Non-relatives	Client lives in a group setting or in shared accommodation with non-relatives (includes clients living in institutions and group homes).
			Unknown or Client Declined	Data was unavailable, could not be obtained or client declined to provide the data.
	Current Living Arrangement	Client based on who they live with at the time of exit from function if they exited or at the end of reporting period.	Self	Client lives by himself/herself, with pet or is homeless.
			Spouse/Partner	Client lives with spouse/partner, girlfriend or boyfriend, or in a common-law relationship.
			Spouse/Partner and Others	Client lives with spouse/partner and other individuals, family or unrelated.
			Children	Client lives with children and any others but not spouse/partner.
			Parents	Client lives with parents and other family, but not spouse/partner or children.

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
			Relatives	Client lives with any relative excluding parents, spouse/partner and children.
			Non-relatives	Client lives in a group setting or in shared accommodation with non-relatives (includes clients living in institutions and group homes).
			Unknown or Client Declined	Data was unavailable, could not be obtained or client declined to provide the data.
	Baseline Residence Type	Client based on their type of living situation prior to admission to the function.	Approved Homes and Homes for Special Care	Includes facilities operated by PPHs for inpatients living in the community and subsidised, special housing and support facilities with 24-hour staffing for residents.
			Correctional/Probational Facility	Jail, penitentiary or halfway house operated for correctional clients.
			Domiciliary Hostel	Municipal funded, privately owned and operated accommodation providing room and board.
			General Hospital	Includes inpatient (psychiatric, medical/surgical or obstetric) unit of a general hospital in an alternate level of care (ALC) bed.
			Psychiatric Hospital	Includes specialty psychiatric hospitals, PPHs and divested PPHs.
			Other Specialty Hospital	Includes specialty rehabilitation and complex continuing care units/hospitals.
			Homeless	Includes living in the streets.
			Hostel/Shelter	Temporary housing for the homeless.
			Long-term Care Facility/Nursing Home	Residence that provides 24-hour skilled or intermediate nursing care.
			Municipal Non-Profit Housing	Apartments owned by the municipal government that offers rent-geared-to-income housing.
			Private Non-Profit Housing	Units in shared or self-contained apartments owned and managed by community based non-profit corporations. (excludes rooming/boarding house).
			Private House/Condo	Any house, condominium or apartment in the community owned or rented by client.
			Private House/Condo	Any house, condominium or apartment in the community whether owned by relative or friend of client.
			Retirement Home/Senior's Residence	Non-regulated facilities for the elderly including people at or over retirement age.
			Rooming/Boarding House	Rented room that is part of a house where bathrooms and kitchen may be communal and meals may be provided.
			Supportive Housing – Congregate Living	Residence of mental health client with varying levels of supervision and support services.
			Supportive Housing - Assisted Living	Community-based housing with support services and supervision in a shared living arrangement with non-relatives for the developmentally delayed/disabled clients.
			Other	Includes other categories not listed above.
			Unknown or Client Declined	Data was unavailable or could not be obtained or client declined to provide the

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
				data.
	Baseline Residence Status	Clients identified as living in the following housing categories in baseline residence type, additional details about the residential status using: municipal non-profit housing; private non-profit housing; private house/condo; retirement home/senior's residence; and other.	Independent	Individuals who are performing the tasks or are capable of performing tasks required for maintaining the home without any assistance. Such tasks include cooking, cleaning, and paying bills.
			Assisted/Supported	Individuals who require some assistance or coaching from family or staff to perform the tasks required for maintaining the home.
			Supervised Non-facility	Individuals who are able to perform very few tasks related to maintaining the home and require significant assistance and coaching.
	Current Residence Type	Client based on their type of living situation at the time of exit from function if they exited or at the end of reporting period.	Approved Homes and Homes for Special Care	Includes facilities operated by PPHs for inpatients living in the community and subsidised, special housing and support facilities with 24-hour staffing for residents.
			Correctional/Probational Facility	Jail, penitentiary or halfway house operated for correctional clients.
			Domicillary Hostel	Municipal funded, privately owned and operated accommodation providing room and board.
			General Hospital	Includes inpatient (psychiatric, medical/surgical or obstetric) unit of a general hospital in an alternate level of care (ALC) bed.
			Psychiatric Hospital	Includes specialty psychiatric hospitals, PPHs and divested PPHs.
			Other Specialty Hospital	Includes specialty rehabilitation and complex continuing care units/hospitals.
			Homeless	Includes living in the streets.
			Hostel/Shelter	Temporary housing for the homeless.
			Long-term Care Facility/Nursing Home	Residence that provides 24-hour skilled or intermediate nursing care.
			Municipal Non-Profit Housing	Apartments owned by the municipal government that offers rent-geared-to-income housing.
			Private Non-Profit Housing	Units in shared or self-contained apartments owned and managed by community based non-profit corporations. (excludes rooming/boarding house).
			Private House/Condo	Any house, condominium or apartment in the community owned or rented by client.
			Private House/Condo	Any house, condominium or apartment in the community whether owned by relative or friend of client.
			Retirement Home/Senior's Residence	Non-regulated facilities for the elderly including people at or over retirement age.
			Rooming/Boarding House	Rented room that is part of a house where bathrooms and kitchen may be communal and meals may be provided.

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
			Supportive Housing – Congregate Living	Residence of mental health client with varying levels of supervision and support services.
			Supportive Housing - Assisted Living	Community-based housing with support services and supervision in a shared living arrangement with non-relatives for the developmentally delayed/disabled clients.
			Other	Includes other categories not listed above.
			Unknown or Client Declined	Data was unavailable or could not be obtained or client declined to provide the data.
	Current Residence Status	Clients identified as living in the following housing categories in baseline residence type, additional details about the residential status using: municipal non-profit housing; private non-profit housing; private house/condo; retirement home/senior's residence; and other.	Independent	Individuals who are performing the tasks or are capable of performing tasks required for maintaining the home without any assistance. Such tasks include cooking, cleaning, and paying bills.
			Assisted/Supported	Individuals who require some assistance or coaching from family or staff to perform the tasks required for maintaining the home.
			Supervised Non-facility	Individuals who are able to perform very few tasks related to maintaining the home and require significant assistance and coaching.
	Baseline Employment Status	Client based on their level of employment prior to admission to the function.	Independent/Competitive	Client found job without help from service organisation and needs no support to maintain job.
			Assisted/Supportive	Support was provided to client to find position and/or continued support received by client to help maintain employment.
			Alternative Businesses	Client employed in part-time or full-time position in alternative businesses developed and operated by consumer/survivor employees.
			Sheltered Workshop	Groups of clients work together in isolated settings. These placements should pay minimum wage and are located within the service organisation.
			Non-Paid Work Experience	Client engaged in regular work activity without compensation including volunteer work.
			No employment – Other	Client is in school, parenting or retired and not engaged in any employment activity
			Casual/Sporadic	Client engaged in casual paid work occasionally.
			No employment of any kind	Client not engaged in any employment activity.
			Unknown or Client Declined	Data was unavailable or could not be obtained or client declined to provide the data.
	Current Employment Status	Client based on their level of employment during function.	Independent/Competitive	Client found job without help from service organisation and needs no support to maintain job.
			Assisted/Supportive	Support was provided to client to find position and/or continued support received by client to help maintain employment.

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
			Alternative Businesses	Client employed in part-time or full-time position in alternative businesses developed and operated by consumer/survivor employees.
			Sheltered Workshop	Groups of clients work together in isolated settings. These placements should pay minimum wage and are located within the service organisation.
			Non-Paid Work Experience	Client engaged in regular work activity without compensation including volunteer work.
			No employment – Other	Client is in school, parenting or retired and not engaged in any employment activity
			Casual/Sporadic	Client engaged in casual paid work occasionally
			No employment of any kind	Client not engaged in any employment activity.
			Unknown or Client Declined	Data was unavailable or could not be obtained or client declined to provide the data.
	Baseline Educational Status	Client based on their highest level of education at the time of their admission to the function.	No Formal Schooling/Not in School	Never completed any formal education program and not currently enrolled in any educational program.
			Elementary/Junior /High School	Completed some or enrolled in Grades 1 to 8
			Secondary/High School	Completed some or enrolled in Grades 9 to 12/13.
			Trade School	Completed some or enrolled in course/program focused on unique skill or craft.
			Vocational/ Training Centre	Completed some or currently enrolled in formal vocational/technical training course.
			Adult Education	Completed some or enrolled in formal course offered by adult education facility.
			Community College	Completed some or enrolled in program offered by community college.
			University	Completed some or enrolled in university program.
			Other	Enrolled in education program not listed in the categories above.
			Unknown or Client Declined	Data was unavailable, could not be obtained or client declined to provide the data.
	Current Educational Status	Client based on their level of education during function.	No Formal Schooling/Not in School	Never completed any formal education program and not currently enrolled in any educational program.
			Elementary/Junior /High School	Completed some or enrolled in Grades 1 to 8
			Secondary/High School	Completed some or enrolled in Grades 9 to 12/13.
			Trade School	Completed some or enrolled in course/program focused on unique skill or craft.

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
			Vocational/ Training Centre	Completed some or currently enrolled in formal vocational/technical training course.
			Adult Education	Completed some or enrolled in formal course offered by adult education facility.
			Community College	Completed some or enrolled in program offered by community college.
			University	Completed some or enrolled in university program.
			Other	Enrolled in education program not listed in the categories above.
			Unknown or Client Declined	Data was unavailable, could not be obtained or client declined to provide the data.
	Baseline Primary Income Source	Client by their primary source of income at the time of their admission to the function. If the client has more than one source of income, the source from which she/he receives the highest amount is the primary source.	Employment	Full-time or part-time employment that is either self-employment or with an employer.
			Employment Insurance	Government sponsored temporary insurance during unemployment.
			Pension	Canada Pension Plan (CPP), Old Age Pension, Veteran's and Workplace Pension
			ODSP	Ontario Disability Support Program
			Social Assistance	Government sponsored assistance such as Ontario Works.
			Disability Assistance	Private (including employer sponsored) insurance to cover disabilities.
			Family	Receiving benefits from family or inherited income.
			No source of income	Not receiving any compensation or benefits and currently not employed.
			Other	Income source is not listed in any of the categories above such as Workplace Safety and Insurance Board (WSIB), student loans, sheltered workshops and investment income.
			Unknown or Client Declined	Data was unavailable, could not be obtained or client declined to provide the data.
	Current Primary Income Source	Client by their primary source of income during function.	Employment	Full-time or part-time employment that is either self-employment or with an employer.
			Employment Insurance	Government sponsored temporary insurance during unemployment.
			Pension	Canada Pension Plan (CPP), Old Age A Pension, Veteran's and Workplace Pension
			ODSP	Ontario Disability Support Program
			Social Assistance	Government sponsored assistance such as Ontario Works.
			Disability Assistance	Private (including employer sponsored) insurance to cover disabilities.
			Family	Receiving benefits from family or inherited income
			No source of income	Not receiving any compensation or benefits and currently not employed.

Type	Data Elements	Data Element Definition	Valid Categories	Valid Categories Definitions
			Other	Income source is not listed in any of the categories above such as Workplace Safety and Insurance Board (WSIB), student loans, sheltered workshops and investment income.
			Unknown or Client Declined	Data was unavailable, could not be obtained or client declined to provide the data.

Note:
The *Community Mental Health Common Data Set – Mental Health (CDS –MH) Manual* uses the term *Service Recipient* to refer to persons who are being served or supported by the functions provided by community mental health programs. For the purposes of this study, the term *Service Recipient* has been changed to *Client*, and is used in the above table.

TBD=To be determined.

Appendix B: Ministry of Health and Long-Term Care. (2004). Community mental health common data set – mental health (cds-mh) manual. Toronto: Author.

Appendix C. Canadian Mental Health Association – Research and Research Ethics

CANADIAN MENTAL HEALTH ASSOCIATION / L'ASSOCIATION CANADIENNE POUR LA SANTÉ MENTALE Cochrane-Timiskaming Branch	Research and Research Ethics	Document Number CSMH - 019 Page 1 of 3

Date Created:	September 07, 2004	Document Type	☑ Policy ☑ Procedure
Policy Approval:	Margo McMillan, Board President	Procedure Approval:	Elizabeth Tullis, Chief Operating Officer
Date:	March 22, 2005	Date:	March 22, 2005
Signature:	Margo McMillan	Signature:	
Authored by:	Team Leaders	Signature:	

Document History						
Date Reviewed:						
Date Revised:						
Date Approved:	Mar 22/05					

1.0 Rationale:

1.1 Research may be defined as an activity designed to test a hypothesis, permit conclusions to be drawn, and by virtue of its results, develop or contribute to the knowledge through generalizations. These generalizations are often expressed in the form of theories, principles and statements of relationships among the elements studied.

1.2 Formal research requires a formal protocol that sets forth an objective and a set of procedures designed to reach that objective.

1.3 Scientific research has produced substantial social benefits. Specific to mental health services, the information gained from formal research often results in the development of new programs and services to better serve the population. The object of research studies may include consumer responses to specific therapies, clinical record analysis, personnel issues and a variety of other subjects.

1.4 Although the scope of issues related to ethical research is vast, there are some common threads, which prevail through most documents related to research ethics.

1.5 Respect for the persons as subjects of research, demands that the subjects enter into research voluntarily and with adequate information. This is usually referred to as informed consent.

1.6 Research involving human subjects must be designated to:
a) maximize the possible benefits, and
b) prevent or minimize the possibility of harm.

2.0 Policy:

2.1 All research undertaken by an employee, volunteer, or other individual associated with the Branch, whether undertaken for approved and specific Branch purposes or other approved purposes concerning the use of individuals or records associated with the Branch shall be done so in accordance with and/or the recommendations of:

a) established Branch policies and procedures (including but not limited to all documents listed under "Professional Conduct and Ethical Issues")
b) the Mental Health Act (Part II, subsections 48 and 49) with respect to use of patients' clinical records for research, study or statistics;
c) professional standards of practice as specified in official practice standards documents under the Canadian Association of Social Workers and the College of Nurses of Ontario and other relevant professional bodies involved in mental health services;
d) Ministry of Health, Health Research Unit;
e) The Freedom of Information and Protection of Privacy Act; and
f) any other relevant provincial and federal legislation or regulations governing research activities.

2.2 All research proposals shall be submitted in writing to the appropriate management personnel.

2.3 All final decisions regarding the approval or non-approval of research proposals shall be the responsibility of the Board of Directors.

2.4 Under no circumstances shall the Branch or any individual acting on behalf of the Branch participate in any research activity involving Branch records, consumers, employees, volunteers or others assigned to the work of the Branch that has not received formal approval via the above listed review process.

AUTHORITY: Board of Directors

3.0 Procedures:

3.1 All research proposals must be submitted to the Chief Executive Officer or designate for initial review. The Chief Executive Officer or designate shall seek appropriate legal or other professional counsel as necessary to assist him/her in the evaluation of the research proposal.

3.2 Upon the Chief Executive Officer's or designate's review of the proposal, he/she may elect to submit the proposal to the Board of Directors for further study.

3.3 The decision of the Board of Directors shall be final.

3.4 All individuals or groups who submit research proposals to the Branch which involve the use of Branch consumers, employees, volunteers and others associated with the Branch as research subjects, are expected to meet or exceed acceptable standards for ethical research. Research proposal applicants are expected to submit all research proposals after having conducted all appropriate reviews within their means (such as an evaluation of the proposal by an academic research review committee or a peer review committee).

3.5 Upon the approval of a research proposal, the Chief Executive Officer or designate shall assign an employee of the Branch who shall oversee the research project to its conclusion. Individuals conducting research within the Branch or in association with the Branch shall be expected to submit a full report of the research project at its

conclusion to the Chief Executive Officer and may be required to submit interim progress reports to the Chief Executive Officer as requested.

3.6 If the research undertaken is related to a staff member completing a University, College course or other continuing education activity, the following guidelines apply in addition to those above:

a) The proposal must be submitted through the Team Leader, immediate supervisor or designate in addition to the Chief Operating Officer for initial review with sufficient time allowed for the review and approval process to occur. Generally allow a two week time period.
b) It is recognized that all projects may not fit the definition of research and Board approval may not be necessary.
c) Final approval by the Chief Executive Officer is required prior to starting the project.
d) Minimum requirements for the proposal are:
   i) an outline of the purpose and nature of the project;
   ii) what information is required and how it will be obtained;
   iii) what the project will be used for;
   iv) and it will be submitted/presented;
   v) whether or not an effort will be made to have it published; and
   vi) and the time line for completion.
e) Confidentiality of any Branch related materials is a concern and a written agreement regarding confidentiality/anonymity of the Branch and/or Branch personnel will be agreed upon and signed by those involved.
f) The Chief Executive Officer may, at their discretion, request to review a copy of all project materials containing information related to the Branch prior to submission of the project. Should the Chief Executive Officer make this request, it will be documented on the submitted proposal and signed by the Chief Executive Officer and the staff member undertaking the project. On review of project material, the Chief Executive Officer or designate will reserve the right to direct modification of the document to protect the Branch's interests.

3.7 A copy of all research proposals, both approved and non-approved, final reports and any other relevant documentation will be maintained by the Executive's Assistant.

AUTHORITY: Chief Executive Officer