

**HALTING THE "REVOLVING DOOR"
OF SERIOUS MENTAL ILLNESS:
EVALUATING AN ASSERTIVE
CASE MANAGEMENT PROGRAM**

by

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Abstract

The Canadian mental health service delivery system has been in a state of flux for several decades. By 1955 (Talbot, 1988b), following an example set by the United States, Canadian psychiatric hospitals began the process of “de-institutionalisation”. However, there were few programs or facilities in place to support the influx of seriously and persistently mentally ill (SPMI) clients into the community (Higenbottam, 1994).

Accordingly, many SPMI clients were unable to live successfully in the community and were frequently rehospitalised. A solution to this problem was the development and implementation of the Assertive Case Management (ACM) intervention model.

Research findings in the U.S. have demonstrated that ACM is an effective vehicle for mental health service provision to SPMI clients in the community (Bond, Witheridge, Dincin, Wasmer, Webb, DeGraaf-Kaser, 1990).

My research is based upon a *subset* of a large database that evolved from the Riverview/Fraser Valley assertive Outreach Program’s (AOP) evaluation research component. The AOP research component was designed in 1989 as a two-year demonstration project for the study of two forms of community mental health service delivery systems in a Canadian setting: the community Mental Health Centre (MHC) and the Assertive Case Management (ACM) models of intervention.

The MHC approach is a traditional, clinic-based model of treatment and care. Due to its constraints, this approach is least appropriate for SPMI persons (Witheridge & Dincin, 1985).

The main rationale of the ACM approach is that by employing an “in vivo” approach to the treatment, care, and *rehabilitation* of clients and by maintaining a relatively high level of client contact (providing life-skills training, helping with basic needs), the program would reduce the recidivism rate of its clients. The AOP evaluation research component spanned two years. The specific focus of my research was delimited to (1) hospitalisation (recidivism), (2) client quality of life, and (3) community living.

The AOP study was an experiment. It took the form of a randomised clinical trial in which 123 clients were randomly assigned to the treatment (T) condition (n=63) and the control (C) condition (n=60) in two sites. Both groups received existing community mental health services; the T group received ACM services. Participants all suffered from serious and persistent mental illness and were deemed to be at high risk for re-hospitalisation.

Significant reductions in the hospitalisation variables were reported in all study groups, reflecting significant enhancements to the mental health system during the study period. Additionally, significant site differences were observed indicating differences in the fidelity of the ACM model implementation at the two study sites. The discussion focuses

on the public policy, program planning, and evaluation issues associated with community mental health research.

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Werner J. Müller-Clemm
Victoria, 30 August 1996

Dedication

To

Maria

Ruth

Berndt

Heinz

&

In fond memory of my grandfather,

Dr. Dr. Helmuth Müller-Clemm

WE are in a dilemma about truth. Because we believe it to be shifting and ungraspable, we have come not just to expect deceit, but to tolerate it. At the same time, our obsession with numbering things reveals a need for the kind of certainty that our rejection of truth has undermined. We try to tame reality by counting. There’s a sense that all assertions, however innocuous, require supporting statistics, such as one study showing hospital patients were happier when their caregivers were nice to them. That’s not to say all numbers are useless. Often, what statistics tell us may even be accurate and valuable. Just don’t count on it.

The Globe and Mail, Thursday, January 25, 1996.

Chapter 1

Assertive Case Management in the Canadian Mental Health System

1.0 Overview

The Riverview/Fraser Valley Assertive Outreach Program (AOP) was implemented in 1989 as a two-year demonstration project. The primary goal of the program was to reduce re-hospitalisation (recidivism) rates for a group of seriously and persistently mentally ill people living in the Surrey and New Westminister areas of British Columbia (Higenbottam, et al., 1990).

Assertive Case Management (ACM) is a community-based intervention demonstrated to be effective in reducing the high rate of rehospitalisation of seriously mentally ill persons (Bond, 1984; Stein & Test, 1980; Weisbrod, 1983). This is accomplished by providing high-risk clients with close follow-up or aftercare in the community. ACM has the following characteristics (Bond, 1990): (1) primary reliance on “in-vivo” assistance and training of clients in most aspects of the clients’ lives; (2) staff are mental health service *providers* rather than just service *brokers*; (3) emphasis on staff teamwork and team client-caseloads rather than individual caregiver caseloads; (4) maintenance of a low client to staff ratio (approximately 10:1); and (5) life-long commitment to clients. In addition to reducing re-hospitalisation rates, assertive outreach also has been shown to improve clients’ quality of life, to be cost-effective in terms of

reducing the burden to clients’ family, and to improve the overall functioning of clients (Bond, 1991; Bond, Witheridge, Dincin, Wasmer, Webb, & De Graaf-Kaser, 1990; Stein & Test, 1980; Test & Stein, 1980).

Finally, the assertive outreach approach complements the current “closer to home” philosophy of serving persons in their home community currently espoused by the British Columbia Ministry of Health (1994). The approach accomplishes this primarily by emphasising the need to (1) include *rehabilitation and training*, not just treatment and care, and (2) by bringing services to the client in the community when possible¹, rather than in institutional settings.

1.1 Research Component

The Assertive Outreach Program evaluation research component spanned two years. Its main goals were to provide a data base for (1) a benefit-cost evaluation and (2) an assessment of clients’ well-being in terms of quality of life, clinical status, and level of functioning. The AOP study was a well designed and well-implemented social scientific experiment in a non-laboratory setting. The AOP study’s archives contain a range of statistical data and documentary information that could potentially inform a number of important summative and formative evaluation research questions.

The AOP study took the form of a randomised clinical trial in which 63 clients were randomly assigned to the treatment (T) condition, and 60 clients were assigned to the control (C) condition. Both groups received existing community mental health

¹ This has been termed an *in vivo* approach to mental health service delivery.

services; the T group received additional assertive outreach services (Higenbottam, et al., 1990).

Participants were selected from clients who were being discharged from Riverview Hospital as well as from clients who were living in the Surrey and New Westminister areas. The selected clients all suffered from serious and persistent mental illness and were deemed to be at high risk for re-hospitalisation. Participants who withdrew from the study within the first six months were replaced by other clients. Client data were collected every six months. The three main domains of data collected were: hospitalisation, economic, and psychometric information.

1.2 Historical Backdrop

The Canadian mental health service delivery system has been in a state of flux for several decades. Societal concern for the containment of persons deemed mentally ill began at the turn of the century with the formation of large asylums or institutions such as what is now called Riverview Hospital (Ombudsman of British Columbia, 1994). Over time, the incarceration and concomitant maltreatment of retarded, autistic, and mentally ill “social outcasts” was made increasingly more humane through increased clinical sophistication, training, and improved treatment practices. With the advent of advocacy groups in the 1960s (e.g., Canadian Mental Health Association) which have increased in influence through the early 1980s to the present (e.g., B.C. Schizophrenia Society), public pressure became another significant change agent for the improvement of clients’ living conditions and treatment.

By 1955, following the United States, Canadian psychiatric hospitals began the process of “de-institutionalisation” (Talbot, 1988b). Although the deinstitutionalisation of persons with mental illness began largely for political (read fiscal) reasons, there were few programs or facilities in place to support the influx of patients into the community (Higenbottam, 1994; Talbot, 1988b). Consequently, patients were released to either existing facilities such as boarding homes, nursing homes, or family, or into the streets. For example, at Riverview Hospital the client population declined from approximately 5,500 in the 1950s, to the present population of approximately 800 clients (Higenbottam, 1996). Many mentally ill individuals ended up in jails, homeless, or dead. Few had their health and psychosocial needs served adequately.

1.21 From One Crisis to Another: A Brief History of the Early Years of Mental Health in British Columbia - The Following Sub-Section is Summarised From *Our History in a Nutshell*, Davies (1988)

The first recorded case of insanity² in British Columbia occurred in 1850. The Royal Hospital in Victoria was a “pesthouse” for quarantining immigrants and also was where the earliest “lunatics” could be found if they were not sent to jail. At times, some mentally ill persons were sent as far as California to be incarcerated. The Royal Hospital was reopened as the Victoria Asylum for the Insane in 1872 with a population of seven

² As this is a historical account, the language may reflect certain prejudices prevalent at that time in history. The use of this language here is for historical accuracy, although it may serve to remind the reader how far North Americans have come in terms of the de-stigmatisation of mental illness as well as and how far we have yet to go.

inmates. Not many years later, after the Victoria Asylum was closed, these patients were moved to New Westminster.

It was approximately at the same time that “work therapy” was introduced in 1883, and within two years the “inmates” had constructed a cowshed, tennis lawn, and summer house. Interestingly, with a patient population (and labour force) of 65, the Asylum garden was able to produce 20,000 pounds of garden produce in 1886. The following year, these figures rose to 82 patients and 27 tons of produce! In 1894, Chinese patients did the laundry by hand. In that same year a Commission of Enquiry revealed widespread maltreatment of patients.

By 1901, there were over 300 patients in the Victoria Asylum for whom more than 48,000 work days had been recorded. The principal causes of insanity were thought to be: *heredity, intemperance, syphilis, and masturbation*. The site where Riverview Hospital is now was under construction by 1905, the grounds having been (not surprisingly) cleared by patients. A few years later “The Hospital for the Mind” (the original name for Riverview Hospital) was opened in 1913 after over 400 acres of a total of 1000 acres purchased had been cleared and several buildings had been constructed all by the work of patients. The year before, the revenue for farm output had been \$60,000 from the farm labour of approximately 600 patients whose per capita cost was 48.6 cents per day. The institution had recovered over half of its overhead for that year!

In contrast, a less mercenary perspective was purveyed by the official 1993/1994 Riverview Hospital Annual Report which stated that: “Since 1913, British Columbians have known Riverview Hospital as a *sanctuary* for people with mental illness” (p. 3,

emphasis added). In 1925, patient #58, originally from the Victoria Asylum died after *over 50 years* in “hospitalisation”. My interpretation of “hospitalisation” historically, is that it was a life of hard labour. On a more positive note, 1940 saw the abolishment of the words “insane” and “lunatic” in the Mental Hospitals Act. Apparently this linguistic “advance” was not significant enough for anyone to take notice a few years later when the “School for *Mental Defectives*” Act was proclaimed in 1953.

In 1955/1956, the patient population of British Columbia psychiatric institutions had reached its peak of over 6300. Riverview Hospital alone had a maximum population of over 5,000 beds in the mid-1950s (Higenbottam, Etches, Shewfelt, & Alberti, 1990). Thereafter, the deinstitutionalisation movement began to effect a rapid decline in the institutionalised mentally ill population; down to a present-day total of approximately 700 clients who still reside at Riverview Hospital. To provide an overview, Table 1 summarises the available annual patient populations, per diem rates (costs), and treatment/therapy information when available.

Table 1: Listing of Patient Populations, Per Diem Rates, and Available Treatment/Therapy by Year for British Columbia

YEAR	POPULATION	PER DIEM	TREATMENT/THERAPY
1850	1		
1872	7		Incarceration
1877	37		
1883			Work Therapy
1886	65		
1888	82		
1889	100		
1896	171		
1900	310		
1903	349		
1905	398		
1910	595		
1912		0.49c	
1913	919		
1916	1205		
1919	1557		
1920			Industrial Therapy
1922	1649*		
1926	2125*		
1930	2550*	0.72c / 0.98c	Occupational Therapy
1932	2824*		
1934	3080*		
1937			Insulin Shock/Metrazol Therapies
1938	3612*		
1941	3902* (all facilities badly over-crowded)		
1942			Electro-Convulsive Therapy
1943			Sulpha Drugs
1944	4019*		
1945			Psychosurgery “in vogue”
1949	4602*		
1951	3479*		Indiv./Group Psychotherapy, Coma insulin. Lobotomies
1954			1st Television Sets, Chlorpromazine, Reserpine
1956	6327		
1995	190,000**	S350-700	Many new drugs, “Bio-psycho-social-rehabilitation”, etc.

* does not include all facilities in the province
 ** this statistic is based upon the use of prevalence data (5% of population) and is not an actual count of persons suffering from serious and persistent mental illness in British Columbia.

1.3 Redesigning the Mental Health System

The mental health service delivery system in British Columbia and in many other parts of North America currently consists of a number of relatively autonomous components. What is termed "primary" level care is offered by family physicians and community mental health centres. Other services that may be classified at the primary level are residential facilities such as boarding homes as well as supported independent living arrangements. However, primary level care is generally *office-based* (and is therefore difficult to access for a person in crisis), has limited resources in terms of dealing with psychiatric crises, and acts most often as a referral agency to other agencies including secondary level care.

Secondary level care takes the form of crisis beds and acute care psychiatric units in general hospitals. Here, although intensive interventions are available, the focus is on medical treatment and stabilisation rather than on long-term care and psycho-social rehabilitation. Secondary level services therefore suffer from relatively frequent utilisation (the "revolving door syndrome") by those seriously mentally ill persons who are fortunate enough to have been identified as requiring services. As will be discussed later one of the systemic problems is, that at the secondary level of care, clients may seek but not receive adequate services. This problem can occur, for example, if clients have dual primary diagnoses of a psychiatric *and* a alcohol/drug abuse nature. This results in the client not receiving adequate services as neither the psychiatric facility nor the drug agency are willing to take responsibility for the clients' care.

Tertiary level care is provided by psychiatric hospitals (Riverview Hospital in British Columbia) and takes the form of long-term treatment and stabilisation. Tertiary level care does attempt to provide skills-training and other types of rehabilitation but in spite of this, by the very nature of its structure, tends to create an institutional dependency on the part of clients. One of the largest problems in mental health today is the clients' inability to move through the service system because necessary or appropriate inter-agency linkages do not always exist.

Additionally, the lack of clear mental health policy direction has led to a system which is fragmented, disorganised, and inefficient (Bachrach, 1987d; Stein, 1990; Wasylenki, 1991). It has been suggested that major systemic changes in many jurisdictions of Canada and the United States are necessary to develop a more integrated model of mental health care (Wasylenki, 1991). For example, general hospital psychiatric units should serve as short-term *stabilisation and treatment* settings (Torrey, Bigelow, & Sladen-Dew, 1993; Wasylenki, 1991). This is the most efficient and effective use of general hospital resources when viewed as part of an integrated network of patient services.

Provincial psychiatric hospitals such as Riverview Hospital should remain tertiary care facilities which provide highly specialised long-term treatment and care. On the condition that the other system components are in place and functioning well, the need for this level of care is minimal; one suggested figure is 15 beds per 100,000 population (Torrey et al., 1993), or approximately 480 beds for British Columbia's population of approximately 3.2 million.

To complement long-term tertiary care facilities, comprehensive community services must be available to clients. This is the most important component to the success of an improved mental health delivery system which must be accountable and must provide its clients with continuity of service delivery. These services range widely, and must include: client identification/tracking; outreach services; mental health treatment; medical health and dental services; crisis services; housing; income support and financial management services; peer/social support; family/community support and education; rehabilitation services; protection; advisory and advocacy support; case management; and service integration and facilitation (Wasylenki, 1991).

Another major requirement for a stable, coherent, and accessible mental health service system is adherence to a philosophy which provides the client with the most comprehensive, coordinated, and continuous care. Assertive Case Management (ACM) is based on such a philosophy and therefore should be an integral component of a well-organised mental health service delivery system as it provides an effective vehicle for achieving these goals. ACM has been widely accepted as an effective intervention particularly for persons suffering from serious and persistent mental illness (Higenbottam, et al., 1990; McGrew, Wilson, & Bond, 1996; Olfson, 1990; Solomon; 1992; Wasylenki, 1991; Witheridge, 1991).

1.31 Psychiatric Hospital Services

Proponents of the “de-institutionalised” model of mental health service delivery do not necessarily advocate the complete abolition of psychiatric hospitals (Bachrach,

1987b; Wasow, 1993). There may always be some demand for some form of long-term (e.g., institutional) tertiary care facilities, if for no other reason than the asylum they afford their clients (Bachrach, 1987b). However, institutional services should have clearly established linkages to other levels/forms of mental health, as well as to general health care delivery programs and agencies. These linkages should allow the client and resources for the client to move through the entire health care system, and thereby facilitate continuous, coordinated, and comprehensive service delivery (Talbot, 1988a; Talbot, 1988b). Such changes would necessitate significant institutional policy, philosophy, and staffing changes (Wasylenki, 1991).

1.32 Community Mental Health Services

Community mental health services have been the main focus of the changing mental health service delivery system for a number of years. Community support, especially for persons with serious and persistent mental illness, has become one of the key issues in maintaining clients' quality of health in the current era of increased institutional downsizing and the “closer to home” philosophy. Since the 1970s, provinces in Canada have increasingly responded to the greater need for support for severely mentally ill persons by funding mental health programs that were designed to provide assessment, treatment, rehabilitation, accommodation, and other vital services (Wasylenki, 1991). Overall, however, the Canadian community mental health services delivery system *continues* to lack true structure, organisation, efficiency and commitment to provide

adequate care to those who require help the most, chronically mentally ill people (Wasylenki, 1991).

A similar situation exists in the United States. U. S. Senator Edward Kennedy (1990) has lobbied for improved mental health services in his country. He stated that “despite 25 years of federal policy efforts, [traditional] community-based treatment opportunities [to be differentiated from ACM] for the seriously mentally ill are still largely inadequate” (Kennedy, 1990, p. 1238).

Clearly the treatment, care, and rehabilitation of persons suffering from serious mental illnesses must be drastically improved in both the U.S. and Canada. The plight of persons with serious mental illnesses has been labelled a "systems failure" (Wasylenki, 1991). It was suggested by many (Anthony, Cohen, & Farkas, 1990; Bachrach, 1987a, 1987b, 1987c, 1987d; Talbott, 1988a, 1988b) that solutions should take the form of changes to the entire service delivery *system*. To be successful, it is essential that these solutions must be driven by client needs, not political agendas.

Thus it is necessary for the entire mental health service system to assume primary responsibility for clients' treatment, care, and rehabilitation. Most authorities promoting the need for a revised mental health care delivery system have agreed that a serious commitment to the model outlined in sub-section 1.33 below would mark the beginning of a comprehensive, continuous, effective, and efficient service delivery system for persons with severe mental illnesses (Bachrach, 1987c; Bachrach, 1987d; Fischer, Goering, Lancee, & Wasylenki, 1981; Mechanic, 1987; Minkoff, 1991; Rachlis &

Kushner, 1989; Rachlis & Kushner, 1994; Talbott, 1988a, 1988b; Torrey, Bigelow, & Sladen-Dew, 1993; Wasylenki, 1991).

The poorly planned (some might say, unplanned) implementation of the deinstitutionalisation policies of the 1950s may be blamed for some of the present problems of the mental health system. However, a new phenomenon is contributing to a significant increase in the North American mentally ill population. This phenomenon is the appearance of a younger generation of mentally ill persons, especially people with schizophrenia (Mechanic, 1987). The impact of this particular subgroup upon the mental health care system is substantial.

Several reasons exist for the emergence of a new generation of clients. Schizophrenia is often most troublesome in its early stages (Mechanic, 1987). In addition, these young people generally have few skills, diverse symptoms, and often carry the added burden of being **comorbid** in being dually diagnosed as mentally ill *and* as substance abusers or as developmentally handicapped (Drake, McLaughlin, Pepper, & Minkoff, 1991). Compounding the problem is that substance abuse in mentally ill people is associated with distorted symptomatology, difficulties in diagnosis (Drake, et al., 1991), and poor prognosis (Ridgely, 1991). The incidence of chronically mentally ill persons who are alcohol and/or drug abusers is high; estimates based upon various definitions and measures range from 15 to 85 per cent (Minkoff, 1991). Although a variety of reasons have been postulated as to why there has been such an increased incidence of mental illness in young people (Drake, et al., 1991; Mechanic, 1987; Minkoff, 1991), the fact remains that the need for well-planned, integrated, community

support programs has increased even more dramatically than it might have due to deinstitutionalisation alone. Consequently, it is imperative that effective mental health service delivery programs, which are defined in clinical and financial terms, be developed and implemented.

1.33 A Framework for Change

There is agreement in the literature on the changes that are necessary to effect major improvements in the current mental health system (see Bachrach, 1987a; Bachrach, Talbott & Meyerson, 1987; Talbott, 1988a; Wasylenki, 1991). This agreement is reflected in the following policy model facilitating psycho-social rehabilitation of persons with serious and persistent mental illness. Seven points are listed below.

1. Top priority should be given to the most seriously mentally ill clients.
2. The roles of general hospital psychiatric units, psychiatric hospitals, and community support services and programs should be redefined to facilitate close cooperative working relationships and inter-agency linkages.
3. Continuity of care/support must be maintained at all times.
4. Co-morbid (multiple psychiatric diagnoses) clients must be linked to required services.
5. Consumer and family involvement must be stressed.
6. Financial, political, and administrative integration of programs, facilities, and services must be achieved to ensure responsibility and accountability.

7. Clients must be assessed and served based primarily upon their actual *identified needs* (psychiatric and general) rather than their diagnosis.

One way in which these systemic policy changes can be effectively implemented is for decision-makers to gain a thorough understanding of their specific mental health program environment. This understanding can be achieved through an aggressive and methodologically rigorous evaluation research strategy.

1.4 Mental Health Evaluation

The mental health program evaluation literature has been sparse until recently. However, in the past four or five years numerous articles and research papers have been published in health, mental health, and the burgeoning psychiatric rehabilitation literature (see IAPSRs, 1994). Mental health evaluators generally seem to have followed the paradigmatic choices provided to them by their counterparts who practise in the more established social sciences disciplines such as psychology, anthropology, sociology, and economics. The paradigmatic choices usually involve being restricted to an experimental or quasi-experimental research methodology, which is grounded in the positivist or post-positivist empirical tradition. What this has meant for many mental health evaluators is that they have been confronted with all of the problems which have been identified with empirical research practises, especially as these pertain to construct validity issues in the context of *social* scientific research (e.g., sampling, measurement, and attribution problems).

In the field of mental health, it appears that evaluators generally have not conquered any of the great methodological concerns shared by other evaluators and social scientists. The criticisms and methodological “solutions” are much the same as those purveyed in the fields of psychology, sociology, education, and program evaluation generally by, for example, Cook and Campbell (1979), Rossi and Freeman (1993), Rutman (1984), Scriven (1993), Shadish, Cook, and Leviton (1991), and Weiss (1984). The main emphasis in modern mental health evaluation practise, therefore, remains the triangulation of measures, the use of multiple methods, and the attempt to include as much methodological (experimental) “rigour” in research designs as is practically possible. The all-too-familiar constraints of time, funding, and staffing, as well as the problems of conducting research within an inherently pluralistic, value-laden, dynamic, socio-historical, and political context are ever-prevalent. Some mental health evaluators, however, have managed to present the field with innovative research models and designs which seem to lend themselves quite uniquely to the mental health care evaluation environment. These developments are predominant in the area of economic mental health evaluations and will be discussed in later sections.

Not surprisingly, a large portion of the mental health evaluation literature in North America has focussed upon costs. The evaluation of programs has often taken the form of: economic impact assessments (Clark & Fox, 1993; Wasylenki, 1989), cost-benefit analyses (Andrews, Hall, Goldstein, Lapsley, Barbels, & Saliva, 1985; Bond, 1984; Weisbrod, 1981; Weisbrod, Test, & Stein, 1980), cost-effectiveness analyses (Gilman & Diamond, 1985; Goldberg, 1991; Cannon, 1985; Nelson, Sadeler, & Cragg,

1995; Rubin, 1982; Wilkinson & Pelosi, 1987), social costs assessment (Test & Stein, 1980), and cost-outcome analysis (Gorin, 1986).

Other types of research and evaluative efforts in mental health have been concerned with service delivery programs and/or systems (Fischer et al., 1981; Stein, 1992; Stein & Test, 1985; Witheridge & Dincin, 1985), case management (Bond, 1991; Bond, Miller, Krumwied, & Ward, 1988; Bond, et al., 1990; Vaccaro, Liberman, Wallace, & Blackwell, 1992), ACM model fidelity (McGrew, Bond, Dietzen, & Salyers, 1994; McGrew, Bond, Dietzen, McKasson, & Miller, 1995) program implementation (Cohen & Tsemberis, 1991; McGrew, Bond, Dietzen, & Salyers, 1992; McQuiston, D’Ercole, & Kopelson, 1991), drug and other clinical interventions (Herz, 1984; Kuehnel, Liberman, Marshall, & Bowen, 1992; Schade, Corrigan, & Liberman, 1990; Stein & Test, 1980), and problems of service provision for the dually diagnosed client (Drake, et al., 1991; Minkoff, 1991; Ridgely, 1991).

Finally, mental health researchers have recognised the importance of incorporating concepts such as “stakeholder participation”, “empowerment”, and the “triangulation of measures” into their research and evaluation activities. The use of multiple methods, both qualitative and quantitative also has been established as critical to the achievement of reliable and relevant research results. Although current evaluation methods have diversified and improved over the past years, their application in the area of mental health has had a somewhat restricted methodological focus. In my judgement, this limited focus has led to practical problems in terms of the implementation of empirical mental health program evaluation research designs in the field, and has

restricted the relevance of evaluation products either because of (a) the methodological constraints of empirical findings or (b) the narrow view achieved through an economic evaluation, for example. In the next chapter I will describe my research more fully and address those methodological issues which pertain specifically to it.

Chapter 2

Methodological Issues

2.0 Introduction

My research is based upon a *subset* of the data base that evolved from the Riverview/Fraser Valley assertive Outreach Program’s (AOP) evaluation research component. This AOP research component³ was designed in 1989 as a two-year demonstration project for the study of two forms of community mental health service delivery systems; the community Mental Health Centre (MHC) and the Assertive Case Management (ACM) models of intervention. The AOP research component was implemented in the way it was designed. It is very important to understand that the AOP (i.e., the ACM nurses and the costs accompanying the ACM intervention) and the AOP research component (i.e., the evaluation research staff and the associated costs of the two year experiment) were funded, implemented, and administered separately from one another.

The first of these service systems is the community Mental Health Centre approach. It is founded on a traditional, clinic-based model of psychiatric treatment and care. Some of the problems of this approach are: (1) it is office-based (acting often as a

³ I employ the term “AOP research component” or AOP study when referring specifically to the evaluation research component of the AOP demonstration project.

referral agency to guide the client to other services), (2) it is reactive instead of preventative, (3) it emphasises psychiatric treatment over rehabilitation, and (4) it provides inadequate crisis intervention and life-skills training. The MHC approach is least appropriate for persons suffering from serious and persistent mental illness as this client group, by the very nature of their illness, lack the necessary skills or motivation to access needed resources in a time of crisis (Witheridge & Dincin, 1985). For example, many of the neuroleptic drugs prescribed to psychiatric clients have an a-motivational effect. Consequently, these clients often end up losing contact with the mental health system entirely.

The office-based aspect of the MHC approach to providing services is especially flawed for seriously mentally ill clients as they are the least likely to visit a clinic when they are in crisis in the community. Further, if they *do* manage to access (within office hours) the MHC services a second problem becomes apparent. MHC staff are generally well-trained to deal with immediate solutions to a psychiatric crisis (the reactive component) but are often unable to provide the necessary support and training which could *prevent* the client from breaking down in the future. It is often the case that very mundane problems (such as shopping for groceries, standing in line, or looking for accommodations) act as a trigger for a psychiatric crisis (Levine, Lezak, & Goldman, 1986).

The second form of community intervention within the AOP study employed the Assertive Case Management approach to caring for severely mentally ill clients. As outlined earlier, ACM interventions involve: (1) a primary reliance on “*in-vivo*”

assistance and training of clients in most aspects of the clients’ lives, (2) staff being service *providers* rather than just brokers, (3) an emphasis on staff teamwork and team client caseloads rather than individual caregiver caseloads , (4) maintenance of a *low client to staff ratio* of approximately 10:1, and (5) a *life-long* commitment to the client.

In the case of the AOP, the ACM intervention was based out of two MHC sites as a way to help existing services to maintain client contact and for budgetary reasons. The ACM component of the AOP employed its own team of outreach workers (ex-Riverview Hospital nurses) who had undergone training in assertive case management techniques as part of their re-assignment to the AOP. The main rationale of the ACM philosophy is that by employing a community- rather than hospital-based approach to the treatment, care, and *rehabilitation* of clients; and by maintaining a relatively high level of client contact by providing life-skills training and helping with basic needs, the ACM intervention of the AOP could reduce the recidivism rate of its clients by *taking the treatment to the clients*.

As part of the AOP study’s experimental design, it was necessary to ascertain whether or not the treatment groups and control groups were similar to one another for the purpose of making inferences about the ACM intervention. To test the equivalence of clients in both the treatment and the control groups, participants were compared on personal, diagnostic, and demographic variables (see Appendices E, F, G, H, and I for the results of these analyses). No statistically significant differences were found between the two groups or sites on any of these variables (Higenbottam, 1993), indicating that the randomisation procedure produced statistically equivalent groups.

One major aspect of the AOP research component was the psychometric or clinical portion of the research. Of interest was whether the treatment group would differ in its global diagnostic ratings (e.g., the Global Assessment of Functioning Scale) and other more specific psychometric measures (e.g., Positive and Negative Syndrome Scale, Specific Levels of Functioning). The analyses of the psychometric and diagnostic data (dependent variables) were the only major analyses conducted by the AOP research staff. Their findings indicated that significant differences existed between the study groups on any of these psychometric measures (Higenbottam, 1993).

2.1 General AOP Research Design

2.11 Participants

The AOP research component took the form of a randomised clinical trial in which 63 clients were randomly assigned to the treatment (T) condition, and 60 clients were assigned to the control (C) condition (Higenbottam, et al., 1990). Both groups received the existing services available from local MHCs. In addition, the T group received ACM services.

The specific structure of the design varied with the data employed. To use the time series⁴ terminology the hospitalisation data were retrieved from an existing database and were structured in the following manner: OOOORXOOOO. Other data (e.g., from

⁴ It is important to note that I use the term “time series” colloquially. The actual statistical analyses followed a multivariate design.

the quality of life questionnaire) were only available post-intake into the AOP and were structured accordingly (ORX0000).

Participants were selected from clients who were being discharged from Riverview Hospital as well as from clients who were living in the Surrey and New Westminister areas at that time (see Table 2 for Inclusion Criteria, Table 3 for Exclusion Criteria, and Table 4 for Selection Protocol). The selected clients all suffered from serious and persistent mental illness and were deemed to be at high risk for re-hospitalisation. Participation was voluntary and was based on the client providing informed consent to participate. Clients who withdrew from the study within the first six months were replaced by other clients. Client data were collected every six months. Other data were collected from client records, archival sources, participating agencies (e.g. hospitals, police, medical services plan), and family members.

Table 2 AOP Inclusion Criteria (AOP, 1991)

- I. Chronic Mental Illness Criterion:
 - A. Impaired Role Function: Client must meet at least two of the following criteria on a continuing or intermittent basis for at least two years.
 - 1. Unemployed, sheltered work only, or poor work history.
 - 2. Requires public financial assistance.
 - 3. Inability to maintain a personal support system.
 - 4. Requires help in basic living skills.
 - 5. Inappropriate social behaviour resulting in the demand for intervention by the mental health or criminal justice system.
 - B. Duration: Client must meet at least one of the following criteria.
 - 1. Undergone psychiatric treatment more intense than outpatient at least once (e.g., inpatient, alternate home care, or partial hospitalisation).
 - 2. Experienced an episode of continuous structured supportive residential care for at least two months.
 - II. Age: 19 - 64.
 - III. Diagnosis: The majority of clients will have a schizophrenic disorder but others will be drawn from any DSMR-III Axis I (major mental disorder) or DSMR-III Axis II (personality disorders) diagnosis (including dual diagnosed clients) where the mental disorder(s) have led to a pattern of hospitalisations and poor community tenure.
 - IV. Recent Use of Mental Health System Criterion:

Client must meet one of the following criteria within the last two years.

 - A. Released from a psychiatric inpatient facility and had a minimum 45 days hospitalisation.
 - B. A minimum of two psychiatric hospitalisations with a cumulative total of thirty inpatient days.
 - C. One psychiatric hospitalisation of any duration in combination with two of the following:
 - 1. Two emergency room visits.
 - 2. A minimum stay of two months in a residential care facility but now in independent living.
 - 3. Attendance at a hospital psychiatric day program for a minimum of thirty days.
 - 4. Judged to be at risk for rehospitalisation by consensus of Mental Health Centre therapists.
 - V. Signed consent form.
-

Table 3 AOP Exclusion Criteria (AOP, 1991)

I.	Principal single diagnosis of psychoactive substance use disorder.
II.	Principal single diagnosis of organic mental disorder.
III.	Principal single diagnosis of developmental disorder.
IV.	Recent history of severe violence or behavioural dyscontrol within the past two years. (Violence during an acute psychotic episode is <i>not</i> an exclusion criterion).

2.12 Description of the AOP Treatment Group Condition

In general, the assertive case management program in the treatment condition is conceptually similar to most ACM programs (e.g., the Training in Community Living or the Thresholds “Bridge” Programs). The key tenets of such outreach perspectives, according to Witheridge and Dincin (1985), are: (1) the outreach team is the “single point of responsibility” for the client (p. 70); (2) client participation is based upon need; (3) an

Table 4 AOP Selection Protocol (AOP, 1991)

I.	A designated member of the research team will screen potential participants for meeting the study’s Inclusion/Exclusion Criteria.
II.	Research staff and/or Assertive Outreach Program nurses will obtain a signed consent form from those participants meeting the Inclusion Criteria, as well as obtaining personal, educational, clinical, and demographic information on all participants.
III.	Research staff responsible for psychometric and tracking data will complete baseline scales with consenting participants.
IV.	The Psychology Department secretary at Riverview Hospital will randomly assign participants to the Assertive Case Management (experimental) group or the control group. The random assignment technique used will be similar to that employed in Bond, Miller, Krumwied, and Ward (1988).
V.	The research intake date for outpatient clients will be the date of randomisation; the research intake date for inpatient clients will be the separation date from hospital.

“in vivo” treatment, care, and rehabilitation approach is employed; and (4) there are no individual caseloads allowing the maximum flexibility of staff utilisation and providing the client with improved continuity of care.

The main conceptual difference between the “Bridge” model and the Stein and Test (1980) model of assertive case management was perhaps best described by Bond (1991). Bond stated that assertive outreach programs aspire to a common set of principles, and agreed with Witheridge and Dincin’s description of these principles as outlined briefly above. However, Bond (1991) further differentiated between two types of assertive outreach models. Bond suggested that the Stein and Test model of “Training in Community Living (TCL)” is “growth-oriented” but the Bridge model is “survival-oriented” (p. 70, see Table 5).

The TCL model employs an interdisciplinary team of outreach workers who each have their own particular expertise that they contribute to the well-being and “growth” of the clients as necessary. The Bridge model employs outreach workers who have a “generalist” capability; though staff work as a team, they each assume multiple caregiver roles in their efforts to help their clients “survive” the system. Bond suggested that the TCL model carries with it higher direct per-client costs than the Bridge model because the TCL model provides, for example, higher levels of intervention. Additionally, TCL goals include facilitating vocational, social, and recreational activities; in contrast, the Bridge focuses strictly on providing basic human needs and resource management.

The AOP falls into the survival-oriented category of service delivery. In practical terms, however, the philosophical differences between these two assertive case management models appear to be minimal.

Table 5 Bond’s (1991) Growth-Oriented and Survival-Oriented Outreach Programs

Dimension	Growth-Oriented	Survival-Oriented
Prototype	TCL	Bridge
Mission	Quality of life: psychosocial development	Reduce homelessness, hospital use; development improve quality of life
Emphasis in service	Includes vocational and social/recreational aims	Focus on basic needs: food, housing, finances, medications
Interventions	Skill training and resource management	Primarily resource management
Target population	Any clients with serious mental illness	High-risk groups: “revolving door”, homeless, and so on
Staffing	Multidisciplinary	“Generalist”
Time commitment to each client	Time-unlimited provided client needs persist	Variable (both long- and short-term programs)
Team availability	Twenty-four-hour coverage, seven days a week	9 to 5 weekdays with emergency response capability
Who provides services	Nearly all provided directly by outreach team	Team assumes role of ensuring that outreach team services are received, usually providing services
Program costs	Direct per-client costs are high	Direct per-client costs are moderately high

2.2 Research Hypotheses

My research involved a focussed examination, analysis, and evaluation of specific key domains of the larger AOP research component. These domains were (1) Hospitalisation / recidivism, (2) Quality of Life, and (3) Community Living. A fourth domain (Hypothesis 4, below) involving a benefit-cost analysis of the AOP was also of interest but could not be conducted. (The reasons for this will be discussed in section 2.4 below).

As I stated earlier, the AOP research component took the form of a randomised clinical trial in which 63 clients were randomly assigned to the treatment (T) condition, and 60 clients were assigned to the control (C) condition. Both groups received the existing services available from local MHCs. In addition, the T group received ACM services. The hypotheses that form the basis of my research are as follows:

- (1) I predict that (1) when the pre-study and post-study periods are compared, the treatment group will experience lower rates of recidivism than the control group as measured by (a) number of hospitalisations and (b) length of stay; and (2) over the two year study period of the AOP program, the treatment group will experience lower rates of recidivism than the control group as measured by (a) number of hospitalisations and (b) length of stay.
- (2) I predict that for the AOP study period, the treatment group will have a higher quality of life than the control group.
- (3) I predict that for the AOP study period, the treatment group will have a higher success rate for living in non-institutional settings than the control group. By

corollary it is predicted that the control group will spend significantly more time in institutional⁵ settings than the treatment group.

- (4) I predict that for the AOP study period, resource utilisation will be less for the treatment group than for the control group as determined by assigning economic values to the use of hospital and community (e.g., police) resources.

2.3 Research Data Analyses: Phase I

The first phase of data analysis involved the use of multivariate statistical procedures (e.g., MANOVA) in order to identify and validate the use of particular variables or indices of recidivism, quality of life, and non-institutional living. The majority of these analyses took the form of a 2 x 2 x 8 or 2 x 2 x 4 mixed multivariate analysis of variance (MANOVA) where the between group variables are “site” (New Westminister, Surrey) and “group” (control versus treatment). The within group variables were repeated measures of data collections at six month intervals for the duration of the two year study period.

From these analyses, a statistically significant pre-post AOP intake treatment effect would have allowed attributions to be made regarding the impact of the ACM intervention. This, in turn, would have justified the establishment of a conceptual inventory of variables pertinent to Phase II, the benefit-cost analysis (cf. Barnett, 1992).

⁵ Although the “institutional” number of admissions (INADM) and length of stay (ILOS) variables subsume hospitalisations and crisis care, they should not be compared with “recidivism rates” in the strictest sense because they include time spent in boarding homes and other “non-crisis” facilities that are perceived by most health care professionals as acceptable “steady-state” living alternatives for some clients. The variables in the “community living” domain have been described in detail in section 3.3.

2.31 Analysis of Hospitalisation Data - Hypothesis 1

The hospitalisation (recidivism) data will be analysed using a mixed MANOVA (2 x 2 x 8) design for the pre-post AOP intake client data for measures of recidivism, and a mixed MANOVA (2 x 2 x 4) design for the post-AOP intake client data, with the variables “number of admissions” (NADM) and “length of stay” (LOS) as dependant measures.

2.32 Analysis of Quality of Life Data - Hypothesis 2

The quality of life data will be analysed using a 2 x 2 x 4 mixed MANOVA with scores from the Quality of Life Form - Client Version (QOLC), see Appendix A, as the dependent variable⁶.

2.33 Analysis of Community Living Data - Hypothesis 3

The community living data will be analysed using a 2 x 2 x 4 mixed MANOVA with the variables “number of days of institutional living” (INADM) and “number of days of residential living” (ILOS) as the dependant measures.

⁶ The data from the Quality of Life Form - Staff Version (see Appendix B) were not used in these analyses for reasons outlined in sub-section 4.21 and 4.22.

2.4 Research Data Analyses: Phase II

2.41 Benefit-Cost Analysis - Hypothesis 4

A benefit-cost analysis, based upon the methodological framework found in Weisbrod (1983), was to be conducted. One of the main economic variables was to be the “hospitalisation cost” index which I describe in detail in Appendix B. This index attempts to combine the variables NADM and LOS in such a manner as to (1) reflect the differential weights of these two variables, and (2) create a single economic indicator of recidivism. The benefit-cost analysis also would have attempted to methodologically extend and improve upon Weisbrod’s (1983) research. The focus of my analysis was to address the question of resource utilisation of the treatment versus the control groups. Additionally, a sensitivity analysis was planned for those data for which numerical values could have been imputed. In Appendix C, I present a more in-depth conceptual and methodological discussion of the economic analyses originally proposed by me.

Chapter 3

Riverview/Fraser Valley AOP: Description of Data

3.0 Introduction

The AOP research component was a thoughtfully designed and well-implemented social scientific experiment. The AOP research component’s archives contain a full range of statistical data and documentary information that could potentially inform a host of summative and formative evaluation research questions. A multiplicity of information collection techniques were employed by the AOP research staff that resulted in a database of unprecedented complexity and inclusivity. Both program *process* and *outcome* issues were addressed by the AOP research project.

As reflected by my hypotheses, my dissertation research has purposively focused on providing an evaluation of *specifically delimited program outcomes* based upon the analysis of a subset of the larger AOP study’s database. Additional information relevant to the AOP research/program environment, the AOP implementation, and the ACM intervention was collected by me. The results of my analyses were informed through various records-based sources, a series of interviews conducted by me post-hoc, and the preliminary application of a program model fidelity measure.

Apart from describing any existing documentation, I do not take personal responsibility for the data base in terms of many of its methodological and practical

issues such as the veracity of the data, the reliability of the data collection techniques, the assumptions and methodological decisions upon which the data and their collection were based⁷, or the implementation of the AOP itself. In contrast, my responsibility is to (1) document any supporting information about the collection of data and, where applicable, the results of earlier analyses; (2) specify and justify my own assumptions about the data; (3) describe and provide a rationale for any alterations made by me to the data; and (4) document any new data when I have collected them.

3.1 Description of Data for Hypothesis 1: Hospitalisation Domain

The data that comprised the three hospitalisation variables in my research were collected and maintained by a single central agency for all of British Columbia, the Medical Services Plan. Because of this, and by virtue of the records-based nature of the data, I assumed that the hospitalisation data were complete for all clients. Consequently, I recoded any missing data in the original data files as equal to zero. My assumption was based upon the interpretation that missing data were actually “non-occurrences” rather than unknown information.

It is important to note here that the concept of rehospitalisation is not necessarily perceived as a negative outcome by everyone involved in the AOP. The results from interviews that I conducted with key informants suggested that, especially with the ACM nurses who were originally Riverview Hospital nurses, *rehospitalisation* was in fact a

⁷ All of the data collected by the AOP research component research team were professionally coded, data-entered, and verified by Accu-Data Ltd., Vancouver, B.C.

positive outcome for a client in crisis (Kline, 1996, MacInnis, 1996). This piece of information may be helpful in later methodological discussions that deal with confounds and rival hypotheses. Nevertheless, it is commonly accepted by myself and others (e.g., McGrew, Wilson, & Bond, 1996; Test & Stein, 1978; Rössler, Löffler, Fätkenheuer, & Riecher-Rössler, 1992) that a *reduction* in rehospitalisation rates is a positive outcome *provided* that the clients in question have experienced an acceptable level of service delivery system support in the community. However, if recidivism rates drop for other reasons (e.g., difficulty in accessing hospital services) then this would clearly be a negative outcome.

3.11 Variable 1 - Number of Hospital Admissions (NADM)

The variable “Number of Hospital Admissions” (NADM) is defined as the *number of inpatient admissions* to either a psychiatric hospital (Riverview Hospital), or an acute care psychiatric unit in a general hospital (see Appendix D for a list of hospitals relevant to the AOP research component). A psychiatric hospital admission most often appeared to occur as a transfer of the client from a general hospital acute care psychiatric unit to the psychiatric hospital. Admissions to the acute care psychiatric units apparently were facilitated through intake and triage procedures in hospital emergency rooms. Only actual inpatient hospitalisations were counted for the NADM variable (i.e., emergency/outpatient visits or treatments were not counted).

The variable NADM did *not* include psychiatric crisis bed admissions. Psychiatric crisis beds were an alternative form of “hospitalisation” and most mental

health care professionals interviewed by me suggested that crisis bed admissions should have been included in the calculation of NADM. I did not make this change for four reasons.

First, there were no data available for the pre-study period because the crisis bed program was implemented at approximately the same time as the AOP. Attempting to incorporate this information into the NADM variable would have biased any attempts at a baseline, or pre-post AOP intake, comparison.

Second, although technically the crisis beds were available to the entire AOP study population, the urgency of a psychiatric crisis combined with the great geographical distance from the Surrey mental health centre resulted in an utilisation inequity between the AOP study sites. This imbalance would have made the sites less homogeneous for the purposes of comparison. This reason by itself, however, is not sufficient to exclude crisis bed admissions from the calculation of the NADM variable. Table 6 provides a comparison of the relevant utilisation data (i.e., hospitalisation variables (NADM and LOS) and crisis bed variables (CNADM and CLOS).

Third, the relative overall proportion of crisis bed admissions to NADM was relatively small and probably would not have seriously altered or influenced the NADM variable (see Table 6). Nevertheless, due to the differences in crisis bed utilisation between the two study sites, the crisis bed utilisation data may have affected the results of the New Westminster portion of the data analyses if they were included.

Table 6: Comparison of “Hospitalisation” Variables (NADM and LOS) with Crisis Bed Number of Admissions and Length of Stay (CNADM and CLOS)

AOP GROUP	MHC	HOSPITALISATION		CRISIS BED		
		NADM	LOS	CNADM	CLOS	
CONTROL	NEW WEST (n=30)	Sum	49	1285	8	39
		Mean	2	43	0	1.3
	SURREY (n=27)	Sum	43	946	3	26
		Mean	2	35	0	1
TREATMENT	NEW WEST (n=31)	Sum	65	918	22	170
		Mean	2	30	1	5.5
	SURREY (n=30)	Sum	48	1550	0	0
		Mean	2	52	0	0
Grand Total	(n=118)	Sum	205	4699	33	235
		Mean	2	40	0	2

Data spanning the two years preceding the AOP study intake period as well as the two year post-intake study period were available. The data for NADM were generated for each study participant from existing hospital utilisation databases. Specifically, NADM was calculated two years back in time from the *clients' intake date* into the AOP study for the pre-study period data, and collected throughout the two year program period for the *post-intake date* study period data). For the purpose of analysis the data for individual clients were then aggregated into six month intervals to facilitate the

comparison of these data with other variables (e.g., quality of life interviews) that were collected at six month intervals. The aggregated admissions data were only counted in the six month period in which they occurred. That is, they were not double-counted if the client’s length of stay spanned more than one six month period. *It is very important to note that the two year pre-study period and study period time-frames have as their reference point the individual clients’ intake dates (i.e., relative time) into the AOP study, rather than a calendar reference point (i.e., chronological time).* This is demonstrated in Table 7 which presents the relative chronological time-frames with which one should interpret any of the repeated measures findings that I discuss later. Thus, an interpretation of the aggregated AOP data analyses in sections 4.1 through 4.4 should be related to the *time-frames* listed in Table 7, rather than be related to a particular date in time. Although the individual clients’ data refer to specific dates in real time, the interpretation of the aggregated times series data is in terms of relative time 6, 12, 18, or 24 months pre- and/or post-intake into the AOP study.

Table 7: Relative Chronological Time-Frames for Aggregated AOP Data

Data Collection Points (6 Month Intervals)		AOP Study Client Intake Dates*	
(Pre-Intake)	Time 1	(Range)	87/11 to 89/01
	Time 2		88/05 to 89/07
	Time 3		88/11 to 90/01
	Time 4		89/05 to 90/07
(Post-Intake)	Time 5	(Range)	89/11 to 91/01
	Time 6		90/05 to 91/07
	Time 7		90/11 to 92/01
	Time 8		91/05 to 92/07

* Client intake dates for both the treatment and the control groups ranged from 89/05 to 90/07.

3.12 Variable 2 - Length of Hospital Stay (LOS)

The variable “Length of Hospital Stay” (LOS) is defined as the *number of inpatient days* in hospital upon admission to some form of psychiatric hospital care as defined by NADM in sub-section 3.11. In the case of my research, the LOS variable measures the *cumulative number of hospital days* for all hospitalisations, which can be spread over two or more admissions. This LOS variable should be distinguished from a related LOS variable often reported in the literature that measures *mean LOS per admission*. The data for this variable also were available for the two year pre-study period and the two year study period as defined in sub-section 3.11. Crisis utilisation data were excluded in the calculation of LOS. The exclusion is justified for the same reasons as discussed in sub-section 3.11 for NADM (see also Table 6). The LOS data also were aggregated for further analysis. If a client experienced a single hospitalisation which resulted in a LOS longer than the arbitrary six month time increments, then LOS was apportioned to those time periods as calculated by the actual intake and discharge dates. Therefore, although LOS is grounded in actual time spent by clients in psychiatric hospital care, for the purpose of my research LOS is relative to the clients’ AOP study intake dates (see Table 7).

3.2 Description of Data for Hypothesis 2: Quality of Life Domain

3.21 Variable 1 - Client Quality of Life Inventory - Client Version (QOLC)

The client version of the client quality of life (QOLC) inventory was shortened and somewhat altered from Bond et al. (1988) by the AOP study research team, to make it fit the Canadian mental health service delivery context. The questionnaire posed a variety of socially normative questions based upon societal values, though not necessarily those values of seriously and persistently mentally ill people (see Appendix A). Questions from the QOLC were presented to clients through interviews and the questionnaires were filled out by AOP research staff at each data collection period. The data base included up to five data collections of the QOLC instrument for each client: Baseline (at or just prior to client intake); Time 1 (six months post intake); Time 2 (twelve months post intake); Time 3 (eighteen months post intake); and Time 4 (twenty-four months post intake). The data from the QOLC were only available for the post-intake period. Scores from the inventory were analysed and found to be internally consistent with a Cronbach Alpha of .96. This statistic suggested that the questions were similar in nature.

The QOLC data had not previously been analysed. Based in part upon the advice of Bond (1996), I calculated a total score for each client on the QOLC. A problem was the issue of how best to deal with missing data; both for the individual who had missing responses to specific items, and for client questionnaires that were missing for a particular data collection point (e.g., Time 3). For the former, one of the most common

statistical solutions to the problem is the deletion of cases containing missing values (e.g., the default setting for the SPSS program). This was not a satisfactory solution as over half of the sample would have had to have been excluded from further analysis.

Based upon the assumption that there were no systematic response or non-response biases in the data other than with regard to the clients' quality of life, I dealt with individual missing responses in the following manner. I calculated the means for existing data for treatment group and control group separately, for each question, at each data collection time. The group means were then used to replace any missing responses. The replacement of missing data is always conceptually problematic to some extent. However, as I predicted group by time effects and as this solution provided aggregated values by group, I judged it to be the best possible solution.

There were 95 missing QOLC questionnaires (total possible $n = 515$) spread over the five data collection periods (missing = 1/123, 9/123, 17/123, 47/123, 21/123). The issue of missing client questionnaires for specific times in the data collection periods required a conceptually different solution than the one for missing responses. The replacement of missing values using mean group scores would have had the potential for unjustly weighting individual changes over time, thereby skewing the group by time results. Table 8 is a hypothetical example of the potential inflation or deflation of a client's QOLC score using simple group means. I employed an alternative approach in an attempt to alleviate this problem.

Table 8 Example of QOLC Missing Score Replacement Inflation Using Group Means

Client #	QOLC Score				
	Baseline	Time 1	Time 2	Time 3	Time 4
T14	45	68	104*	75	81

* Group mean = client score missing for Time 2.

I calculated the mean *incremental changes* in scores across the data collection periods separately for each of the study groups. Any clients who had two or more consecutive missing questionnaires were excluded from further analysis. Clients with missing questionnaires had the appropriate increment added to the score from their previous questionnaire. In the case of a missing baseline questionnaire, the appropriate increment was deducted from the Time 1 score. Table 9 illustrates how this provides a reasonable alternative to the “inflated” example in Table 8. In the example in Table 9 a hypothetical mean incremental change for the T group scores between Time 1 and Time 2 equalled +8. This increment was added to the client’s Time 1 score to calculate a value for the missing Time 2 score.

Table 9 Example of QOLC Missing Score Replacement Using Increments

Client #	QOLC Score				
	Baseline	Time 1	Time 2	Time 3	Time 4
T14	45	68	76*	75	81

* Group mean incremental change = +8 (added to previous score to replace missing value).

A correlational analysis between the QOLC (Appendix A) and the staff version of the quality of life (QOLS) questionnaires established that, for each of the data collection periods these two questionnaires were significantly correlated with one another (see Table 10). An exception was the baseline data collection as it only existed for the QOLC.

Table 10 Correlation Coefficients for QOLS versus QOLC

	Time 1	Time 2	Time 3	Time 4
QOLS versus QOLC	.37* (n=114)	.35* (n=114)	.25** (n=115)	.60* (n=115)

* $p < .0001$ (two-tailed significance).

** $p < .007$ (two-tailed significance).

From a statistical point of view, it *could* be assumed that these two questionnaires were measuring the same thing. However, the variance (r^2) actually explained by these correlations is quite small, rendering the assumption of the questionnaires' similarity problematic on this basis alone. However, I chose *not* to employ the databases of both instruments in further analyses. I continued my analyses using only the QOLC data base for the following reasons.

First, although the QOLC data base was less complete in terms of the relative quantity of missing data than the QOLS data base, it had an overall advantage of having a baseline data collection point which the QOLS did not have. Second, as the QOLC reflected the clients’ responses to the questionnaire, I deemed it the best available reflection of the clients’ quality of life at least as measured by this instrument. The QOLC was arguably more “valid” than the QOLS because of these reasons. The responses of a third party, no matter how well-grounded the caregiver’s judgements might have been considered, are not as potentially insightful as the clients’ perceptions of their own quality of life.

3.3 Description of Data for Hypothesis 3: Community Living Domain

The “institutional” variables were created in order to determine the type and amount of residency experienced by clients in the two study groups. Any significant amount of time spent by treatment group clients in a non-institutional or community setting was assumed, for the purpose of my research, to be a positive program outcome. This assumption may not hold true for all clients, especially not for seriously and persistently mentally ill persons who, identified or not, continue to fall among the cracks of the mental health service delivery system.

3.31 Variable 1 - Number of “Institutional” Admissions (INADM)

This variable is an aggregate of all client admissions into mental health care environments deemed by the AOP research staff to be “institutional” or non-community

living. Clients who were in an independent living (e.g., apartment) or semi-independent living (e.g., supported housing or living with family/significant other) situation were considered to be living “successfully” in the community. The non-community or “institutional” admissions (INADM) variable was aggregated from a variety of sub-variables. These sub-variables were all in the form of “number of admissions” to: Emergency units (inpatient or outpatient), acute care psychiatric units in general hospitals, psychiatric hospitals (Riverview Hospital), psychiatric crisis beds, and boarding homes. Of this list, only emergency, crisis bed, and boarding home admissions require further clarification. Acute care and psychiatric hospital admissions have been described in detail in sub-section 3.11.

A considerable amount of information was collected concerning a variety of aspects of the emergency admissions (e.g., presenting reason for admission, inpatient/outpatient status, dates, times). However, after the fact, it was impossible to determine post-hoc whether the reason for admission was due to the clients’ psychiatric condition (see Appendix E for a complete list of presenting reasons for emergency admissions during the AOP study period). I made the assumption, therefore, that all emergency admissions were made, directly or indirectly, for psychiatric reasons and I included them.

My justification for this decision is as follows. If one can assume that the annual emergency admission rates for the population of the Province of British Columbia - on average approximately one in four persons experienced a hospital admission in 1992/1993 (British Columbia Ministry of Health, 1994) - have not fluctuated

significantly, the AOP study population experienced a much higher proportion of emergency admissions compared to the general population of British Columbia. Clients in the AOP study experienced, on average, approximately one emergency visit per year per client for the two years preceding and the two years following the clients’ intake into the AOP study).

In 1991/1992 a psychiatric crisis bed facility was established in New Westminister with the purpose of serving the catchment area of the Fraser Valley/North Shore. The facility played an important role in providing immediate street-level support to seriously mentally ill persons who were experiencing a psychiatric crisis or breakdown in the community.

Another factor, boarding home number of admissions, was counted as part of the INADM variable. No further descriptive information on the boarding home variable was available. Anecdotally, it is “common knowledge” that the quality of care can vary greatly among individual boarding homes, and this may affect client recidivism rates in a differential manner (Gray, 1996; Van der Leer, 1996).

Only data from the two year study period were available for INADM. The data for INADM were generated for each study participant from existing mental health, system utilisation databases. The data were collected throughout the two year program period for clients in each of the study groups. As with the other data described in this chapter, these data were then aggregated into six month intervals for the purpose of analysis. This allowed the comparison of these data with other variables (e.g., quality of life interviews) collected at six month intervals. As with the NADM variable the

admissions aggregated in this manner were only counted in the six month period in which they occurred (i.e., they were not double-counted if the client’s length of stay spanned more than one six month period; see also Table 7).

3.32 Variable 2 - Length of “Institutional” Stay (ILOS)

The “institutional” length of stay variable was based upon the same definition of “institutional” as described in 3.31 and the same definition of length of stay outlined in sub-section 3.12. Recall that only post-intake period data were available for this variable.

3.4 AOP Data - Enumeration of Methodological Constraints

The purpose of this section is to identify and provide a brief description of possible methodological constraints imposed upon my research by the AOP database. As my research is a secondary data analysis, my responsibilities lie in (1) describing the data, the data collection procedures, and where applicable, the results of their earlier analysis, (2) specifying and justifying my assumptions about the data, (3) describing and providing a rationale for any alterations that I made to the data, and (4) documenting any new data that I have collected. Even though much of this has been accomplished in sections 3.1 to 3.4, there are some important methodological issues that I have not yet discussed. These include: (1) additional assumptions about the data (either mine or those documented by AOP research staff), (2) sampling issues, (3) measurement issues (e.g., reliability, validity), (4) other data issues (e.g., post-hoc data that I collected), and

(5) program implementation and/or research issues. A more in-depth discussion of these issues will be the focus of a later chapter in connection with the results of my analyses.

3.41 Assumptions about the Data

I assume:

- (1) That the hospitalisation data were complete and relatively accurate as they were extracted from a single “centralised” records-based information system (i.e., the British Columbia Medical Services Plan (MSP) records).
- (2) That the variables NADM and LOS could be employed as valid indicators of resource utilisation and measures of program outcomes. I base this assumption on support from the mental health literature where researchers have reported the extensive use and validation of these measures (e.g., Bachrach, 1993; Bond, 1991; McGrew, et al., 1996; and many others).
- (3) That the QOLC variable could be employed as a “best available” estimator of client quality of life information, despite the potentially significant constraints on the data due to: (a) the validity of self-report data derived from questionnaires, (b) instrumentation issues such as reliability and validity, (c) sampling and other biases, and (d) the issue of how to value the responses of seriously and persistently mentally ill persons.
- (4) That the data upon which the “institutional” variables INADM and ILOS were based were complete and relatively accurate.

3.42 Specific Assumptions about Sampling Issues

I assume:

- (1) That the AOP study research (e.g., data collection protocols, sampling procedures, data coding/entry, data analysis, randomisation of clients to conditions) was conducted with methodological rigour.
- (2) That the implementation of the treatment/intervention was delivered according to accepted principles of ACM (outlined in sub-section 2.12).

Further discussions of sampling issues have been incorporated into Chapters 5, 6, and 7.

3.43 Measurement Issues

Although the AOP study database includes a large number of measures, only some of these are represented in my research. The data for the hospitalisation domain (section 3.1) have been described as have the data for the institutional domain (section 3.3). The data for the quality of life domain (section 3.2) require one further point of clarification. Although I conducted the previously mentioned internal consistency analyses, there is no published information available for the QOLC instrument on its reliability and validity.

One measurement issue which deserves discussion here is the “Hawthorne effect”. This is the phenomenon whereby significant research results are achieved because the participants in the research are aware of their participation which leads them to alter their behaviour due to this awareness, and not because of the experimental treatment/intervention. To what extent a Hawthorne effect may have “contaminated” the

data of the AOP study is speculative. (For a discussion of Hawthorne effects in a similar research context see Appendix C).

I compare the AOP study to Weisbrod’s (1983) list of arguments *against* the existence of Hawthorne effects in *his* research, in order to judge their possible existence in *my* research. First, it cannot be assumed that all AOP clients were unhappy to be discharged from hospital (although this may have been true for some individuals) thereby affecting their behaviour and recovery rates. Second, the ACM staff were psychiatric hospital nurses and had limited ACM training and no prior ACM experience. Therefore, there was (1) a chance that a “novelty” effect occurred for the nurses and/or the clients due to the implementation of the AOP and (2) a question as to whether or not the treatment protocols were maintained by the ACM staff. Third, although the AOP research team staff were not clinically involved with the clients, the team nevertheless did have a vested interest in the program and the research on the program succeeding. Fourth, clients, family, staff, and community agencies were aware that a new treatment approach was being evaluated and may have reacted differently had they been unaware of the program.

3.44 Data Issues

I have mentioned many issues about the AOP data in earlier sections of my dissertation. However, I describe here the post-hoc data which I have collected. For me to conduct my research, I needed to gain as complete and thorough an understanding of

the AOP study, its methods, its data, and its context, as was possible. The available documentation that I consulted included:

- (1) the AOP study database complete with descriptive files, forms, and records of various types;
- (2) AOP study staff meeting minutes, steering committee meeting minutes, letters, memos, a journal-style record from the research supervisor, and other hard-copy documentary materials;
- (3) the results of qualitative, open-ended caregiver staff questionnaires; and
- (4) selected journal articles supporting some of the measures used in the research.

As complete and enlightening as this background information was to me, I required more information on the political and interpersonal dynamics, and the research and evaluation contexts, including the history of the AOP study. I searched out many of the people who were employed in the British Columbia Mental Health Service at the time of the AOP study and who would have had close contact with, or intimate knowledge of, the program and its research component.

As a result of this search I conducted interviews that ranged from 15 minutes to over two hours with 40 individuals (see Appendix F for a list of interviewees). Interviewees were employed in a variety of capacities at the time of the AOP study, from case-workers and inter-agency liaison personnel to local-, regional-, and provincial-level administrators. In many cases I also received supporting (often financial) documentation from them as well as anecdotal testimonies. In an attempt to provide the reader with a contextual framework I have presented a summary of the interviews that were most

relevant and insightful in Chapter 6 (see also Appendix G for a collection of the transcripts judged by me to be the most relevant to my research).

3.45 Synopsis

In this chapter I have provided a detailed description of the AOP data that I used in my research. These descriptions of the data, their sources, their constraints, and important methodological considerations, were meant to establish an understanding of the AOP study suitable for interpreting the results of the data analyses in Chapter 4. For clarity, the present Chapter and Chapters 4 and 5 are structured to follow the order of my hypotheses, as well as being cross-referenced where appropriate to other sections of my dissertation.

Chapter 4

Data Analyses and Results

4.0 Introduction

The data analyses and results described in the following sections involved the use of statistical procedures to identify and validate the use of particular variables or indices such as recidivism. The majority of these analyses took the form of $2 \times 2 \times 8$ or $2 \times 2 \times 4$ repeated measure multivariate analyses of variance (MANOVAs). An additional goal of these analyses was to provide statistical support for any clearly discernable incremental program effects. From such evidence a conceptual inventory of variables pertinent to the benefit-cost analysis could be generated and the appropriateness of conducting an economic analysis established. The MANOVAs had the following structure: the between group variables were "site" (New Westminister, Surrey) and "group" (control versus treatment), and the within group variables were repeated measures of data collections at six month intervals⁸ for the duration of the two year study period⁹.

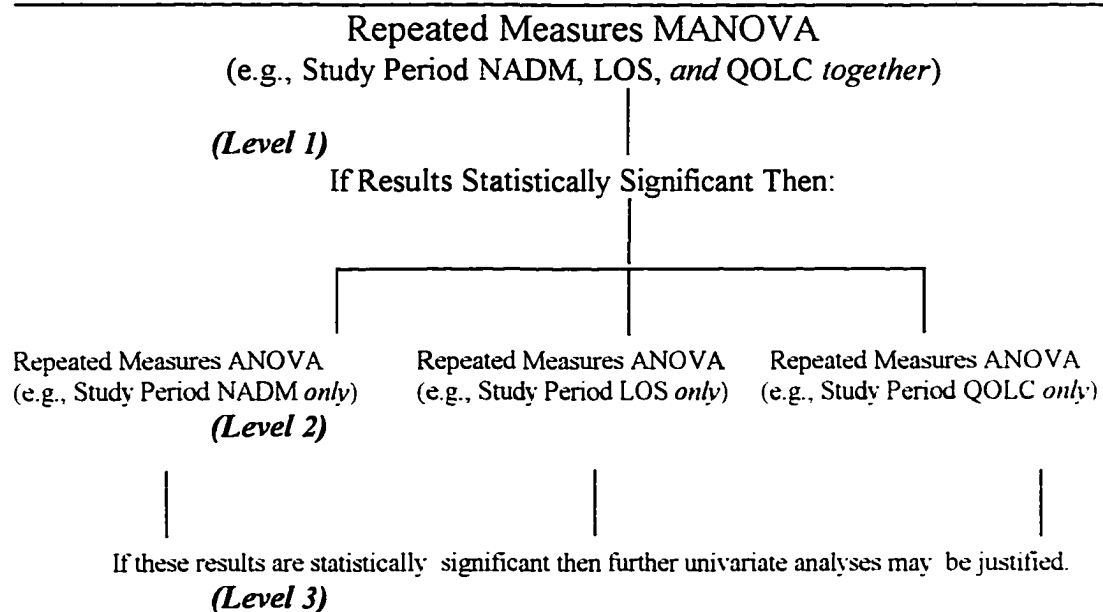
The analyses and results reported below were based upon a methodological strategy that subsequent multivariate, bivariate, or univariate analyses would follow from

⁸ See sub-section 3.11.

⁹ Data for the two year pre-study period as well as for the two year study period were available for only some of the variables (e.g., NADM, LOS).

the statistically significant results of a larger, overall, multivariate analysis which examines all relevant independent and dependent variables of interest. Consequently, where applicable, each of the following sections (e.g., 4.1, 4.2, 4.3) describe the results of an overall multivariate analysis. Each sub-section then describes more specific analyses, as appropriate (see Figure 1 for a schematic representation of the decision tree for the statistical analyses described here).

Figure 1: A Decision Tree for the Statistical Analysis of the AOP Data



Note: If the results from the above analyses had been statistically significant, then Phase II of my research - the benefit-cost analysis - would have been warranted. The negative results of the pre-post intake analyses have important implications for evaluation research and mental health policy issues.

All statistical procedures were run using the computer programs *SPSS* version 6.1.2 and *SAS* version 6.10. The graphs representing the results of these data analyses were generated using the program *Excel* version 5.0. All statistical analyses conducted in the course of my research were based upon a sample size of 118 clients, 57 in the control group and 61 in the treatment group. This reduction in sample size (from the original sample size of 123) occurred due to the deaths of five clients. It is very doubtful that this sample attrition could have caused a selection bias as there was no discernable pattern of death (e.g., two suicides in each of the study groups, even gender split). I therefore judged it appropriate to eliminate those clients' data from the analyses. It is interesting to note that the attrition rate for the AOP study was quite low (4%).

As an aside, the suicide rate for the mentally ill population is known to be higher than for the general population. The suicide rate for the population of British Columbia (1989/1990, 1990/1991) was reportedly a ratio of approximately 1.2 suicides in 10,000 (British Columbia Ministry of Health, 1991). The AOP study suicide rate was 325 suicides in 10,000 for those years (by calculating an equivalent ratio).

4.1 Data Analysis Results for the Hospitalisation Domain

(Hypothesis 1) I predict that (1) when the pre-study and post-study periods are compared, the treatment group will experience lower rates of recidivism than the control group as measured by (a) number of hospitalisations and (b) length of stay; and (2) over the two year study period of the AOP program.

the treatment group will experience lower rates of recidivism than the control group as measured by (a) number of hospitalisations and (b) length of stay.

4.11 Pre-Post Study: Variable 1 - Number of Hospital Admissions (NADM) and Variable 2 - Length of Hospital Stay (LOS)

A 2 x 2 x 8 mixed MANOVA was conducted with the *pre-post study* NADM and LOS data (level 1). A 2 x 2 x 4 mixed MANOVA was subsequently conducted on the individual variables (level 2). Table 11 summarises the statistically significant results of these analyses (see also Figure 2, 3, 4, and 5). Table 12 provides a summary of the means and standard deviations for the variables NADM and LOS.

Table 11: Results of Pre-Post Intake NADM and LOS Data Analyses

Level 1 Analysis for NADM and LOS	F	df	p <
Time main effect	6.41	(14, 101)	.0001
Group by time interaction effect	2.44	(14, 101)	.005
Group by site by time interaction effect	1.82	(14, 101)	.05
Level 2 Analysis for NADM			
Time main effect	8.58	(7, 108)	.0001
Level 2 Analysis for LOS			
Time main effect	7.31	(7, 108)	.0001
Group by site by time interaction effect	2.30	(7, 108)	.03

Table 12: Means and Standard Deviations for the Variables NADM and LOS

NADM	Time 1 (Pre)	Time 2 (Pre)	Time 3 (Pre)	Time 4 (Pre)	Time 5 (Post)	Time 6 (Post)	Time 7 (Post)	Time 8 (Post)
NW/C {n=30}	.50 [.82]	.53 [.73]	.77 [.97]	1.0 [1.08]	.23 [.57]	.37 [.67]	.30 [.84]	.83 [1.26]
NW/T {n=31}	1.19 [1.85]	1.07 [1.12]	.71 [.90]	1.19 [1.01]	.74 [1.03]	.74 [.89]	.48 [1.06]	.29 [.59]
S/C {n=27}	.37 [.63]	.85 [1.13]	1.07 [1.07]	1.15 [.95]	.48 [.96]	.44 [.93]	.48 [1.01]	.37 [.84]
S/T {n=30}	.70 [1.06]	.70 [1.06]	.57 [.90]	1.30 [1.39]	.23 [.68]	.73 [1.53]	.57 [1.38]	.33 [.84]
LOS								
LOS	Time 1 (Pre)	Time 2 (Pre)	Time 3 (Pre)	Time 4 (Pre)	Time 5 (Post)	Time 6 (Post)	Time 7 (Post)	Time 8 (Post)
NW/C {n=30}	25.57 [50.4]	16.40 [35.5]	16.53 [26.9]	38.27 [60.0]	7.70 [20.8]	2.67 [7.1]	10.40 [28.5]	22.07 [37.3]
NW/T {n=31}	17.84 [29.4]	29.23 [39.8]	28.29 [53.3]	33.42 [40.4]	9.97 [20.4]	10.45 [19.6]	3.87 [9.4]	5.32 [16.6]
S/C {n=27}	15.48 [36.9]	24.48 [37.2]	31.19 [44.6]	40.96 [51.2]	7.04 [19.7]	11.89 [30.3]	7.4 [17.6]	8.7 [24.8]
S/T {n=30}	9.9 [18.8]	16.43 [31.2]	14.23 [26.6]	33.77 [38.5]	9.73 [32.9]	10.57 [26.6]	12.0 [35.5]	19.37 [46.6]
Note: NW = New Westminster, S = Surrey, C = Control, T = Treatment. Standard Deviations in brackets []; Sample Size in { }.								

Figure 2: Mean Number of Hospital Admissions (NADM) for Clients' Pre-Post AOP Intake Data by Study Group

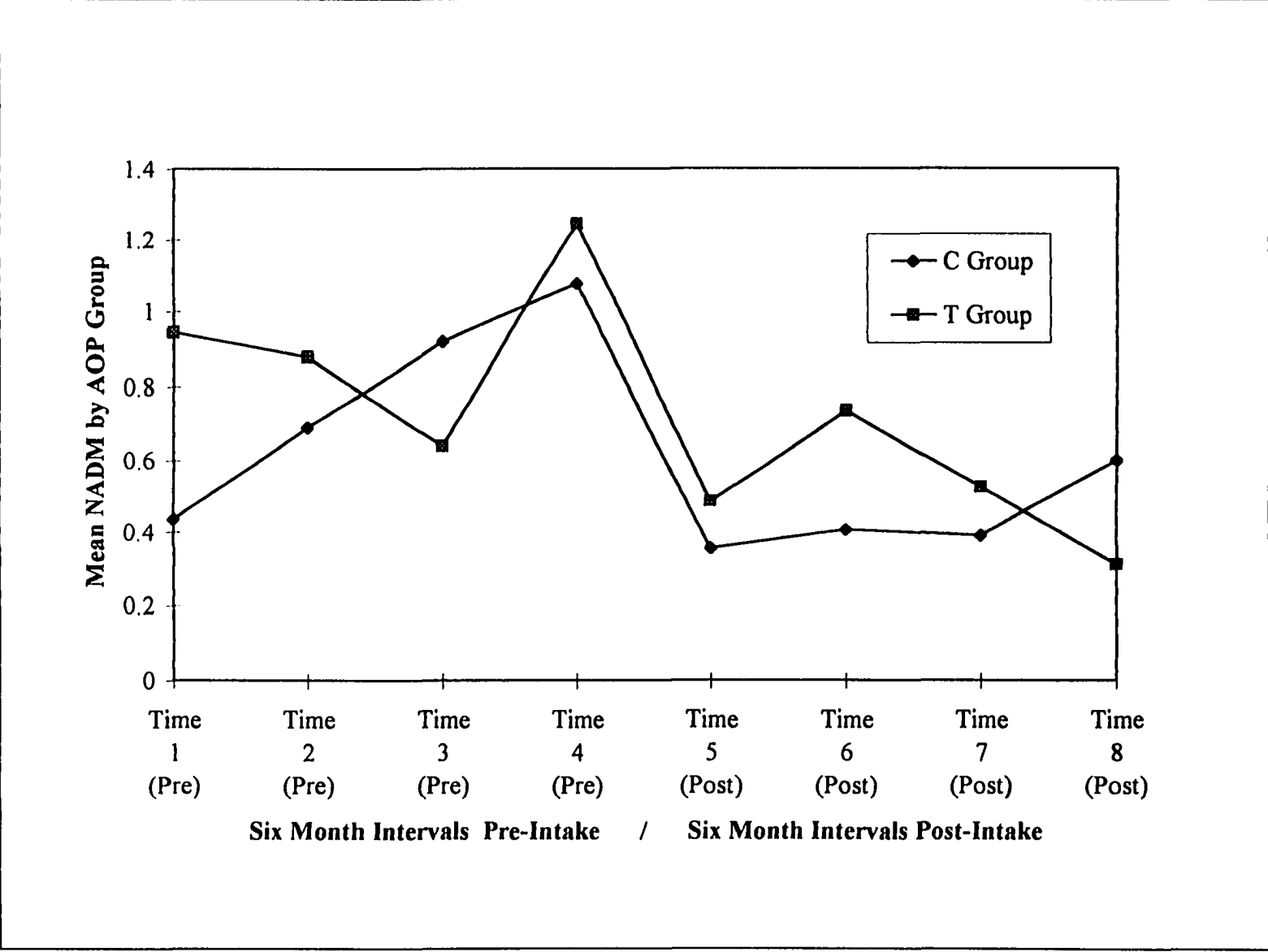
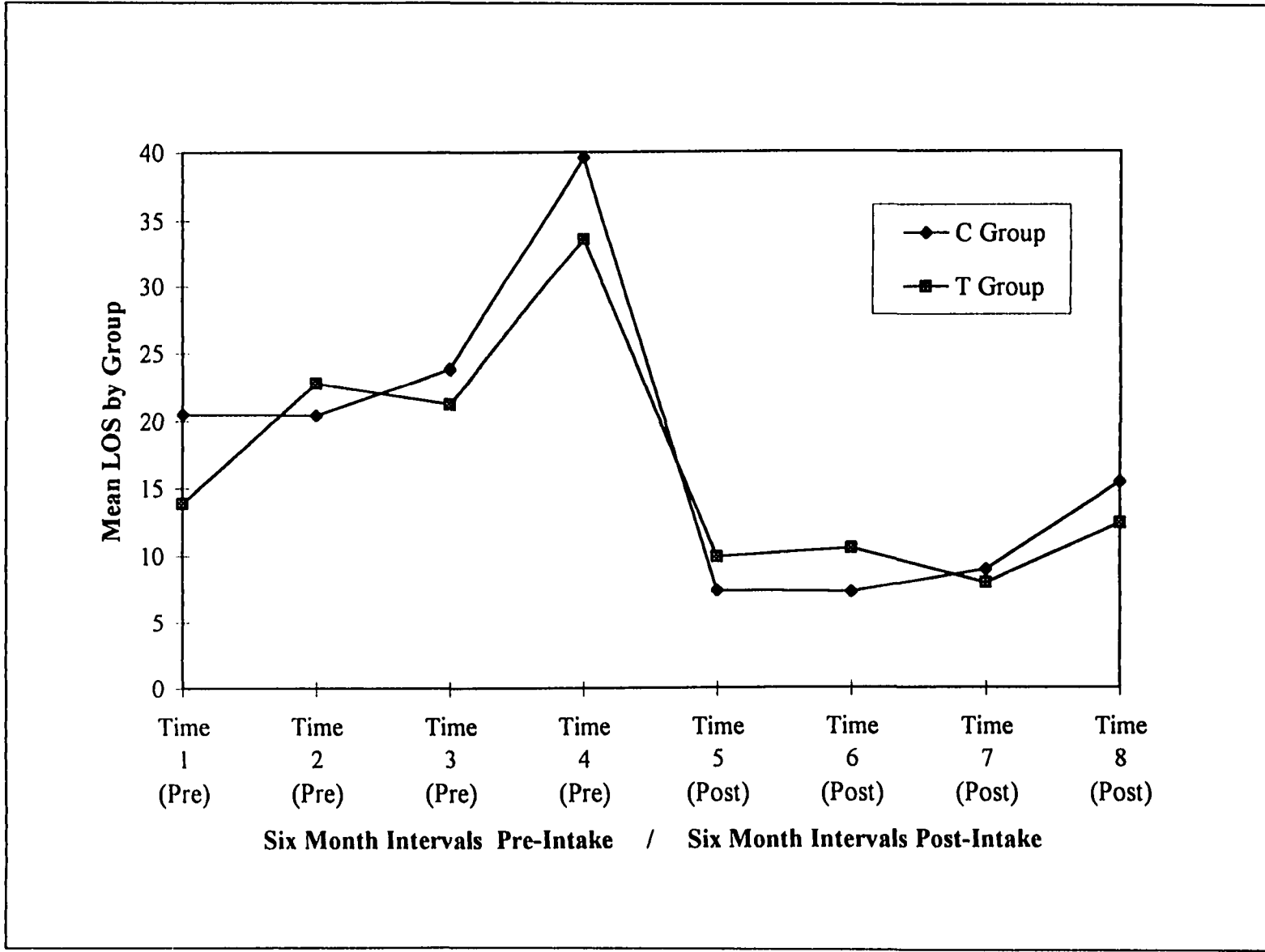


Figure 3: Mean Length of Hospital Stay (LOS) for Clients' Pre-Post AOP Intake
Data by Study Group



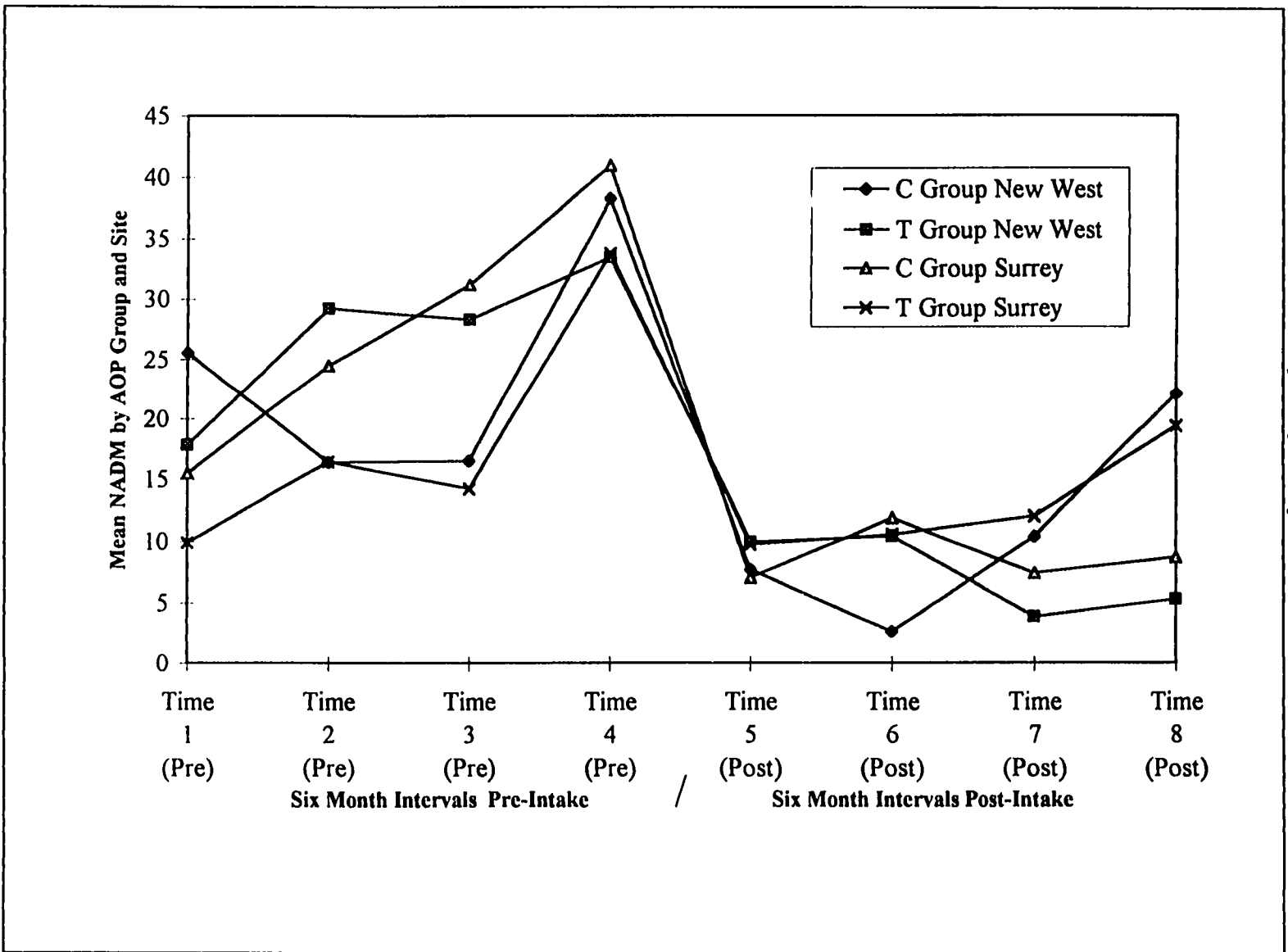


Figure 4: Mean Number of Hospital Admissions (NADM) for Clients' Pre-Post AOP Intake Data by Study Group and Site

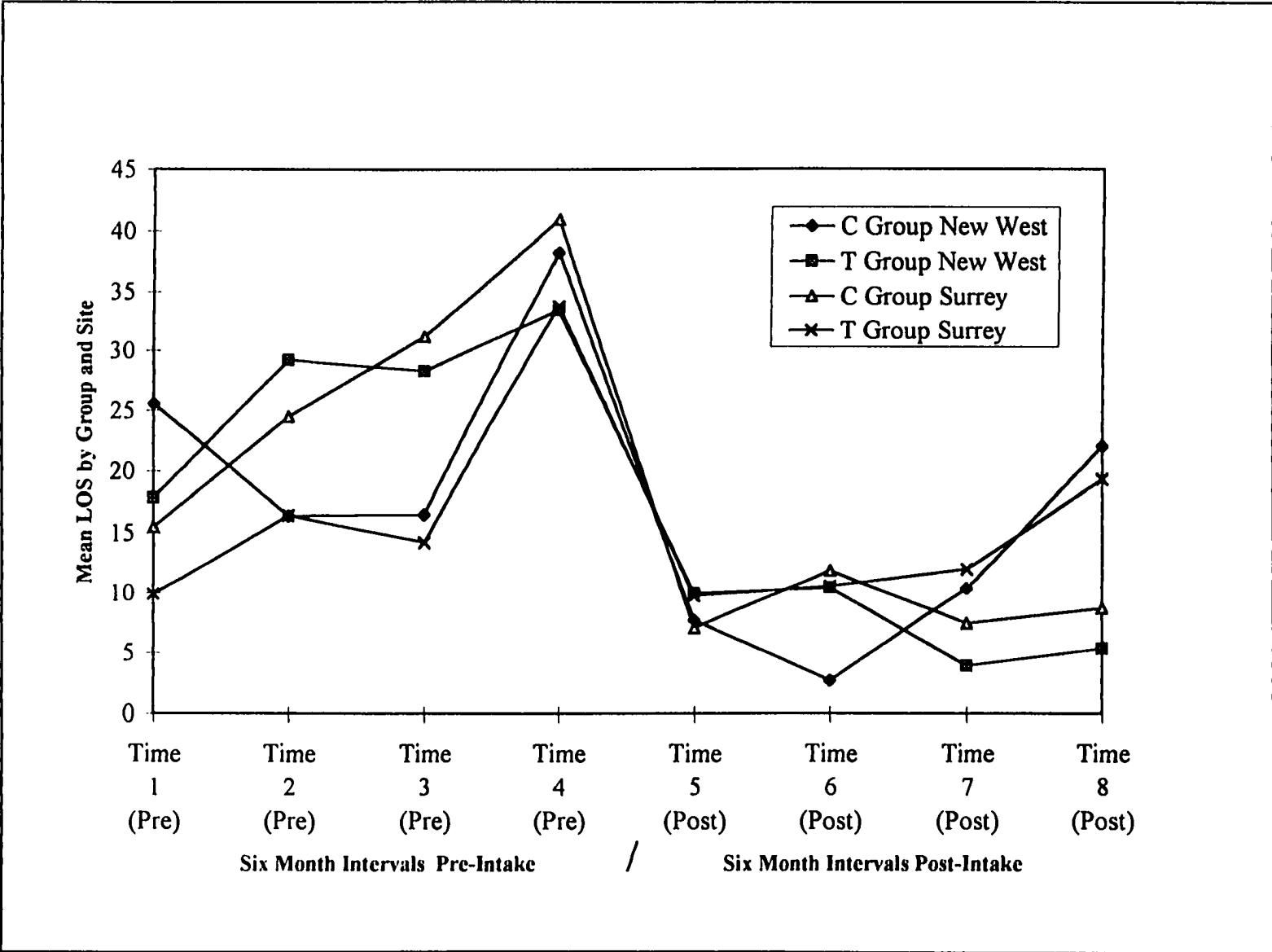


Figure 5: Mean Length of Hospital Stay (LOS) for Clients' Pre-Post AOP Intake Data by Group and Site

The results of the pre-post intake analyses did not confirm the first portion of Hypothesis 1. Both the treatment and the control groups experienced significant reductions of re-hospitalisation rates as measured by NADM and LOS.

4.12 Study Period: Variable 1 - Number of Hospital Admissions (NADM), Variable 2 - Length of Hospital Stay (LOS), and Variable 3 - Quality of Life (QOLC)

A 2 x 2 x 4 mixed MANOVA was conducted (level 1 analysis) that included *post-study* NADM, LOS, and QOLC data. Consequent to the above analysis, 2 x 2 x 4 mixed MANOVA analyses were conducted with the data for each of the *post-study* NADM and LOS variables separately. Table 13 summarises the statistically significant results of these analyses (see also Figure 6, 7, 8, 9, and 10).

Table 13: Results of Post-Intake NADM, LOS, and QOLC Data Analyses

Level 1 Analysis for NADM, LOS and QOLC	F	df	p <
Group treatment effect	7.51	(3, 108)	.0001
Group by site by time interaction effect	1.82	(9, 102)	.02
Level 2 Analysis for NADM			
Group by site by time interaction effect	3.27	(3, 112)	.02
Level 2 Analysis for LOS			
Group by site by time interaction effect	2.68	(3, 112)	.05
Level 2 Analysis for QOLC			
non-significant			

Figure 6: Mean Number of Hospital Admissions (NADM) for Clients' Post AOP Intake Data by Study Group

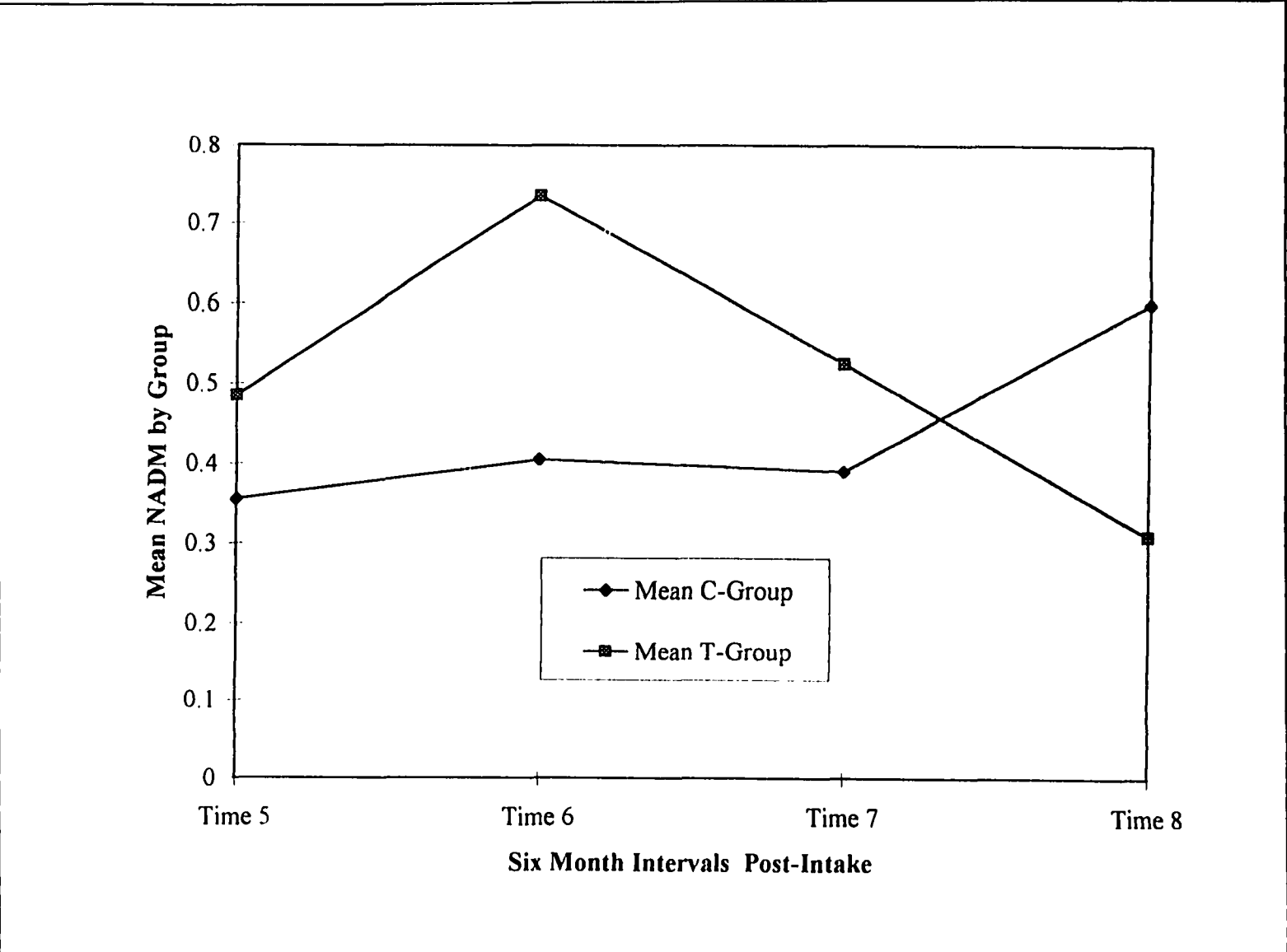


Figure 7: Mean Length of Hospital Stay (LOS) for Clients' Post AOP Intake Data by Study Group

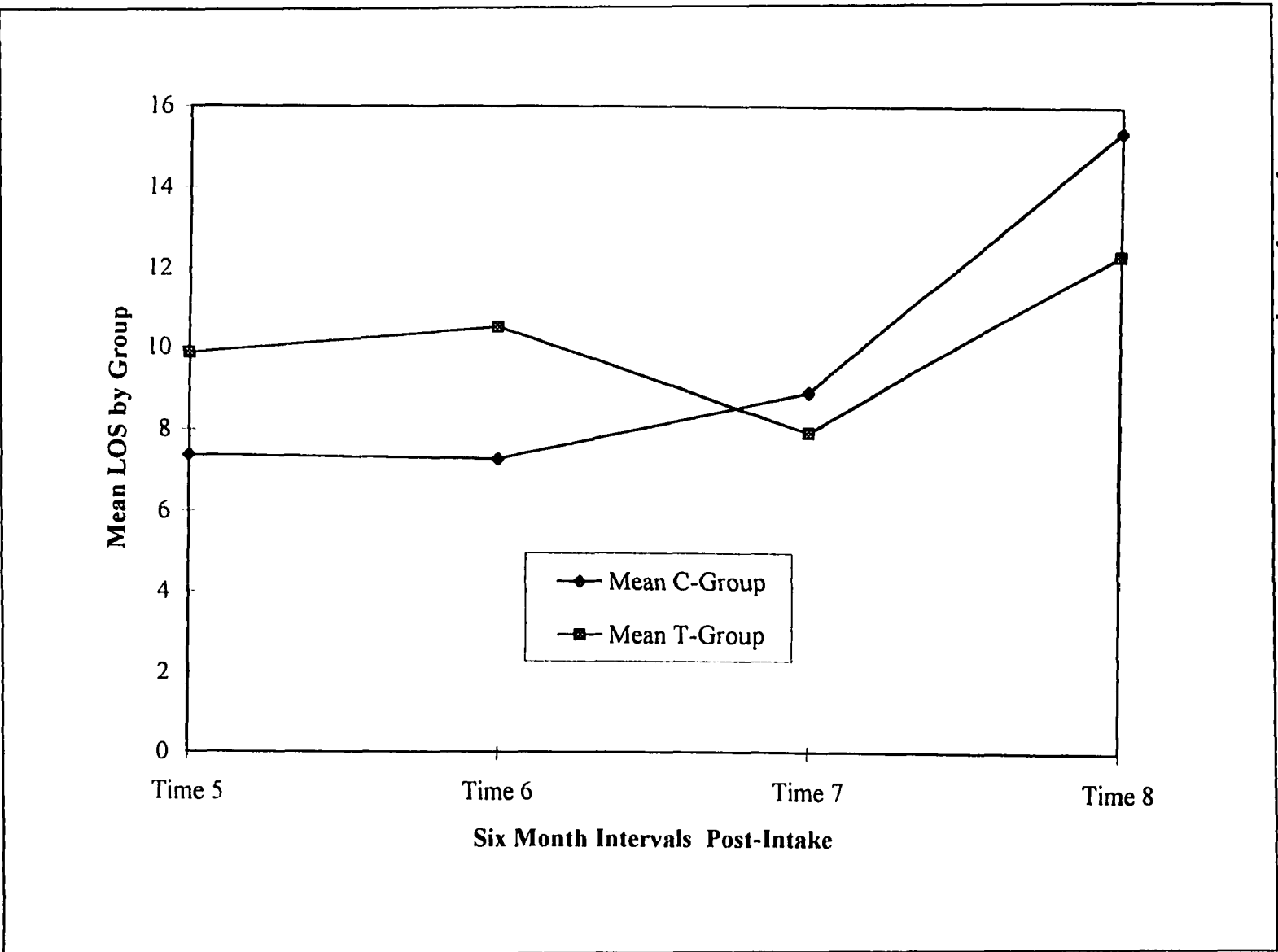


Figure 8: Mean Number of Hospital Admissions (NADM) for Clients' Post AOP Intake Data by Study Group and Site

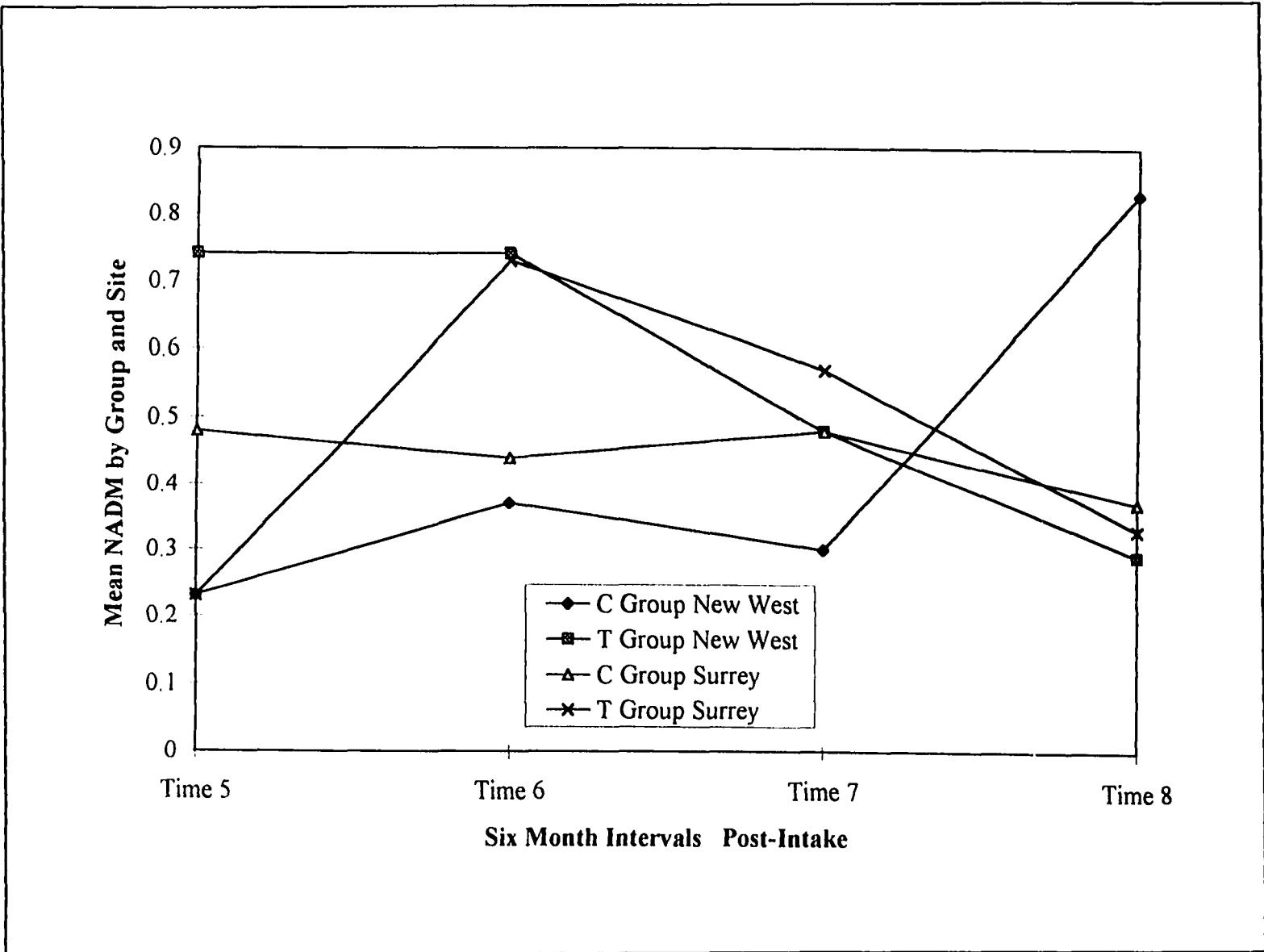


Figure 9: Mean Length of Hospital Stay (LOS) for Clients' Post AOP Intake Data by Study Group and Site

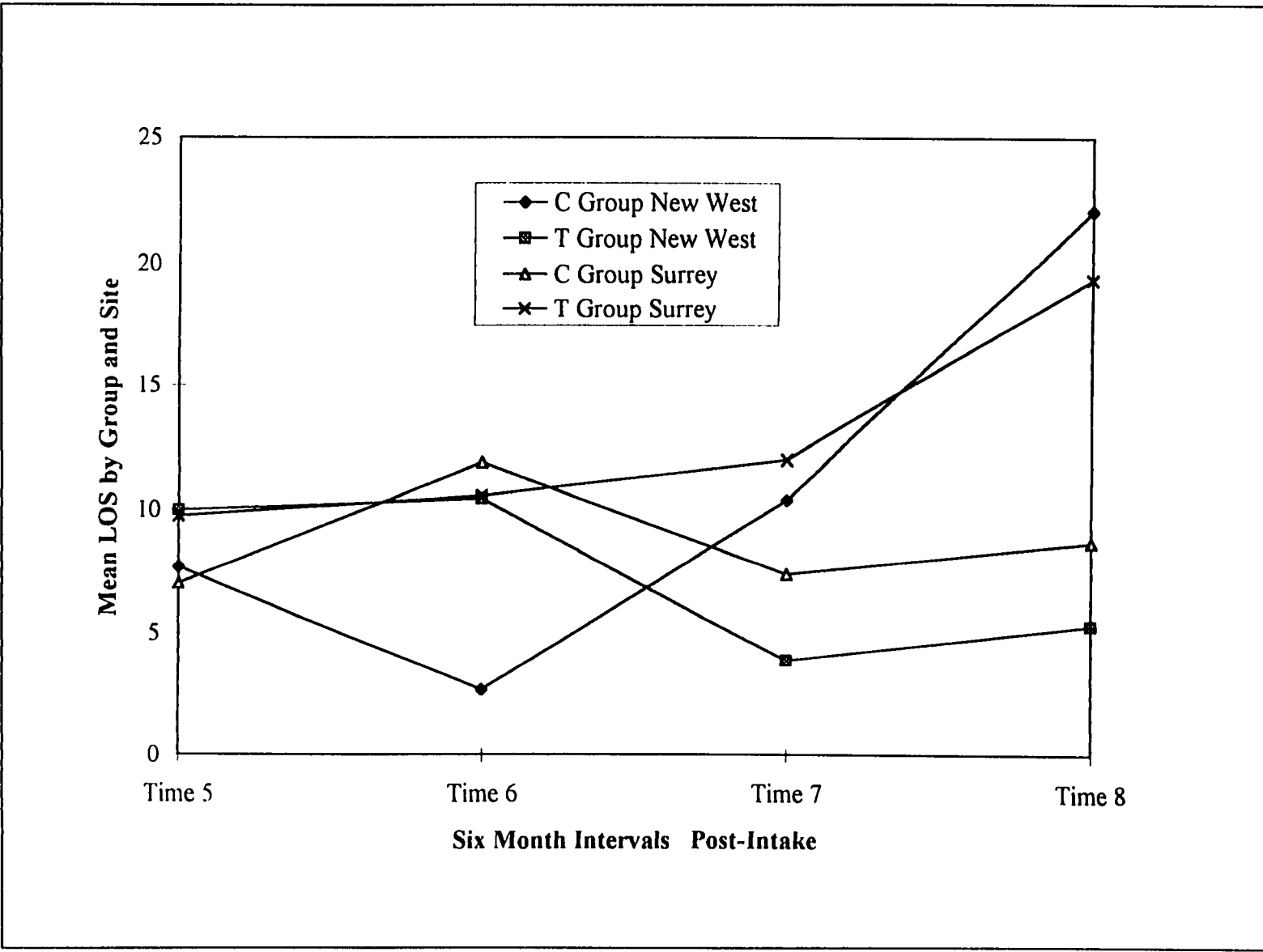
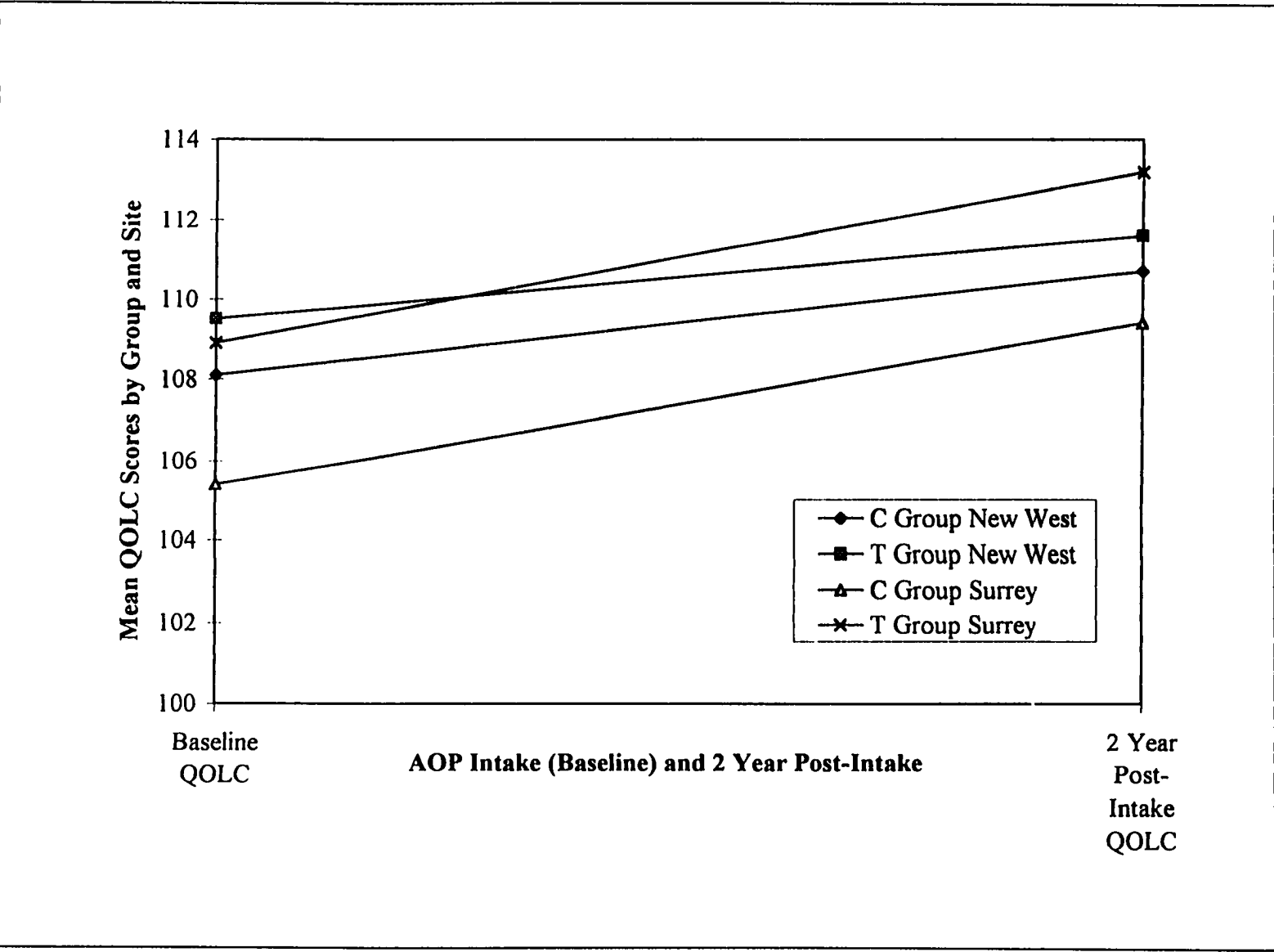


Figure 10: Mean Quality of Life Scores (QOLC) for Clients' Post AOP Intake Data by Group and Site (non-significant)



The results of the post-intake hospitalisation data (NADM and LOS with QOLC) suggest that the predicted effects in the second portion of Hypothesis 1 occurred for the New Westminster clients, but *not* for clients at the Surrey site (who experienced the opposite effects of those predicted). For methodological reasons the QOLC measure was included in this analysis (see Figure 1) but did not result in statistically significant findings.

4.2 Data Analysis Results for the Quality of Life Domain

(Hypothesis 2) I predict that for the AOP study period, the treatment group will have a higher quality of life than the control group.

4.21 Variable 1 - Client Quality of Life Inventory - Client Version (QOLC)

A 2 x 2 x 4 mixed MANOVA analyses was conducted with the data for the *post-study* QOLC variable (see sub-section 4.12). The results were non-significant (see Table 13 and Figure 10). This result does not confirm the predicted treatment effect in Hypothesis 2.

4.3 Data Analysis Results for the Community Living Domain

(Hypothesis 3) *I predict that for the AOP study period, the treatment group will have a higher success rate for living in non-institutional settings than the control group. By corollary it is predicted that the control group will spend significantly more time in institutional settings than the treatment group.*

4.31 Study Period: Number of “Institutional” Admissions (INADM) and Variable 2 - Length of “Institutional” Stay (ILOS), and Variable 3 - Quality of Life (QOLC)

A 2 x 2 x 4 mixed MANOVA was conducted (level 1 analysis) that included *post-study* INADM, ILOS, and QOLC data. Consequent to the above analysis, 2 x 2 x 4 mixed MANOVA analyses were conducted with the data for each of the *post-study* INADM and ILOS variables separately. Table 14 summarises the statistically significant results of these analyses (see also Figure 10 (QOLC) and Figures 11, 12, 13, and 14). Figures 15 and 16 (no significant effects) have been included for the sake of comparison with Figures 8 and 9.

Table 14: Results of Post-Intake INADM, ILOS, and QOLC Data Analyses

Level 1 Analysis for NADM, LOS and QOLC	F	df	p <
Group treatment effect	7.56	(3, 108)	.0001
Site treatment effect	3.90	(3, 108)	.01
Time main effect	2.08	(9, 102)	.04
Level 2 Analysis for NADM	non-significant		
Level 2 Analysis for LOS			
Time main effect	3.86	(3, 112)	.01
Level 2 Analysis for QOLC	non-significant		

Figure 11: Mean Number of Institutional Hospital Admissions (INADM) for Clients’ Post AOP Intake Data by Study Group

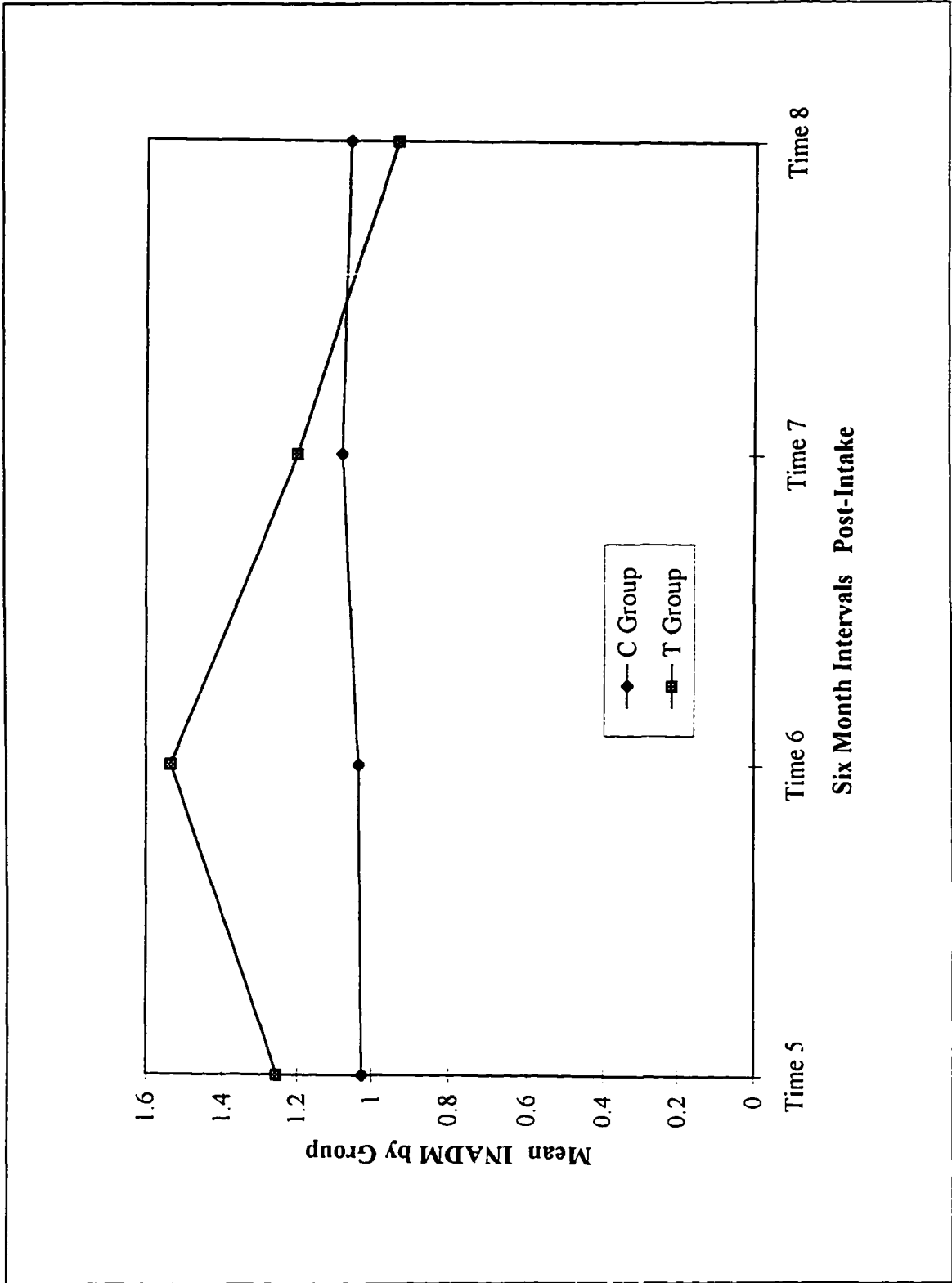


Figure 12: Mean Length of Institutional Hospital Stay (ILOS) for Clients' Post AOP Intake Data by Study Group

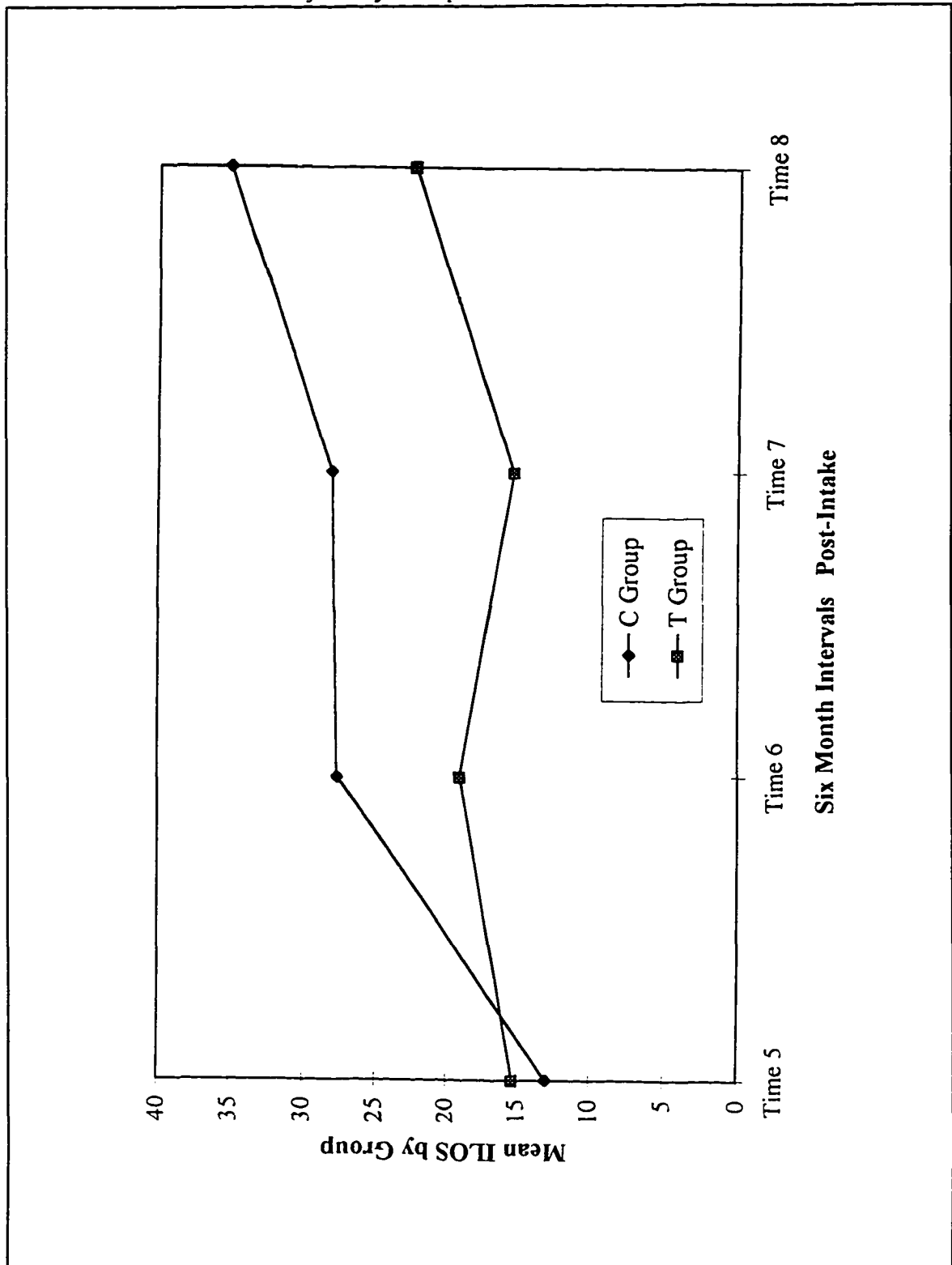


Figure 13: Mean Number of Institutional Hospital Admissions (INADM) for Clients’ Post AOP Intake Data by Study Site

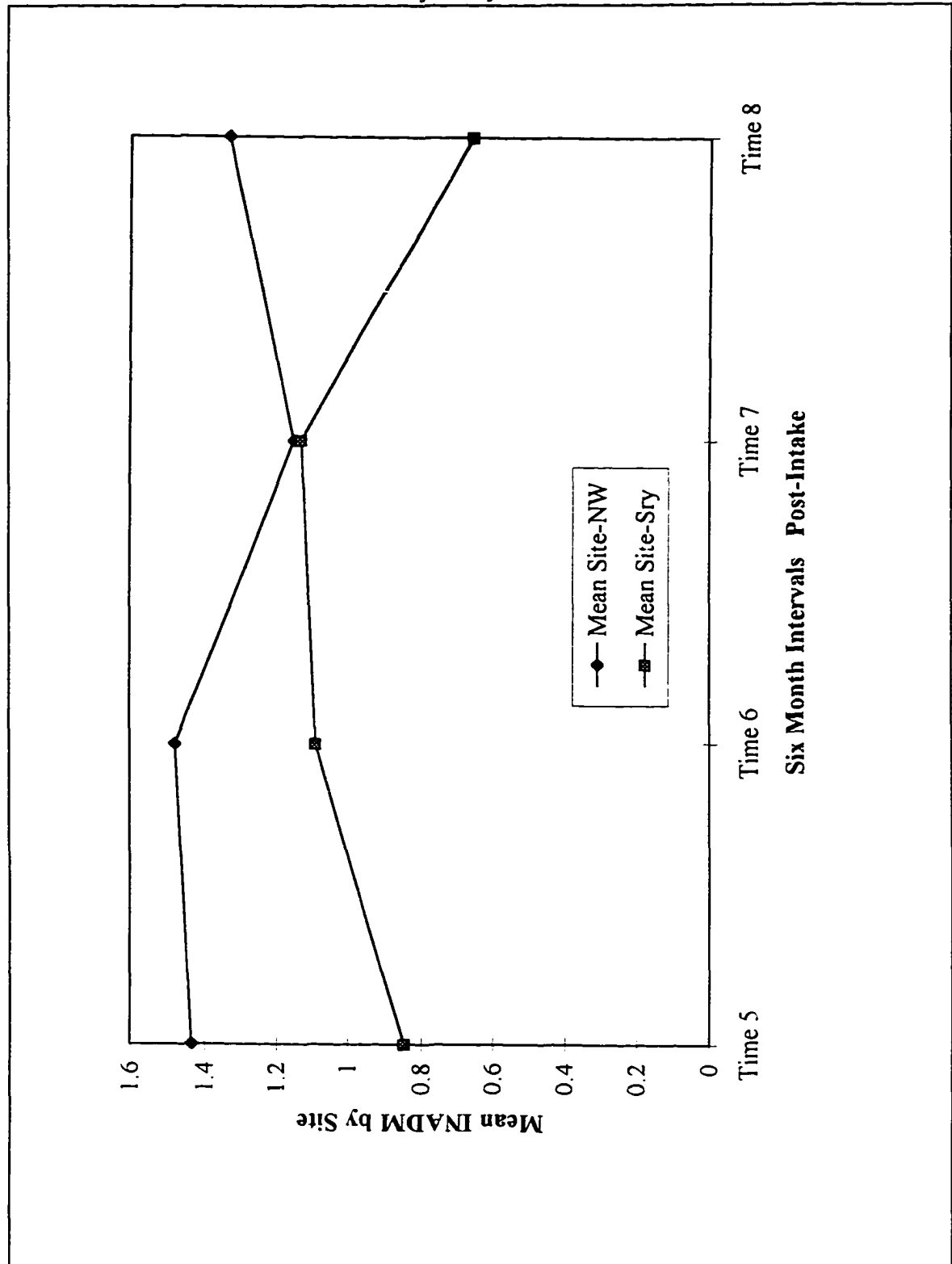


Figure 14: Mean Length of Institutional Hospital Stay (ILOS) for Clients' Post AOP Intake Data by Study Site

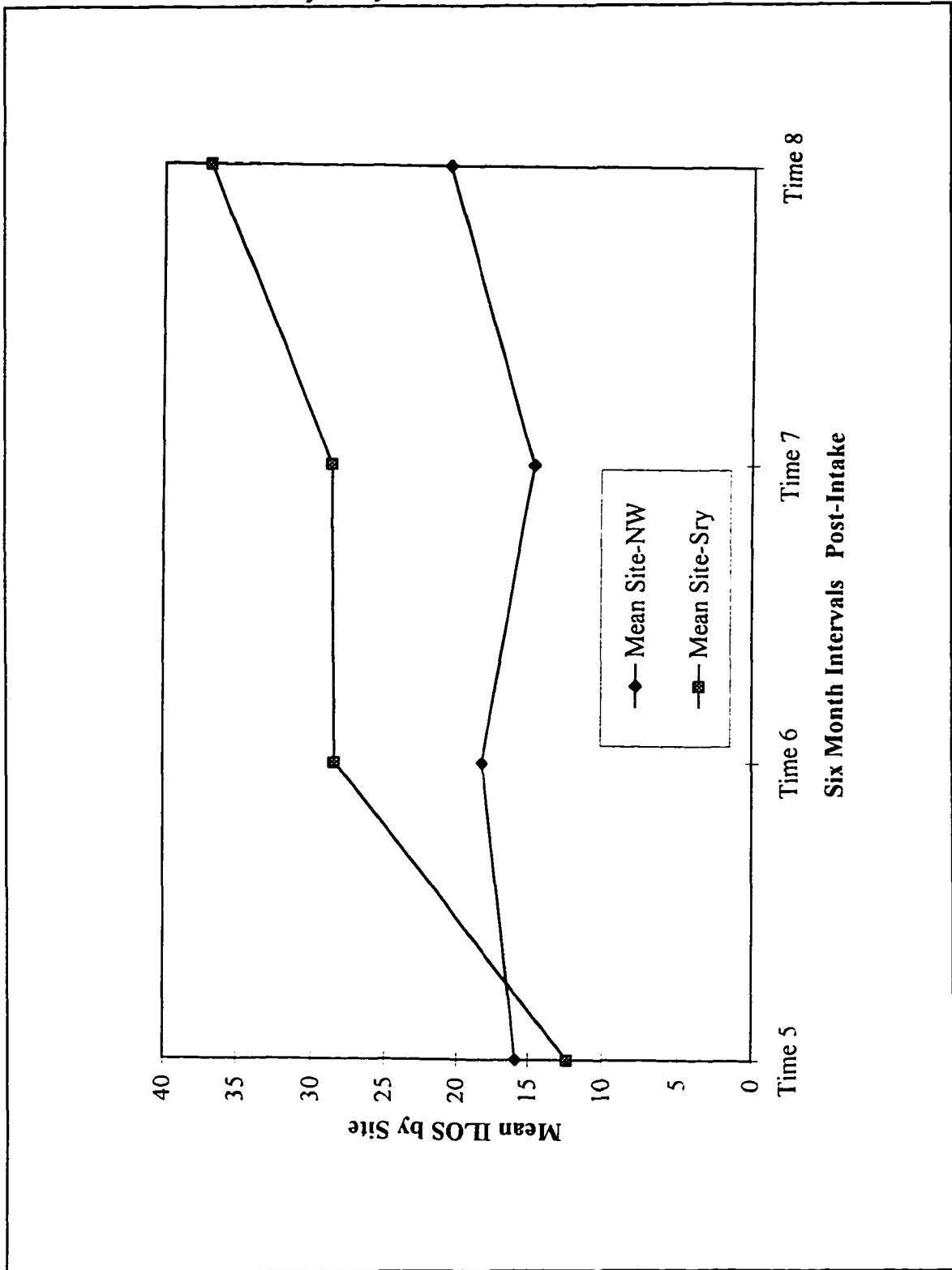


Figure 15: Mean Number of Institutional Hospital Admissions (INADM) for Clients’ Post AOP Intake Data by Study Group *and* Site

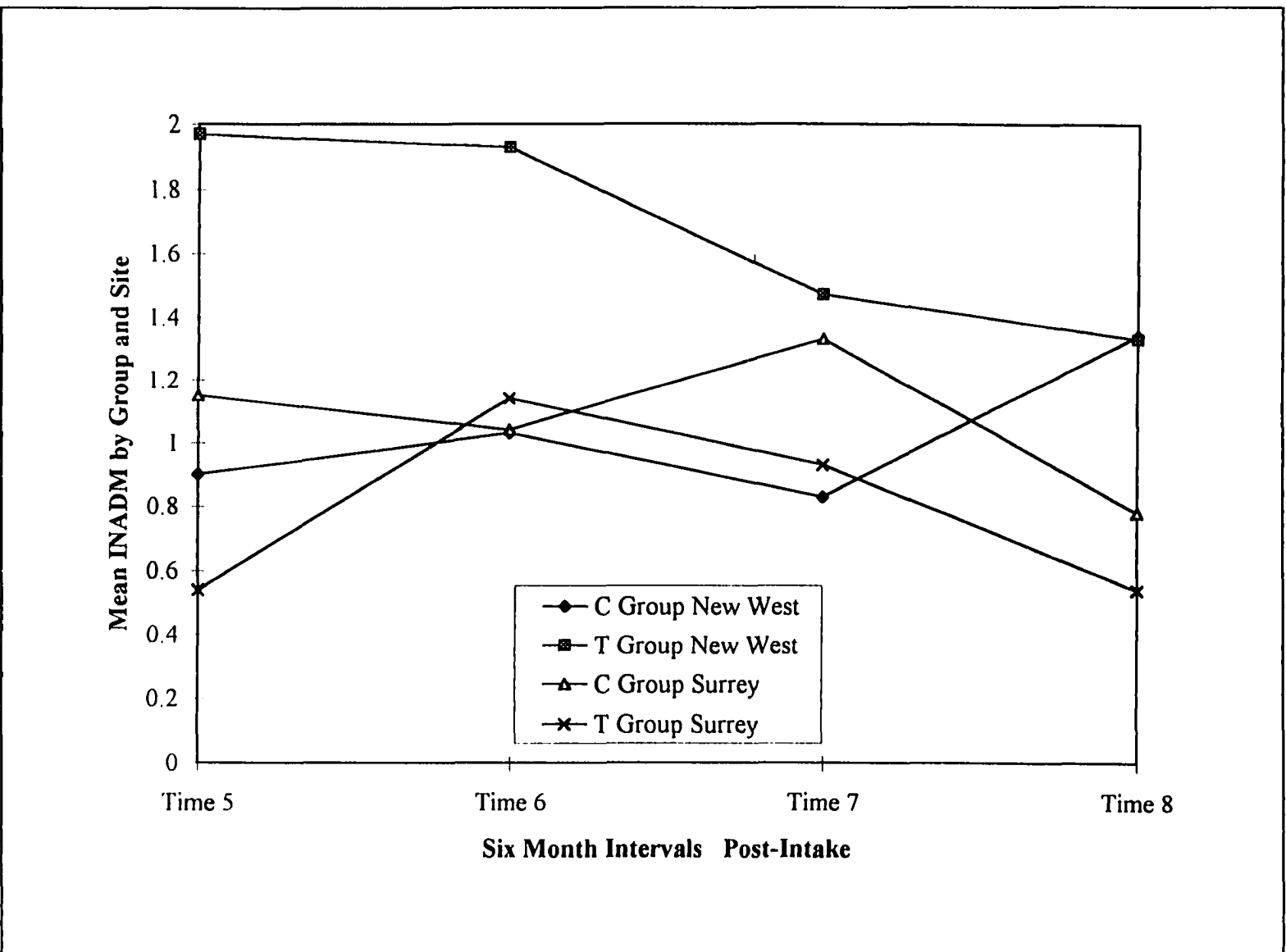
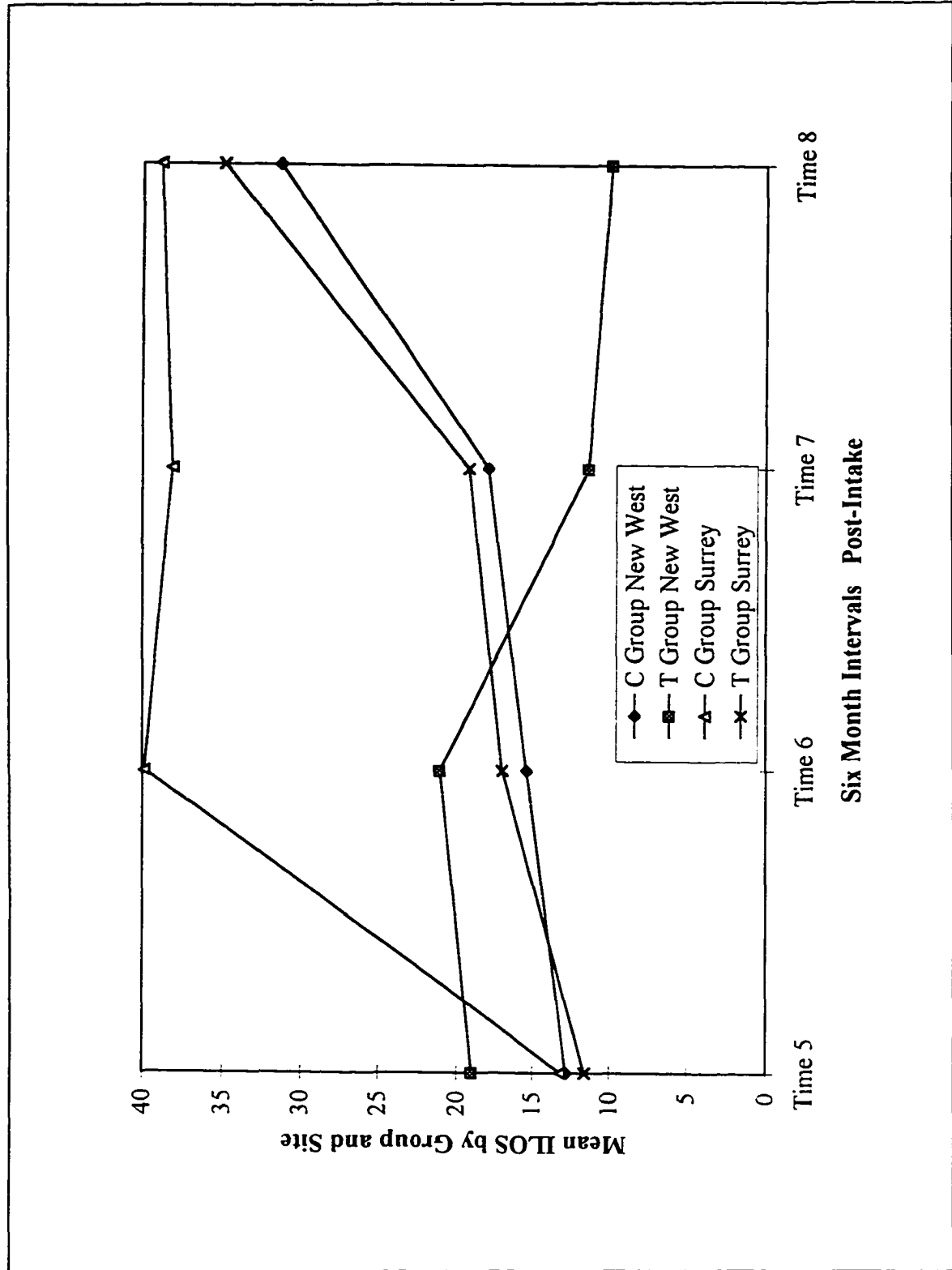


Figure 16: Mean Length of Institutional Hospital Stay (ILOS) for Clients’ Post AOP Intake Data by Study Group *and* Site



The results of the post-intake institutionalisation data INADM and ILOS (with QOLC) do not confirm the predicted group by time effects in Hypothesis 3. The significant treatment main effects lend general support to the results in 4.12, indicating that some differences between groups and between sites did occur. However, these results were not specific enough for making further inferences. As in 4.12, the QOLC measure was included in this analysis (see Figure 1) but was not statistically significant.

4.4 Post-Hoc Profile Analysis for the Variables NADM, LOS, INADM, and ILOS

As the above multivariate analyses resulted in some significant findings a post-hoc data analysis was performed using the means of the variables “group” and “site”. This was an attempt to determine whether one or more of the individual “time series” increments accounted for a significant proportion of the variance in the previously reported post-intake findings.

Three dependent “dummy” variables were created for the purpose of determining a value for the differences between means at the four post-intake “time series” - the independent variable (e.g., \bar{X} of time 5 minus \bar{X} Time 6 = dummy variable “5minus6”). An ANOVA procedure was used to determine whether or not these differences were statistically significant. Table 15 summarises the results of these analyses.

Table 15: Results of Post-Hoc Profile Analyses Testing for Differences between Post-Intake Time-Series Means for NADM, LOS, INADM, and ILOS

Variable Name	Type of Effect	$p <$	“5minus6” $p <$	“6minus7” $p <$	“7minus8” $p <$
NADM	Group x Site	.02	NS	NS	NS
LOS	Group x Site	.05	NS	.03	NS
INADM	None				
ILOS	None				

The results of the post-hoc profile analysis confirmed the significant group by site by time effects for the variables NADM and LOS (see 4.12). However, at the univariate level of analysis only the difference between time 6 and Time 7 was significant for the group by site by time interaction effect for the variable LOS (see Figure 9).

In an attempt to further clarify the pre-post AOP intake hospitalisation findings supplementary MANOVAs were conducted employing a 2 x 2 x 2 repeated measures design. The four pre-intake and the four post-intake data collection periods for the variables NADM and LOS were collapsed into one pre-intake and one post-intake variable for each. These analyses resulted in a significant time main effect for both the NADM ($F = 32.2$; $df = 1, 114$; $p < .001$) and LOS ($F = 34.1$; $df = 1, 114$; $p < .001$) variables. The only other statistically significant effect was a group by site by time interaction effect for the LOS variable ($F = 4.0$; $df = 1, 114$; $p < .05$). These analyses

simplified the hospitalisation data but did not result in any significant changes to the earlier findings (see Table 11 and sub-section 4.11).

In the next chapter I present a discussion of my statistical analyses. This discussion is prefaced by (1) an overview of the important issues that evolved out of my research, (2) a listing of the documentary information that was available to me and that I collected, and (3) a summary of the AOP study and public policy contexts. This preliminary information is necessary for a better understanding of : (1) my research findings (sections 6.3 and 6.4) and (2) the rival hypotheses that I propose in an attempt to explain my findings (section 6.5).

Chapter 5

Discussion of the AOP Study Results

5.0 Overview

The results of my investigation of specific outcomes of the Riverview/Fraser Valley Assertive Outreach Program, a mental health intervention for seriously and persistently mentally ill clients population in British Columbia, are difficult to interpret and were generally inconclusive. Despite this, my research remains important in terms of its significance for: (1) informing public policy and program planning in the mental health field, and (2) identifying key methodological issues in the evaluation of mental health programs. Consequently, my discussion will focus on these mental health policy and evaluation issues.

There are numerous reasons (rival hypotheses) why the AOP study, and the results from the analyses of its database, do not support key hypotheses and are difficult to interpret. These are presented in section 5.5 below. It is, of course, every social scientist’s hope that his/her research will result in “clean”, easily identifiable and interpretable findings. The best we can hope for is that the research which we conduct is methodologically defensible by whatever appropriate methodological (not restricted to statistical) standards. The fact is that we work in, and with, an intensely dynamic, human

environment which does not allow itself to be easily categorised, analysed, and/or manipulated.

5.1 The “Larger Picture”

This section will describe those aspects of the British Columbia mental health service delivery context relevant to the discussion of my research findings. It was this context which formed the environment within which the AOP study was conceived and implemented. This environment is a web comprised of the various political, social, service delivery, individual, fiscal, practical, and methodological realities of life in the mental health system.

In light of the results of my statistical analyses and the conclusions I had derived from them, I attempted to collect documentary information concerning the AOP. I did this in an effort to further validate, understand, and/or explain my research findings. Here is a brief list of sources and types of information available to me. Supporting evidence for drawing inferences about the AOP study results was provided by: (1) anecdotal information collected during the AOP research period (e.g., research meeting minutes), (2) the results of qualitative (open-ended) AOP staff questionnaires, and (3) the testimonies from several “key informant” interviews conducted by me post-hoc (e.g., regional directors, division heads, mental health staff, AOP research staff). Finally, my conclusions will include references to some of the relevant literature and research in the fields of evaluation and mental health.

In the next sub-section I will present a brief summary of a number of the key informant interviews with several persons whose expertise and experience provided me with insightful contextual information (see Appendix G for a selection of excerpts from those interviews judged by me to be the most informative). Many of these individuals had considerable specific knowledge of the AOP study and its environs, especially during the period of 1988 to 1992 - the time within which the AOP study was conceived, implemented, and researched. This information was instrumental in corroborating many of my deductions which had previously been derived from somewhat circumstantial evidence and were based upon the problematic statistical results of my research.

5.11 The Public Policy Perspective: A Summary of the AOP Research Environment

Below is an “*uneditorialised*” summary of what I considered to be the major public policy themes¹⁰ reported by several “key informants” in their testimonies (Campbell, 1996; Gray, 1996; Kline, 1996; Ledwidge, 1996; Lee, 1996; MacInnes, 1996; Miller, 1996; Morrison, 1996; Seagate, 1996; Van der Leer, 1996). I present these themes from most important to least important as judged by the frequency with which they were mentioned, and the emphasis given to them by the interviewees. These themes have considerable implications for the future development of mental health policies.

¹⁰ These themes may have affected the impacts of the ACM intervention and/or the MHC service delivery for: (1) the control group clients, (2) the treatment group clients, and/or (3) both study groups. These themes could also have caused differential site and/or time effects.

- ◆ (1) Additional money injected into the British Columbia mental health system between 1990-1993 positively influenced service delivery. This resulted in new services and programs that would have (directly or indirectly) impacted the AOP study clients (especially: Riverview Bridging, better and more housing, crisis beds, increased community mental health staff throughout the region).
- ◆ (2) Site differences existed between New Westminster and Surrey MHC catchment areas leading to potential differences in the quality of client interventions. The most notable differences were: client access to crisis beds, MHC leadership, clinical competence of MHC caregivers, public perceptions of mentally ill clients.
- ◆ (3) Problems existed at both MHC sites due to staff perceptions with regard to the apparent inequities between MHC versus ACM client to staff ratios (e.g., 60+:1 versus 10:1). The ensuing interpersonal rivalries, tensions, and/or resentments may easily have impacted the quality of client services.
- ◆ (4) Riverview Hospital tightened admission criteria, facilitated faster client discharges (shorter LOS), and had longer waiting periods all of which began in the late 1980s and early 1990s. For these reasons Riverview admission rates are not necessarily a valid reflection of the incidence of actual clients' psychiatric needs.
- ◆ (5) There occurred an increase in the late 1980s and early 1990s of an informal emphasis, by persons at all levels of mental health services, on

the need to provide clients with more comprehensive and integrated services, as well as developing an increased focus on rehabilitation and “assertive”/outreach.

- ◆ (6) Senior staffing changes at the Ministry and local MHC levels impacted the way in which services were delivered by caregivers and agencies.
- ◆ (7) An expansion and increased integration of the roles played by family members and consumers (clients) may have directly or indirectly impacted the quality of services for the seriously and persistently mentally ill.
- ◆ (8) At the political level, (1) a change in government from the Social Credit Party to the New Democratic Party and (2) the recommendations from the Royal Commission on Health Care Costs, may have contributed to significant systemic changes in the delivery of mental health services.
- ◆ (9) Some apparent methodological weaknesses of the AOP study included: (1) the potentially unrepresentative distribution of resources because the control and treatment groups were drawn from the same sites, and (2) the need to include crisis bed utilisation data in the calculation of recidivism.
- ◆ (10) The potential of differential living standards/conditions pre-study versus post-AOP study intake might quite logically have led to very different rates of recidivism, especially in view of the concomitant systemic changes that were taking place.

Although the above is a brief outline, the selected interview notes in Appendix G provide a more thorough picture of the British Columbia mental health policy

environment at the time of the AOP study. The best way of providing an adequate understanding of the AOP study’s larger public policy context is to allow the people involved in the mental health system at the time to tell their stories. In my judgement many aspects of the policy themes identified above lend support to a variety of rival hypotheses concerning the findings of my AOP research. The next section will describe the additional information sources that were available to me.

5.2 Additional Supporting Information

In addition to the “key informant” interviews conducted post-hoc by myself, a considerable amount of qualitative information was collected by the AOP research team.

This information was in the following form:

- ◆ internal or external AOP memoranda and letters,
- ◆ AOP study staff meeting notes,
- ◆ AOP steering committee meeting minutes,
- ◆ formal AOP study progress reports to funding agencies by the principle investigator and various consultants,
- ◆ conference paper presentations, and
- ◆ AOP staff questionnaires.

Those portions of the transcripts of the staff questionnaires, judged by me to be of particular interest to the current chapter as well as Chapter 6, are excerpted below in subsection 5.21. All but the last item on the above list will be briefly described in subsection 5.22 - “Archival Information”.

5.21 AOP Staff Questionnaires

Tables 16, 17 and 18 provide a synopsis of qualitative information from the AOP Staff Questionnaires collected by the AOP research team (see Appendix H for complete transcripts). This information reflected the staffs’ perceptions after the first year of the AOP study’s operation. Consequently, some of the negative concerns raised (e.g., lack of: community linkages, credibility) were found to improve in later years (cf. Lee, 1996; MacInnis, 1996 in Appendix G).

Table 16: AOP Staff Perceptions: Ideas and Solutions

<i>Education</i>	
◆	need to educate community and MHC about Assertive Outreach model and the role of the AOP staff
◆	educating others would help AOP with their credibility
<i>Coordination of Services</i>	
◆	it would help if there is a coordinator on staff to do the education and liaison with other agencies, resources etc.
◆	need to work together more with community

Table 17: AOP Staff Preceptions: Positive Aspects

Team approach

- ◆ good for clients, less dependency on one case manager
- ◆ less burnout for staff, more support
- ◆ stronger united voice of staff to deal with MHC related problems

High Frequency of contact/Assertive contact

- ◆ got to know the clients better, able to build trust and rapport
- ◆ early signs of decompensation were picked up sooner

Length of follow-up

- ◆ some of the clients AOP is following may have been discontinued in traditional follow-up

In vivo

- ◆ dealing with the day to day small problems/crisis intervention
- ◆ home visits enable a clearer picture of what their daily living is really like
- ◆ delivery of meds and injection at their place offer convenience and close monitoring and compliance
- ◆ ability to interact with clients' families

Availability/flexibility of Staff

- ◆ much more available (e.g., telephone calls returned the same day)
- ◆ unscheduled meeting can be the same day if it is urgent

Scope of Concern

- ◆ improve quality of life as a whole (all aspects), not just clinical aspect

Better knowledge of Community Resources than MHC staff

Table 18: AOP Staff Preceptions: Negative Aspects

Location of Office in MHC

- ◆ strained relationship with MHC staff since they do not understand the AOP model
- ◆ MHC staff resent the small caseloads of the AOP staff
- ◆ MHC staff resent the “in vivo” approach, commenting, when the AOP staff leave to meet clients for coffee, that the AOP staff must be lucky to have so many coffee breaks and have such a cushy job
- ◆ MHC staff interfere with AOP clients after hours and on weekends (hospitalisations) (e.g., clients show up at centre and manipulate staff into hospitalising them by saying they are suicidal or have just overdosed)
- ◆ waste of time having to be involved in MHC meetings
- ◆ MHC thinks that once client getting better, we should disengage, pressure to do so

Hospitals

- ◆ the wait at emergency for assessment was unbearably long
- ◆ lack of psychiatrists in the hospitals
- ◆ poor communication with hospital staff once client was admitted (e.g., We had a client admitted to hospital for three weeks when a short term (overnight) admission would do. They were not interested about what we knew about the client.)

Society

- ◆ pressure from relative, neighbour, landlords - complaining of unusual behaviour of the client - “they belong in the hospital”

Turf war with community

Region too large (Surrey)

- ◆ time for travel

Lack of direct supervision

Need a larger team with strong team leader

Community more lonely than Riverview Hospital experiences

- ◆ stressful emotionally and physically to work as AOP nurse
 - ◆ miss the fun aspect of working with other staff
 - ◆ being out there and on the road all of the time, you don't feel as though you “belong” anywhere
-

5.22 AOP Study - Archival Information

The various documents from the list of sources described in section 3.3 as "archival information" were very helpful in providing me with necessary contextual information about the AOP study. These sources also gave me some insight into how certain methodological decisions were made (and why); what research limitations were identified; and the general evolution and complexity of the AOP research component. The archival information also served to corroborate some of the results of statistical analyses and the findings from other sources of information (e.g., interviews). The next sections will discuss the results of my analyses as they were reported in Chapter 4. The structure of these discussions is patterned after analytical hierarchy used in my data analyses (Figure 1) and is presented in terms of my hypotheses.

5.3 Discussion of the AOP Pre-Post Intake Findings

5.31 AOP *Pre-Post* Intake "Hospitalisation" Findings

This section addresses the first portion of Hypothesis 1 which stated that "...when the pre-study and post-study periods are compared, the treatment group will experience lower rates of recidivism than the control group as measured by (a) number of hospitalisations and (b) length of stay". Although a "level 1" multivariate analysis resulted in statistically significant findings, an inspection of the means and the graphical representations of these results clearly indicated that the group by time effect and the group by site by time effect were problematic in terms of making attributions about the

possible incremental effects of the ACM intervention (see Figures 2 through 5). The reason for is that both the *AOP control and treatment* groups experienced significant drops in recidivism rates as measured by NADM and LOS.

The majority of the evidence in the U.S. mental health evaluation research literature appears to support the notion that ACM intervention techniques reduce the rehospitalisation rates for persons suffering from serious and persistent mental illness (e.g., Stein & Test, 1985; Test & Stein, 1980). Corroborating this view, McGrew, Wilson, and Bond (1996) wrote that “Recent reviews have concluded that there is substantial support for the effectiveness of ACT [Assertive Community Treatment - another form of ACM] (Olfson, 1990; Solomon, 1992; Test, 1992)” (p. 14).

However, this support for ACM models is not unanimous. Rössler, Löffler, Fätkenheuer, and Riecher-Rössler (1992) stated that “several empirical studies did not show a definite impact of case management on the rehospitalisation rate” (p. 446). In fact, the research reported by Rössler et al. employed a records-based statistical survival analysis technique in an attempt to investigate the impact of a German case management intervention program on recidivism rates. Their findings indicated that there were no significant differences between the “treatment” and “control” groups. By their own admission, however, their research may have suffered from various, very basic, methodological flaws. These methodological problems also are pertinent to my research and illustrate some of the inherent problems in the use of empirical social scientific methods in the context of mental health evaluation.

Sampling biases were identified by Rössler et al. (1992) as having potentially influenced their research design. First, their “control” group was matched to their “treatment” group on recognised demographic and diagnostic characteristics. However, alone the fact that some clients were referred to the case management intervention program (treatment group) and some clients were not, may have been biased by the severity of the clients’ illness and their vulnerability upon discharge from hospital. Second, the clients’ participation in this intervention program was voluntary, leading to possible “self-selection” biases.

Rössler et al.(1992) concluded their research report by emphasising the documented *clinical advantages* of employing case management programs in the community for seriously mentally ill people and suggested that their hypothesis “Does case management reduce the rehospitalisation rate?” was perhaps asking the wrong question. Rössler et al. suggested that, although this question is important from an economic, resource-utilisation standpoint, it is perhaps not the most appropriate question from a clinical or client perspective. The results of Rössler et al.’s research, which spanned an observation period of 2.5 years, also supported the hypothesis that longitudinal studies of mental health services for persons suffering from serious and persistent mental illness may suffer from a study “duration” bias. Several sources have indicated that psychiatric interventions, such as ACM which go beyond mere clinical treatment by including rehabilitation and life-skills training, may require several years to show positive program effects (e.g., Higenbottam, 1993; Lee, 1996; MacInnis, 1996). The logic of this consideration is further validated by the tendency for seriously mentally

ill people to be able to experience lengthy periods of stability, sometimes as high as two years, even without an aggressive intervention (Higenbottam, 1996).

From the discussion of my research findings in sections 6.3 and 6.4 it appears to be the case that, in spite of the inherent methodological “rigour” of employing well-constructed experimental and quasi-experimental research designs, many of the social-scientific examples of the implementation of such designs in the field of mental health often suffer from serious methodological flaws. This puts into question the validity of such research paradigms. The existence of the above-mentioned methodological biases as well as other factors external to the AOP study and its ACM intervention, may have acted to “contaminate” the AOP data. A discussion of additional biases relevant to the AOP are presented later in this chapter in the “rival hypotheses” sections.

5.32 AOP Pre-Post Intake “Resource Utilisation” Findings

The resource utilisation data were the only other “pre-post” data in my research. Unfortunately, the economic analysis could not be justified on the basis of the findings from the multivariate analyses of the pre-post intake hospitalisation data. This is because no program attributions could be made with regard to the possible incremental effects of the ACM intervention. In Appendix B, I present a discussion of the economic “hospitalisation cost” (HOSP\$) variable which I developed, and its potential for informing future economic analyses of mental health programs. No further comment is warranted here.

5.4 Discussion of AOP Post-Intake Findings

The multivariate analyses in sub-sections 4.12 and 4.31 respectively, resulted in a number of statistically significant findings with regard to the *post-intake* data of the “hospitalisation” and “community living” domains. These findings are discussed below, primarily in terms of their importance to mental health policy development and program planning.

No inferences could be drawn from the findings of the AOP *pre-post* intake data analyses due to the “contamination” of the data discussed earlier. However, statistically significant differences resulting from the analyses of the *post-intake data* may be interpreted. Although the AOP control and the treatment groups both experienced significant drops in pre-post intake recidivism rates, making any interpretation of the findings in terms of incremental program effects impossible, the results of the post-intake data analyses indicated further significant differences over time between the groups and the sites, allowing some inferences to be made of these findings.

As the ‘level 1’ (see Figure 1) analysis in sub-sections 4.12 and 4.31 included the QOLC variable which, through further analysis proved to be non-significant, I will deal here only with the variables whose “level 2” analyses resulted in statistically significant findings.

5.41 AOP *Post-Intake* “Hospitalisation” Findings

The second portion of Hypothesis 1 is pertinent to this section: “...over the two year study period of the AOP program, the treatment group will experience lower rates

of recidivism than the control group as measured by (a) number of hospitalisations and (b) length of stay".

Only one important significant effect was found for the post-intake NADM variable. That was a study group by site by time interaction effect. Figure 8 shows this effect quite clearly. This interaction effect with time indicated that group *and* site membership affected the clients' outcomes as measured by the NADM variable. For example, from this result it was apparent that to unambiguously experience lower NADM rates over time (the desired outcome for the ACM intervention), a client had to be in the *New Westminster treatment group*. Conversely, it appeared that the worst group to be in, in terms of NADM, was the *New Westminster control group* (also a predicted effect). These New Westminster site- and group-specific results from the analysis of the NADM variable support the interpretation that ACM is an effective intervention. Also of interest is that neither of the Surrey study groups appeared to have experienced dramatic changes in NADM when Time 5 was compared with Time 8. All of these results have important program implementation implications with regard to the differences in the fidelity of the ACM model implementation at the two sites (discussed below following the discussion of the LOS results).

The findings from the analysis of the post-intake LOS variable were similar to those of the NADM in that a study group by site by time interaction effect was found. However, in this case the clients in the *New Westminster control group* and the *Surrey treatment group* experienced increased LOSs over the post-intake period, whereas the *New Westminster treatment group* and the *Surrey control group* LOS rates remained

relatively stable and lower (see Figure 9). Here again, the results for the New Westminster site support the hypothesis that ACM is effective in reducing, or keeping LOS rates low. The finding which is contradictory to the desired outcomes of an ACM intervention is that the Surrey control group was, in fact, the “better” group to be in, in terms of low client LOS. Fortunately, due to the fact that a number of different qualitative data sources are available that suggest the existence of site differences with regard to the implementation of the ACM model/philosophy, these results are rendered more intelligible.

The preceding interpretations of the NADM and LOS findings are validated by testimonials from the “key informant” interviews as well as by the results of the ACM staff questionnaires. These sources have indicated that there were at least two very important differences between the two study sites. The first site difference was that the caregivers had varying clinical abilities that could have led to qualitatively different levels of client care. The second, and in my judgement the most important site difference, was that the *administration and implementation* of the ACM model differed greatly between the two sites. This second site difference reflects the apparent lack of robustness of the ACM model to variations in the quality and adherence of its intervention philosophy (model fidelity). The Surrey site experienced program implementation difficulties due to a high level of MHC staff resistance to the “imposition” of the AOP (AOP, 1989-1992; Kline, 1996; Lee, 1996; MacInnis, 1996).

5.42 AOP Post-Intake “Quality of Life” Findings

There were no statistically significant QOLC findings. The implication is, therefore, that there was no change in the AOP clients’ quality of life, as measured by the QOLC inventory. However, this interpretation must be made with caution as the QOLC employed a scale of one to three (i.e., “bad”, “ok”, “good”) and may suffer from a restricted range. The consequence of this is that the scale may not provide much variance across data collection periods.

This QOLC finding was not surprising because, although one hopes for improvement, just the fact that the clients’ quality of life did not worsen is a positive outcome for seriously mentally ill persons. An additional consideration here is that several of the interviewees reported that the AOP research component might have suffered from a “duration” effect (Lee, 1996; MacInnis, 1996). If this were the case, then perhaps the study period was not sufficiently long to allow potential changes in the clients’ quality of life to be measured. A follow-up study could attempt to inform this issue further.

5.43 AOP Post-Intake “Community Living” Findings

No statistically significant results were found at the second level of analysis for the INADM variable. The ILOS variable analysis resulted in a significant “time” main effect. Although a time effect was anticipated in the form of an interaction with one or more of the independent variables (group and site), a time main effect simply suggests that, for the ILOS variable, a change(s) over time occurred beyond the generally accepted

limits of chance. This level/amount of information (which collapses the study groups and sites into one) is of little value in terms of understanding or evaluating the AOP program.

5.44 Direct Policy and Planning Implications

It is very important to note the policy and planning implications of these findings. At the British Columbia mental health services policy level, more program information is needed before any definitive conclusions can be drawn about the relative merit of the AOP. However, this is not to say that further interventions employing ACM should not be planned for mentally ill population in British Columbia. To the contrary, there is a substantial literature which supports the use of the ACM model as a vehicle for delivering services to the most seriously and persistently mentally ill, and in my judgement this alone provides sufficient justification for the continued use of ACM techniques. One of the key lessons that can be drawn from the two year AOP study experience is the importance of informing policy decisions through a well-structured research and evaluation programme.

The AOP study provides another lesson with regard to *public* policy involving *humans*. It is very important to incorporate an inherent flexibility into mental health service policy structures in order for those policies to be able to facilitate systemic changes as they become necessary. This flexibility necessitates a willingness on the part of decision-makers to accept the risks that accompany making changes to the system. These changes should be informed through a well-implemented, on-going, program monitoring and evaluation strategy. Finally, mental health policy decisions must include

an emphasis on creating a service delivery environment that encourages the development of a comprehensive and well-integrated service system. This can only be accomplished when all of the existing (as well as the planned) service components have been identified and understood in terms of how they relate to one another and how effective they are in serving the needs of the client.

The AOP study also informs the program planning perspective in several ways. First, the results of my research clearly support the need for planners to address program (and program research) implementation issues. For example, the perceived inequities of implementing a low-caseload ACM program alongside a very high-caseload MHC service illustrated the importance of attending to the inherent human sensitivities, be they the caregivers’ or the clients’, of any social program.

Attention to the program environment, and how that environment might be impacted by the implementation of a new program is very important. This includes attending to geographic differences (urban versus rural), the availability of core services (such as the crisis beds), and the relative qualifications of the personnel involved in service provision. The program environment naturally also includes: the political context, fiscal constraints, and other programs which may impact - or be impacted by - a new program. These issues must be understood and considered in the program planning process.

5.45 Summary

The findings from the statistical data analyses of my research indicated that there were factors extraneous to the AOP study that confounded the interpretability of the pre-post intake data. However, the results of the post-intake data analyses implied that important program implementation differences existed between the study sites. These site differences are amongst the issues still to be discussed in the next section where I describe each of the “rival hypotheses” that I have developed.

5.5 AOP Rival Hypotheses: Attempting to “Explain” the Unexplained

The hypotheses presented in this section have been formulated by me in two ways. First, through my consideration of the methodological constraints of the original AOP research. Second by conducting a thorough analysis of the AOP’s policy and operational environments. This included several personal interviews and a review of existing archival data.

5.51 Rival Hypothesis 1

*ACM does not have the expected impact on
mental health care delivery.*

This is the null hypothesis of the assumption that ACM works as a model of mental health care delivery. Although there were some statistically significant post-intake program effects (discussed in section 5.31), the results of the analyses of the pre-post study hospitalisation data indicated that something other than the program was

affecting both the control and treatment groups in a similar fashion. That is, the NADM and LOS rates for both study groups were markedly reduced in the first period post-intake into the AOP study (see Table 11 and Figures 2 through 5). It is therefore inappropriate to make any comment with regard to possible incremental program effects. This also leaves open the question “How effective was the ACM intervention in this specific context?”.

5.52 Rival Hypothesis 2

Competing programs are as effective, more effective, or effective in concert with ACM in maintaining seriously mentally ill clients in the community.

A variety of sources have substantiated that the periods just prior, during, and after the AOP study were times in which a number of other mental health programs¹¹ were implemented that could have impacted the potential (relative) effectiveness of the AOP (see sub-section 5.11). These programs are documented to have, either directly or indirectly, served the seriously mentally ill population in the AOP study catchment areas. Consequently, it was quite possible for these programs to have been:

¹¹ Of these programs it appears that those offering housing and/or some form of outreach and skills training may have had the most impact (e.g., the Riverview Bridging program and community outreach workers attached to clubhouses).

- (1) as effective as the ACM treatment component - treating mostly the control population (making it difficult to ascertain differential incremental effects between control and treatment groups),
- (2) more effective than the ACM treatment, thereby eliminating any measurable treatment effects, or
- (3) effective in a compatible, complementary manner with the ACM treatment whereby an interaction of service deliveries in some way helped maintain both the control and the treatment groups in the community relatively well.

As mentioned, these impacts could have been direct (in terms of actual client contact) or indirect. Indirect impacts could have included such things as improved services to other, less severely mentally ill, persons thereby lightening the MHC staff caseloads and freeing up resources that could have been used for the more needy (AOP) clients. MHC staff also could have been increasing the services to the control group clients in an attempt to compensate for the “inequitable” treatment ACM clients were receiving.

Additionally, the AOP study utilisation data indicated that the crisis bed facility was relatively heavily used by the New Westminster MHC/AOP staff when compared with the Surrey site although both sites were technically in the specified crisis bed service area. This quite possibly led to differences between the AOP study sites and groups. An obvious explanation for these differences in crisis bed utilisation is that the geographic location of the south Surrey site is a considerable distance from the crisis bed facility and consequently is not a practical service delivery solution for a client who is decompensating. Other explanations for the disparate utilisation of the crisis bed facility

are: (1) that the Surrey client population is inherently more stable (older and less transient) population and is more likely to have community support (e.g., family, friends) (Miller, 1996); (2) that the general population (including police, landlords) are less likely to report/attend any “socially inappropriate” behaviours which might manifest themselves when a seriously mentally ill person is in crisis (Van der Leer, 1996); or (3) that the Surrey MHC staff were clinically more competent and therefore able to deal with crises more effectively without resorting to alternative tertiary care programs or facilities (Kline, 1996).

5.53 Rival Hypothesis 3

Recidivism rates dropped dramatically for both the control and treatment groups due to difficulties in being re-admitted to tertiary-level psychiatric care.

Both Riverview Hospital and mental health contacts have indicated that the Hospital has increasingly tightened its admission criteria whilst *simultaneously* increasing client discharges (by reducing clients’ LOS) into the community *and* effecting permanent bed/ward closures (due to the downsizing mandate). Documentation from the AOP study files indicated that compounding these problems were the related facts that (1) acute care psychiatry beds were being blocked (extended LOSs due to the severity of illness in the current population and also due to increased new admissions), and (2)

waitlists were longer due, perhaps in part, to an increasing, younger, and more complex (often dually-diagnosed) client population.

Although a consideration, the fact that the psychiatric crisis beds in New Westminster were not included in the calculation of the hospitalisation variables should not have significantly altered the outcomes of the data analyses, as the utilisation of the crisis beds was relatively low and localised (see Table 6).

5.54 Rival Hypothesis 4

Recidivism rates dropped dramatically for both the control and treatment groups because clients were stabilised before intake into the AOP study by virtue of having recently been discharged from hospital.

This rival hypothesis is very logical and somewhat plausible. It also fits well with the timing of some of the other systemic factors which have been documented to have impacted the mental health service delivery system in the first year or so of the AOP study (e.g., increased funding, staffing, programs, services). However, the AOP clients were *not* all taken into the program directly upon being discharged from Riverview Hospital. In fact, as the AOP intake period lasted for over 14 months, a great number of clients who were already resident in the community were identified and recruited from MHC records. As some of these clients on discharge to the community may not have received adequate MHC services for a variety of reasons, including the relative lack of

attention MHC staff gave to seriously mentally ill clients (MacInnis, 1996), they were quite possibly unstable by the time they were identified, found, and recruited into the AOP.

Additionally, many clients who had been identified as being seriously mentally ill and who were already living in the community, were not being actively supported in the community by the MHCs. The evidence from the interview data suggests that those clients needing services the most were, in many cases, not receiving those services (Lee, 1996; MacInnis, 1996).

5.55 Rival Hypothesis 5

The AOP study control group was not a true control group.

This rival hypothesis is plausible for several methodological as well as “anecdotal” reasons. Methodologically, there *could* have been a form of sampling bias. This is due to the fact that the alteration of the MHC staff caseloads, through the removal of some of their most resource intensive clients into the AOP treatment group, would have meant that the remaining MHC caseloads at the two sites would not have been as representative of “regular” or “normal” aftercare service at other MHCs in the region (Miller, 1996). The reduction in numbers of MHC clients in this scenario may have been minimal, however the reduction in resource use could have had an important impact on the remaining clients (especially the control group who were judged as being most in need of services). A reasonable, although not perfect alternative could have been to

recruit control group clients from other MHCs who were similar to the experimental group sites. However, this alternative presents equally problematic methodological issues, for example, the non-equivalence (leading to non-comparability) of sites.

Other interview data do not lend their full support to this hypothesis. Although this hypothesis was accepted as *potentially* valid, Lee (1996) and MacInnis (1996) emphatically stated that, in their opinion, the majority of the AOP study control clients were *not* receiving adequate MHC services at the time of their entry into the program as the MHC staff typically did not work much with the most seriously and persistently ill clients. However, once the program began, Lee (1996) and MacInnis (1996) also reported that a great deal of rivalry between the MHC staff and the ACM staff may have led to the MHC staff attending to the control clients more than they had prior to the program being implemented. Although unintentional, this outcome could be interpreted as a positive program effect.

Clients could possibly also have been attended to more by MHC staff due to (1) lighter staff case load because of the transfer of treatment group clients, or because of the increased staffing and services available in the community, (2) staff competition, politics, and/or (3) an increased emphasis on practices which reflected a more “assertive” philosophy in all the MHCs at this period in time.

5.56 Rival Hypothesis 6

*Poor pre-study living conditions likely
contributed to client decompensation and*

consequent hospitalisation. Post-study living conditions improved for both groups due to the increases in funding directed specifically at the community mental health system (and perhaps directly or indirectly the AOP). These systemic changes led to better client living conditions and, consequently, to lower recidivism rates.

Unfortunately, although there are well-documented data on client living conditions for the AOP study period, there is no such information for the pre-study period. An answer to this question could help corroborate other indicators that pointed to improvements within the mental health delivery system improvements that were occurring at that time.

5.57 Rival Hypotheses - Summary

The rival hypotheses discussed above are all to varying degrees plausible and in most cases at least partially substantiated by the anecdotal and archival information available to me. My best speculative attempt at the “reality” of the AOP study resulted in the following proposition: that the “true” story is probably an “amalgam” of these six rival hypotheses, combined perhaps with aspects of my four original research hypotheses.

This may not be a very satisfying solution but it is the best version of the “truth” that I am able to construct, based on the information from people who were directly involved in

various aspects of the AOP. This “truth” does, however, indicate the complexity of conducting research and evaluation in the mental health field. My research is also important because of its implications for future research and evaluation practices. I discuss these implications in Chapter 6 in terms of their relevance to mental health policy, program planning, and evaluation research.

Chapter 6

Research and Policy Implications of the AOP Study

6.0 Introduction

In the case of my research the intended economic evaluation was not conducted. The alternative, a methodological assessment of the AOP research component based upon the results of my data analyses, is the focus of this chapter. This assessment documents the need for researchers in mental health to attend to, and find alternative solutions for, many of the problems inherent in conducting experimental social scientific field research.

It is important to note that this assessment necessarily represents my somewhat restricted perspective of the AOP. This is because my research focused largely on specific program outcome questions and was therefore based on a subset of the total available AOP research data. The AOP database and archives contain a large amount of information relevant to program “process” questions and which were beyond the scope of my investigation.

I begin this discussion with a basic outline of the methodological “evolution” within the field of program evaluation, paying particular attention to the practical aspects of the implementation of applied social scientific experiments. This discussion includes highlights of a selection of influential (U.S.) social experiments and some of their

contributions to program evaluation. Finally, I conclude the first section by providing a Canadian case study in which I compare and contrast the results of my AOP research with those of the Manitoba Basic Annual Income Experiment (MINCOME).

In section 6.2, I continue with a precis of a sample of the pertinent mental health program policy and planning literature to provide a context for, and corroboration of, the implications of my research. This is followed by a synthesis of both the mental health evaluation research and policy “lessons” which can be drawn from my research (section 6.3) and a conclusion (section 6.4).

6.1 Evaluation Research Implications: Experiments versus Experience

The results of my AOP research described above have important methodological implications for the evaluation of mental health programs as well as for research in the social sciences generally. The specific methodological issues which arose from my research of the AOP have been discussed in earlier chapters. I will focus here on some of the important mental health evaluation research issues which the literature, and the results of my research can inform.

6.11 Social Science Research in *Human* Environments

In this subsection I will outline some of the advantages and disadvantages to conducting social scientific research in non-laboratory environments. I base this discussion on a brief survey of the literature from the mid-1970s onward. From this

literature I have selected a series of research and review articles that, taken together, describe the methodological “evolution” of North American program evaluation. This evolution has, not surprisingly, emulated (or grown out of) the dominant methodological paradigm of the social sciences (i.e., the experimental method). My account highlights and corroborates specific methodological issues that were also implicated by my research. However, this is not meant to be an exhaustive historical and/or methodological review of the evaluation literature and therefore excludes many important contributors to the field.

Some evaluation researchers have adhered to the earlier belief espoused by Campbell (1969) and Cook and Campbell (1979) that program evaluation designs which employ the techniques of social scientific experimentation in non-laboratory settings is viable, valid, relevant, and timely. These researchers appeared to suggest that the various objections to the use of empirical methods in the social sciences were unfounded (Berk, Boruch, Chambers, Rossi, & Witte, 1986) (see, for example, the more recent work by Guba & Lincoln, 1989 for these “objections”). Berk et al. cited examples of evaluation research in an attempt to refute the ideas that experiments are unethical, too costly, too time consuming, incompatible with the political environment, and do not produce worthwhile knowledge products. Although Berk, et al. admitted that the implementation of “meaningful experiments” has proven to be harder than anticipated, they stated that a “commitment to an experimental *philosophy*...[and] a commitment to the experimental *method* would allow *factual* questions about the impact of the social reforms to be addressed within the best scientific traditions” (Berk, et al., 1986, p. 631, emphasis in

original). Freeman (1977) also acknowledged the limitations of employing experimental methods in applied settings. Nevertheless, he too, strongly advocated their continued use and suggested that improvements in their technical sophistication and rigour would help to solve their implementation problems.

As long as the evaluation research question is strictly one of program impacts *and* these impacts can be specified in terms of measurable outcomes, then the above positions are perhaps reasonable. However, even Campbell (1984) has considerably “softened” his stance on the exclusive use of experimental methods in non-laboratory settings. Campbell stated that:

We can be somewhat more scientific than we are now or have been....[but] if we present our resulting improved truth claims as though they were definitive achievements comparable to those in the physical sciences, and thus deserving to override ordinary wisdom when they disagree, we can be socially destructive (p. 26).

Campbell went on to describe the evolution of his own work as a methodologist and ended by stating that his is an “*unfinished and inadequately formalized*” methodological problem (p. 44, emphasis added). He suggested that if valid applied social science is possible then it requires an adequate social theory to drive it; if it is not possible then the “pseudo-science in which we inadvertently find ourselves engaged” must be denounced (p. 44). In my judgement, questions such as “Which are the most appropriate methodological tools in social program evaluation?” should involve judgements of the

relative merit of alternative methods in view of specific research questions, rather than an adherence to a particular paradigm.

By the mid-1980s several authors appeared to agree with my view (Lipsey, Crosse, Dunkle, Pollard, & Stobart, 1986; McLaughlin, 1987). In spite of the fact that the experimental paradigm was the dominant methodological approach to program evaluation research, the lesson that Lipsey et al. drew from their study of the published program evaluation literature was:

The experimental paradigm is not an all-purpose program evaluation methodology. Research under that paradigm requires special circumstances, resources, skills, and a time frame that permits appropriate attention to the details of design, measurement, treatment implementation, and program theory” (p. 171).

Lipsey et al. continued by stating that historically, *the results of even the most carefully conducted social intervention experiments*, such as the negative income tax experiments, *required extensive post-hoc probing, criticism, and amending by the research community prior to their validation*. In section 6.12 below I present an example of such an experiment in a Canadian setting.

Lipsey et al. (1987) stated that they were not in principle against the use of experiments in applied social settings, only that the research question should drive the choice of methodological paradigm. They suggested some alternatives such as program monitoring and information systems approaches, as well as naturalistic observation and survey techniques.

McLaughlin (1987) determined that, as a result of experience with social program implementation issues, the dominant experimental paradigm is only one, very limited, way of conceiving the evaluation task. This is because the *context* “in which social programs are implemented is *fluid, unstable, complex, and often unpredictable*” (McLaughlin, 1987, p.94, emphasis added). Consequently, McLaughlin maintained that the dominant hypothetico-deductive model of social program evaluation is largely inappropriate because it is based upon:

- (1) An assumption of clearly specifiable program goals, parameters, and criteria of success; and
- (2) a correlational model of static “inputs” and of “outputs” that are represented as estimates of treatment effect, framed in unidimensional terms, and usually excluding contextual and/or process factors.

I would add to this the fact that not all program evaluation questions are of the sort that can be adequately or usefully informed through the statistical aggregation of data.

McLaughlin went on to state that:

Implementation realities have important implications for evaluation both as a mode of inquiry and as a strategy to promote organizational learning, program improvement, or even accountability. Experience with the process of change and social program implementation suggests fundamental rethinking of evaluation design and conduct in five major areas: (1) evaluation objectives, (2) unit of analysis, (3) outcome

measures, (4) differentiation of evaluation strategies, and (5) concepts of use (p. 82).

For a more in-depth discussion of these issues see McLaughlin (1987).

In my judgement, because the context in which social programs are implemented is complex and dynamic, the important message pertinent to my discussion here is that evaluation efforts must move beyond the static conceptions of experimental methods. These efforts must attempt to generate and integrate qualitatively different program “facts” having to do with the institutional, contextual, and social aspects of programs. This assertion has been corroborated by the findings of my research of the AOP. Fortunately, the appropriate data and documentary information that extend beyond the outcome data analysed in my research, were collected as part of the larger AOP research component (e.g., nurse-client contact logs, family interviews, police contact information). The availability of this “process” information will be vital for future investigations that are interested in providing research findings which could inform public policy decisions and program planning in mental health.

Social reform programs have been popular in North America since the 1960s. Efforts to understand these programs that were generated by the Great Society’s social policies led to the “birth” of program evaluation as a distinct enterprise. As evaluators consisted largely of researchers from social scientific disciplines such as education, psychology, and economics, it was natural that their theoretical and methodological perspectives reflected the experimental paradigm which was prevalent at the time. Social programs could be found in many areas (e.g., health, law, education) and many of these

programs were evaluated. Lipsey et al. (1986) reported that by 1975 several hundred federally sponsored evaluation studies had been reviewed. However, most of these were found to be “deficient in either design, sampling, or validity of measures” (Lipsey et al., 1986, p.153-154).

Mental health programs began to receive more attention in terms of funding and research as policy-makers became increasingly aware of the fact that their “deinstitutionalisation” policies of the mid-1950s were actually having the effect of being “trans-institutionalisation” policies. This “trans-institutionalisation” had the effect of deferring the problem of mental health service delivery to other, usually less appropriate and/or inadequate service providers (e.g., the justice system, geriatric facilities). The disastrous impacts on the lives of psychiatric clients as well as on the social programs burdened with the additional responsibilities of caring for them led to increased evaluative efforts - especially of alternative community mental health programs.

In 1977 Ciarlo wrote that “the routine use of statistical data about clients and treatment process information in mental health program planning and decision-making is still a relatively rare phenomenon” (p. 648). Almost a decade later Finney and Moos (1986) stated:

Until recently, a client input -- “black box” treatment -- client outcome paradigm guided many evaluations of mental health [programs]....this approach systematically minimized the role of environmental factors....[used as the only outcome measure] the treatment variable often was found to exert only a weak influence on posttreatment client

functioning....relatively little was learned in such evaluations about either the treatment program or the underlying problem to which it was directed” (p. 564).

By the middle 1980s, evaluators in mental health were attempting to get into the “black box”. This involved paying more attention to program implementation, treatment processes, the impact of treatment delivery on sub-groups of clients, and extra environmental factors (Finney & Moos, 1986). Evaluators in general may have criticised the discipline for failing to assess treatment/program implementation as far back as the middle to late 1970s (Finney & Moos, 1986). However, evaluators in mental health are only now beginning to develop measures in community mental health for the assessment of program “fidelity” or the integrity of (adherence to), a particular model of psychiatric intervention (Bond, 1996; McGrew, Bond, Dietzen & Salyers, 1994; McGrew, Wilson, & Bond, 1996; Teague, Drake, & Ackerson, 1995). A recent meta-analysis of randomised trials of ACM programs indicated the increasing popularity and attention paid to this form of evaluation in mental health (Burns, & Santos, 1995).

Another anecdotal indicator that mental health researchers are still in the early stages of struggling with the development of new methods is found in the *Introduction to the Special Section on Seeking New Methods in Mental Health Services Research* by Newman, Howard, Windle, and Hohmann (1994). Newman et al. explained that “experience during the past decade suggests that the goals and study conditions of mental health services research require special methods” (p. 667). They went on to invite

colleagues to join them in developing these methods, including alternatives to traditional research design.

Two areas of social scientific interest have historically had some success in applying experimental designs to non-laboratory settings. First, in education, the Perry Preschool Project and a number of national programs incorporated under the Head Start initiative were considered exemplary of well-designed and implemented social experiments. Second, the public welfare research involving the negative income tax (NIT) experiments are still cited today by those interested in the impacts of alternative public welfare programs¹².

The Perry Preschool Project (PPP) was designed as a classical experiment very similar in design and sample size to the AOP. The following is summarised from Barnett (1992) who conducted a meta-analysis of compensatory preschool education and employed the PPP as an example. The PPP began in 1962 and continued through the 1980s. The PPP’s basic research question asked whether a preschool education program could improve the school success of African American children. The PPP’s research design employed random assignment, intake over time, and time series data were collected on a number of measures. The attrition rate from intake through age 19, for the original sample of 128 children, was five due to death.

Although early positive program effects on IQ scores of the treatment group disappeared, significant positive long-term increases in achievement test performance

¹² Other authors also support the use of experimental designs in the evaluation of social programs (e.g., Boardman, Greenberg, Vining, & Weimer, 1996; Burtless & Orr, 1986; Manning, Newhouse, Duan, Keeler, Leibowitz & Marquis, 1987).

were found. Other positive outcomes were found on indicators such as “economic success” and “social adjustment”. Having established the existence of substantive long-term effects a benefit-cost analysis was conducted. The results of the economic analysis indicated that, even after a sensitivity analysis was performed, the net present value of the program remained positive. Various methodological issues were discussed by Barnett (1992) including potential rival hypotheses, sampling biases, and the problem of the research’s relevance 30 years after its inception. One interesting footnote is that a case study component was built into the research design. This allowed researchers to report on the environmental, attitudinal and other information relevant to providing a more comprehensive understanding of the PPP’s statistical and economic findings (Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984).

In my judgement, the PPP is important because of its obvious similarities to the AOP. The apparent success of the PPP validates the AOP’s use of an experimental framework and its concomitant incorporation of multiple information sources into the data collection protocols. Unfortunately, due to environmental contamination, my research of the AOP could not establish the existence of clear program effects (i.e., the pre-post hospitalisation data analysis).

The original NIT experiment began in New Jersey. Notable replications of this experiment occurred in Gary, Indiana and in Seattle-Denver (Haveman & Watts, 1976). The most commonly cited, the New Jersey experiment also shared similarities with the AOP. It was constrained by budgetary considerations, geographic locations (results were exposed to site biases), administrative procedures (potentially creating group and/or site

differences), environmental noise, and public policy changes (the introduction of competing programs) (Rossi & Lyall, 1979). The New Jersey NIT was lauded by some as an overall success (Boruch, 1976; Rossi & Lyall, 1979). In their view the “major achievement of the NIT Experiment was to demonstrate that it was possible to carry out a complicated field experiment...this accomplishment excites admiration” (Rossi & Lyall, 1979, p. 425). However, in the next breath Rossi and Lyall stated that the New Jersey NIT suffered from major methodological flaws that made “it impossible to extrapolate from findings to any reasonable universe of the poor who might be the object of welfare reform...and the findings themselves, ignoring the design defects, are frustratingly inconclusive, even for the restricted sample examined (Rossi & Lyall, p. 426). It seems to me that, overall, this was not the best “report card”.

Rossi and Lyall (1979) pointed out that, from their experience of the NIT, among the most important factors contributing to the success of an evaluation employing an experimental design, is that it is well-timed in terms of informing political debate. Fortunately, if this assertion holds true then my research of the AOP will be very well-timed as the current debate on mental health issues is very strong in British Columbia (The Vancouver Province, 1995).

6.12 The AOP Experiment versus the Manitoba Basic Annual Income Experiment - A Comparative Methodological Case Study

The Manitoba Basic Annual Income Experiment was a Canadian version of the New Jersey Negative Income Tax experiment. It was designed to evaluate the economic

and social consequences of a guaranteed annual income program based on the concept of negative income tax (NIT) (Hum, Laub, & Powell, 1979). The experiment was jointly funded by the governments of Canada and Manitoba to examine the effects of labour supply behaviour on a sample of families and individuals in Manitoba. First, I provide a summary of the reasons for this case study comparison. Second, I discuss those aspects of the MINCOME and AOP experiments which are most salient to the present methodological discussion.

There are several reasons for presenting this comparative case study. First, the MINCOME experiment was very similar to the AOP experiment in several ways. It took place in Canada, employed multiple sites, was a social experiment, was interested in assessing behaviour change in people, and was concerned with incremental program effects. MINCOME also suffered from serious practical and methodological constraints due in part to its design limitations. Second, the MINCOME literature has a lengthy history that extends into the present, a fact which indicates that many of the methodological issues raised in the original MINCOME reports are still of interest or are unresolved (cf., Hum & Simpson, 1993). Third, a comparison of the MINCOME and the AOP studies provides a cogent argument for the proposition that experimental methods are restricted in their ability to measure “real” human phenomena (as opposed to human phenomena studied in the laboratory). I propose that this is in part due to the inability of experimental techniques to produce anything more than a specific type of “factual”¹³

¹³ It is important here to note that qualitatively different “facts” can result from different analyses of the same research environment. Statistical facts can be very different from anecdotal or narrative facts. For example, it is statistically factual that, as a pedestrian in British Columbia, the chance of being injured or killed by a motor vehicle in 1994 was approximately one in 1313 (Department of Motor Vehicles, 1995). However, this “fact” does

information which is quite limited in its scope (and therefore in its relevance to the human experience). There is also considerable evidence that suggests that social experiments are difficult to implement successfully - another reason why they have a very limited value in the area of social research. Other problems in conducting social experiments have to do with the assumptions upon which statistical analyses are based; for example, the assumption that the data are linear, or the relative (in)appropriateness of employing aggregated data in various situations. Consequently, a comparison of the MINCOME and AOP experiments is especially valuable in terms of the methodological lessons which can be taken from them.

Upon conducting a survey of the technical reports which formed the basis for the MINCOME reporting mechanism as well as some of the more recent literature, I compared the MINCOME and the AOP experiments on the basis of their experimental design structure and their methodological advantages and/or disadvantages. Table 16 presents a simple overview of this comparison.

not help or console the one in 1313 individual who was injured or killed.

A more qualitative analysis, which would take into account the larger context of “how to be or not to be a pedestrian hit by a motor vehicle in British Columbia”, could provide a very necessary “factual” perspective of a descriptive sort. This type of information could enlighten all the future “one in 1313” people and prevent them from being injured or killed (perhaps thereby altering the *statistical fact* in this example that $p < .0013!$).

Table 19: Comparison of the MINCOME and AOP Experiments’ Basic Experimental Design Structures

Type of Basic Design Structure	MINCOME	AOP
Experimental Treatment / Control groups	✓	✓
Random sampling / Random assignment	✗	✓
Heterogeneous sample / Multiple sites	✓	✓
Experimental “rigour” (high, med.. low)*	low	high
Budget constraints (high, med.. low)*	med.	med.
Program implementation issues Environmental confounds	✓	✓
Response rates (high, med.. low)*	med.	high
Attrition rates (high, med.. low)*	high	low
Statistically significant effects	✓	✓

* My judgement.

The research designs for both the MINCOME and the AOP studies were apparently very carefully constructed. However, as with most attempts at generating social scientific knowledge in human contexts, implementing true experimental designs and procedures can be problematic. In this sense both studies can be said to have limitations at varying levels, and to varying degrees of severity.

6.13 “Inside the AOP and the MINCOME Experiments”

Internally, the AOP study provided an excellent example of how an experimental design can be constructed and implemented in a viable manner, in the field *and* employing human participants. One can find very little to fault in terms of variable selection, data collection, reliability issues, and other basic design issues. Although it

was a true experiment in terms of it having employed treatment and control groups who, within sites, were randomly assigned to conditions, the AOP study had at least one potentially important design limitation. This limitation was that both the MHC staff and the ACM staff had to work out of the same locations and, more importantly, the control group clients were taken from the *same sites* as the treatment group clients. The alternative to this design configuration would have been to have the control group located at one site and the treatment at another. However, as mentioned earlier, this solution is just as unsatisfactory in terms of the potential for site non-comparability.

Thus the potential situation was created for the control group to receive a higher degree/quality of intervention (i.e., not representative of “regular” MHC service delivery) based upon the change in MHC caseloads (a resource reallocation issue). That this supposition might be true was indicated through key informant interviews (see subsections 6.22 and 6.23). The decision not to have the control group and treatment group clients at separate, but similar, sites possibly resulted in the control group data being partially confounded (see section 6.35). A separation by site might also have reduced some of the staff resentments and tensions surrounding the AOP study thereby also lessening the possibility of fluctuations in the quality of service delivery to control clients. Unfortunately, compromised design decisions such as these are required in applied research.

The MINCOME experiment should, in my judgement, actually have been described (at best) as a quasi-experiment. This is because it was a relatively weak example of an experimental design. It is understandable that it was difficult or in some

manner illogical in this case to randomly select or assign a sample of study participants from a larger population when dealing with human situations and problems.

Consequently it may have been reasonable for the MINCOME researchers to have selected their sample by using a formal assignment model technique. The use of this technique was based upon explicitly stated assumptions in the selection and “assignment” of participants. Its use facilitated the researchers’ need to accommodate budgetary constraints as well as a complex design involving multiple treatments, multiple sites, and multiple types of sample sub-populations (Hum, Laub, Metcalf, & Sabourin, 1979). Although MINCOME had “treatment” and “control” groups, they were matched on very few indicators and *were not randomly selected or assigned*. It was therefore quite possible that the sample populations varied on dimensions that were not identified or considered which in turn may have seriously affected the validity of the findings.

Researchers have published literature documenting the fact that the MINCOME study also suffered from other internal methodological flaws. These included: sample selection bias in the form of differential, non-random study attrition; difficulties in determining (through analyses) whether or not even the statistically significant experimental effects were in reality large; and concerns with regard to biases due to the relatively short duration of the study (Hum & Simpson, 1993). Kurz (1979), a researcher hired by MINCOME to evaluate their study, added to this list: sample self-selection bias that led to concerns over the validity of the study, and problems with small sample sizes that impacted the reliability of the research findings.

The AOP, in comparison, employed random assignment to conditions and was fortunate to have had very low attrition rates (e.g., only five clients died, $n = 123$), which virtually eliminated many of the concerns mentioned here.

6.14 “Outside the AOP and the MINCOME Experiments”

Human environments are inherently complex, dynamic, evolving, political, and charged with a variety of individual and group value systems. Much of the social scientific research of this century has been based upon a methodology that is relatively simple, linear, reductionist, positivist, and reliant upon the strict control of the experimental conditions/context. Perhaps, then, it is not so difficult to understand why even one of the (internally) “cleanest” examples of a “true” experiment in Canadian mental health evaluation - the AOP study - fell short of being able to provide definitive conclusions (or even weak inferences) about the incremental effects of the ACM program or its relative economic viability as compared to the existing service delivery system. Not coincidentally, it may also be understandable why the MINCOME study received a mixed methodological “report card” when evaluated (Kurz, 1979), or when discussed in later comparisons with other NIT studies (Hum & Simpson, 1993).

After reviewing what appeared to be the most important aspects of the MINCOME and AOP studies which led to their experiencing certain methodological difficulties, I discovered that, of these, most had to do with the *external research environment*. First, the fact that both studies (albeit for different reasons) employed multiple sites in their designs, led to difficulties in interpreting the research results. One

of the main reasons for this (and also an important drawback in the use of multiple sites) was a variety of site differences documented by both studies (e.g., discrepancies in clinical proficiency, in the case of the AOP).

Second, at the political and individual (interpersonal) levels, the dynamics of both studies’ environments were so complex that various strategic, and potentially confounding implementation obstacles were created. In the case of MINCOME political problems occurred because of the numerous political entities that had varying degrees of authority over the research, design, implementation, and operation of the study (Kurz, 1979). The AOP was also impacted by external and internal political and administrative changes implemented at the time the AOP study began. Individual tensions between the MHC staff and the ACM staff also contributed to the potential confounding of the program results.

Third, the ability of the researchers of both the AOP and MINCOME programs to accurately discern any incremental program effects from the results of their analyses was hampered by the existence of “competing” programs. These programs (or other simultaneous contextual events such as the large influx of money into the system in the case of the AOP) were likely, directly or indirectly, to have been responsible for masking potential program effects. The main “competing program” for the MINCOME study appeared to be the existence of the “positive income tax” environment within which the NIT program had to try to operate. A detailed account of the various possible environmental confounds in the AOP study have been discussed in Chapter 5.

6.2 Policy/Planning Implications

My research also has important implications at the levels of mental health service delivery policy and planning. These implications involve the system’s restructuring in terms of administration, program development, and the locus of mental health service delivery. Stakeholders need to continue to adjust their attitudes and beliefs with regard to what constitutes a good mental health service delivery system, as well as how they perceive their role within that system.

The results of my research also strongly suggest that program evaluation should play a stronger and more active role in the restructuring of the mental health service delivery system. However, it is clear from the literature that efforts need to be made to improve the design and implementation of program evaluations in order for their products to be of more substantial value in terms of the quality and relevance of the information provided to program staff and administrators. In the mental health arena, these efforts should include the collection of program implementation and process information from multiple sources and with the use of multiple techniques (e.g., survey, interview), in addition to statistical data. Researchers cannot hope to alter or to control the larger evaluation or program contexts (which is to some degree what research based upon experimental methods attempts to do). Consequently, it is necessary to develop a greater contextual sensitivity in order to understand the environment, no matter what investigative methods are deemed appropriate. Only in this way can many of the methodological and interpretive pitfalls be avoided.

6.3 Mental Health Evaluation Research and Policy “Lessons”

The AOP study was a thoughtfully designed and well-implemented social scientific experiment. My dissertation has focussed only on providing an evaluation of specifically delimited *program outcomes* based upon analyses of a subset of the AOP database. The results of my analyses were further informed through various records-based sources, a series of post-hoc interviews, and the preliminary application of a program model fidelity measure. This section will describe the most important lessons that my research provided for mental health evaluators, policy-makers, and program planners. Further analyses of the remainder of the AOP data pertaining to many of the program implementation issues, fidelity of the ACM model, and/or site differences, remain the responsibility of future investigative efforts.

6.31 Recommendation: *New Directions for Mental Health Evaluation*

Although the issue of the incrementality of program effects has been touched upon earlier, it is a topic that requires a more detailed treatment in light of the present research. The best possible outcomes of the AOP analyses would have been in terms of incremental program effects. Although incremental effects are very much an evaluation research reality and can be very important in making policy or program decisions, they are very illusive. In my judgement, *methodological solutions* to the problem of how to determine incremental program effects (a form of causal attribution) *should* vary enormously. These solutions should depend on the researcher’s expertise, environmental

factors, economic constraints, socio-political pressures, and/or the particular choice of evaluation paradigm determined to be appropriate.

For those who are able to successfully practice evaluation within the post-positivist, empiricist, quantitative paradigm, Cook and Campbell (1979) have provided us with a clear, and relatively complete guide to making reasonably accurate decisions regarding the attribution of incremental program effects. In reality, however, we are not a part of Campbell’s utopian “experimenting society”; as has been aptly demonstrated through the unfortunate methodological and paradigmatic shortcomings of the AOP and MINCOME studies.

In reality, social scientific research efforts (including program evaluations) are most often conducted in a confusing, complex environment consisting of interacting and evolving networks of human actions, thoughts, beliefs, and politics - not to speak of the problematic nature of the purely physical contextual phenomena. It is in this reality that incrementality issues are often evaded (i.e., by doing evaluability assessments, needs assessments, program monitoring, and process evaluation) or ignored. However, if a program, especially a publicly funded one, is to have a legitimate societal value, then questions of accountability and therefore of (usually incremental) program effects are unavoidable.

The input-output or “black-box” models of social scientific research that are typical of empirical methods lead to what can be termed “factually” correct statistical knowledge. However, in order to adequately cope with and function within the

complexity of our human world, we require “explanatory” knowledge (or understanding) as well. This kind of knowledge is usually of a descriptive, more qualitative nature.

Were we to attempt to analyse, for example, “tribal hunting behaviour” (based on the a priori assumption that hunting somehow leads to eating) from a quantitative perspective we might be able to establish (using mostly physical measures) statistically significant relationships between the number of individuals beating bushes, the number of bushes beaten, the number of animals running away, and the number of individuals killing animals. By themselves, lacking any contextual information, these findings might be puzzling. What this type of “causal” explanation lacks, therefore, is the ability for us to *understand* the logic of our findings in terms of a more *relevant* research question such as “How is it that these bush-beaters *actually* acquire food to eat?”. What a more flexible approach to attribution of causality or incremental effects could afford us, is the ability to qualitatively understand the social conditions (rules) by which the individuals killing the game share their spoils with those who beat the bushes. Again, both quantitative and qualitative types of knowledge are valuable but *together* they can provide us with much-needed insights into social “programs”, in this case that of tribal hunting.

It is my recommendation that mental health evaluators: (1) consider the aforementioned alternative strategies for conducting their research, (2) focus on allowing the research question(s) to drive the research methods, and (3) strive to inform mental health policy by gaining a “true” (relevant) descriptive understanding of the program being evaluated. This final point must include an assessment of the implementation of the treatment/program. To this end, evaluation research strategies in mental health should be

based upon the use of a multiplicity of investigative methods, that will include experimental information.

6.32 Policy Lessons from the Study of the Riverview/Fraser Valley Assertive Outreach Program (AOP)

In this subsection I will summarise the main policy lessons that can be drawn from my secondary research with a subset of the AOP study data. For each of these lessons I will provide a reference to the preceding text where they have been discussed in more detail. One of the key issues that has run as a thread throughout my research is the continued need to improve mental health service delivery mechanisms. A framework and concomitant philosophy has been suggested to achieve this goal (see subsection 1.33). Part of this systemic improvement process must involve improved research and evaluation techniques. In spite of its shortcomings, the AOP study remains a good example of an effort to combine innovative programming, experimental research, and multiple evaluation techniques within a complex social environment

Lesson 1 - (Section 1.2)

In order to generate appropriate new mental health policies it is necessary to have an understanding of the historical context and evolution of mental health services (and to appreciate the reasons why early deinstitutionalisation policies led to the disastrous consequences of the past four decades). This perspective is valuable in another way as well. It allows us to more fully comprehend the attitudes and prejudices that have

encouraged the stigmatisation and inhumane treatment of persons suffering from serious and persistent mental illness. Armed with such an appreciation, the entire mental health community can take a more active role in providing a caring and supportive community environment for mentally ill persons. This can be accomplished through the education of the general public, the empowerment of consumers and their families, and by setting an example.

Lesson 2 - (Section 1.3)

One of the key policy lessons that can be drawn directly from my research of the AOP study is the need for a system that provides seriously and persistently mentally ill persons with continuity, coordination, and comprehensiveness of service delivery. This point has been repeatedly emphasised in the mental health literature (Bachrach, 1987a; Bachrach, Talbott, & Meyerson, 1987; Mercier & White, 1994; Wasylenki, 1994; and others), and the results of my research substantiate the need for relevant and reliable information to be generated (Chapter 6). The above systemic goals may be achieved through the implementation of mental health system policies that aggressively attempt to integrate the currently isolated services, agencies, and programs. This integration can be accomplished by combining and implementing three key administrative factors.

First, a commitment by the government must be made to make radical systemic changes. Second, this commitment must be merged with a process of inter-agency restructuring, having the goal of facilitating solid linkages between all of the various service delivery mechanisms. This would give clients the freedom to access the specific

form of services that they require at any given time. Third, a comprehensive and viable communication network must be established, based upon research and evaluation, to inform current and guide future policy and planning efforts. Although the commitment appears to exist in British Columbia, the last two components have not been attended to in any significant manner. The existing resources in the system must be understood in terms of (1) what services/programs exist, (2) whom they serve, and (3) how they inter-relate with one another - before they can be expected to be integrated. It is interesting to note that, as the government increasingly removes itself from having direct responsibility for service delivery (with the current movement towards a completely regionalised mental health care system) additional complexities may be introduced that may make these systemic goals even more difficult to realise.

Lesson 3 - (Chapters 6 and 7)

When considering research and evaluation components, policy-makers must provide adequate support in terms of reasonable budgeting and time-lines. In return it is the responsibility of the researcher to generate a contextually relevant and methodologically well-grounded evaluation product. This product should provide information in terms of program implementation and program outcomes. Even with a relatively large budget, the AOP study was still somewhat limited in its ability to create an “ideal” research environment for determining program impacts. However, as my research has determined, it is to the AOP’s credit that a considerable amount of necessary documentary information as well as statistical and economic data are available for future

research into program implementation, planning, and policy issues. In retrospect, I am certain that the AOP research team would do many things differently given a second chance, and in that sense the AOP study provided a rich example from which to learn and improve.

Nevertheless, decisions continue to be made based to some extent on intuitions, prejudices, misconceptions, and personal or political interests. For decision-making to become more enlightened all stakeholders must be willing to risk changing by putting aside their differences and communicating - from the clients and caregivers to the administrators and politicians. This lesson was well-documented in the staff surveys, the post-hoc interviews and the AOP study's archives.

Lesson 4 - (Appendices B & C)

Unfortunately, any economic lessons must be taken from the existing literature, as this portion of my research was not viable. I had hoped to make some methodological improvements upon past efforts (e.g., Weisbrod, 1983) in terms of the estimation of costs and benefits. It also was clear from the available AOP economic data, that the costing of mental health services in such a way as to provide an adequate representation of the true economic impact of the AOP would have been extremely difficult. Although the economic AOP data were complete and unprecedented in several specific domains, as a whole they would have been inadequate for the construction of a thorough benefit-cost analysis.

Lesson 5 - (Chapters 5, 6, and 7)

Another important lesson runs throughout this report concerns the AOP data. It is clear that data must be methodologically and conceptually grounded in order to be defensible. However, it is important that policy-makers or program planners have the ability to understand the limitations of the research findings they use; especially when the findings are based primarily on one paradigm. The interpretation of statistical findings, for example, requires an understanding of the assumptions underlying them. Policy decisions that are made on the basis of one type of “fact” or “truth” will inevitably fail the user. Again, my research involving the AOP outcome data illustrates that a heavy reliance upon one form of information can be disappointing. It is therefore fortunate that the larger AOP information-base included several sources of data for policy-making in an attempt to maximise the possibility of acquiring a legitimate understanding of the program. This lesson is especially true in the field of mental health evaluation.

6.4 Recommendations for Future Policy and Planning in the British Columbia Mental Health System

Most persons in the mental health field agree that the treatment, care, and rehabilitation of persons suffering from serious mental illnesses must be drastically improved. The aggressive de-institutionalization policies which began over forty years ago have left the hallways of psychiatric hospitals echoing with familiar slogans such as “the revolving door syndrome” and “falling between the cracks”. The suffering endured by the seriously mentally ill population in Canada and the United States is poignantly

embodied by the case of Sylvia Frumkin (Moran, Freedman, & Sharfstein, 1984). Tossed back and forth between psychiatric, general, state, and municipal hospitals; six different types of community settings; and her family, Frumkin experienced 45 changes in treatment settings over a period of 18 years. Yet she was one of the lucky ones. Many more persons with serious mental illnesses have little or no family support and are consequently relegated to homelessness, jail, or lodgings not equipped to serve their needs.

As described in section 1.3, the causes for many of the mental health service delivery failures are not attributable to the immediate caregivers so much as they are reflections of *systems failures* (Wasylenki, 1991). Solutions should therefore take the form of structural service delivery system changes, reformulated mental health policy, and an understanding of alternative mental health care philosophies (such as ACM), leading to a wider acceptance of the necessary evolution of the entire service delivery *system*. Most importantly, these *solutions must be driven by client needs* not political agendas. The entire mental health service system must take an active role and assume primary responsibility for clients' treatment, care, *and* rehabilitation. A multi-disciplinary approach anchored in a cooperative, inter-agency network of facilities, programs, and services, managed through the implementation of a Continuous Quality Improvement model, must become the framework for B.C. Mental Health Services.

Many more guiding principles and specific practices have been identified for the successful implementation of these changes (e.g., Bachrach, 1987a; Bachrach, Talbott, & Meyerson, 1987; Talbott, 1988b; Wasylenki, 1991). These principles and practices have

been discussed in subsection 1.33. The proposed changes challenge (1) the fundamental policies that, to some degree, still form the infrastructure of the existing service delivery system, and (2) the traditional philosophies which, for many caregivers and administrators, still provide the basis of their attitudes and practices.

Any attempt at implementing these changes in a partial or incremental way can greatly diffuse their effectiveness. Most importantly, for changes in the system to take place, an acceptance of the *risks* involved in restructuring the system, and a strong *commitment* to radical change must be made beginning at the Minister's level. Such a commitment has, in the past few years begun to be apparent in British Columbia. However, although more changes are needed, *more* programs are not necessarily better if they provide conflicting, overlapping, or unnecessary services; or if they provide services to the wrong target population. It is only through well designed and appropriately implemented evaluation research designs that decision-makers will be able to make well-informed policy and programming choices.

6.5 AOP - Research Conclusions

In theory, if not entirely in practice, the AOP study was an excellent example of field research employing an experimental methodology within a social scientific context. It was exemplary in its attempt to provide a database which was thoroughly and meticulously constructed in spite of the inherent difficulties of doing experimental field research. One of the strengths of the AOP research component was its retention of study participants (see for example Bond, Mc Grew, & Fekete, 1995). Many of the AOP data

were unprecedented in their detail (e.g., the police data and the nurse contact logs) and deserve further consideration beyond the scope of my research.

My intention was to provide an evaluation of the AOP program targeted at four key domains: hospitalisation (recidivism), client quality of life, success in community living, and the cost-effectiveness of the ACM intervention. This information would have been of great value to the mental health service delivery system; providing it with much-needed, well-grounded findings.

Unfortunately, my statistical analyses resulted in certain findings that were contextually confounded. Incremental ACM intervention effects were therefore difficult to interpret. Consequently, I employed my research involving certain portions of the AOP study data as a vehicle for informing mental health policy and planning issues, as well as an instrument for instructing future evaluation research efforts in the field of mental health.

In spite of its apparent limitations, the AOP study data that formed the basis of my research of program outcomes may have been viable in terms of their interpretability if only a few of the methodological issues could have been foreseen and guarded against. The limitations of the AOP research component reflect the limitations of the experimental method when applied in a field setting (i.e., the inability to control the program environment). As it is, the AOP database still has a great deal of potential for providing insights into a variety of aspects of mental health service delivery. Perhaps the most important of these aspects is the information available for an investigation of program implementation (fidelity) issues.

Model fidelity has recently become the focus of research concerned with the evaluation of ACM interventions (e.g., Essock & Kontos, 1995; McGrew et al., 1994; Teague et al., 1995). The evidence from these studies suggests that ACM interventions can suffer from a lack of robustness in terms of program implementation and site differences. These findings are further corroborated by the exploratory post-hoc interviews conducted by me in my research of the AOP. Further research employing the extensive AOP database is vital to inform the development of adequate mental health policies and programs in British Columbia. Recent meta-analyses of mental health research also have substantiated the need for the “clear specification of program models and clear documentation of program fidelity, both of which have been unevenly reported in the literature” (Bond, McGrew, & Fekete, 1995, p. 14).

Additionally, future analyses could research specific sub-domains of the AOP data such as the use of community services by seriously and persistently mentally ill people (e.g., the use of police resources). The AOP study serves as a methodological example for the social scientific community (as illustrated through my research); and it provides a basis for future research in terms of longitudinal follow-up work on both the control and treatment group clients. Such follow-up research is feasible for two reasons: (1) the ACM intervention has continued to receive funding and continues to provide services in the region, and (2) many of the AOP study clients continue to live in the region. Additional longitudinal research could also attempt to discover whether or not there were any study “duration” effects that may have biased the data analyses to date.

The AOP database contains valuable information on a variety of important domains not addressed by my research. The fact that many persons suffering from serious mental illness are homeless makes the issue of housing very important. ACM interventions are generally considered to be effective in providing clients with stable accommodation (Mueser, Bond, Drake, & Resnick, 1996). Further longitudinal research of the AOP may be instructive in assessing how effective the ACM intervention was in facilitating housing stability for clients.

Other measures that have been suggested as indicators of the effectiveness of ACM programs are data concerning issues of medication compliance, substance abuse, social adjustment, vocational functioning, client and/or family satisfaction, and program retention (Mueser et al., 1996). Data for several of these domains exist (e.g., medication data, family data, client satisfaction data) or can be collected/calculated with relative ease (e.g., program retention, vocational functioning data) for the AOP.

The fact that the AOP employed nurses as ACM staff is relatively unique. An analysis of the detailed AOP nurse-client contact and activity logs could be very instructive in determining: (1) whether there were site differences due to the implementation of the ACM model, and (2) the relative merit (when compared with the existing literature) of employing psychiatric nurses as ACM workers. Connected with such an analysis is the issue of identifying potential “maturation” effects in terms of the staffs’ relative effectiveness over time (i.e., the possibility of a learning curve).

The re-analysis of the AOP data at the *site* level (e.g., Bond et al., 1988) is also warranted by the findings of my research. The methodological strengths of the AOP data

in terms of the two-year follow-up period and the low attrition rates are features that make this database a valuable resource for further investigations. The findings from site-specific data analyses could inform model fidelity issues such as site differences. For example, whether rural versus urban environments affect the implementation of ACM interventions (see Bond et al., 1995 for a list of pertinent references).

It is important to note that the results of my research do not invalidate either the ACM model of intervention approach, or the AOP. One inconclusive evaluation study, the data of which were partially confounded for various environmental reasons, should in no way imply that any sort of final judgement is warranted of the worth or merit of the evaluand. In fact, in spite of the two study groups having experienced significantly reduced post-intake recidivism rates overall (making pre-post program attributions untenable); there were statistically significant incremental differences found with regard to the relative post-intake rates of recidivism (group by site by time effects - see subsection 5.12). However, although these results warranted speculation, they did not provide a robust enough basis for making overall attributions about the effects of the treatment model (ACM) or the program (AOP).

Finally, contextual understanding is a vital component of effectively conducting clinical research and program evaluation in the mental health field. Perhaps the single most important lesson that comes out of my research is that the *contexts of both the program and its evaluation need to be understood* as fully as possible. Some key aspects of these contexts include: (1) implementation issues, (2) political and interpersonal dynamics, (3) the qualitative attributes of consumers, caregivers, and the community, (4)

the complex and evolving program environment, (5) the financial constraints of the research and of the system, (6) the reliability and validity of available measures, and (7) *a strict adherence to a research philosophy that permits the research question and its environment to drive any methodological choices that are made.*

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Appendix A: AOP Client Quality of Life Questionnaire - Client Version (QOLC)

NO.: _____ 1-7 _____ 8-9 ASSESSMENT NUMBER: _____ NO.: _____ 11 (RVH=1 VGH=2 St.P=3) _____ 12 CONTROL=1 ACM=2 _____ 13 MALE=1 FEMALE=2 _____ 14 _____ Date: (yr mn dd) 15-20 _____ Staff Name: _____ [OFF. USE] _____ 21-22 _____ Position: _____ [OFF. USE] _____ 23-24 _____ Team: 1=Broadway 2=Strathcona 3=Mt. Pleasant _____ 25 4=Other (specify) _____ _____ [OFF. USE] _____ 26-27	HOSP. How do you feel about: FORM: 1. Your life in general? _____ 28 _____ 29 HOSP.: 2. How you get along with other people? _____ 30 _____ 31 3. The amount of friendship in your life? _____ 32 4. The amount of fun you have? _____ 33 For the following question choose: 1 = Bad 2 = OK 3 = Good 4 = N A 5. How comfortable and well-off are you financially? _____ 34 Explore: If bad, how could this be improved? _____ [OFF. USE] _____ 35-36 [OFF. USE] _____ 33-34
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QUALITY OF LIFE FORM - CLIENT VERSION

**RIVERVIEW HOSPITAL /FRASER VALLEY
ASSERTIVE CASE MANAGEMENT PROJECT**

Form to be read and explained to the client.

For all questions, place the number corresponding to the correct answer in the space at the right of the page.

For the following questions choose:

- 1 = Bad
- 2 = OK
- 3 = Good
- 4 = N A

6. Are there a lot of necessary items you feel you have to do without? 1 = Yes 2 = No _____ 35 Explore: If yes, what for instance? _____ [OFF. USE] _____ 36-37	For the following questions choose: 1 = Bad 2 = OK 3 = Good
---	--

4 = N/A

2 = Once a month
3 = Once a week
4 = Daily or almost daily

How do you feel about:

53

7. The neighborhood where you live now? 38
Explore: If bad, why?

15. The way you spend your days?

_____[OFF. USE] ____ 39-40

1 = Bad
2 = OK
3 = Good
4 = N A

54

8. Your current type of housing? 41

Explore: Describe a typical morning.

Explore: If bad, how come? If good, explain.

_____[OFF. USE] ____ 42-43

A.M. _____

[OFF. USE] ____ 55-56

For the following questions choose:

Explore: Describe a typical afternoon.

1 = Bad
2 = OK
3 = Good
4 = N/A

P.M. _____

[OFF. USE] ____ 57-58

How do you feel about:

What could be done to improve your day?

9. The amount of privacy where you live? 44

OFF. USE] ____ 59-60

Explore: If bad, what are the reasons?

_____[OFF. USE] ____ 45-46

16. Current employment status?

1 = Full-time
2 = Part-time
3 = Unemployed
4 = Sheltered employment
(TVP EIH other work

10. The amount of living space where you reside? 47

incentive programs)

5 = Other (explain)

11. The amount of freedom you have? 48

Explore: If bad, in what way is your freedom restricted?

_____[OFF. USE] ____ 49-50

[OFF. USE] ____ 62-63

61

12. The food you usually eat? 51

For the following questions choose:

1 = Bad
2 = OK
3 = Good
4 = N A

13. How are you getting along with your family? 52

14. How often do you talk with your family?

How do you feel about:

1 = Seldom or never

17. The protection you have against being robbed or attacked? 64

18. Your health in general:
 a) physical health? 65
 b) mental health? 66

19. Do you have any specific physical health problems?
 1 = Yes
 2 = No
 67

20. Describe the psychiatric condition(s) you have been told you have.

 [OFF.USE] 68-69

21. How often are any physical problems on your mind?
 1 = Constantly
 2 = Occasionally
 3 = Never
 70

For the following questions choose:

1 = Yes
 2 = No

22. In the last six months have you been assaulted or physically attacked?
 71

23. In the last six months have you been robbed or had something stolen?
 72

24. Have you had any problems with the police in the last six months?
 Explore: If so, what problems?

 [OFF.

USE] 74-75

25. Are you worried about being able to buy the things you will need in the future?

1 = Very Worried
 2 = Somewhat Worried
 3 = Not at all Worried

 76

26. In all, considering your life situation now, how bothered are you by your problems?

1 = Extremely Bothered
 2 = Somewhat Bothered
 3 = Not at all Bothered

 77

27. How often do your problems prevent you from doing the things you would like to do?

1 = Almost Always
 2 = Sometimes
 3 = Never

Never

 78

Explore: Which problems prevent you from doing the things you would like to do?

_____ [OFF.
 USE] 79-80

28. How satisfied are you with yourself on the whole?

1 = Not at all
 2 = Average OK
 3 = A great deal

 81

Explore: In which way are you most dissatisfied?

_____ [OFF.
 USE] 82-83

29. How satisfied are you with your current psychological condition?

1 = Not at all
 2 = Somewhat
 3 = A great deal

2 = Average/OK
 ___ 84

30. Do you feel you get as much enjoyment from life as most people do?

1 = Not at all 3 = A great deal
 2 = Yes average

___ 85

Explore: If not at all, in what way does your life differ?

_____ [OFF. USE]: ___ 86-87

31. Where do you get your clothes?

1 = Given to me by charities or churches
 (e.g. Salvation Army)
 stores

2 = Buy them at thrift stores

3 = Buy them at regular stores

4 = Other (specify)

_____ 88

[OFF. USE]: ___ 89-90

32. How many full meals do you eat a day?

1 = One full meal
 2 = Two full meals
 3 = Three full meals
 4 = Other (specify)

_____ 91

[OFF. USE]: ___ 92-93

33. Most of the time, where do you eat your main meal?

1 = Eat on the streets
 2 = Soup kitchen
 3 = Fast food
 4 = Cafeteria
 5 = At home, cold food
 6 = At home, prepared food
 7 = Other

(specify) _____ 94

[OFF. USE] ___ 95-96

34. Do you feel you obtain a sufficient amount of food every day?

1 = Yes 3 =
 Sometimes 2 = No

___ 97

Explore: If no or sometimes, please describe.

_____ [OFF. USE]: ___ 98-99

35. What type of housing do you live in?

1 = Rented Apartment
 2 = Hotel Room
 3 = Boarding Home (specify)

_____ [OFF. USE]: ___ 100-101

4 = Subsidized Housing (Coast Foundation)

5 = MPA Housing
 6 = Family Home (with parents or members of family)

7 = Own House
 8 = Emergency Shelter
 9 = No Fixed Address
 10 = On the Street
 11 = Room and Board-Semi Independent Living ___ 102

36. What is your source of income? How much per month?

1 = Social Assistance \$ _____ 12

2 = Handicapped Pension _____ 13

3 = Own Savings _____ 14

4 = Unemployment Insurance _____ 15

5 = Income From Employment _____ 16

6 = Financial Help from family or friends _____ 17

7 = Other (specify) _____ 18

[OFF. USE] ___ 19-20

(The client may have income from several sources and this should be recorded).

I would like to ask you some confidential questions about companionship.

37. Do you have a satisfactory sexual life?
1 = Yes 2 = No 3 = Declined to answer
21

Explore: If not, describe what you would like to change.

[OFF.U SE] 22-23

38. Do you have a regular sexual partner?
If not, a) do you have intermittent different partners?
1 = Yes 2 = No 25

b) no sexual outlet with a partner?
1 = Yes 2 = No 26

Explore: What would you like to change?

[OFF.US E] 27-28

Please answer the following:

39. Are you:
1 = Married
2 = Common-law
3 = Single
4 = Separated
5 = Divorced
6 = Widowed
29

40. Do you have a close companion?
1 = Yes
2 = No
30

41. Do you have children?
1 = Yes
2 = No
31

Explore: How often do you see your children?

[OFF. USE] 32-33

Do you feel close to your children?

[OFF. USE] 34-35

42. How close are you to members of your family (parents, siblings, etc)?
1 = Very
2 = Somewhat
3 = Not at all
36

Explore: If not at all, explain the reason.

[OFF. USE] 37-38

43. In regard to your family, they are:
1 = Overinvolved
2 = Underinvolved
3 = Involved the right amount
39

For the following questions choose:
1 = Yes
2 = No

44. Have you been in hospital in the last six months?
40
Explore: If "yes", why?

[OFF. USE] 41-42

45. Have you run into housing difficulty in the last six months?
43
Explore: If yes, what difficulty?

[OFF. USE] 44-45

46. Have you been placed at Venture in the past six months?
46
Explore: If yes.

[OFF.U SE] 47-48

47. Rate the client's comprehension and cooperation at the time of interview
1 = Understood questions and was cooperative
2 = Understood questions and was uncooperative
3 = Could not understand questions, tried to cooperate
4 = Could not understand questions, would not cooperate
49

Appendix B: Description of the Hospitalisation Cost (HOSP\$) Variable for the Resource Utilisation Domain

Although the originally planned benefit-cost analysis was not conducted, I present a brief description of the “hospitalisation cost” index that I developed. This measure has potential applications beyond the parameters of a benefit-cost analysis. It provides a simple, yet in my judgement defensible, way in which two of the most commonly used indicators of recidivism can be weighted and combined to form a single measure of recidivism.

The variables NADM and LOS are in reality, related. Nevertheless, they have been treated most frequently as separate variables in the literature to-date. I have joined these two variables into one, in an attempt to create a single index of recidivism. I did this primarily for the purpose of the economic analysis component of my dissertation research because I needed a measure of hospitalisation cost per-client. Although the HOSP\$ variable is somewhat arbitrary and may reflect only a crude estimation of client psychiatric hospitalisation costs, it might serve as an adequate measure or “index” in future research for comparing the relative economic merits of experimental treatment and control groups with regard to hospital resource utilisation. I created the following formula in order to generate the HOSP\$ variable:

$$\mathbf{HOSP\$ = Hospital\ per\ diem\ rate * (NADM) + Hospital\ per\ diem\ rate * (LOS)}$$

Although most per diem rates reflect some aspects of the cost of hospital admission in their calculation, the weighting of each NADM by the cost of one day of hospitalisation seemed justified because each admission carries with it a number of additional costs (e.g., social, emotional, and other resources) which may not be reflected in the per diem rate. See Appendix C for an in-depth discussion of benefit-cost research in mental health.

Appendix C: Discussion of the AOP Resource Utilisation Domain and Benefit-Cost Analysis in the Mental Health Field

Description of the Initially Planned AOP Benefit-Cost Component

Appendix C - 1.0 Overview

The economic methodology of my research was modelled after Weisbrod’s (1981, 1983) work which studied the “Training in Community Living” program designed by Stein and Test (1980). When compared with Weisbrod (1983), my research would have reflected important changes to the analytical aspects of the economic analysis, at both the conceptual and methodological levels. I would have attempted to: a) improve the robustness of the data and the results of analyses; b) render the research relevant to the Canadian context; c) make this research up-to-date; and d) reflect the fact that the service delivery context, for both the control and the treatment groups, takes the form of two alternative models of community-based programs. The latter point is different from the research by Weisbrod, and by Stein and Test, as they compared *hospital-based* care with their version of an assertive case management program.

Many of the issues which have the potential of differentially affecting the quality of my research would have been of a methodological nature. As such, they may have been quite familiar to economists, psychologists, and social scientists. One of the most problematic issues is that a benefit-cost analysis in the social sciences inevitably is comprised of a multiplicity of constructs which, in many cases, are difficult to value.

Some of these constructs might be measured readily in monetary terms (e.g., caregiver wages, drug costs, psychiatrist/physician costs). Others would be more difficult to assess in monetary terms, although it might be realistic to impute dollar values to them (e.g., the value of family time involvement, and the capital costs of public facilities). However, in some cases constructs would be absolutely impossible to report in monetary terms (e.g., quality of life, client satisfaction, emotional family burden, some societal costs and/or benefits). Accordingly, valuation problems almost always exist when applying benefit-cost techniques to non-physical, human domains, or any domains involving intangible entities.

Other methodological issues include: sampling issues; the production of knowledge which is constrained by the use of statistical analyses and decontextualised data; the possibility that not all factors pertinent to the research were identified; the quality of data; the problematic aspects of outcome definitions; interview biases; and the probability that some tangible benefits and costs may have been inappropriately costed (e.g., capital costs). These issues have been discussed further in section 3.4.

Appendix C - 1.1 Weisbrod's (1983) Research: Conceptual Issues

Weisbrod's (1983) research has provided a good example of the application of benefit-cost analysis in the domain of mental health evaluation. In his own words, his study “is the first [benefit-cost] analysis of a controlled (random assignment) experiment in the mental health field” (Weisbrod, 1983, p. 809). Weisbrod appeared to make every attempt to present a thorough, as well as critical, exposition of his own work. He described the study, its methods, and the results from a conceptual as well as methodological perspective. In his abstract he emphasised the view that benefit-cost analyses should be regarded as “a mixture of science and art” (p. 808). This point is important enough to have been repeated in the literature by other authors who encourage researchers, analysts, and policy-makers to appropriately appreciate the knowledge and decision-making value of the results of benefit-cost analyses, without succumbing to the

apparent “precision” of their mathematical form (Fried, Worthington, & Deber, 1989b; Wasylenki, 1989; Weisbrod, Test, & Stein, 1980; Wolff, Helminiak, Weisbrod, & Diamond, 1980).

The research conducted by Weisbrod (1981, 1983) compared a hospital-based treatment approach to a “non-traditional” community-based treatment approach for the treatment of mentally ill people. The results of his research supported the hypothesis that, except in emergency situations, the hospitalisation of persons suffering from mental illness is less satisfactory to clients yet of approximately equal cost to, the community-based treatment alternative. Weisbrod’s (1983) paper, which extended the conceptual and analytical bases of his earlier research, had three main goals. The goals were as follows:

- (1) to present a new benefit-cost (B-C) analysis of two alternative approaches for treating the mentally ill; (2) to guide the prospective benefit-cost analyst working in any area, but especially in human services, in achieving a comprehensive view of the range of costs and benefits; and (3) to emphasize the importance and feasibility of including *all relevant variables* in any B-C analysis, even if their monetary valuation is impractical (Weisbrod, 1983, p. 808-809, italics added).

In his “Guide”, Weisbrod (1983) made explicit several very important points on the use, interpretation, and constraints of employing benefit-cost techniques in the assessment of social programs, especially those related to persons with mental illness. Firstly, the mental health context presents benefit-cost analysts with difficulties concerning the issue “of *what* to measure and *how* to measure it” (Weisbrod, 1983, p. 810). Particularly problematic are: the clients’ inability to make informed choices and/or to view the world in a manner which is rational and normative by society’s standards; and the complexity of the external effects generated by the clients’ illnesses and by the program. For example, external effects, such as financial and psychological cost burdens, are borne by multiple organisations and individuals (e.g., various levels of government, the clients’ family and friends, the general public).

Secondly, all the consequences of a particular program, including those that extend beyond the target group, need to be identified so that a possible “shift in the *form* of a cost or benefit will [not] be misinterpreted or misestimated as a change in the *magnitude* of total costs or benefits” (Weisbrod, 1983, p. 810). A good example of this would be a psychiatric hospital which, through the implementation of a rapid “downsizing” program (i.e., an early client discharge policy), reduces client hospitalisation costs. However, in this case the *real* costs are transmuted into costs borne by family, police, and other social agencies who experience an *increase* in their resource consumption.

Weisbrod’s (1983) solution to some of these problems was for the researcher to develop a *comprehensive* list of costs and benefits for all apparent stakeholders. If this were accomplished, the worst that could happen would be that any omissions to the pecuniary costing framework would have been identified and could therefore be considered, if not valued, thereby informing the investigator as to the possible direction of a potential estimation bias.

Weisbrod (1983) also noted that, although many of the principles of benefit-cost analysis may be conceptually clear, they might be difficult to operationalise in practise. An example of this would be that when viewed from a societal perspective, a benefit-cost analyst is interested in “real benefits and costs, whether or not pecuniary exchanges are involved” (Weisbrod, 1983, p. 811). The non-pecuniary exchanges may, however, be difficult to measure in reality. Additionally, in order to arrive at the most accurate estimation of social benefits and costs, it would be necessary to probe beyond the “private good” conception of benefits and costs and assess the social “willingness to pay” for the programs in question. Benefit and cost estimations would, in practise, be depicted in one of the following ways: monetary terms, quantitative but not monetary terms, qualitative terms, or purely descriptive constructs without an attempt at valuation.

Appendix C - 1.2 A Detailed Consideration of Weisbrod’s (1983) Research

In Weisbrod’s (1983) research, clients in both the experimental (E) and the control (C) groups: (1) were residents of Dane County, Wisconsin, U. S. A.; (2) were between the ages of 18 and 62; and (3) had any diagnosis of mental illness other than severe organic brain syndrome or a primary diagnosis of alcoholism. Clients were randomly assigned to the E and C groups at a rate of 4-6 persons per month to a total of 130 clients. Prior to group assignment, there were no significant differences between members of the E and C groups on age, gender, marital status, or average prior time spent in institutions.

Clients in the C group received short-term, in-hospital treatment, and traditional aftercare provided by community mental health centres. Clients in the E group generally were not hospitalised except in cases of extreme crisis (i.e., where an intensive drug treatment was required or when the lives of clients or others were at risk). Each of the E group clients received assertive outreach in the community for a period of 14 months, after which they no longer had any contact with staff in the experimental condition.

Weisbrod (1983) appears to have been thorough in his enumeration of the conceptual and methodological issues in his research. Although I do not describe his actual estimation of costs (see Table 20) and benefits (see Table 21) in this section, I highlight the structure of his conceptual research framework.

Table 21 Weisbrod’s (1983) “Table 4” - Listing of Benefits Per Patient, Control (C) and Experimental (E) Groups, for Twelve Months Following Admission to the Experiment

BENEFITS	<i>(Benefits for which monetary estimates have been made)</i>	
1. Earnings:	From competitive employment	
	From sheltered workshops	
<i>Other benefits:</i>		
2. Labour market behaviour:	Days of competitive employment per year	
	Days of sheltered employment per year	
	Percentage of days missed from job	
	Number of beneficial job changes	
	Number of detrimental job changes	
3. Improved consumer decision-making:	Insurance expenditures	
	Percentage of group having savings accounts	

Notes:
 In original:

1. Columns of data for control, experimental, and control minus experimental groups were reported in original.
2. Dollar figures were reported in original.
3. Numerical were reported in original.
4. Percentages were reported in original.
5. Values for costs and benefits that defied estimation in any form were reported as a “?” in original.
6. This table is a reasonable reproduction of Weisbrod’s Table 4 (1983, p. 826-827). However, his footnotes and data have been omitted.

Under the heading *Direct treatment costs*, Weisbrod (1983) adjusted the state-provided cost data for the per diem cost of inpatient, psychiatric hospital care for clients in the C program. He did so for three reasons. First, the opportunity cost of the hospital land was disregarded. Second, the depreciation of the hospital buildings was based upon historical cost rather than replacement cost. Third, research activities were carried out at the hospital that were included in the per diem cost. The E program was difficult to cost due to the variation in the rate of capacity utilisation of its resources. Adjustments in this case were made utilising annualised data on the average cost per patient per month that was calculated for the time in which the number of clients in the E program was highest.

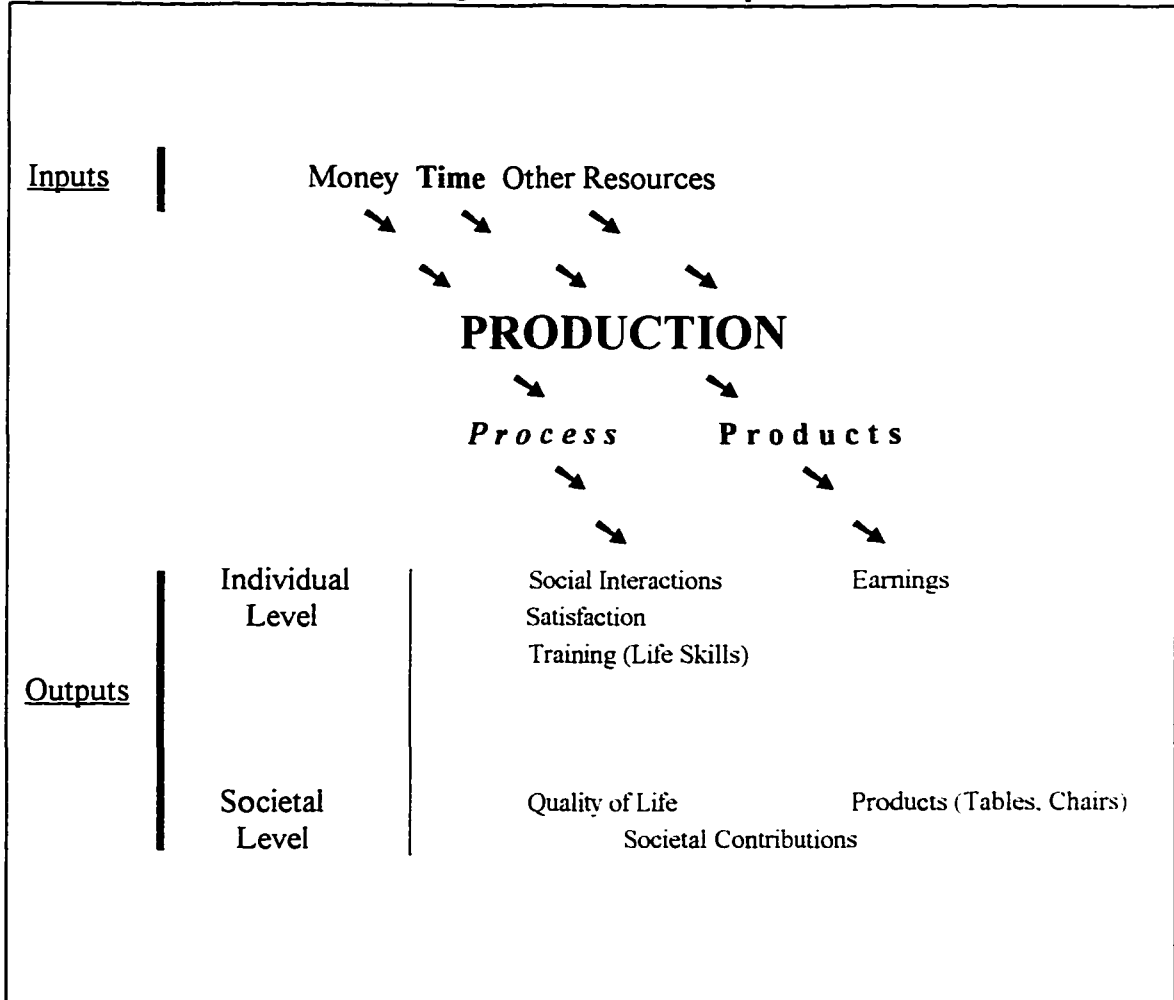
Weisbrod (1983) identified *Indirect treatment costs* which included medical and related services provided by agencies external to the clients’ respective primary treatment context. Initial data were collected from client interviews and later verified with major

service providers whenever possible¹⁴. Weisbrod pointed out that these measures of indirect treatment costs were far from ideal, and stated that, for benefit-cost analysis, the lesson to be learned is that “financial records generally lead to the use of imperfect and biased cost data” (p. 821). Other costs measured through the use of interviews and/or records-based data collection techniques were: Law enforcement costs, external costs incurred due to clients’ illnesses (e.g., family burden), client maintenance costs, improved client mental health (e.g., client satisfaction), increased work stability (e.g., absenteeism), improved consumer decision-making, and improved productive behaviour.

In the context of an economic analysis, production (or output) has two components, benefits and costs (see Figure 17). Both benefits and costs can be assessed at the individual or the societal level. The outputs of production are the benefits. These can be broken down into two parts, process and product. The inputs to production are the costs. One of the main costs of production is time. The benefits of production at the individual level (on the product side) are earnings. On the process side, possible benefits in the form of: increased social interactions, feelings of accomplishment or satisfaction, and life-skills training. The latter “process” benefits of production are difficult to estimate.

¹⁴ Providers’ estimates were employed for cost estimation.

Figure 17: Flowchart Depicting the Economic Concept of Production



From a societal perspective, the benefits of production are relatively simply valued if they are products (e.g., tables and chairs) because they have a “market value”. However, benefits in the form of “process” outcomes such as quality of life and contributions to society are much more difficult to estimate. On the cost side, society’s valuation of time as a cost of production is difficult; time generally cannot be considered a “free good”, as most people have relatively little leisure time and hence value it rather highly. However, in the case of persons suffering from serious and persistent mental illness, who often have a great deal of “leisure” time especially if they live in an

institution, the cost of time is probably very small, or even negative. Too much leisure time can be boring and can lead to an increase in clinical problems. An anecdotal example of the former that is especially pertinent to the problem of measurement bias is an observation that I made as an interviewer of clients at a psychiatric hospital. In some cases, clients would appear very lethargic when I observed them in the ward population. However, when these clients were introduced to me they seemed eager to speak with me or answer questions, and at times appeared to want to extend the interview by asking me questions or by following me to my next interview.

With regard to production, Weisbrod (1983) took the position that increased production is a benefit to society, in spite of the possibility that increases in hours worked could mean decreases in “leisure” hours. The reasons for his taking this position are twofold. First, the opportunity cost of work time for a mentally ill person can be assumed to be zero or even negative if negative feelings are associated with leisure time due to, for example, a lack of social contact. Second, as mentally ill persons typically have difficulties in retaining work, an increase in earnings in one treatment mode may be interpreted as a differential program effect, regardless of the reason (i.e., increased pay versus increased hours). In attempting to cost production, Weisbrod obtained data from client interviews and partially corroborated these data by checking social security or employment (sheltered workshop) wage records. The value of housework, however, was not ascertained. Also, human capital investment variables (e.g., education/training), which theoretically increase productive potential and therefore the present value of future earnings, were not measured.

Although I have not offered an exhaustive list of the variables identified by Weisbrod (1983), I have represented many of the major areas of interest for a benefit-cost analysis of a mental health ACM program. I present a comprehensive treatment of the identification and costing of variables in my research in chapter three. However, it is important to note that at a conceptual level, my selection of the economic variables and measures in my research must reflect the fact that this research took place in the Canadian context. The Canadian mental health care system is quite different in structure and in funding than the American system of mental health care. Consequently, although

I am indebted to Weisbrod’s pioneering work, many of the research constructs, client characteristics, and program policies that shape my research necessitated a reformulation of his model. I discuss my model in more conceptual detail later in this chapter.

Weisbrod’s (1983) research supported the hypothesis that hospitalisation for mentally ill persons is less effective than, and of approximately equal cost to, assertive community-based treatment, except in emergency situations where a hospital environment is considered necessary. From Weisbrod’s research, it can be concluded that benefit-cost analyses can quite easily provide very misleading and/or incorrect information, especially “if the range of costs and benefits is not viewed comprehensively and if forms of costs and benefits that are not easily measured in monetary terms are omitted” (p. 842).

Weisbrod (1983) warned his readers that the forms taken by the social costs of alternative programs can be so different, that a *change in the form of costs* can be mistaken simply for a *change in their level*. For these reasons, the inclusion of all relevant variables in a benefit-cost analysis is vital. Finally, Weisbrod (1983) stated that “benefit-cost analysis is not a substitute for judgement, but only an aid in using judgement” (p. 842). This point is important to remember as the apparent mathematical “precision” of benefit-cost analysis masks its very subjective, and often arbitrary, “true” nature.

Appendix C - 1.3 Criticisms of Existing Benefit-Cost Research Models

Wolff and Helminiak (1993) criticised the available research on the economic appraisal of mental health programs. The authors stated that, although the number of mental health costing studies have increased, “these studies have serious methodological and design shortcomings limiting their generalisability and comparability” (p. 159-160).

Wolff and Helminiak went on to say that:

the conceptualization of the research question, the choice of data sources, the definition of service use, and calculation of dollar values can render

widely different estimates of average societal (medical care, law enforcement, family burden) cost per client... (p. 160).

As one can see from the varied forms of valuation in Table 1, which range from reasonably robust monetary estimations to a “?” for constructs that defy estimation, the conceptual framework for a comprehensive benefit-cost analysis is difficult to realise in practise. Wolff and Helminiak offered an example of how variable the results of one set of mental health data can be when analysed using different methodological approaches.

Non-response bias, a potentially significant form of sampling error, is often omitted in the discussion of methodological constraints. Even three of the most comprehensive studies of community-based care for seriously mentally ill persons including Weisbrod (1983) did not discuss non-response bias (Wolff & Helminiak, 1993). Another sampling bias can occur when hospital records are employed as the only source of “census” information for the identification of potential study participants (Wolff & Helminiak, 1993), as some individuals afflicted with serious mental illness may not have been caught by the available “social net”. Such individuals are often dual-diagnosed and have historically “fallen between the cracks” of the mental health delivery system (Talbot, 1988a).

Even if the non-participants and the participants in experiments are comparable on selected clinical and socio-demographic characteristics, the possibility remains that participant refusal may bias cost estimates significantly. For example, Wolff and Helminiak (1993) found that the average law enforcement costs for a non-sampled group of mentally ill persons were three to six times the average cost of law enforcement for the sampled consent group. Finally, sampling inconsistencies can vary due to differences between facilities on the accuracy and/or completeness of records and sorting criteria, even if the focus is on the same type of client (Wolff & Helminiak, 1993).

A research problem which is somewhat related to the sampling bias issue is what is commonly known as the “Hawthorne effect”. This effect is a bias that can occur when study participants are aware of the fact that they are being “studied”. Although Weisbrod (1983) acknowledged the possibility of the existence of a Hawthorne effect, he suggested that if any biases existed, they would negatively affect the treatment outcome and

therefore make any positive results more robust. Weisbrod defended his research in the following manner: (1) although clients knowingly participated in the treatment, they were most likely unhappy to have been taken out of the hospital environment as persons with serious and persistent mental illness are often institutionalised; (2) treatment staff had previous experience with community outreach, which reduced a potential “novelty” effect; (3) interviewers were external to the program and had no vested interest in the outcomes of the research; and (4) it was doubtful that family or service agency representatives thought of themselves as part of an experiment.

I am not convinced by all of Weisbrod’s arguments. It has been my experience as an interviewer conducting similar research that family members, by voicing their concerns to me, appeared *very* concerned that my interview may affect their relative, directly or indirectly. One of the inherent biases in the use of self-report interview techniques is that respondents often under- or over-report service use for a variety of reasons including intentionally due to stigmatisation and unintentionally due to loss of memory (Wolff & Helminiak, 1993). These problems have been shown to exist for clients, care-givers, and agencies. The quality of data stemming from the use of client self-report and provider cost estimates can be improved through the cross-validation of data with other sources (Weisbrod, 1983), and the understanding that data of this type are of questionable reliability, at best (Wolff & Helminiak, 1993).

Valuation problems in economic analyses of mental health programs have been dealt with quite extensively in the literature (Dickey, McGuire, Cannon, & Gudeman, 1986c; Rubin, 1982; Weisbrod, 1983; Wolff & Helminiak, 1993; Zelman, Stone, & Davenport, 1982). Wolff and Helminiak (1993) stated that:

Internal and external validity are influenced by the definition and measurement of cost outcomes....it is vital that these definitions of cost outcomes employed within a study be carefully described, and that the choices made to exclude certain resource service types, content areas, product grouping, or providers be fully documented and their impact on study estimations discussed. The choice to omit, ignore, misrepresent, or misclassify certain types of resources will bias the cost outcome estimates.

which will compromise their robustness and utility to policy makers” (p. 167).

Weisbrod (1983) is one of many commentators who asserted the generalisation that benefit-cost analyses are invariably incomplete. For this reason, it is imperative that researchers strive for the most comprehensive account of all possible forms of costs and benefits, irrespective of the ease or difficulty of measurement. Conceptually, the specification of unit costs also is an important component of the cost estimation procedure. Large differences can exist between economic costs (opportunity costs), accounting costs (annualised explicit costs), charges (“list prices”), and payments (what third parties actually pay) (Wolff & Helminiak, 1993). As an example, Wolff and Helminiak cite Zelman et al.’s (1982) research which showed how 17 different cost estimates could be derived for one community health centre simply by varying accounting standards.

Apart from the complex problem of cost estimation, it is important to try and ascertain the reliability of data sources. This may be accomplished through a “consistency” test between two data sources, for example hospital records as compared to mental services plan records. Human error, definitional variability, and missing data are just a few of the reasons why the use of secondary data sources should be qualified through cross-validation with primary data sources (Wolff & Helminiak, 1993). The use of multiple measures, **triangulation**, informs the researcher about the consistency and relative completeness of service use and cost figures.

Other measurement issues in benefit-cost analysis include: the duration of the treatment program, the simultaneous alteration of multiple treatment variables, and the problem of assessing “willingness to pay” (i.e., on the part of clients versus society) for mental health services (Weisbrod, 1983). Particularly pertinent to questions of data analysis is the masking of systematic variation for particular subgroups (e.g., by diagnostic subgroup) by making overall comparisons between the experimental and control groups based upon averages. Weisbrod’s solution was to disaggregate patients by diagnostic group. A second potential problem occurs through the use of random assignment, that is, the possibility of systematic differences existing within particular

variables. To address this issue, Weisbrod employed a regression analysis approach which reexamined the effect(s) of treatment mode on “relevant” variables. By controlling for previous earnings and diagnostic category, Weisbrod discovered significant systematic effects based on previous client earnings and diagnostic type.

Interpretation of the results of benefit-cost analyses in the area of mental health should be made with caution. Weisbrod (1983) indicated that the focus on a single geographic area; use of a relatively short treatment period; and potential influences from the specific economic, political, and social environments (e.g., unemployment rates, city versus rural) are potential problems in allowing direct interpretation of reported benefit-cost results.

I provide the following list of issues concerning cost estimation standards in the domain of mental health, as identified by Wolff and Helminiak (1993), in order to provide a framework for the next section of this chapter. The issues that require researchers’ attention are: study perspective, sample selection, cost outcome definition, choice of data source, quality of the data source, measurement of a service unit, estimation of unit prices, sensitivity analyses, and reporting study findings (see Wolff and Helminiak, 1993, for a detailed explanation of these points).

Appendix C - 1.4 Methodological Strategies for the AOP Benefit-Cost Evaluation

I proposed to conduct a benefit-cost analysis of the Riverview/Fraser Valley Assertive Outreach Program (AOP) by utilising data that have been made available to me. In this section, I provide an outline of the reasons for conducting a benefit-cost analysis rather than a cost-effectiveness analysis; and the use of the term “short-term” costs and benefits¹⁵. I also present the benefit-cost framework which would have formed

¹⁵ I focus here on the methodological aspects of my research from a conceptual point of view. A detailed description of my database, as well a discussion of the data in terms of practical research issues (e.g., actual methodological constraints, methods of analysis, sampling issues, and measurement problems) appears in the next chapter.

the basic benefit-cost structure of my research. Maintaining the *conceptual* point of view of this chapter, I (1) identify three “ways of knowing” that apply to my data, (2) describe an additional mode of data analysis, and (3) discuss important methodological changes, which would have attempted to overcome some of the constraints discussed earlier. Finally, I examine the potential of my results, especially in terms of how they might have compared with previous research and how they could have informed the Canadian mental health care service delivery system in terms of policy-making, planning, and programming from an economic perspective.

Appendix C - 1.41 Benefit-Cost Analysis versus Cost-Effectiveness Analysis

The issue of what type of economic assessment technique to use was an important one. At stake was the problem of whether to use a benefit-cost analysis or a cost-effectiveness technique. The literature provided mixed messages with regard to the definition and appropriate use of these two types of analytical models (see Zerbe & Dively, 1994; cf., Fried, et al., 1989; Wortman, 1983). My interpretation of the distinctions between the two models follows.

As research *methods* should be driven by research *questions*, and not the reverse, I begin by re-stating my fourth hypothesis in more general terms:

How does the Riverview/Fraser Valley Assertive Outreach Program compare with the traditional Community Mental Health Centre program with regard to resource utilisation and client outcomes (e.g., recidivism, clinical indices, client level of functioning)?

The key aspect of this research question is that I did *not* assume that these two community interventions would have had the same or even similar *treatment outcomes*. An important condition when conducting a cost-effectiveness analysis is that the outcomes of the alternative programs in question are predicted or known to have the *same* outcomes (Zerbe & Dively, 1994). As I would have been in a position to identify, measure, and value potentially different treatment outcomes of the two programs in

question, a cost-effectiveness analysis was not the appropriate tool for the purposes of my investigation¹⁶. A benefit-cost analysis would have been the conceptually correct methodological framework to use.

Appendix C - 1.42 A Definition of Short-Term Costs/Benefits

As in many benefit-cost analyses before the one I had proposed, the main research perspective that I would have taken would have been a societal one. In line with this perspective, all constructs reported in monetary terms would have been measured in terms of societal costs. Most importantly, this point impacts the handling of capital costs. I will deal with capital costs by adopting a “short-term” benefit-cost (STBC) approach. Hospital capital costs cannot be calculated as savings in the STBC perspective, as this form of analysis assumes the existence of the hospital fixtures, buildings, and grounds and treats them as “sunk costs”. In terms of the STBC point of view and also largely from a historical perspective (e.g., see subsection 1.21 with regard the labour “costs” of constructing Riverview Hospital) capital costs are considered “free”. However, hospital operating costs are considered saved costs though they are calculated incrementally in STBC analyses, rather than as additive per diem savings.

My main purpose for introducing this way of “handling” the data was for ease of interpretation of the results, especially as the results would have pertained to policy-making and program planning. The STBC constitutes one conceptual economic perspective. It has a relatively concrete time horizon with which one can attempt to address economic decision-making issues. This perspective is useful because it addresses one of the aspects or needs inherent in the planning of mental health service delivery. This particular need involves the consideration of short-term and/or transitional service delivery goals.

¹⁶ Methodologically, cost-effectiveness analyses are inherently easier to use because the measurement of outcomes or benefits is, by definition, not an issue.

The current mental health system in British Columbia is the embodiment of a service delivery system in transition. The STBC perspective is well-suited to inform policy and planning needs at the present. Over the short-term, the downsizing of the Riverview Hospital client population and the concomitant implementation of community service strategies (e.g., ACM) have immediate ramifications. First, a significant economic factor would have been the potential of a reduction in operating costs due to (a) the diminishing size of the client population, and (b) the potential “moth-balling” of sections of the Riverview Hospital buildings and remaining campus facilities such as cafeterias, laundry facilities, kitchens, and the fire department. Second, short-term benefits were expected to include such factors as positive clinical outcomes and improved client quality of life including reduced recidivism and improved client functioning.

Appendix C - 1.43 Benefit-Cost Analysis Data Sources

Tables 22 and 23 provide summaries of what would have been the sources of economic data for the Riverview/Fraser Valley AOP, and provide frameworks for analysing the costs and benefits for the proposed STBC analysis, respectively. The tables have been inspired by Weisbrod’s (1983) often cited Table 4, a version of which appeared earlier in this paper. However, changes have been made that reflect the uniqueness of the Canadian mental health context. These changes include the consideration of differences between the U.S. and Canada in terms of: geography, client characteristics, funding structures, service delivery programs, policy issues, laws, economic factors, legal issues, and cultural influences.

Table 22 Summary of Sources of Economic Data for the Riverview/Fraser Valley AOP (Costs)

COSTS (per client)	<i>(Estimated monetary costs)</i>
1. Direct (primary) treatment costs*:	Community Mental Health Centre Riverview/Fraser Valley AOP
2. Indirect (secondary) treatment costs:	Social Services agencies: (e.g., Income assistance). Hospitals: (e.g., Vancouver General), Community Care Teams: (e.g., Broadway), Private physicians and psychiatrists, Sheltered workshops: (e.g., Salvation Army), Residential programs: (e.g., Boarding homes), Drop-in programs: (e.g., Coast Foundation)
3. Law enforcement costs:	Police contacts, Probation/parole, Overnights in jail. Court contacts, Lawyer/legal aid contacts
4. Maintenance costs.	
5. Family burden costs:	Lost earnings, Direct expenditures
6. Non-family burden costs:	Food/clothing banks, Pan-handling/Theft
<i>Non-monetary costs</i>	
7. Family burden:	Physical illness in family due to client's mental illness Emotional strain in family due to client's mental illness
8. Non-family burden.	
9. Illegal activity costs.	
10. Patient mortality.	
* Note: The STBC analysis does not include capital costs.	

Table 23 Summary of Sources of Economic Data for the Riverview/Fraser Valley AOP (Benefits)

BENEFITS (per client)	<i>(Estimated monetary benefits)</i>
1. Earnings:	Competitive employment Sheltered workshops Volunteer work
<i>Other benefits</i>	
2. Labour market behaviour:	Days of competitive employment per year Days of sheltered employment per year Days of volunteer employment per year Percentage of days missed from work Number of beneficial job changes Number of detrimental job changes
3. Clinical symptomatology.	
4. Level of functioning/decision-making:	Self care skills Resource management skills Social interaction/communication skills
5. Quality of life/client satisfaction.	

Appendix C - 1.44 Three “Ways of Knowing”

An important source of data is the informed opinions of experts such as nurses. Expert opinion can provide a data set which may a) help to corroborate the results of statistical analyses; b) provide contextual information; c) uncover previously unknown or neglected variables; and d) contribute insight into many of the qualitative, procedural, and emotional aspects of the ACM program that may not have been otherwise readily assessed. One must take care, however, to consider the potential narrowness of various informants’ perspectives as well as the methodological constraints inherent in the use of anecdotal data collection techniques.

Another type of information in experimental or quasi-experimental methods is derived from matching control and treatment group client characteristics, and then testing for different treatment outcomes between the two groups. This “group” knowledge is based on the aggregation individuals’ data. In other words, the importance of this information is in terms of understanding *group characteristics* (e.g., the reporting of group means). Methodologically, the validity of interpreting research findings obtained from aggregated data depends on the random assigning of clients to groups. An additional technique within this approach is to use “disaggregation” techniques similar to those employed by Weisbrod (1983). Such an approach permits the investigation of potentially significant sub-group effects (e.g., diagnostic category) that may have been lost through the more global analysis.

Finally, another version of a quasi-experimental design also assigns clients to control and experimental groups. However, the analyses focus on the *individuals’ characteristics* (e.g., standard deviations from the group mean). Regression analyses are then employed to investigate possible systematic differences at the individual level. By combining the dependent variable of interest (e.g., an index of recidivism) with the appropriate independent variables, (e.g., demographic variables and a dummy variable in which the control group = 0 and the experimental group = 1), a least squares regression analysis can produce very different interpretations of the data. This can be due to the

effects of, for example, large standard deviations or interaction effects not accounted for in the first quasi-experimental approach that I outlined above. Other sampling characteristics (e.g., past earnings) of the sample population not accounted for can also bias the results (Weisbrod, 1983).

The use of multiple regression techniques also has potential shortcomings. Among these are “specification errors” which tend to shape the results of data analyses in various ways. Specification error occurs: (1) by assuming that the data are linear when in fact they are not, and (2) by forgetting, or not knowing something important about the sample or the data. Even if one achieves “good” results as reported by the standard measures of goodness of fit, one cannot exclude the possibility of specification error. As demonstrated with Monte Carlo studies, regressions can result in seemingly statistically robust results which are nevertheless factually wrong (Huenemann, 1984).

The triangulation of methods of analysis thus serves as an important check on the “true” similarity of control and treatment groups. All three of the above types of analyses would have been employed in my research. If they had been confirmatory of one another then I might have drawn some tentative inferences about the findings. Although benefit-cost research usually employs numerical data, it is an inexact “science”. In the next subsection I describe how the use of sensitivity analyses can test the rigour of benefit-cost findings.

Appendix C - 1.45 Sensitivity analysis

Whenever valuations in benefit-cost analysis are in the form of numerical cost-estimations, it is appropriate to test the robustness of these estimations. Sensitivity analysis can be used to determine what the “outer limits” are for key variables in the analysis. In other words, the relative sensitivity of the data is explored by replacing the original data with reasonable estimations of their upper and lower bounds. This type of analysis can help to establish whether or not reasonable changes in the data would affect the way the benefit-cost findings are interpreted and how policy decisions are made. Thus sensitivity analysis identifies important “threshold” values for variables by

challenging the precision of the data in a way that has great potential for increasing the rigour and usefulness of the data.

Appendix C - 1.5 Synopsis

The current trend in Canada is to replace psychiatric institutions with community service alternatives for persons suffering from serious and persistent mental illness. The results of my research are of considerable relevance to policy-makers and program planners who require empirical evidence to inform their decision-making. Several studies in the United States and elsewhere have shown that the implementation of ACM programs for the seriously mentally ill population reduced rates of recidivism and were cost-effective. Although the economic component of my research would have been, to my knowledge, the first attempt to provide a relatively comprehensive economic evaluation of two alternative community mental health service delivery programs in a Canadian setting, the results of the preliminary multivariate analyses prohibited me from conducting the proposed benefit-cost analysis.

In this chapter I provided a conceptual and methodological discussion of the many issues that would have faced the economic component of my research. Tables 22 and 23 provided a basis for identifying the costs and benefits that would have been employed in my research. It is my hope that these frameworks, and the benefit-cost discussion here, can serve to aid future economic research in Canadian mental health.

Appendix C - 2.5 Data Analyses for the Resource Utilisation Domain

(Hypothesis 4) I predict(ed) that for the AOP study period, resource utilisation will be less for the treatment group than for the control group as determined by assigning economic values to the use of hospital and community (e.g., police) resources.

I must conclude, based upon the results in sub-section 4.12 (the pre-post AOP intake analyses), that a benefit-cost analysis based upon the AOP study data is inappropriate. The justification for this decision and the concomitant evaluation, methodological, and policy issues which arise from the results of these analyses are discussed in Chapter 6.

Appendix C - 2.51 Variable 1 - Hospitalisation Cost (HOSP\$)

No inferences may be drawn regarding the economic feasibility of the AOP.

However, I am presenting below a set of eight graphical representations (pre-post study by group and by site) of the “hospitalisation cost” (HOSP\$) variable that was generated by applying the formula described in Appendix B. As mentioned, this variable was the result of an attempt to combine NADM and LOS in such a manner as to (1) reflect the differential weights of these two variables, and (2) create a single economic indicator of recidivism. These graphs, although not representative of a “true” economic measure in the benefit-cost sense, nevertheless offer an informative representation of this amalgamation of the NADM and LOS variables. The result is a novel view of the construct “recidivism” from the perspective of one index rather than from two indices/variables (NADM and LOS) which, because of their inherently related nature, would have to be combined at a purely intuitive level. This information should, however, only be thought of in speculative terms. Figures 18 through 21 represent the overall HOSP\$ variable calculation for the AOP groups and sites separately (pre-post intake). Figures 22 through 25 represent the HOSP\$ variable for each AOP study group *by* site (pre-post intake). Finally, Figures 26 through 29 illustrate how potentially important it is to analyse these data at the individual client level. Were these pre-post AOP intake data not confounded, they could aid policy-makers and programmers in making more informed decisions about which clients’ resource utilisation rates (e.g., heavy versus light system users) are being affected the most by a particular intervention (measured here by the reduction in “hospitalisation costs”).

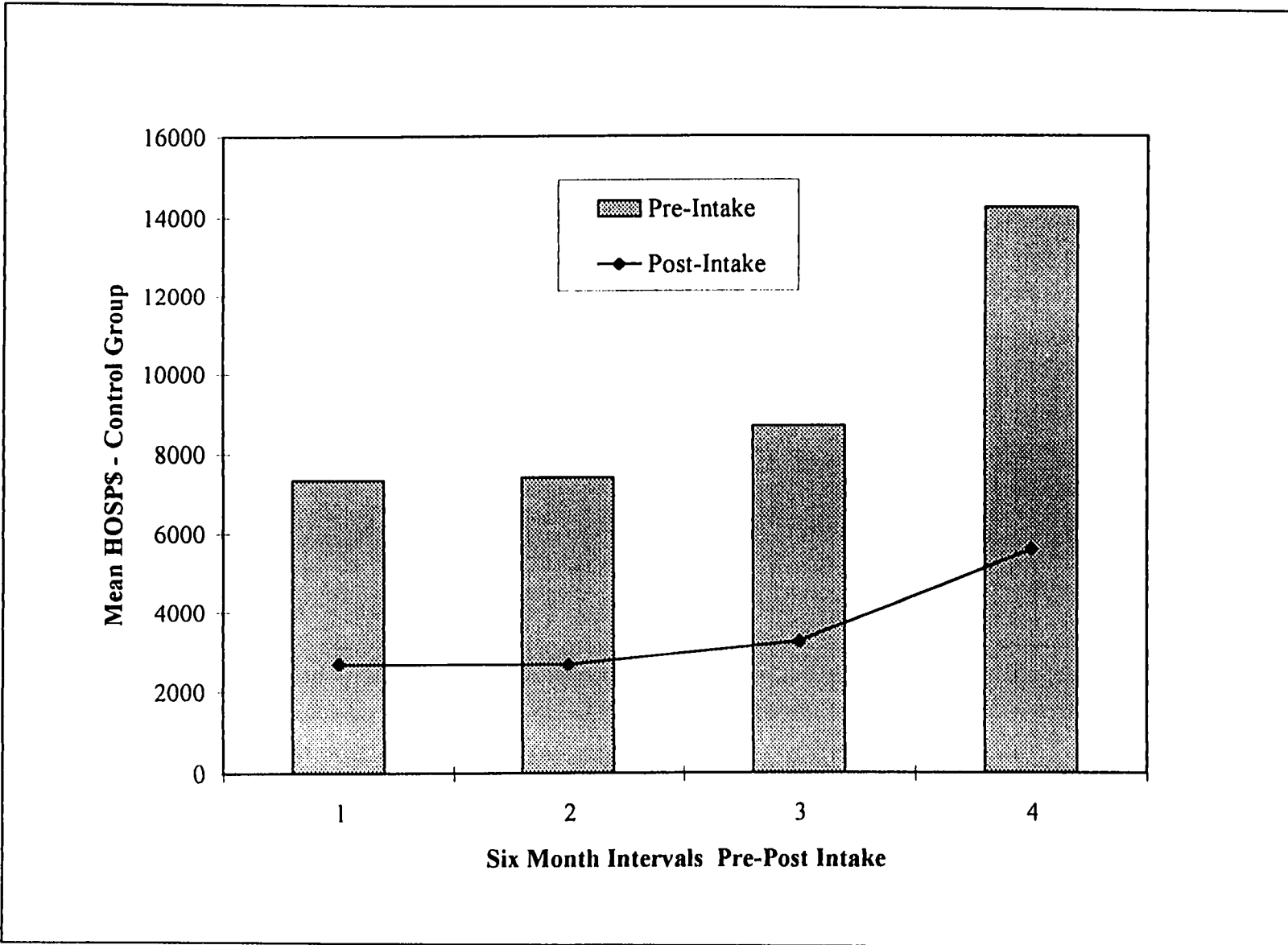


Figure 18: Mean HOSPS - AOP Control Group - Pre-Post Intake

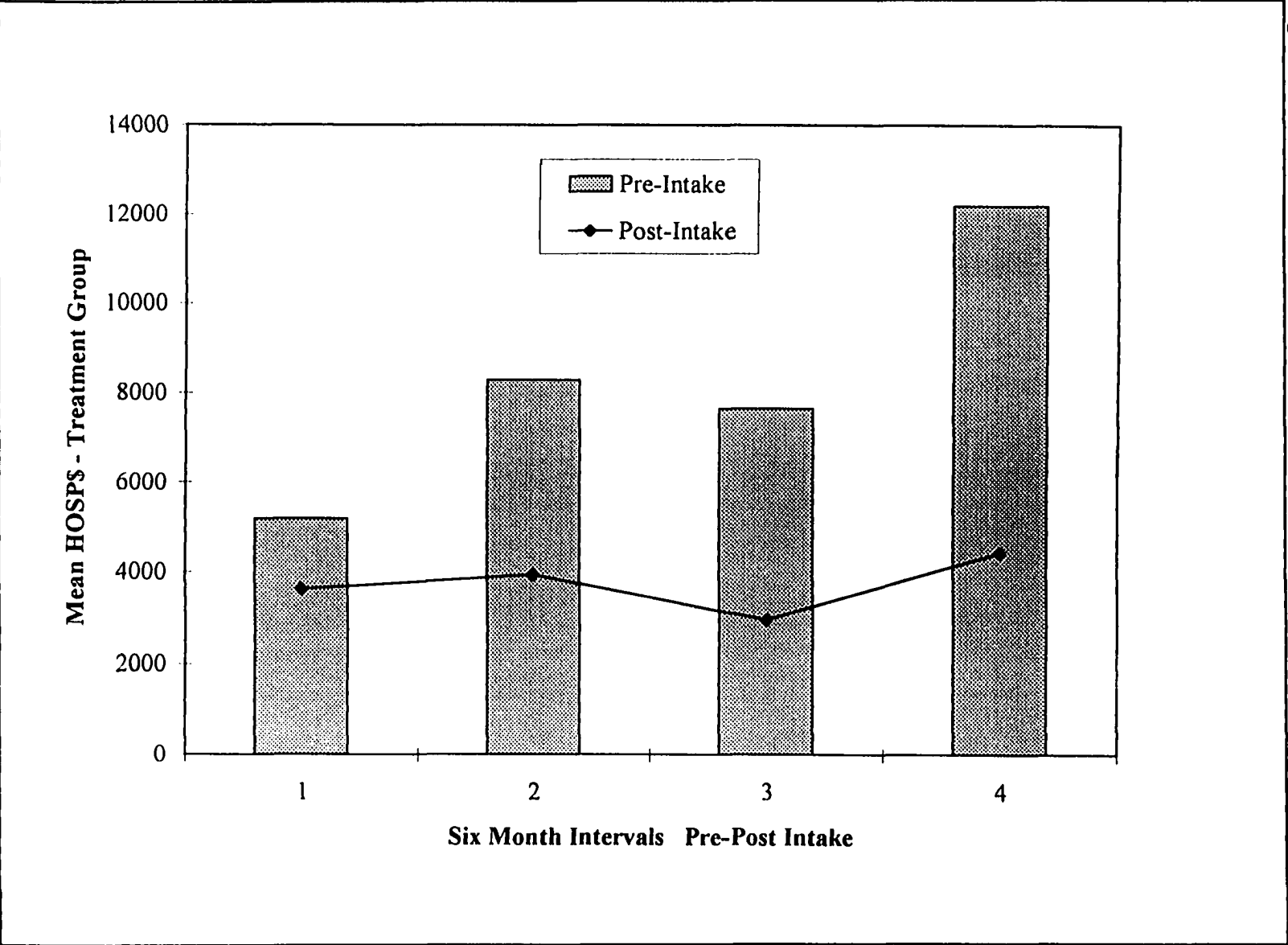


Figure 19: Mean HOSPS - AOP Treatment Group - Pre-Post Intake

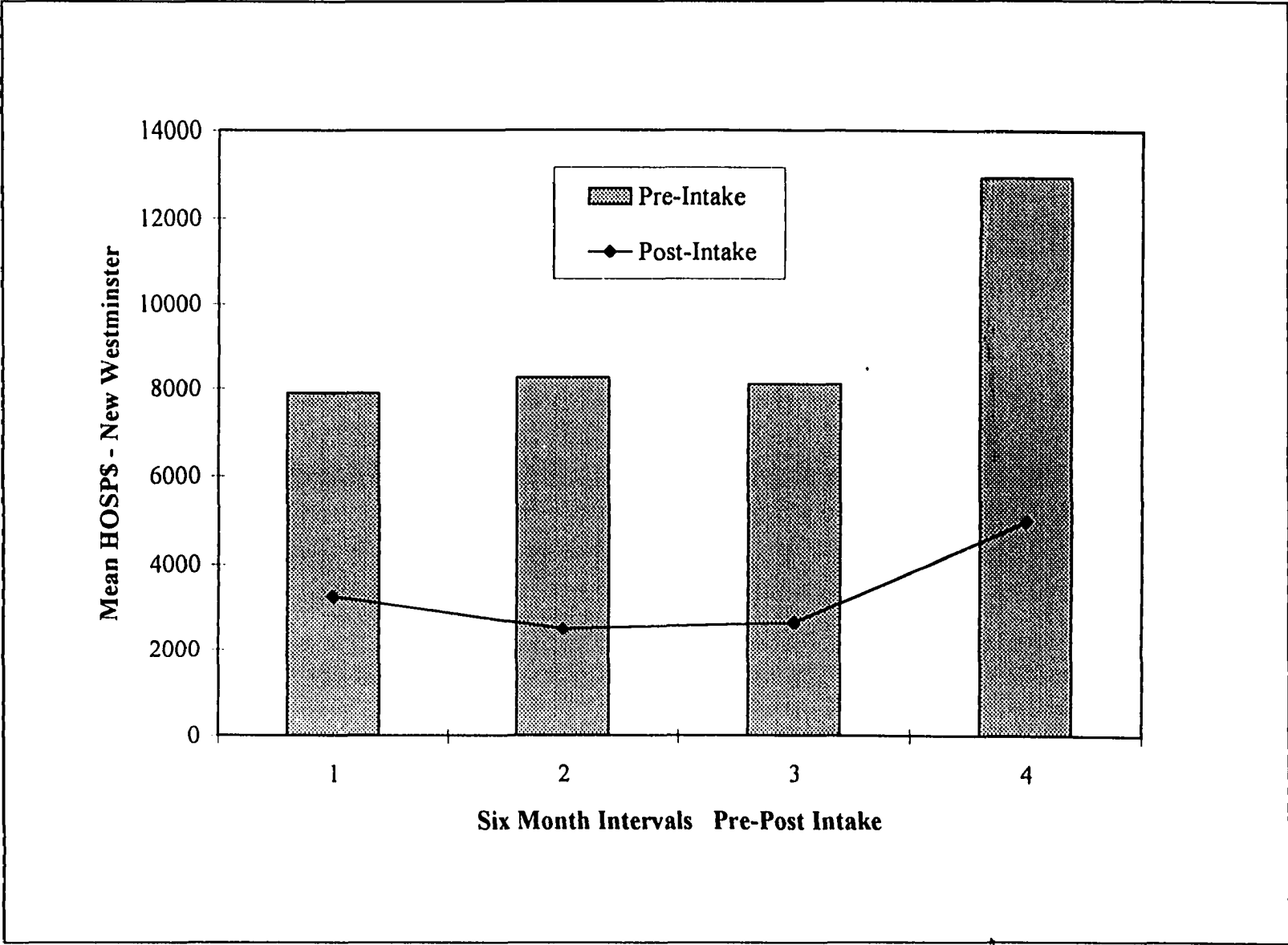


Figure 20: Mean HOSPS - AOP New Westminster Site - Pre-Post Intake

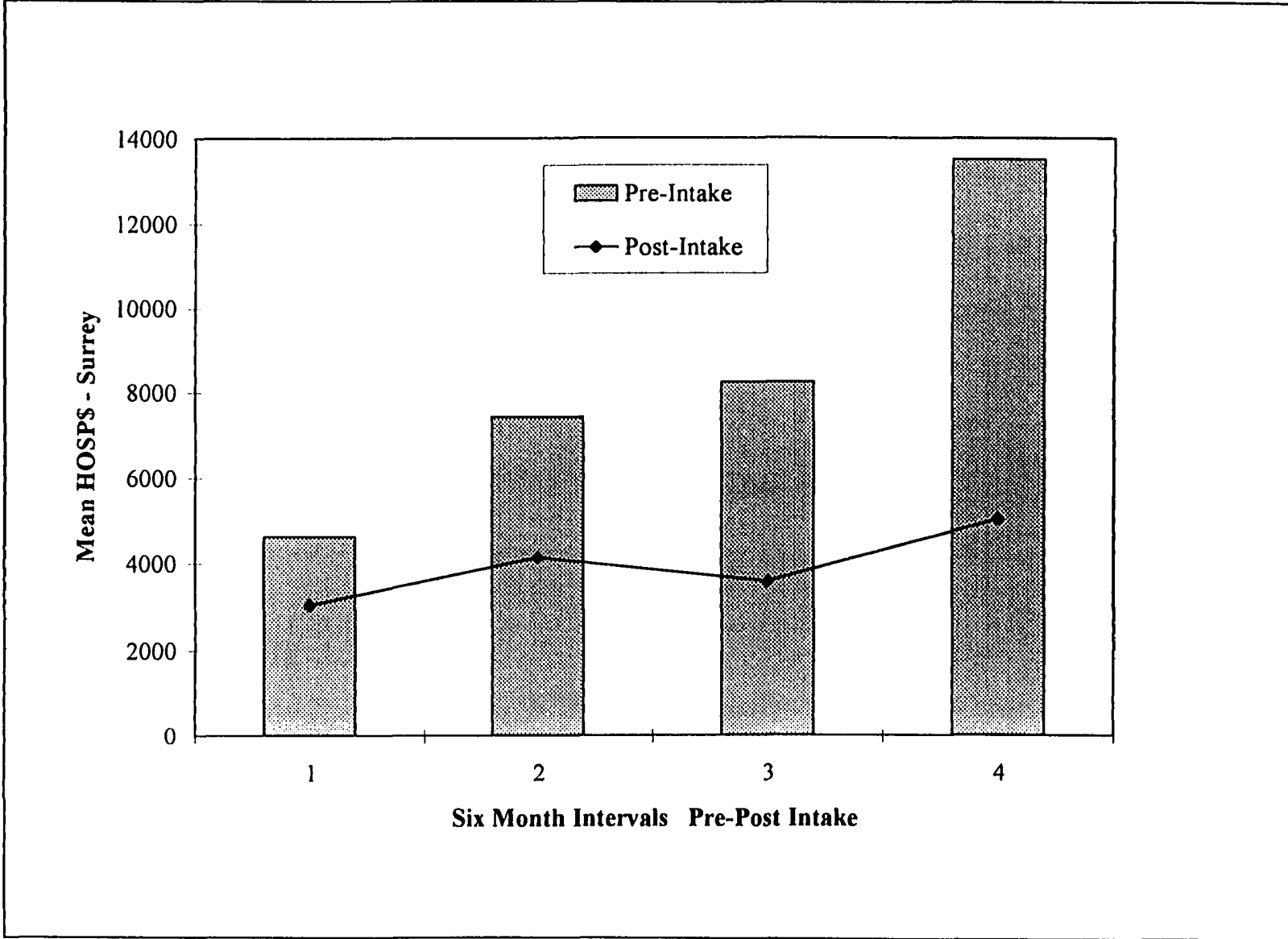


Figure 21: Mean HOSP\$ - AOP Surrey Site - Pre-Post Intake

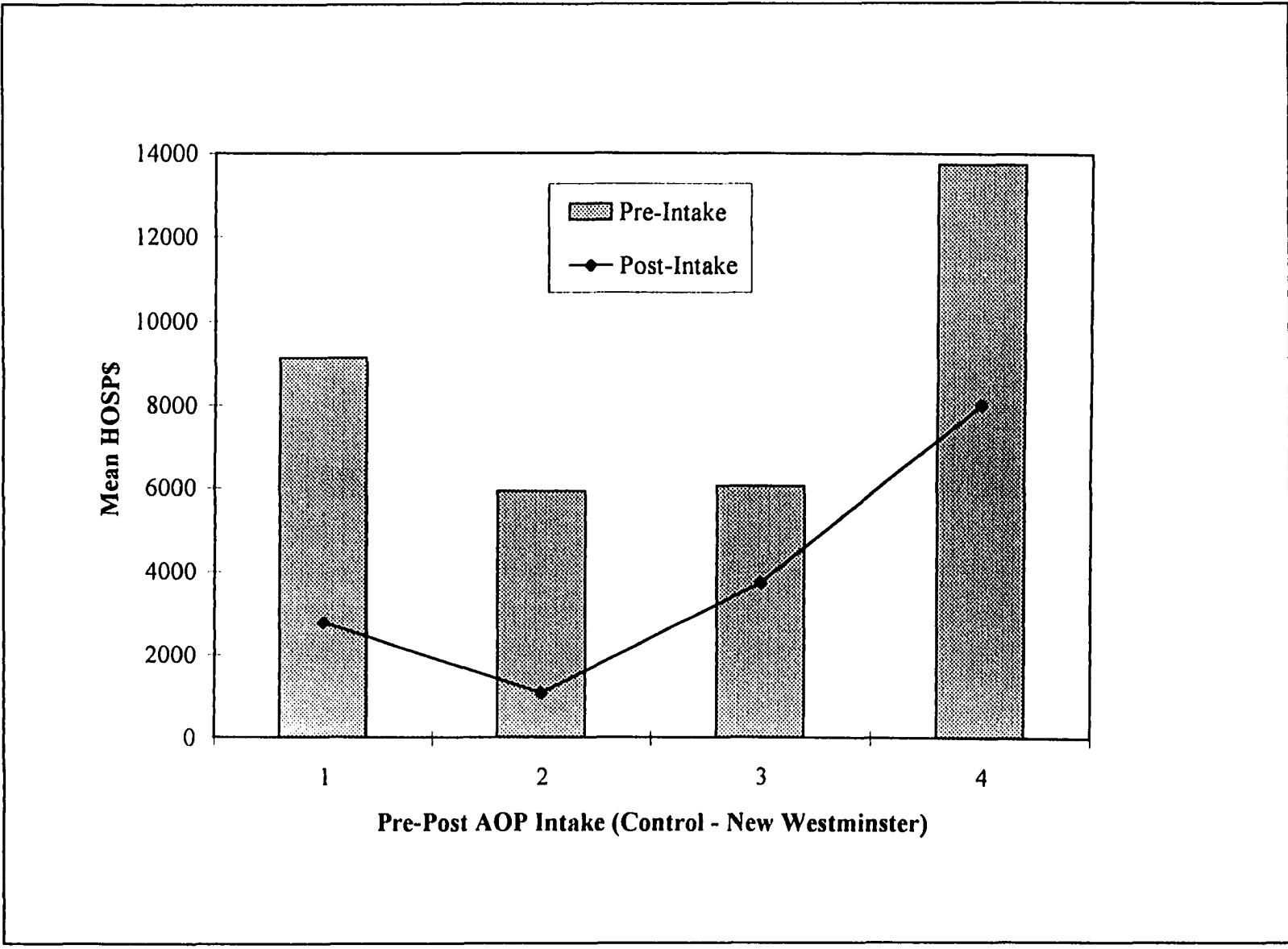
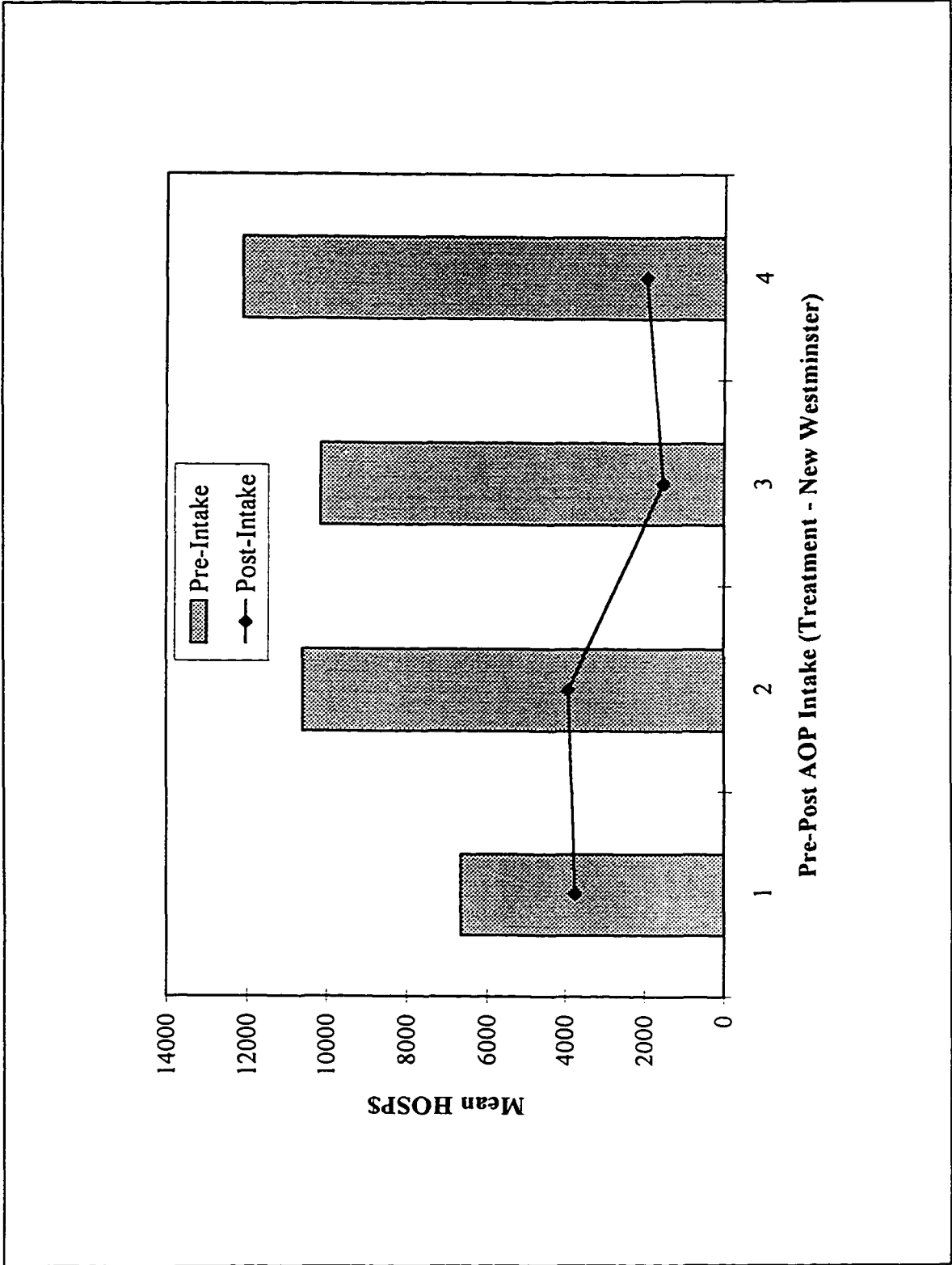


Figure 22: Mean HOSPS - AOP Control Group/New Westminster - Pre-Post Intake

Figure 23: Mean HOSP\$ - AOP Treatment Group/New Westminster - Pre-Post Intake



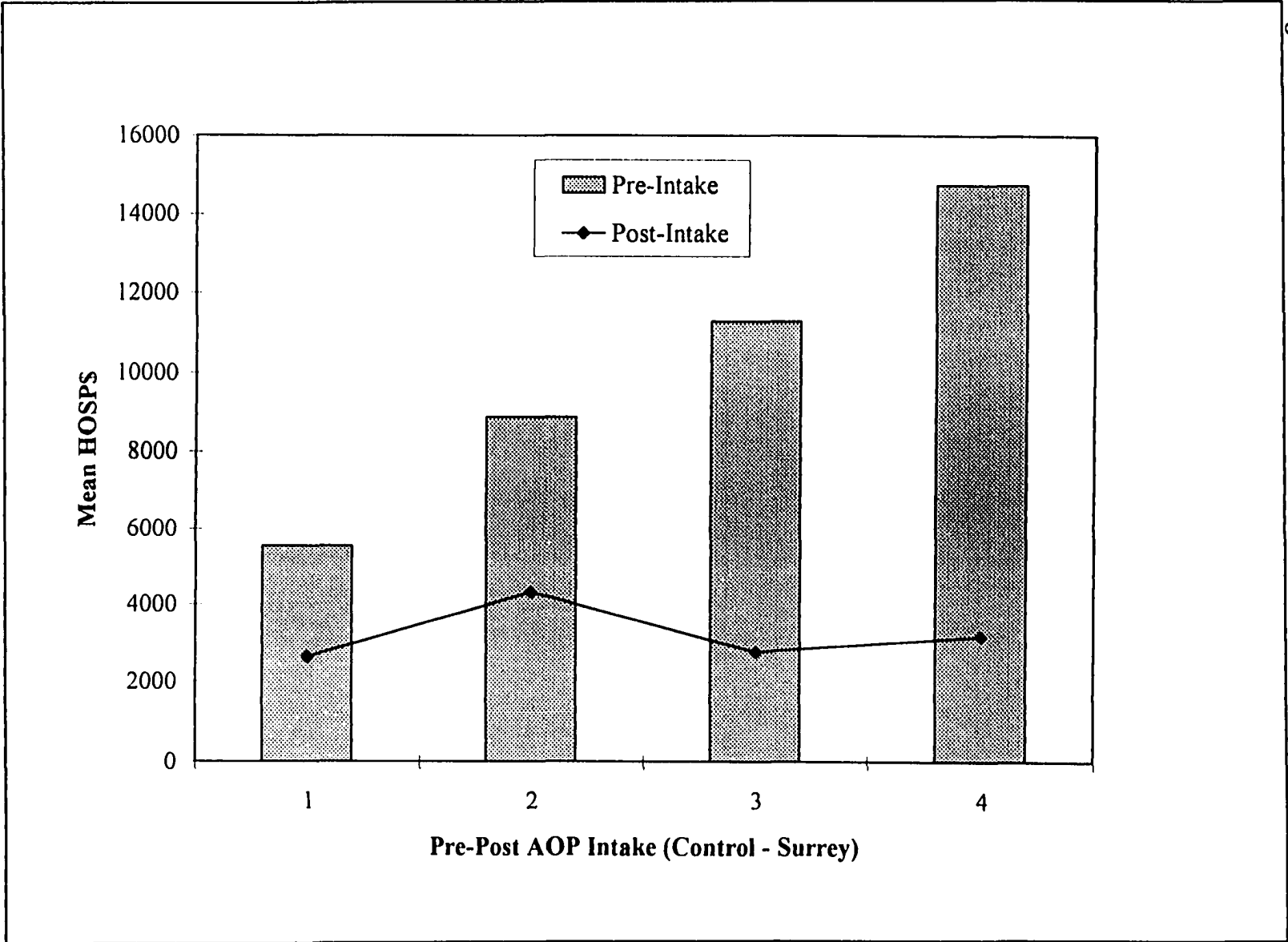


Figure 24: Mean HOSPS - AOP Control Group/Surrey - Pre-Post Intake

Figure 25: Mean HOSP\$ - AOP Treatment Group/Surrey - Pre-Post Intake

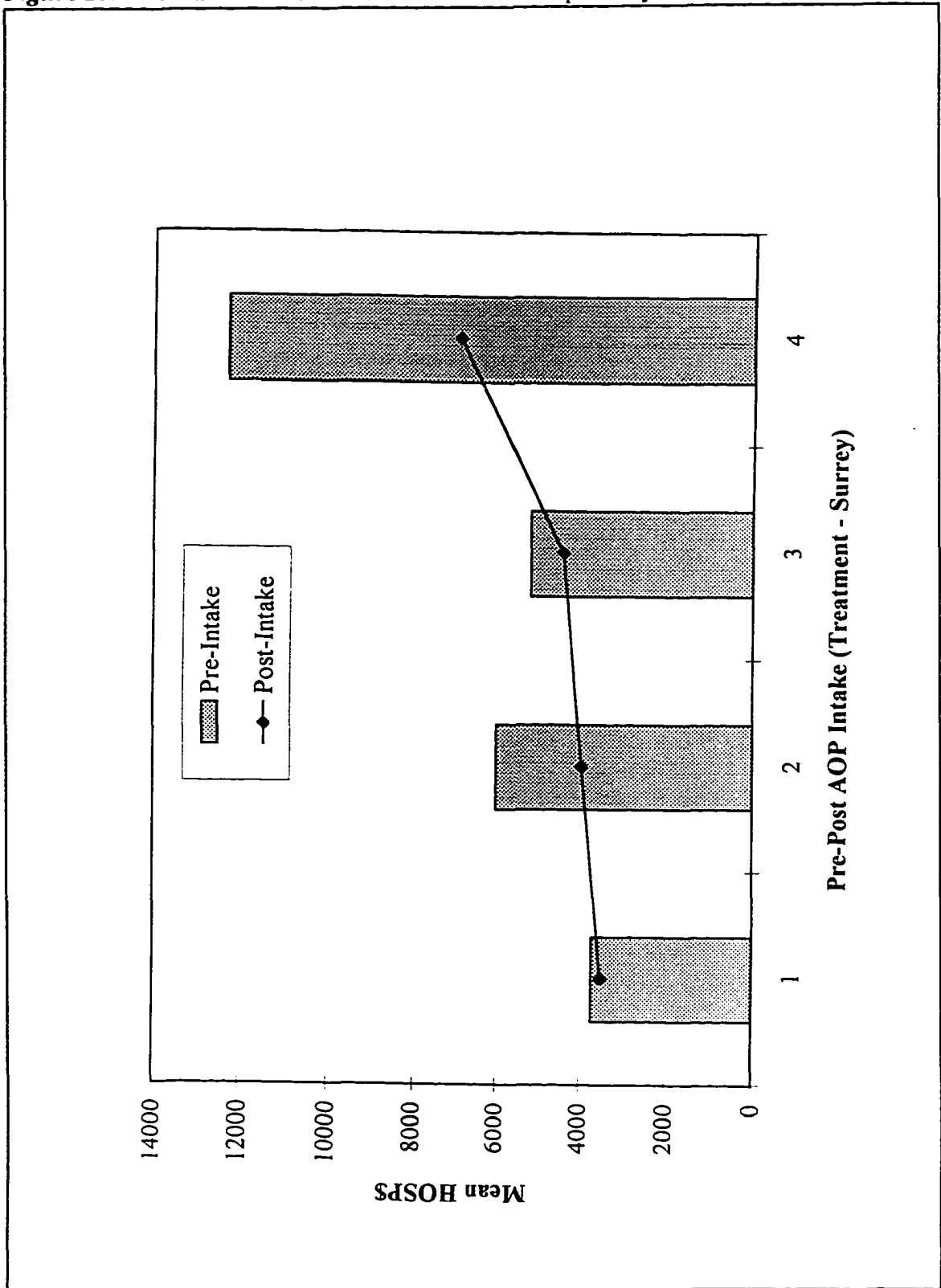


Figure 26: Mean HOSP\$ - Individual AOP Clients' Data - Pre-Post Intake (Control Group/New Westminster)

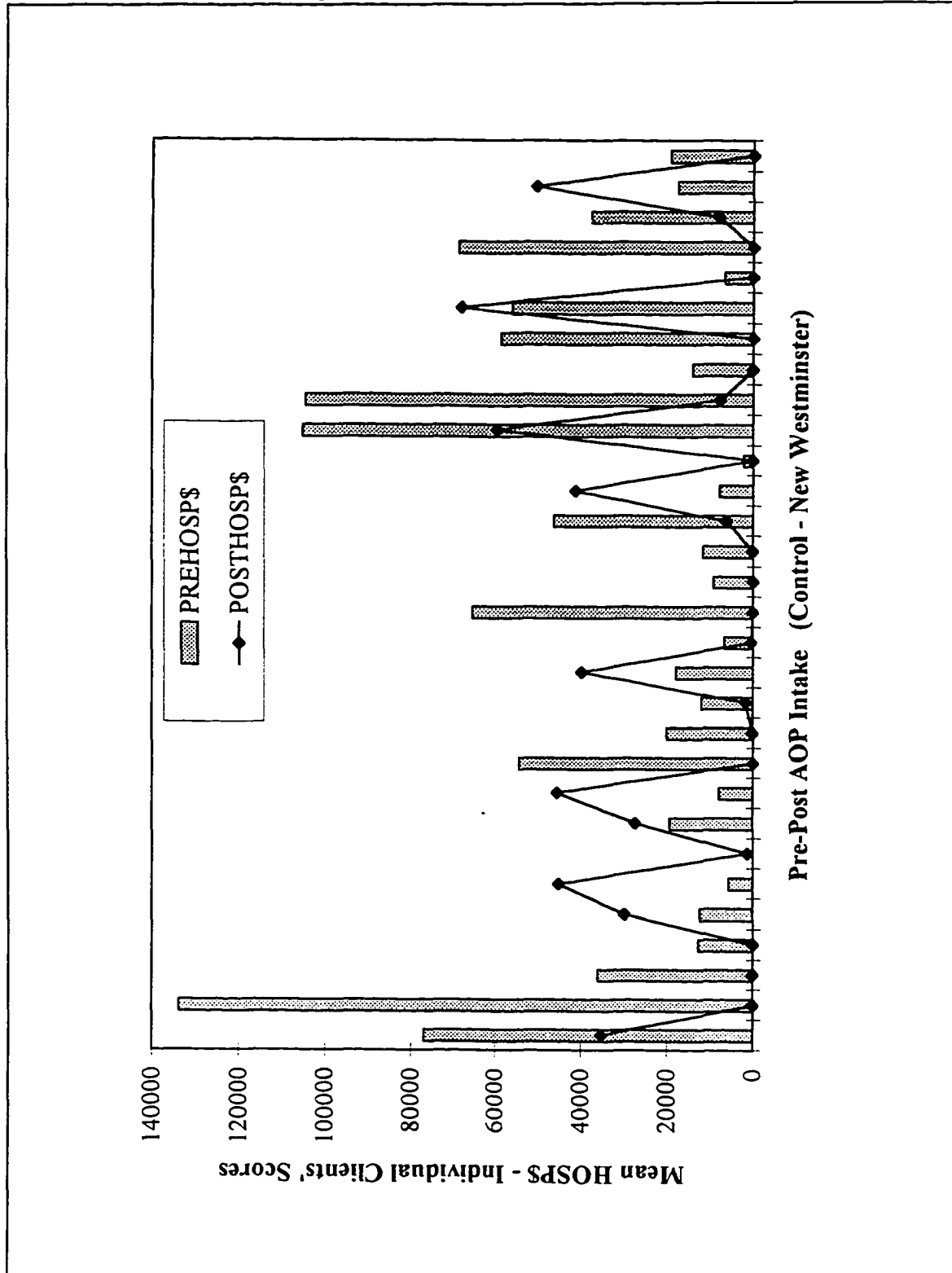


Figure 27: Mean HOSP\$ - Individual AOP Clients' Data - Pre-Post Intake (Treatment Group/New Westminster)

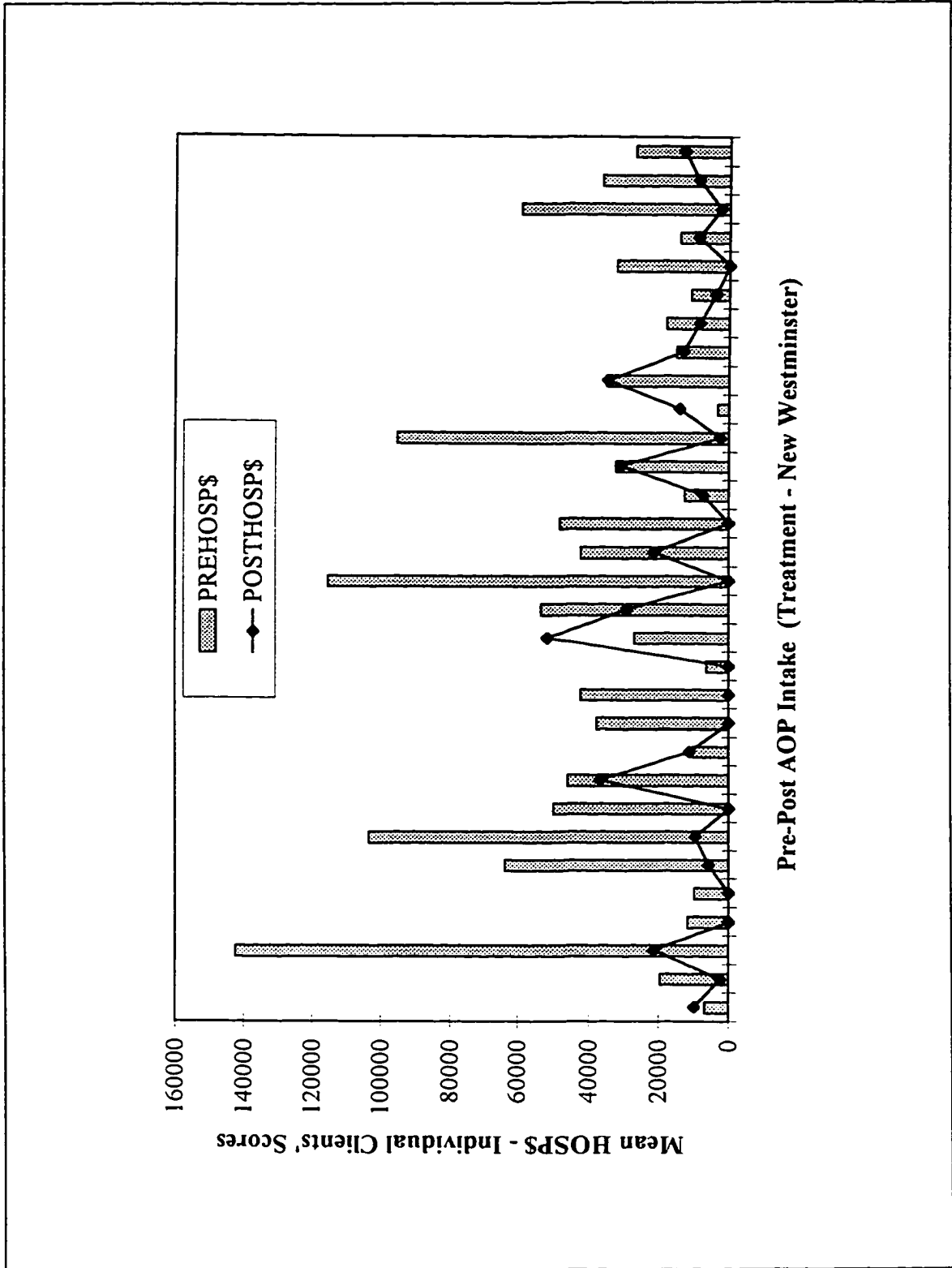


Figure 28: Mean HOSPS - Individual AOP Clients' Data - Pre-Post Intake (Control Group/Surrey)

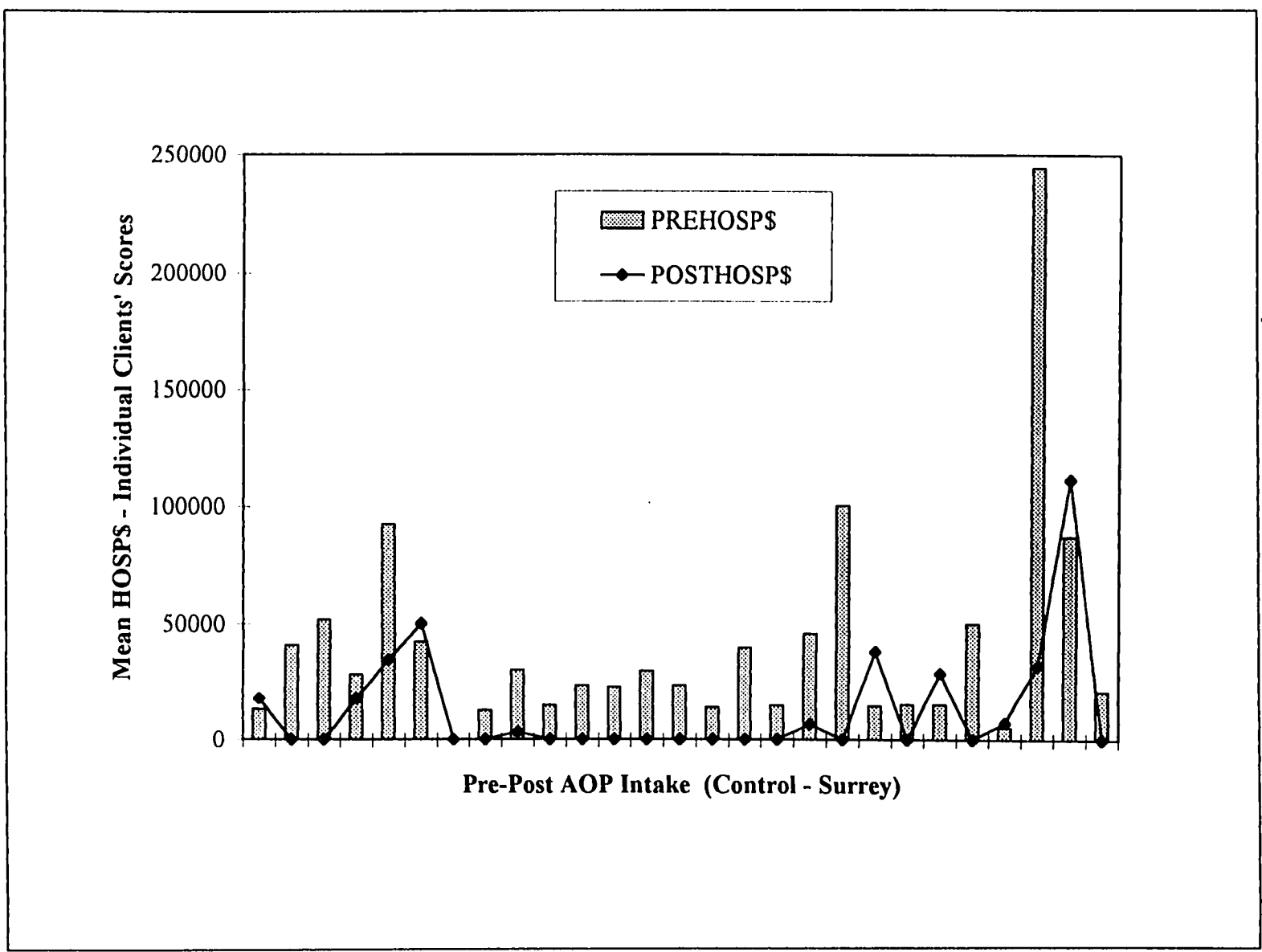
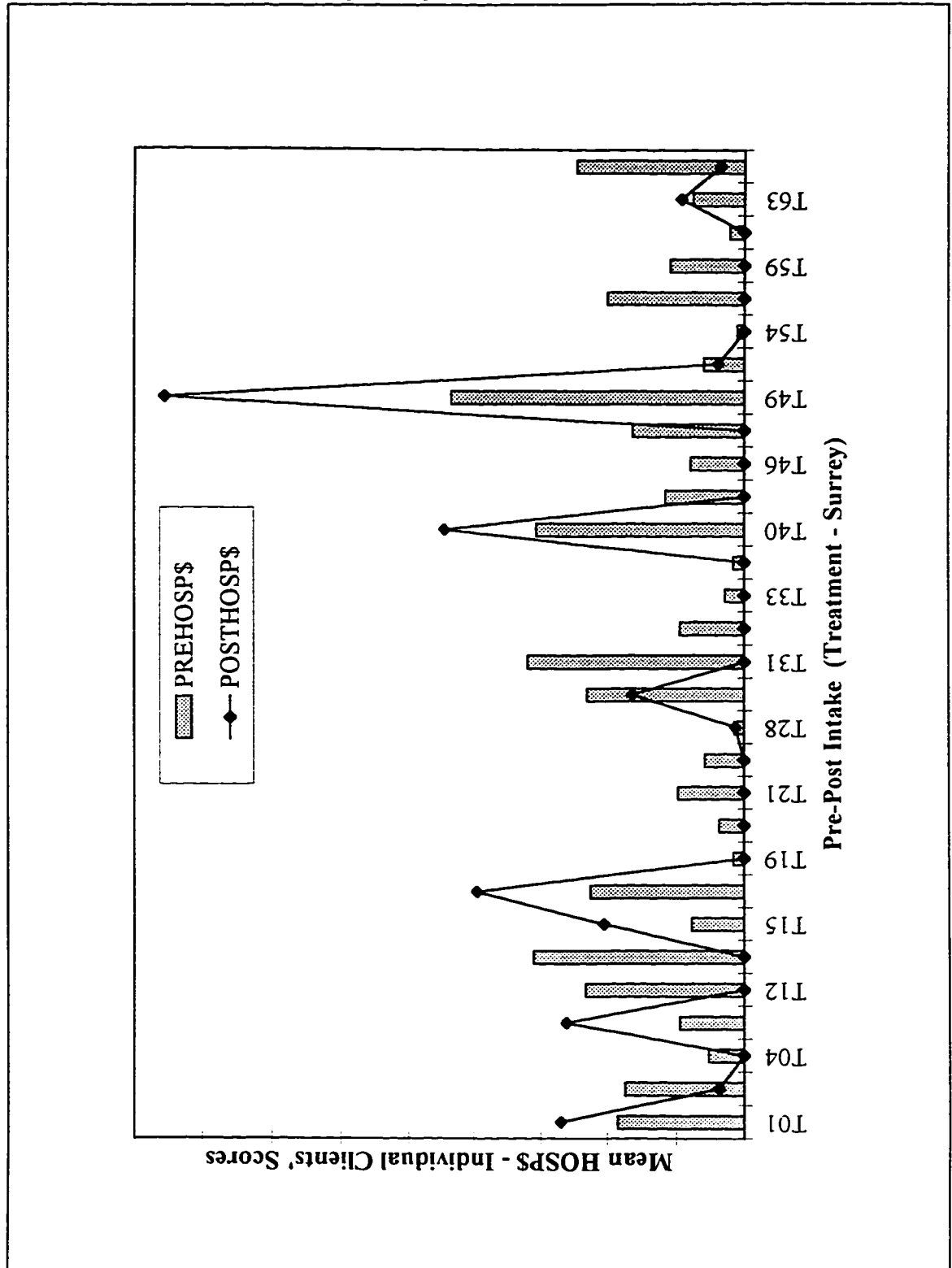


Figure 29: Mean HOSP\$ - Individual AOP Clients' Data - Pre-Post Intake (Treatment Group/Surrey)



**Appendix D: List of AOP Relevant Catchment Area
Hospitals**

BGH	Burnaby General
CGH	Chilliwack General
ERH	Eagle Ridge
FPI	Forensic Psychiatric
HSC	UBC Hospital
LGH	Lions Gate
LMH	Langley Memorial
MMH	Mission Memorial
MRH	Maple Ridge
MSJ	Mt. St. Josephs
PADH	Peace Arch
RCH	Royal Columbian
RVH	Riverview
SHY	Shaughnessy
SMH	Surrey Memorial
SPH	St. Pauls
STMH	St. Marys
SVH	St. Vincents
VGH	Vancouver General

Appendix E: List of Presenting Reasons for AOP Study Clients’ Emergency Admissions

1	SUICIDAL	41	LETHARGIC	76	HOSTILE_VIOLENT
2	DOUBLE VISION	42	LEG PROBLEMS		BEH
3	EAR PROBLEMS	43	ANXIETY	77	HEART PROBLEMS
4	TO SEE	44	PARANOID	78	GENERAL INJURY
	PSYCHIATRIST	45	DIFFICULTY	79	CGH TRANSFER
5	DELUSIONAL		BREATHING	80	HEADACHE
6	RECTAL PROBLEMS	46	POST PARTUM	81	SENT BY MENTAL
7	BROUGHT BY POLICE		DEPRESSN		HEALTH
8	RCH TRANSFER	47	MIND IS BLANK	82	BOWELL PROBLEMS
9	MANIC	48	PSYCH PROBLEMS	83	MVA
10	NEEDS MEDS	49	FOOT PROBLEMS	84	WANTS LEVELS
	ADJUSTED	50	GYNECOLOGICAL		CHECKED
11	UNABLE TO SLEEP		PROBS	85	FACIAL CONCERNS
12	PRESCRIPTION	51	SEIZURES	86	SORE BUTTOCKS
	RENEWAL	52	EMOTIONAL	87	NAUSEA
13	BACK PAIN	53	SEXUALLY	88	DERMATITIS
14	DEPRESSION		ASSAULTED	89	ERH TRANSFER
15	CHEST PAIN	54	SHOULDER	90	MEDICATION
16	SHORT OF BREATH		PROBLEMS		REACTION
17	SCHIZOPHRENIA	55	PSYCHOTIC	91	SHY TRANSFER
18	HALLUCINATING	56	PSYCHIATRIC	92	FEELING UNWELL
19	LOBECTOMY		ASSMENT	93	SLEEP DISORDER
20	OVERDOSE	57	WANTS TO BE		SERVICE
21	SUICIDE DOA		ADMITTED	94	MOOD DISORDER
22	SMH TRANSFER	58	TO ATTEND		SERVICE
23	SELF INFLICTED		HILLSIDE	95	IV THERAPY
	WOUND	59	ARM PROBLEMS	96	ABUSE MEDS_ALC
24	D&C	60	BIOPSY		NOT OD
25	DECOMPENSATION	61	NEEDS	97	GASTROSCOPY
26	LMH TRANSFER		ACCOMODATION	98	LESION
27	BIZARRE	62	COLPOSCOPY	99	LGH TRANSFER
	BEHAVIOUR	63	FLU OR COLD	100	MMH TRANSFER
28	EYE PROBLEMS		SYMPTOMS	101	SINUS PROBLEMS
29	WANTS MEDICATION	64	PSYCH DAYCARE	102	UNHAPPY W
30	VGH TRANSFER	65	CONFUSED		HOUSING
31	ABDOMINAL	66	GENITAL_URINARY	103	WANTS REF TO
	PROBLEMS		PROBS		CRESST
32	SORE THROAT	67	STRESSED	104	DIABETIC DAYCARE
33	STRUCK BY CAR	68	SPH TRANSFER	105	FPI REMAND_ASSMT
34	PADH TRANSFER	69	ASSAULTED		
35	RVH TRANSFER	70	PREGNANCY ISSUES		
36	MEDICATION	71	DIABETES		
	WITHDRAWL		PROBLEMS		
37	SUICIDE ATTEMPT	72	DIZZY		
38	HAND PROBLEMS	73	SENT IN BY DR		
39	SHAKEY	74	DENTAL PROBLEMS		
40	AGITATED	75	HEAD LACERATION		

**Appendix F: List of Contacts and Interviewees for
Post-Hoc AOP “Key Informant”
Testimonials (In no particular order)**

BATCH, C.	PITT, O.
MCDONALD, D	LANG, E.
MEDFORD, K.	POLE, M.
MCCOLGAN, P	MILLER, D.*
CAMPBELL, A.*	FOWLES, B.
MORRISON, B.*	MACINNES, M.*
SEAGATE, J.*	GRAY, J*
MATCH-HALL, s.	NESBITT, K.
COE, D.	KLINE, C.*
BEADLE, D.	OWEN, P.
SCHUCKEL, V.	LEDWIDGE, B.*
VAN DER LEER, G.*	BELL, P.
MCKINNON, M.	FOX, J.
GORDON	DENYS, R.
JOLLIVET, J.	BOHRMAN, s.
O'MELLIN, L.	UTCHEC, H.
PEARSON, B.	LEE, s.*
CHING, H.	B.C. MINISTRY OF HEALTH, LIBRARY
MORISSETTE, K.	RIVERVIEW HOSPITAL, LIBRARY
ANDERSON, P.	MENTAL HEALTH DIVISION, ARCHIVES

* Individuals whose interviews were selected for inclusion in Appendix G.

Appendix G: Summary of Selected Transcripts of the Assertive Outreach Program Study Post-Hoc “Key Informant” Interviews

Campbell, (1996)

Director, Continuing Treatment and Strategic Planning, Mental Health Division

- ◆ In 1988 Riverview Hospital was taken out the portfolio of the Ministry of Health and placed under the auspices of the British Columbia Mental Health Society (BCMHS).
- ◆ Subsequently, the Ministry used the BCMHS to develop a number of new community mental health programs through the Community Operations Division set up for that purpose. These community programs included, among others, a number of mental health outreach teams that were set up in various regions.
- ◆ The “30/60/90” initiative moved 90 clients from Riverview Hospital to the Fraser Valley/North Shore region in 1988/1989, closed 30 beds at Riverview Hospital and shifted two million dollars to the community for *new services*.
- ◆ New services for the seriously and persistently ill included the establishment of facilities such as the Sunset Lodge in Abbotsford. This was a new, purpose-built, residential mental health facility constructed in the late 1980s.
- ◆ In 1990 the Mental Health Initiative (MHI) was approved by the Social Credit Government of the day. Mental Health Services received six million dollars in *new funds* in 1990/1991 in order to improve *community* mental health services.

These funds were expanded by an additional four and a half million dollars in 1991/1992.

- ◆ The Royal Commission on Health Care and Costs was holding hearings in 1990/1991 at which many groups complained that there was insufficient funding for mental health and that the mental health delivery system was poorly coordinated. During the final year or so of the Social Credit Government's tenure staffing was largely frozen and many positions were vacant throughout the province.
- ◆ With the New Democratic Party election success of 1991 and the subsequent new budget in 1992/1993, mental health became one of the top priorities in terms of funding. The increase in the overall Mental Health Division budget that year was 50 million dollars (approximately a 25 per cent increase). This translated into approximately a 40 per cent increase to the community mental health budget (as Riverview Hospital only received the equivalent of cost increases to their budget).
- ◆ This increase in funding was used to develop many new housing units, rehabilitation programs, and to hire many new community mental health staff, as well as to meet the accumulated deficits (from the previous few years) of the many already funded agencies and to pay for wage and inflation increases.
- ◆ Many significant staffing changes occurred during these years at senior levels (Deputy Minister, Assistant Deputy Minister, Executive Director).
- ◆ With the budget and staffing increases the MHI was put into high gear. Mental Health greatly expanded the role of consumers and family members in planning and policy-making - something that was not always so popular with some of the professional mental health staff. Although the system of service delivery was still fairly traditional during this time, some individuals were working at developing service integration and were trying to effect an evolution in service philosophy at

the local levels - largely through the use of informal/personal arrangements (as the official “New Directions” policy was not yet implemented).

Kline (1996)

**Regional Director, Fraser Valley/North
Shore**

- ◆ As the crisis beds were a form of rehospitalisation, it would perhaps be important to include them in the calculation of NADM and LOS variables.
- ◆ An alternative hypothesis is that ACM does not have the expected impact.
- ◆ From the mid-1980s onward the priority in mental health was delivering services to the chronically mentally ill population. It was recognised that a more focussed and comprehensive intervention was required for these clients. To this end, regional offices were established which had directors, policy specialists, and MHC coordinators whose mandate was to improve services to the chronically mentally ill.
- ◆ Due to differences in the quality of the leadership, the New Westminster MHC experienced better client intervention and service delivery than the Surrey MHC.
- ◆ Locations for service included mental health centres, residential (Bridging) program for Riverview Hospital clients (boarding homes), psychiatric units in general hospitals, Riverview Hospital, and crisis beds.
- ◆ Crisis beds strongly emphasised client rehabilitation. Whereas MHCs focussed more on outreach and provided rehabilitation through Social Services.
- ◆ One of the biggest issues for the staff at the MHCs participating in the AOP study was the perception that the caseload burdens between MHC staff and ACM staff

were highly unfair. The client/staff distribution was in the order of 60:1 to 90:1 for the MHC staff, compared with 10:1 for the ACM staff. This “inequity” generated a great deal of resentment (especially in the Surrey MHC) as the two groups of staff were thrust into an adversarial relationship where the (relatively resource rich) AOP study was perceived as being the “Cadillac”.

- ◆ The quality of the MHC staff varied by site in terms of their clinical strengths and training (Surrey had some staff who were more competent and experienced than the New Westminster counterparts).
- ◆ At about the start of the AOP study Riverview tightened up their client admission criteria and increased their client discharge rate, and consequently experienced a drop in recidivism (due to shorter LOS).
- ◆ The greatly enhanced financial support to the MHCs at the time of the start of the AOP study would definitely have had an impact on the MHC service delivery generally. And at approximately the same time, the following services that served the seriously and persistently mentally ill population, were initiated or enhanced: Riverview Bridging, expansion of rehabilitation programs, community mental health staff increases, reduced MHC caseloads, crisis beds, and the Supported Independent Living program.

MacInnis (1996)

**Riverview Hospital Outreach
Programs/Staffing Coordinator**

- ◆ Various issues led to problematic relations between ACM staff and MHC staff. These issues included: (1) travel funding attached to the AOP (MHC did not have travel money), (2) resentment with regard to territoriality (e.g., the “imposition” of institutional *Riverview Hospital nurses* onto the community mental health

territory), and (3) ACM model prejudices (including a lack of MHC faith in ACM staffs’ abilities).

- ◆ Site differences were very apparent due to: (1) Staff barriers in Surrey - New Westminster MHC was more accepting of the AOP and its ACM philosophy (and therefore implemented the ACM model more effectively), (2) New Westminster (but not Surrey) received an additional nurse under the auspices of the Riverview Bridging Program, (3) the inherent differences between sites due to the urban versus rural environments, and (4) differences in severity of clients’ illnesses between sites.
- ◆ Control group clients in general were very sick because, until the AOP was implemented, they were not receiving the services they required. The reasons for this were : they were not capable of connecting with the MHCs; they did not receive follow-up care from the MHC staff; and in some cases the clients had to be tracked down as MHC contact with them had been lost.
- ◆ At the time of the implementation of the AOP there was a reduction in MHC caseloads in the region.
- ◆ As ACM nurses came out of Riverview, they perceived hospitalisation as a positive thing, and being very motivated to provide high quality care, may have over-admitted clients in the early stages of the AOP.
- ◆ Once the AOP had been implemented a competitiveness with regard to the treatment of the control group by MHC staff was quite apparent. (Actually a good side effect of the AOP!).
- ◆ The many positive effects of AOP in the community were not measured (e.g., improved hospital/inter-agency relations, increased linking of client services,

breaking down of barriers between the “institutions” and the community, improved credibility of ACM and Riverview nurses).

- ◆ The AOP study may have suffered from a duration effect - it would be an excellent idea to do a five year follow-up, as many of the clients are still be served (the ACM model is quite intact in New Westminster). The “novelty” factor has worn off now as well.

Miller (1996)

**Regional Policy Planner, Fraser
Valley/North Shore**

- ◆ MHC caseloads: Surrey 1:56, New Westminster 1:72 (1992).
- ◆ The psychiatric crisis bed unit in New Westminster opened in September 1990 with 10 beds.
- ◆ Surrey clients had greater family and community support than New Westminster clients, who tended to be a younger and more transient group. This observation was corroborated by one of the original project nurses.
- ◆ Riverview client return rate of discharges (within the first year) for 1990/1991 was approximately 30.5%.
- ◆ Nurses for both the AOP and Bridging projects were funded by the hospital’s operating budget.
- ◆ Chronic care Sub-Committee Report on Caseload Size concluded that the optimum caseload size should be 37 clients. This result is based upon a weighted formula which accommodates 29 clients who are “maintained” (seen on a monthly basis) plus: four new client referrals, one acute/exacerbated client, one at

risk client, one non-compliant client, and one rehabilitation client. The actual caseload figures for the lower mainland region in 1990 were 1:37 to 1:93 and for 1992 they were 1:20 to 1:75.

- ◆ The Riverview Bridging program began in 1989. Especially the AOP control group could have benefitted from this program - receiving intensive residential services.
- ◆ There was an inherent AOP design flaw in that the control group were chosen from the same MHC client population as the treatment group. Even though both groups may have been seriously mentally ill clients the transfer of some of the most seriously ill clients to the treatment condition (and therefore into the care of ACM staff) would have meant a significant qualitative reduction in caseloads for the MHC staff which would have meant a reallocation of resources to those seriously mentally ill clients who remained (some of whom must have been in the AOP control group). Although the MHC caseload reduction may not have been large in terms of number of clients, it would have been considerable in terms of the amount of resources (e.g., time) that were freed up.
- ◆ The concept of the AOP control group receiving “regular” MHC service delivery is somewhat problematic as “regular” service varied greatly on several dimensions. First, those seriously mentally ill clients who were considered acute or at risk would have received qualitatively different service than those clients who were considered stabilised and maintaining well in the community. This means that the AOP control group would have received, by the very nature of their status, a much more “assertive” and resource intensive level of service delivery. Second, control clients would have also been the most likely recipients of services from community living support workers who worked out of “clubhouses” in the community. One of the functions of these workers was to provide various forms of support to MHC clients who required assistance.

- ◆ Crisis bed utilisation data should be included in the calculation of recidivism rates.
- ◆ Geographically, New Westminster would have found it easier than Surrey to access the psychiatric crisis beds, although they were available to the entire region.

Ledwidge (1996)

**Psychologist, Department of Psychology,
Riverview Hospital**

- ◆ Problem of admission at Riverview hospital. It is important to note that admission rates in the last decade especially do not necessarily reflect the incidence of client need as admission criteria have increasingly been tightened in the climate of continued downsizing and restraint to prohibit all but the most severely decompensated individuals admission. This fact, combined with the longer waiting periods and the usually indirect referral mechanisms, render Riverview recidivism rates somewhat invalid for the purpose of establishing the level of need in the seriously mentally ill population for tertiary psychiatric treatment and care.
- ◆ The MHC and AOP staff suffered from certain political tensions brought about by the competitive nature of ex-Riverview nurses entering the MHC territory with (1) a new, fully-funded program, (2) a philosophy of care which, to some degree, challenged traditional MHC procedures, and (3) a much smaller staff to client ratio. It would therefore be of interest to compare MHC staff “compliance” data before, during, and after the AOP study period for the control group clients versus the remainder of the MHC client population who were not in the AOP study.

- ◆ A considerable amount of funding was dispersed into the community mental health care delivery system in 1989/1990 to 1992/1993 through the Community Operations Division of Riverview Hospital. Some of these funds would have quite probably impacted the level of care, directly or indirectly, which was received by clients who participated in the AOP study.

Lee (1996)

**AOP Psychiatric Assertive Case
Management Nurse (ex Riverview
Hospital) - New Westminster**

- ◆ After the first year the ACM staff were assigned permanently to each of the two sites, whereas for the first year they worked rotating shifts between the two sites. This was hard on the clients and the staff (lack of continuity, etc.).
- ◆ New Westminster adapted to the ACM model well and implemented it much more vigorously than the Surrey site.
- ◆ ACM improved linkages for clients to other services and received high praise from family members.
- ◆ The two year study was not long enough (therefore possible a possible study bias existed - duration effect). Follow-up research would be very important.
- ◆ The gradual increases in ACM caseloads over the first year (due to slow intake) may have made some difference to the amount of attention given to each client (early versus late).

Seagate (1996)

**Regional Mental Health Office, Fraser
Valley/North Shore**

- ◆ The Supported Independent Living Program (SIL) was initiated in 1991/1992. This program facilitated mentally ill clients to live independently in the community by providing basic support such as housekeeping and life skills help/training.
- ◆ The Riverview Bridging program was also available to help mentally ill clients in the lower mainland establish and maintain themselves in the community. The program provided housing support and a full range of other support services to help clients in their transition from institutional life to life in the community. Bridging program services were extended qualified clients who were already living in the community if and when resources (e.g., boarding home beds, apartments) were available. Consequently, the Bridging program would have been in a position to provide services to the AOP study population.

Van der Leer (1996)

Mental Health Division

- ◆ The Surrey area community is likely to be more tolerant of extraordinary behaviours than New Westminister. There would consequently be less police, landlord, and public contact which in turn would potentially reduce reporting of clients in crisis and lower the rates of resource utilisation.
- ◆ The AOP/MHC staff likely view hospitalisation as a positive (i.e., lower recidivism rates do not necessarily mean better clients!).
- ◆ Crisis care beds are an alternative form of hospitalisation and therefore should be included in the hospitalisation data (NADM, LOS) although the LOS would characteristically be shorter.

***Appendix H: Transcripts of AOP Nurse
Questionnaires: Responses to Open-
Ended Questions***

ASSERTIVE OUTREACH PROJECT

AOP Nurse Questionnaire - Part I

**Question #1: How are the services that you offered different than the traditional
Mental Health Centre services?**

Respondent 1 (New Westminster):

With the frequency of contact, I feel I got to know the clients better. The very early signs of decompensation were picked up sooner, I think, than with traditional follow-up. I believe the clients become even more open and share often their innermost experiences, concerns. I feel there becomes a bond of friendship. AOP nurses, in my opinion, have to be careful about this because even if the relationship is very professional, the clients begin to be able to "read" the nurse from reactions, body language, etc. and the relationship could feel "too close". I think this "friendship" feeling doesn't occur so much with traditional follow-up. The length of follow-up differs. I believe some of the clients AOP is following may have been discontinued in traditional follow-up. The fact that the AOP model is "in vivo" is different. Dealing with the day to day small problems is different. AOP provides a different approach, sometimes, to crisis intervention.

Respondent 2 (New Westminster):

- a) The regular home visits which enable us to have a clearer picture of what their daily livings are really like as they cannot hide anything from us.
- b) The close relationship as we go through the crisis together with them. Even the hospitalization they don't feel that we are dumping them at the hospital and will be referred back to the MHC after discharge because we are there to help and continue after the hospitalization.
- c) The delivery of meds and injection at their place offer convenience and close monitoring and compliance.
- d) The advocacy and the living arrangement, ie. physically helping them moving, etc.

Respondent 3 (New Westminster):

- a) In vivo assessment is based on what I see, not on what they say.
- b) Much more available - telephone return the same day. Unscheduled meeting can be the same day if it is urgent.
- c) Interacting is more personal - over and above "therapeutic".
- d) Trust and working relationship becomes stronger with time, especially after I support them through a crisis.
- e) Respond very quickly to small crisis in life - avoid big crisis to happen.
- f) Improve quality of life as a whole (all aspects) - not just clinical aspect.

Respondent 4 (Surrey):

Most important aspect is the contacts are in vivo which allows for a more comfortable setting for the client and allows us to obtain a complete picture of the persons' lifestyle, likes, dislikes, hobbies, activities, state of mind, behaviour (ability to function in the community). The in vivo approach also allows us to seek out the client when appointments are missed. (Traditional service allows them to go weeks to months without being seen or until there is a problem.) With some of the schizophrenic clients, decompensation occurred within days so early intervention often led to stabilization.

Secondly, to have a vehicle and monies to use as reinforcement for the client, secures the clients' involvement and Mental Health. Most clients dread the thought of attending the centre. Even though the clients realize they need psychiatric help, most lose sight of the goal to function well and at these times they view AOP as a friend who has \$ and a car.

Respondent 5 (Surrey):

- a) Smaller case load.
- b) We see the client on their own turf.
- c) We offer more frequent contacts.
- d) We are continually advocating for the client. We are more aware of resources in the community than the staff in the MHC. This is because we are in the community more and we are continually searching for different resources.

Respondent 6 (Surrey):

We visit the client in the home, at work, or wherever he or she is. Visitations happen regularly two - three times weekly for many clients, consequently you often get involved in everyday life, ie. family squabbles. One is more aware of lack of resources or the barriers presented for those living with limitations, ie. money, friends. Assist client to become more integrated into the community.

Question #2: Describe any problems that you had regarding your clients' hospitalizations. Please cite examples.

Respondent 1 (New Westminster):

Sometimes clients were referred to hospital or taken to hospital after hours or on weekends when AOP would not have considered hospitalization as an option. Perhaps more education re AOP and it's role, etc. could have been done with some of these other community resources. Maybe AOP didn't educate clients enough to try and wait for us to be available "tomorrow" or "Monday". Sometimes the clients 'manipulated' their way into hospital (using alternate after hours services or took themselves to emergency) to avoid

other pressures. Example: One client being threatened physical harm for not paying debt may go to hospital and say the right things to get admitted. Example: A client seeking hospitalization told staff there he overdosed on procyclidine when in effect AOP provided him with no more than four procyclidine at a time. When clients genuinely did need hospitalization, sometimes the wait at emergency for assessment was unbearably long. When the program first started, AOP were there at emergency and through whoever's expectations, were expected to stay there until a decision was made. I have spent four hours in emergency. I wouldn't do that any more. The liaison with the hospital I'm involved with now is much better. I phone ahead, I can leave the client, emergency staff can contact me, etc. At first, I think the hospitals were feeling out the AOP's credibility. Now, I believe that hospital staff are much more inclined to listen and hear what we have to say. I guess, in general, I'm saying there are fewer problems with rehospitalisation now than when the program was young. However, clients still find their way to hospital - very often when AOP is not on duty.

Respondent 2 (New Westminster):

Sometimes hospitalization can be avoided from our assessment. Since other agencies or even the therapists at the MHC do not fully understand our services offered to our clients, they panic and advise hospitalization without our blessings. We found that some hospitalizations occurred during weekends when we are not available. Instead of asking them to wait until Monday, hospitalization was offered. We, in turn, do a lot of educating to our clients to ask them to wait until we are available. Maybe better communication and liaison with other agencies and less turf war will help greatly in this area.

Respondent 3 (New Westminster):

- a) Other agencies involved, eg. a client showed up at the centre after 4 p.m. complaining of suicidal thoughts. He was taken to emergency and was admitted. This has been the way the client gets people's attention. The hospitalization can be avoided if it was handled by AOP.

- b) Pressure from relative, neighbour, landlords - complaining of unusual behaviour of the client - "they belong in the hospital".

Respondent 4 (Surrey):

Client taken to emergency to encounter long waits, 3-4 hours, before seen by a psychiatrist. They are usually seen by a G.P. or resident without adequate training in psychiatry and thus have to call in a consultant psychiatrist anyway. Otherwise, no problems encountered admitting. After admission to a psych unit, communication was often a problem even after much effort to avoid these problems. Hospital staff are never consistently on duty and thus their internal communication is poor.

Respondent 5 (Surrey):

Lack of psychiatrists in hospital. Psychiatrist at the MHC does not have admitting privileges to the hospital. Lack of beds. We had to send a client to North Vancouver because PADH or SMH would not admit the client. The staff at the hospital isolate themselves from the other resources, eg. We had a client admitted to hospital for three weeks when a short term (overnight) admission would due. They were not interested about what we knew about the client.

Respondent 6 (Surrey):

I did not have problems, but I know of others who did.

Time - whenever one goes through emergency you will have to cancel any other plans - at least three hours or more. Without a more expedient way to enter hospital one has to first persuade the client that he needs hospitalization and then the process takes so long. Not always a psychiatrist available in emergency and hospitalization necessitated because side effect symptoms aren't recognized.

Question #3: In your experience, what worked with the ACM model?

Respondent 1 (New Westminster):

What worked mainly with the ACM model in my experience was the team approach. Early on when I entered the program this approach had to be clarified and established as it was meant to be. I think now, that the team I work with is very strong and this helps the model. The clients all know were coming from the same place and going the same place. If we err, we all err, then we all agree on a new approach. The clients all know we come as a package - if they don't like that, then we can't be involved. The team approach also gives us a fairly strong voice at the Centre. We sometimes have to be firm but more can be accomplished with a united front.

The trust that is generally established with the clients which the ACM model affords is very beneficial in terms of being able to be honest and up front - us with our clients, our clients with us.

Respondent 2 (New Westminster):

- a) The team approach.
- b) Strong leadership.
- c) Freedom and full responsibility in planning treatment formats with our clients.
- d) Job satisfaction.
- e) Less burnout.
- f) Team support from top down.
- g) The commitment to avoid unnecessary hospitalization.

Respondent 3 (New Westminster):

The ACM team seen as a separate organization.

All planning, clinical administration is done within the team.

All team members are team players. They follow the plan and approach uniformly and consistently.

All communications amongst team members - good understanding of the clients at all times.

Support each other.

Support from management - who believes the model will work.

Respondent 4 (Surrey):

- a) Frequent contacts, scheduled appointments to meet with clients each week, at a mutually agreed site, in vivo, and tracking no shows.
- b) Being mobile based, there was a lot more time spent with clients as opposed to socializing, attending meetings and waiting for no shows at the MHC. This also allowed for increased contact with community support agencies; MSS, Clubhouse, families, friends.
- c) Focus on all needs - housing, food, clothes, hygiene, voc/rec/educ training, ie. when out of food, accompany client to obtain food (MSS, food bank).
- d) Rapport and trust relationship built often convinced clients to remain compliant with meds and/or Rx. We often advocated for clients at their request.
- e) Team approach - three person to decrease burnout, allow for new ideas and approaches, to give a change to the client and to decrease the chance of client manipulating therapist through dependence/transference.
- f) Individual responsibility - for Rx plans and approaches - gives staff a sense of commitment/responsibility/accountability and satisfaction.

Respondent 5 (Surrey):

Frequent contacts. This was a stabilizing factor for several of our clients. Tracking or exchanging clients with other team members. The fact there was more than one important person in their life was very important. Monitoring the effects and compliance of taking medication was very important to the client staying out of hospital. Advocating for clients in crisis situations worked as a strong bonding factor.

Respondent 6 (Surrey):

- a) Frequent visits - intervention early through regular assessment.
- b) Rotation of clients - keeps nurses more alert and minimizes the "bogged down" feeling. Good for nurse and client. Client can get "bogged down" with one nurse too.
- c) Team meetings and communication - good for up-to-date info sharing/solving and builds a cohesiveness in the team.
- d) Decreased hospitalizations of many clients.

Question #4: What did not work with the ACM model?

Respondent 1 (New Westminster):

The early lack of understanding of others immediately around us about the ACM model. There's some jealousy (?) that goes with knowing three people have a 30 client caseload when traditional therapists have 1-50 or 1-60 or whatever. This isn't a fault of the model but it made working relationships strained a bit. One common comment as I would leave the office would be "must be nice - going for coffee again~".

I think the ACM model lends itself better to a smaller geographical area, eg. New Westminster as opposed to the more sprawling and some rural area of South Surrey. Seems to me much more money and time is spent in travel and perhaps less time with clients in the larger geographical area.

The lack of understanding of the model with other community resources. (Also, not really a problem with the model but perhaps with introduction and on-going education)

Respondent 2 (New Westminster):

- a) Not in a separate office of MHC as clients will seek and wait for us when it is not their scheduled appointment.
- b) Too much time spent in doing paperwork.
- c) Not a proper size of the team of 5-6 with strong team leader.
- d) No direct supervision from the personnel who fully understands the model to see it carried out properly.
- e) For some team members not fully understand their commitment to the model.

Respondent 3 (New Westminster):

Team size - less than three will have problem on coverage. Over six will have problem with communication and consistency.

In the same office as MHC and regarded as MHC “one of the workers” - clients have access to MH staff at the Centre.

Treatment plan may be affected, influent.

Room for them to manipulate.

Respondent 4 (Surrey):

- a) Close ties to MH - being in the same building we were often expected to participate in MHC functions that were time consuming and/or irrelevant to us. We would try to opt out of the events; meetings, social gatherings and chit chat.
- b) At times, follow through on treatment strategies were not done - sometimes due to differing opinions amongst the AOP staff. Staff had different ideas of the model in areas that were not well defined, ie. life-long involvement or involvement until

they are capable of independent function (may be the client selection for the program was faulty).

- c) Clients with the singular diagnosis Axis II Borderline P disorders, there again, maybe with strict adherence to the model, problems may have been avoided.
- d) Covering the rural areas caused problems in itself. Events often unfolded due to our absence from an area, resulting in the handling of the clients by those unfamiliar to them. Cell phones a must when distantly mobile.

Respondent 5 (Surrey):

The model states that we make contact three times per week. With some of our clients this was not possible. We had clients that worked steady and the best we could do is have one major contact a week.

We could not be totally separate from the MHC. It would have been better if we had a separate office away from the MHC. At times there was too much interference from the staff at the MHC.

Respondent 6 (Surrey):

- a) Being housed in mental health centre leads to necessity to be always defending your plan.
- b) MHC (not all) staff not committed to the model.
- c) Intake criteria did not always "weed out" personality disorders (Borderline) who do not do well in the program.
- d) Regular prescheduled visits from week to week. We found that many clients had their own agenda (work, school) and we had to be flexible when we could see them.

Question #5: Describe any barriers that you may have experienced or observed in implementing the model. Please be specific.

Respondent 1 (New Westminster):

Outside services not sure of AOP role, eg. may recommend hospitalization when same may not be necessary. There has to be on-going contact and education.

Staff within the Centre not being clear on ACM model (as I mentioned in answer 4).

Establishing credibility with the Centre and the community. Being RVH staff, there are some (not all) who think we know nothing.

Inflexibility of people involved where implementing the model was taking place.

Respondent 2 (New Westminster):

- a) The turf war in the community.
- b) The jealousy of the therapists at the MHC because of our low ratio of 1:10/12 and that we are frequently taking our clients out for coffee. In turn, they feel that we are on coffee breaks all day long.
- c) Not enough education for G.P.'s or psychiatrists in the community about ACM model.
- d) We have to establish our credibility and these take some time in order for them to accept that we are as good as they are.

Respondent 3 (New Westminster):

Initially, some agencies, eg. MHC life skill support, housing support, see us as a competitor for their territory. This, however, will improve with time.

Some MHC staff resent the low case load. 1:10 compared to their 1:40 - 1:70. "You have a cushy job"

Initially, we are not known to the community. It takes a long time to establish some credibility.

It would help if there is a co-ordinator on staff. Part of his/her job is to keep contact with other agencies and educate them to the model.

Respondent 4 (Surrey):

Resistance/resentment from MHC staff (only a few) who don't understand the model and only see the low staff client ratios while they are swamped. At times, the Director of the MHC would become involved with cases without firstly consulting with us re treatment strategies. As described earlier, the rural setting made contacts difficult, especially when no-shows were encountered and tracking needed to be done, also when immediate early intervention was warranted.

Respondent 5 (Surrey):

The staff at the MHC would not retain the definition of the Model in their heads. One problem which kept coming up was the idea of on-going care with the ACM. They kept insisting when the client is functioning well we should replace them with another client. This continues to be a major problem.

Respondent 6 (Surrey):

- a) Being housed in MHC.
- b) Attitudes of non-commitment to the Model by administrative staff.
- c) Difficulty in keeping up with changing resources, phone numbers, locations.
Difficulty knowing if there is a resource for a certain problem.
- d) Following clients often resulted in long travelling times.
- e) Lack of psychiatrists.

Question #6: Is there anything about having worked as a nurse at Riverview Hospital that has affected your approach or performance as an AOP nurse?

Respondent 1 (New Westminster):

Provided me with some good clinical knowledge which I use daily. I don't think working in a hospital (any hospital) can provide much "preparation" for AOP nursing. The whole approach is different.

I guess such things as learning to deal with unpredictable or impulsive behaviour in hospital might carry into the community. However, you're alone in the community - you're not in the hospital.

Respondent 2 (New Westminster):

The only thing I can think of is that my thinking and approach have to adjust from the hospital setting to the community setting. This took about six months to adjust or get use to it.

Respondent 3 (New Westminster):

Nothing major. I have to make a few adjustments.

- a) Resources and support in the community is not readily available. It is on-going seeking, negotiating to get resources for clients.
- b) I don't know, and won't tell my client what they should do. Instead, I explore options with them.
- c) They are the boss. They decide what is good for them.
- d) I miss the support of staff. I make decisions without "consulting" or "confer" with experts first.

Respondent 4 (Surrey):

As with any institution, you see yourself as the most important aspect in treatment. Coming from RVH, I was quite unfamiliar with the realities faced by community nurses. Now, having experienced the full gambit of treatment environments (institution [RVH], Community hospital and Community MHC), I feel I have gained respect for every service approach going. My years at RVH gave me the ability to work with the treatment resistant, difficult, seriously mentally ill in the community. Most RVH nurses are more than adequately equipped to deal with clients in the community but lack knowledge of the process within the community.

Respondent 5 (Surrey):

Yes. I always tried to be fair to the patients at RVH. Working in the community I ran into several of these clients. They were helpful at times with linking up with a new client for ACM. Because the new client was aware that I knew a friend of his that was a patient in RVH and this patient put in a good word about me, the client was willing to link with the ACM.

Being familiar with medication side effects is very helpful in the community. The clients feel 12 more comfortable about taking medications as a result of this.

Respondent 6 (Surrey):

- a) Good knowledge of nursing process.
- b) Experience and understanding of mentally ill.
- c) Good clinical knowledge practised here and good in service offered.
- d) A better understanding from readmissions as to what is needed in the community.

Question 7: Please add any comments that you wish to make regarding your experience as an AOP nurse.

Respondent 1 (New Westminster):

Despite the team approach, I think the ACM nurse is prone to burnout. I think its a hard job, draining both physically and mentally.

I think when I first joined the team I really was not clear on my role. I think there seemed to be enormous expectations (perhaps self imposed). I felt responsible for absolutely everything (not a pleasant feeling). After about six months or so I had to really take stock of myself and make some mental adjustments. I think there could have been more help for me in this with perhaps a clearer view initially or some on-going questions to me in this regard.

I think there has to be continuing concern re safety of the AOP nurse.

I miss, very much, the comradery of the "ward setting" where I can work with patients - but also have great fun and laughter with my colleagues. I find AOP work lonely.

I found making the adjustment from hospital to community difficult because of my lack of knowledge of "what's out there"; what resources, who can I call on, etc., and these are things that really have to be learned on the job. So, initially, there's a lot of "flying by the seat of your pants".

This job has satisfaction but has a lot of frustrations. Sometimes you can see the problems the client will encounter but because this is "their decision", not "yours", even with fancy footwork, you can't prevent some obvious failures.

I pride myself as being flexible but I've never had to be so flexible as I have in this job.

I don't like the real wear and tear on my car. I wish I drove a vehicle assigned to me by my employer.

There are times when we work when we're not well because we know what kind of being absent puts on the scheduling.

I think being an Outreach Nurse is time-limited (at least for me). I do not see myself pounding the pavement looking and feeling like a drowned rat all wintertime forever. Some days in the summer, when the weather is fine, it's nice to be able to be outside - have a little more freedom - but there's a downside. Because we're "out" most of the time, there really isn't a feeling of belonging anywhere.

Respondent 2 (New Westminster):

There should be better education and communication, commitment from the authority to the community agencies and hospitals and service providers.

The community hospital and agencies should understand that we are not there to compete with them, rather that we are working together to keep patients in the community and offering more services to those who are falling through the cracks. Maybe we are a few years ahead of them and the community is not yet ready for it.

The AOP nurses should be flexible team players rather than individuals; innovative, creative and totally devoted to the model.

Respondent 3 (New Westminster):

When selecting staff for AOP look for these qualities:

- a) Flexibility - we need to change quickly in our way to handle changing situations.
- b) A team player - be able to put away our personal opinion.
- c) Able to negotiate and make compromise.

- d) Experience with chronic, severely ill mental patients - able to accept the idea the clients' progress may take a long time.

Respondent 4 (Surrey):

I feel strongly that the program works to reduce hospital admissions while promoting the potential of the individual, as long as staff and clients have a clear sight on reasons why AOP are there and both have a commitment to adhering to the model. The AOP approach was a learning experience for me and I appreciate the opportunity to have gone out. Hopefully, the programs will remain the way they were intended.

Respondent 5 (Surrey):

I received more "perks" from my clients during the short time I have worked with them than in all the years I have worked at RVH. This is the result of getting involved in their life. One client was about to be made incapable and all her assets were to be placed under the care of a Public Trustee all because the staff at the hospital would only see what this client was like in the hospital and not in the community. After getting another family member involved and convincing the staff at the hospital that the client is able to function with the help of the ACM, the client was discharged. The client has been out of hospital for 1.5 years and is managing her affairs quite well. The client keeps reminding the ACM team how thankful she is for what we have done !

Respondent 6 (Surrey):

Increased my awareness of how handicapped people are expected to access resources (resources that require good communication skills, an understanding of the system, good planning skills, short and long term goals and patience + + +) in order to have shelter, food and a degree of acceptance.

Appendix I: Breakdown of Matching Variables and Results of Chi-Square Analyses to Test for AOP Study Group Equivalency

	# of Clients		Chi-Square “p” values
	Control (n=60)	Treatment (n=63)	
AXIS I PRIMARY DIAGNOSIS	39	35	0.392
Schizophrenia			
Mood Disorder	19	27	
Other	2	1	
AXIS I SECONDARY DIAGNOSIS			0.833*
Anxiety Disorder	1	0	
Substance Abuse	4	1	
AXIS II DIAGNOSIS			0.068
Anxiety Disorder	0	2	
Diagnosis Deferred	5	6	
Developmental Disorder	2	0	
No Axis II Diagnosis	14	20	
Personality Disorder	2	15	
Substance Abuse	1	5	
Other	3	1	
SEX			0.530**
Male	38	29	
Female	28	34	

Appendix I con't				
MARITAL STATUS	Never Married	33	32	0.542
	Divorced/Annulled	16	13	
	Widowed	3	1	
	Separated	2	5	
	Married	5	9	
	Common Law/Living Together	1	2	
	Not Known	0	1	
DOES THE CLIENT HAVE BIOLOGICAL CHILDREN?				
	Yes	25	27	1.00**
	No	35	36	
PROXIMITY & INVOLVEMENT OF FAMILY				
	Live Close & Involved	48	50	0.400
	Live Close, Not Involved	4	4	
	Live Close, Involvement Unknown	0	3	
	Does not live close	7	6	
	Not known	1	0	
EDUCATION	Completed Primary School	2	4	0.747
	Completed Secondary School	38	37	
	Some Post Secondary Education	12	15	
	Post Secondary Graduate	7	7	
	Not Known	1	0	

* Fisher's Exact Test (one-tailed)

** With Yates Correction

***Appendix J: Assertive Outreach Program Lifetime
Pre-study Inpatient Hospitalization Data***

	<i>Control</i>	<i>Treatment</i>
Total No. Admissions	520 (n=60)	601 (n=63)
Mean No. of Admissions	8.7 (n=60)	9.5 (n=63)
Mean Length of Stay (days)	363.8 (n=60)	312.5 (n=63)
Median Length of Admissions (days)	179 (n=60)	247 (n=63)

***Appendix K: Assertive Outreach Program Pre-study
Lifetime Hospitalization Frequencies***

<i>Nature of Contact</i>	<i>Control</i> (n=60)	<i>Treatment</i> (n=63)	<i>AOP Total</i> (n=123)
Emergency	216.00	220.00	436.00
Inpatient	520.00	601.00	1121.00
Group Total	736.00	821.00	1557.00

**Appendix L: Assertive Outreach Program
Pre-study Lifetime Hospitalizations
by Mental Health Centre Site**

	New West- minster	New West- minster	Surrey	Surrey	
<i>Nature of Contact</i>	<i>Control</i> (n=31)	<i>Treatment</i> n=32)	<i>Control</i> (n=29)	<i>Treatment</i> (n=31)	<i>Total</i> (n=123)
Emer- gency	136	128	80	92	436
Inpatient	273	345	247	256	112
Totals	409	473	327	348	1557

Appendix M: AOP Descriptive Statistics for Testing the Equivalency of Groups - Pre-Intake Period (Derived From Client Information Sheets)

	CONTROL (n=60)	CONTROL (n=60)	TREATMENT (n=63)	TREATMENT (n=63)	
VARIABLE	MEAN	RANGE	MEAN	RANGE	T-test “p” values
Intake Age	37.8	24-65	37.3	19-63	0.801
No. of Children	1	0-5	0.95	0-4	0.848
Global Assessment Scale Rating	46.6	30-80	51.2	20-80	0.069

**Appendix N: AOP Principle Investigator's Letter of
Permission for Use of Data by Werner J.
Müller-Clemm**



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January 17, 1996

Mr. Werner Muller-Clemm
Department of Psychology
University of Victoria
P.O. Box 3050
Victoria, B.C.
V8W 3P5

Dear Werner:

Re: Riverview/Fraser Valley Assertive Outreach Program

This is in reference to our discussions of January 17. As principal investigator, I hereby authorize you to have full access to all the data gathered in the evaluation of the Riverview/Fraser Valley Assertive Outreach Program. It is understood that these data will be used by you to meet your doctoral dissertation requirements. You will be designated as a first author on all publications you prepare using these research data.

Access to and use of these data is authorized on the understanding that it will be treated as confidential and used only for the purposes of your dissertation research in conjunction with the policies of the University of Victoria.

Thank you for your attention.

Yours sincerely,

Dr. John A. Higenbottam
Vice President
Rehab/Residential Programs

JAH/mgl