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AN EXAMINATION OF THE PROCESS OF REGIONALIZING THE DELIVERY OF MENTAL HEALTH SERVICES: A CENTRAL ALBERTA PERSPECTIVE

by

© NICHOLAS SYNENKO

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled AN EXAMINATION OF THE PROCESS OF REGIONALIZING THE DELIVERY OF MENTAL HEALTH SERVICES: A CENTRAL ALBERTA PERSPECTIVE submitted by Nicholas Synenko in partial fulfillment of the requirements of Master of Health Services Administration.

David P. Slatton
Supervisor

Date April 18, 1974

DEDICATION

To Mr. Ron White, who introduced me to the field of Health Services Administration in the Summer of 1969, at the Winnipeg General Hospital. His personal interest in my career will never be forgotten.

ABSTRACT

The concept of organizing health care systems on a regional basis has enjoyed widespread attention in health services literature, yet the applicability of regionalization to specific health programs is rarely tested. The study was undertaken to determine the feasibility of regionalizing mental hospital programs in Alberta, and to identify the possible effects of regionalization on a selected facility (Alberta Hospital, Ponoka). The study process consisted of an examination of selected aspects of mental health and social policy; a general concept of regionalization; organizational elements including hierarchy of authority; professional and bureaucratic orientations; the budgetary process; and finally, the computer simulation of regionalized demand for inpatient services at a selected mental hospital.

The results indicated that the regionalization of mental hospital programs should be given serious consideration, whereby institutional care is decentralized to serve local service area populations. The quantitative examination revealed the marginal nature of change in demand, inpatient beds, and operating costs suggesting that the mental hospital facility studied could be regionalized without wholesale changes to existing programs.

The process of health regionalization is primarily a political undertaking. Notwithstanding the importance of political and social interests, the success of regionalization depends on: the separation of administrative and clinical responsibility; the employment of personnel on a regional (rather than an institutional) basis; the development of regional health boards with broad fiscal and organizational powers; local administrative autonomy; and, on-going systems research to integrate management information at the regional level.

ACKNOWLEDGEMENT

To my wife Sylvia, whose patience and understanding sustained me throughout the development of this thesis.

To Professor David Flathman, whose guidance, stimulating challenges, and immediate responses regarding my work, have been invaluable in completing this thesis.

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CHAPTER 1

INTRODUCTION

I. PURPOSE

The purpose of this study is to examine selected aspects of mental health services in Alberta in order to determine the feasibility of providing mental hospital programs on a regional basis. The examination will include:

1. an overview of mental health and social policy.
2. a consideration of organizational parameters underlining the structure and process of regionalization.
3. an investigation into the potential effects on utilization, inpatient beds, and operating costs of regionalizing a major mental hospital, namely, Alberta Hospital, Ponoka.

II. SCOPE

The definitional problems associated with determining meaningful criterion variables of mental health, mental health services, and the delivery of patient care programs on a regional basis are substantial. Therefore, a significant portion of this study is directed towards a review of the literature, and an examination of the concept of regionalization from selected standpoints including manifest social policy; the role of professional and bureaucratic personnel; political and legislative influences; and the budgetary process in government organizations. The integration of

this material provides a conceptual framework from which to investigate the possible effects of implementing a regional concept of delivering mental health services. This latter investigation into the effects of regionalizing mental services will be restricted to:

1. A macro-analysis using quantitative techniques to estimate the regional demand for in-patient mental hospital services at Alberta Hospital, Ponoka (AHP).

2. A descriptive analysis of the potential effect on aggregative operating costs and the scale of operations of AHP given a restricted service region (Central Alberta Mental Health District).

With regard to the impact of regionalization on the Provincial network of mental health services, no attempt will be made to deal specifically with services beyond the hypothetical region of "Central Alberta." This study is carried out by the author with the appreciation that while a great deal of further information could be obtained on the impact of regionalizing mental health services, it would not be possible to develop their full implications in the context of this study. An in-depth study would not only require trained investigators, but diverse specialists with greater background knowledge. Accordingly, the expected utility of this study is that it may serve as a contribution to further, and fuller research into the area of regionalization.

III. FORMAT OF THESIS

This thesis is divided into six chapters. Chapter 1 embodies the introduction, scope of the study, and the format. Chapter 2 reviews selected aspects of mental health and social policy as a basis to a conceptual development of regionalization. Chapter 3 offers a general concept of regionalization derived from institutional and geographic factors related to the provision of specific resources to promote health on a regional basis. Chapter 4 examines the potential role of organizational elements on the process of regionalization, including: hierarchy of authority; professional and bureaucratic orientations; and the budgetary process in government organizations. Chapter 5 investigates the potential effects on a major institutional facility (Alberta Hospital, Ponoka), arising out of the (hypothetical) implementation of a regional concept of mental health services delivery. This chapter provides a descriptive analysis of the potential changes in aggregative costs, utilization, as well as shifts in the patterns of admissions-separations.

Finally, Chapter 6 provides a summation of major parameters underlying the process of regionalization, and offers recommendations regarding the feasibility of regionalizing Alberta Hospital, Ponoka, on an experimental basis.

CHAPTER 2

AN OVERVIEW OF MENTAL HEALTH AND SOCIAL POLICY

Regional health care planning, in general, by provincial and federal authorities is a dominant theme in current health service literature. The exercise of regional mental health planning has had profound effects on at least one province -- Saskatchewan.[1] In terms of the Alberta situation, an examination of social policy and mental health may provide some useful insights into some criterion variables that may assist in the formulation and implementation of regional mental health service systems. Accordingly, this chapter will attempt to review selected aspects of mental illness, and mental health service concepts.

I. INDICATORS OF SOCIAL CONCERN

The general indicators of demand for mental health care stem from the utilization of available services; the allocation of funds; and the expressions of social policy.

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[1] A comprehensive analysis of the Saskatchewan system's shift from dispersed and remote inpatient psychiatric facilities to a comprehensive community mental health centre serving a specific geo-political area is contained in, Aldred H. Neufeldt, The Developing Community Mental Health Centre: A Study of Referral and Treatment Patterns Before and After the Openning of a Modern "Total Care" Psychiatric Facility (Saskatoon, Saskatchewan: Marcotte Research Centre, September, 1972).

In Canada as a whole, over 101,700 people were hospitalized for psychiatric treatment in 1970. Of these, 51,527 were first admissions, giving a rate of first admission for 1970 of 2.41 per 1000 population. In the last decade the rate of first admission rose about 58 percent from 1.53 per 1000 population. The current utilization is such that approximately one-half of all categories of health care beds in Canada are psychiatric.[2]

Alberta, by comparison, showed similar increases in utilization of facilities, except that the rate of first admissions rose more than 110 percent to the 1970 rate of 3.44 per 1000 from the rate of 1.63 per 1000 population, ten years ago. Of the 10,500 total beds in the province about 5000 of these were designated as psychiatric, and maintained an average of 5,195 patients in residence daily.[3] Not included are the volume of patients seen in outpatient facilities, day and night centres, non-psychiatric wards of general hospitals, half-way houses, and the offices of private practitioners.

In 1973, Alberta appropriated an operating budget of approximately $28 million on provincial mental health facilities, or about 12 percent of the expenditures on all

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[2]Canada, Mental Health Statistics, Institutional Admissions and Separations (Ottawa: Information Canada, 1970), Vol. I, pp. 151, 157, 193, and 199.

[3]Ibid.

other hospital programs being operated under the Alberta Hospital Services Commission.[4] In fact, that appropriation is highly conservative since it does not reflect the cost of capital depreciation, and expenditures for new capital equipment and facilities. Given the general trend of rising costs in health care, the cost of mental health services in general, and institutional services in particular, are likely to increase. For example, the aggregative cost for institutional care on a patient-day basis has increased over 16 percent between 1972 and 1973.[5]

Active social policy is difficult to measure, but the proliferation of policy statements by government, and the interest of the public has at least demonstrated a concern over the state and future of organized mental health services.

In Alberta, the Government commissioned the Alberta Mental Health Study in January of 1968, with a mandate to investigate mental health problems, and make recommendations for improving mental health service programs in the province. The first of two volumes arising out of that study was

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[4]Alberta, Public Accounts of the Province of Alberta for the Year Ended March 31, 1973 (Edmonton: Queen's Printer, 1973), pp. 288, 302, and 358.

[5]Calculated from cost per patient-day statistics reflecting the experience of Alberta Hospitals, Edmonton and Ponoka. Ibid., p. 302.

completed in February 1969, with the second being published in March of 1973. Both documents have been widely heralded as landmarks for mental health services reform.

As well as having supported various studies in the mental health field, the provincial government has concerned itself with active legislation. The acts relating to mental health have not only been frequently amended over the years, but have recently undergone total revision. The new Mental Health Act was assented to in November, 1972 and is progressive in its recognition of patient rights.

In sum, the explosive mixture of high utilization, the allocation of substantial funds, and demonstrated social policy, in regard to mental health in Alberta may precipitate rapid changes in the mental health care delivery system. Whether change, or the appearance of change will occur, should be of interest to many in the health care field.

A. Assumptions and Format Underlying the Review of Mental Health and Social Policy

Given the importance of professional and social policies on the structure and process of mental health services, a selective literature review will be organized around the following assumptions:

1. That a basic understanding of the phenomenon of mental illness is an essential first step in determining the nature of the health services problem.

2. That some knowledge of the social processes underlying the entry of patients into organized mental health care programs is significant to the distribution of service facilities and the levels of care provided.

3. That social policy, or lack thereof, is instrumental in determining the "careers" of patients who became a part of mental health care programs.

Material related to the development of these assumptions will be offered for consideration in Sections II to IV of this chapter. Section II will examine concepts of mental illness, with particular emphasis on social and psychiatric determinants of case identification. Section III will present a public health concept of mental health services, dealing specifically with some problems in determining mental illness in a total population in terms of prevalence and incidence information. Finally, Section IV of this chapter will examine ideologies of mental health service systems in the context of community-based comprehensive mental health services.

II. CONCEPTS OF MENTAL ILLNESS

A. Social Determinants

A beginning review of the literature shows a proliferation of research into the definitions of mental illness, but there appears to be no unitary concept of what mental disorders really are. In gross terms, mental

disorders are hypothetically linked with concepts of illness behavior, and societal reaction to that behavior. Illness behavior on the part of the individual with "symptoms" often reflects the social and professional attitudes of society.[6] In the case of mental illness, professional diagnosis and treatment is often preceded by societal reactions to inappropriate behavior. Accordingly, the process of social rejection is a major factor in the definition of mental illness, and the operationalization of therapeutic programs.

The degree of visibility, tolerance, and the degree of annoyance and disruption caused by particular patterns of symptoms are component variables of culture, socialization, and other environmental conditions.[7] Within this relative framework Lemert, in his work on social deviance, recognizes two broad stages of behavioral deviance: (1) the primary act of deviation by the individual which may be due to a wide variety of social, psychological, and physiological causes, and (2) secondary deviation which expresses the influence of social forces in response to the primary act.[8]

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[6] David Mechanic, "Response Factors in Illness: The Study of Illness Behavior," in Social Psychiatry (1969), 1, pp. 11-20.

[7] Ibid.

[8] E.M. Lemert, Human Deviance, Social Problems, and Social Control (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1967); and E. Goffman, Stigma (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1963).

The original causes of deviation often gives way to social reaction inducing the individual's defensive, aggressive, or adaptive responses to social stigma. Susser contends that the considerable changes in the sequence of the careers of mental patients, are the result of organized attitudes given official form in mental health care delivery programs.[9] The implication is that professional intervention into disordered behavior can influence the social capacity to accommodate mental disorders, as well as treat the patient directly.

Susser[10] presents two levels of accommodation that are liable to professional adjustment: (1) the primary stage of accommodation by the family or society of the disordered individual before treatment, and(2) the secondary accommodation of the patient after treatment.

A high level of primary accommodation tends to insulate disordered persons from professional intervention, whereas a high level of secondary accommodation makes rehabilitation of the patient easier.[11] The movement of the patient appears to be partly dependent on the degree of societal accommodation at both levels. Ostensibly, mental

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[9] M. Susser, Community Psychiatry: Epidemiological and Social Themes (New York: Random House, 1968), pp. 17-19.

[10] Ibid., pp. 41-48.

[11] Ibid.

health care programs should attempt to vary the levels of primary and secondary accommodation. Since rejection from society and ultimately the rehabilitation of mental patients is socially based, a major aspect of mental health services will be the degree to which a community environment may be created. This has important implications to the visibility and location of therapeutic facilities within the community, in that the process of rejection, diagnosis, treatment and rehabilitation may be enhanced by this setting.

B. Psychiatric Determinants

1. Ideologies

Psychiatric practice tends to reflect two broad conceptualizations of the phenomenon of mental disorders: (1) that mental illnesses are primarily "diseases" with some specific combination of physical causes, and (2) that mental disorders are active behavioral disturbances due to some broad social and environmental causes.[12] Current classifications of mental disorders such as that used by the World Health Organization, incorporate both concepts.[13]

The "disease" perspective, or medical model of mental

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[12] M. Kramer, "Cross-National Study of Diagnosis of Mental Disorders: Origin of the Problem," American Journal of Psychiatry (1969) 125, p. 1.

[13] World Health Organization, Expert Committee on Health Statistics, Eighth Report (Geneva: World Health Organization Technical Reproduction Services 261, 1963).

disturbances implies that each psychiatric diagnosis corresponds to a different syndrome, with corresponding differences in approaches to therapy and research. Current diagnostic manuals such as that used by the American Psychiatric Association[14] attempt to standardize the criteria for identifying particular psychiatric syndromes, as well as categorize those cases where the gross behavior patterns of patients are not identifiably due to physical pathology.

The social model leans heavily to the belief that the external environment by way of social, community, and patient circumstances leads to behavioral disorders. Accordingly, therapeutic intervention is directed to social circumstances as well as the patient. Mental disorders are seen as a deterioration process from a state of wellness to illness, and that chronic psychosis can be averted by effective early treatment.[15]

In practice, however, both the social (external environments) and the physical (internal environment) aspects of mental disorders seem to be inseparable. This is reflected in the increasing use of psychiatric social workers, and community mental health counsellors in the case

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[14] American Psychiatric Association, Diagnostic and Statistical Manual: Mental Disorders, 2nd edition (Washington, D.C.: Committee on Nomenclature and Statistics, 1968).

[15] G. Caplan, Principles of Preventive Psychiatry (New York: Basic Books, 1964), pp. 35-38.

management of psychiatric patients.

2. Reliability of Psychiatric Assessment

Despite ideological differences between proponents of medical and social models of psychiatry, the practices of both groups tends to be reinforced by what society in general identifies as aberrant behavior. In this important sense, society relies on the diagnostic expertise of psychiatrists for the admission of patients to organized mental health service programs, as well as their discharge and rehabilitation into society. The availability of psychiatric specialists is considered fundamental to the operation of mental health programs, regardless of the level of care being provided, and the associated treatment methodologies being implemented.[16] In the face of divergent treatment methodologies and ideological differences, the critical aspect to patient flow through mental health programs, facilities, and agencies is the reliability of psychiatric diagnosis. Studies have shown that despite experimental changes in diagnostic criteria, the rates of diagnosed psychosis requiring hospital care remained consistent with previous patterns of practice.[17] With less acute conditions,

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[16] G. Caplan, The Theory and Practice of Mental Health Consultation, (London: Basic Books, 1970).

[17] E.H. Hare and J.K. Wing (eds.), Psychiatric Epidemiology (Toronto: Oxford University Press, 1970),

changes in assessment criteria resulted in diagnostic differences between clinical psychiatrists.[18] Despite ideological differences, psychiatrists, as a group, tend to agree on broad diagnostic categories. A recent International study by the World Health Organization into the reliability of psychiatric assessment of schizophrenic patients indicates that 94 percent of the tested clinical psychiatrists agreed on the ICD (International Classification of Diseases), 3-digit diagnostic category of "general schizophrenia," and 68.9 percent agreed on a more specific 4-digit classification such as "paranoid schizophrenia."[19]

In sum, there is general reliability of psychiatric assessment, and that reliability tends to increase as more simple or general diagnostic categories are used. Furthermore, the professionalization of diagnostic procedures has made psychiatric practitioners a prominent factor in the formulation and implementation of mental health programs.

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[18] J. Wing et al, "Reliability of a Procedure for Measuring and Classifying Present Psychiatric State," British Journal of Psychiatry (1967), 113, pp. 499-515.

[19] T. Lin, E.M. Brook, and N. Sartorius, "Reliability of Psychiatric Assessment in International Research," in E.H. Hare and J.K. Wing (eds.), Psychiatric Epidemiology (Toronto: Oxford University Press, 1970), p. 138.

III. SOME PROBLEMS IN DETERMINING MENTAL ILLNESS IN A TOTAL POPULATION

A. Public Health Concepts

"In general, psychiatrists have tended to concern themselves with individual patients."[20]

The mental health care needs of a total population are difficult, if not impossible to meet under an exlusive "one-to-one" approach by limited numbers of psychiatrists.[21] Moreover, the belief that mental health care was unevenly distributed, and was not in proportion to the population served, has precipitated a widening interest in regional mental health care planning.

The appropriate mobilization of mental health resources, however, depends on and is limited by the epidemiological (and demographic) data available on the target population.[22] This is particularly relevant to the potential success of primary, secondary, and tertiary prevention of psychiatric morbidity in a given regional population.

Primary prevention is concerned with the actual

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[20] H.E. Hilleboe and P.V. Lemkau, "General Health Administration and Mental Health," in S.E. Goldston (ed.), Mental Health Considerations in Public Health (Washington, D.C.: U.S. Government Printing Office, 1969), p. 12.

[21] W.R.N. Blair, Mental Health in Alberta: A Report on the Alberta Mental Health Study, Human Resources and Research and Development Executive Council (Edmonton: Government of Alberta, 1969).

[22] M. Kramer, Applications of Mental Health Statistics (Geneva: World Health Organization, 1969), p. 9.

avoidance of disorder, by identifying and counteracting pre-morbid conditions. Unfortunately, this approach is severely hampered by the inherent definitional problems of mental illness, and the extent to which causal agents, and the sequence of environmental circumstances which precipitate mental disorders, are known. There is continuing research into social and situational high risk factors and their pre-morbid combinations, but very little is available in the way of firm epidemiological data on which to base programs.[23]

It is possible, however, to prevent to some extent mental disorders that are sequelae of other illnesses such as alcoholism, drug addiction, and physical pathology. The "preventible" component of mental illness, and mental deficiency may be more relevant to general health care services, than to direct mental health care programs. In areas such as perinatal and postnatal care, genetic counselling, and metabolic therapy, it is clear that the scope, and quality of general health care (and potentially social development) have a great deal to do with lowering the inception of mental disorders. Information systems such as high-risk registers, and integrated health care patient records would be an essential first step in providing the

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[23] David Mechanic, Mental Health and Social Policy (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1969), p. 101.

necessary data to implement these programs.

Established disorder is a late stage at which to take action, yet the majority of epidemiological data is based on demonstrated mental illness. Secondary prevention, the avoidance of further sequelae, and tertiary prevention, the avoidance of chronicity, tend to absorb most of the mental health care resources. In the transition from a singular patient orientation, to the commitment of organized resources to reduce morbidity in the total population, data may already be available to guide such change.

B. Epidemiological Considerations

> "Epidemiology is frequently called the diagnostic science of public health."[24]

As such, the major concern of epidemiology is the distribution of disease, defects, and disabilities in populations. If the organization of health care services is directed to countering morbidity, epidemiological research may also include intervention systems and the impact of such systems on the population.[25]

The above may be summarized into parameters of

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[24] C.C. Cassell and A.H. Leighton, "Epidemiology and Mental Health," in S.E. Goldston (ed.), Mental Health Considerations in Public Health (Washington, D.C.: U.S. Government Printing Office, 1969), p. 69.

[25] David Mechanic, "Problems and Prospects in Psychiatric Epidemiology," in E.H. Hare and J.K. Wing (eds.), Psychiatric Epidemiology (Toronto: Oxford University Press, 1970), p. 3.

operational research as: (1) the original measurement of significant health problems in the population, and (2) the evaluation of programs implemented by a remeasurement of the target population. Theoretically, the evaluation of programs largely depends on the degree to which goals have been determined, and that health care goals should be related to morbid and pre-morbid conditions in the population.[26] Accordingly, the following sections will examine the applicability of epidemiological methods in estimating the prevalence and incidence of mental illness in a total population.

1. Prevalence

Prevalence rates attempt to describe the amount of disorder existing in a defined population, either at a point in time (point prevalence), or over some defined period of time (period prevalence).[27] Prevalence surveys, indicate a cross-sectional view of the population, but do not necessarily isolate the causes or circumstances of cumulative mental disorders. For example, the enumeration of one schizophrenic case will register a single incident, but may not provide data on changes in illness status and circum-

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[26] For a more detailed review see, M. Kramer, Application of Mental Health Statistics (Geneva: World Health Organization, 1969), p. 9.

[27] M. Susser, op. cit., p. 205.

stances, or sequelae between the time of onset and enumeration.

The technical aspects of survey design, case-finding, classification, and statistical methods will not be discussed here, except to point out that valid prevalence surveys of total populations are rarely considered feasible, due to the expense and complexity involved.

Prevalence surveys by population sampling are more common. The well-publicized Midtown Manhattan Survey[28] found that less than 20 percent of the adult (aged 20-59) population surveyed had always been free of symptoms related to mental problems. The Stirling County Study[29] found that between 33 to 50 percent of the sample population were free of symptoms. The general message of these and other prevalence surveys is that a significant portion of the public are suffering, or have suffered from mental disorders. The psychiatric significance of data from prevalence surveys is the major problem. That is, do prevalence surveys determine the proportion of the population at risk to psychiatric disorders, or is the actual risk to lesser and transient levels of mental distress?

Although there is continuing research into the extent

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[28] L. Srole et al., Mental Health in the Metropolis: The Midtown Manhattan Study (New York: McGraw-Hill, 1962).

[29] D.C. Leighton et al., The Character of Danger (New York: Basic Books, 1963).

and distribution of mental illness in the population, using a variety of "illness" standards, much of this research is difficult to validate.[30] Mechanic summarizes the dilemma in this way: "As the concept of illness expands, the prevalence rate increases."[31]

2. Incidence

Incidence studies are actually the gathering of data on disorders of patients who have been registered for treatment in mental health care institutions. The major advantage of incidence data is that the circumstances relating to mental disorders are usually included within the psychiatric diagnosis. The data currently reported by service agencies provides information on a large number of cases such that statistical analysis may be carried out without "straining" the data.[32] Despite their limitations for estimating the total incidence and prevalence of mental disorders, institutional data may provide a solid start to the planning and implementation of mental health care programs.

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[30] A.H. Leighton, D.C. Leighton and R.A. Danley, "Validity in Mental Health Surveys," Canadian Psychiatric Association Journal (1966) 11, pp. 167-188.

[31] David Mechanic, Mental Health and Social Policy (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1968), p. 66.

[32] M. Kramer, Application of Mental Health Statistics (Geneva: World Health Organization, 1969), p. 15.

In that epidemiological investigation depends on some degree of consistency in case identification, morbidity information on mental illness draws heavily on psychiatric data. This agrees with the social policy wherein psychiatrists are the major reference group in society for determining the "sickness" of unusual behavior. Accordingly, much of the statistical information on "mental health," is in fact data on psychiatric morbidity. Statistics Canada, in their Mental Health Statistics, is reporting data generated by psychiatric activity. Demographic analysis of this data, may reveal patterns of high risk characteristics in a population, which may in turn reveal a more appropriate distribution and style of organized intervention to reduce pre-morbid and morbid states. Similarly, the evaluation of the efficiency and effectiveness of mental health services delivery may be carried out by examining those criterion variables characteristic of the functioning system, such as: frequency of patient contact; case flow in terms of admissions and separations; cost analysis and economic rationalization; and many other quantitative measures of organizational activity. In most cases, quantitative analysis tends to reduce administrative uncertainty, and is, therefore, a fundamental asset to the planning, management, and control of patient service activities.

The prime source of incidence data is derived from patient records and is of two basic types: (1) cross-

sectional data on age, sex, diagnosis and demographic information of all patients associated with the facility on a given day. An abbreviated form of cross-sectional data referred to as the daily census, is available in most Provincial Mental hospitals; and (2) movement data that reflects changes in patient population over a specific period.

Kramer[33] describes three basic methods of collecting cross-sectional data: (1) by case register, combining individual patient data from a defined range of psychiatric services within a geographic subdivision, (2) sampling methods by special survey to obtain more detailed data on particular patients admitted to a facility during a defined period; and (3) tabulation of a selected diagnostic subject (for example, a distribution of annual admissions by age, sex, marital status and geographic origin) from each facility. Of these methods, tabulation of selected diagnostic groups predominates current data collection.

The case register method, although the most ideal source of information on psychiatric patients, is probably the most difficult system to implement. This concept is not only complicated by the mechanics of reporting and statistically integrating data, but also raises professional and social questions on the "ownership" of patient information.

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[33] Ibid., p. 17.

Despite these difficulties, an EDP case register system of patients referred for care to psychiatric facilities (whether in or out of hospital) is being currently used by the Psychiatric Services Branch, Saskatchewan Department of Public Health.[34] At the present time, the Division of Mental Health in Alberta is contemplating the development of a similar system.

Sampling methods are not routinely performed, and are primarily used for micro-analysis rather than large-scale investigations into the function of mental health service systems.

From the standpoint of availability, the tabulation method of gathering psychiatric data provides the bulk of mental health services in Canada today. Mental Health Statistics (Canada), annually tabulates a wealth of data reported from institutions across the country, of a general nature as well as data made specific for age, sex, marital status and general demographic characteristics. A more detailed tabulation on a provincial basis of such factors as geographic origin and distributions of patients is available from the Annual Report of the Department of Health including Vital Statistics Division (Province of Alberta).

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[34] For a description of the Electronic Data Processing (EDP) system refer to, A.H. Neufeldt, "A Province-Wide EDP System for Community based Psychiatric Services," in Canadian Psychiatric Association Journal (1969) 14, pp. 135-141.

IV. MENTAL HEALTH SERVICE CONCEPTS

A. Community Mental Health

Underlying current social policy on mental health care programs is a belief in the early diagnosis and treatment of disordered individuals, and the rehabilitation of patients. In fact, mental health care programs have undergone considerable change over the years, yet the manifest philosophy of early treatment and rehabilitation has remained more or less constant.

Pinel advocated over 170 years ago that the insane should be treated with kindness and dignity.[35] Rossi describes the contribution of medical men to a more humane ethic in the 1890's.

> "Frederick Peterson and John Chapin began advocating a new type of institution for the care of the insane. This new institution called a 'psychopathic hospital' was to be located in the community it served, in contrast to the location of asylums, and its primary function would be the provision of treatment rather than custodial care."[36]

The implication was that mental patients required institutional treatment of their "disorders," but these facilities should be geographically near the community. The proposition that the community environment outside the hospital walls

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[35] P. Pinel, A Treatise on Insanity (New York: Hafner Publishing Company, 1962), reprint.

[36] A.M. Rossi, "Some Pre-World War II Antecedents of Community Mental Health Theory and Practice," in A.J. Bindman and A.D. Spiegel (eds.), Perspectives in Community Mental Health (Chicago: Aldine Publishing Company, 1969), p. 11.

could be therapeutic was presented as early as 1906 by Adolf Meyer.[37] Rossi goes on to say that the concept of community-oriented care, became known as the "mental hygiene movement," and by 1930 led to the first International Congress on Mental Hygiene in Washington, D.C. The purpose of that meeting was to formulate a mental hygiene policy. Taken from the same article by Rossi:

> "The National Committee recommended: 'a four fold program, one of treatment and prevention; education and demonstration and includes, among others, the following basic activities: Integration of mental health principles into the practice of social work, nursing, public health administration, education, industry and government; encouragement of institutional programs favorable to the creation of a mentally healthy environment and the co-ordination of community forces to this end'."[38]

Further to the attempted amelioration of psychiatric facilities throughout the first half of the twentieth century, the surrounding community is now being considered as a potential locus of therapy.

B. Therapeutic Concepts of Community

In general terms, current mental health care literature promotes the belief that the process of treating and rehabilitating the mentally ill must include "the community." Klein argues that more traditional models of

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[37] Ibid., p. 20.

[38] Ibid., p. 23.

psychiatric practice for years required that, "people entering mental hospitals and clinics check their communities at the door."[39] The major role of community psychiatry by contrast, is to alter the quality of individual, and social interaction in order to restore disordered persons to the community, using the community itself as a major locus of therapy. There are varying theoretical propositions by proponents of community psychiatry as to what degree this may be possible.

Caplan proposes that psychiatric morbidity can be significantly reduced by a series of preventive programs directed at high risk factors in the population. "Primary prevention" would reduce pre-morbid conditions, "secondary intervention" would alter the course of incident mental illness, and "tertiary prevention" could reduce chronicity by active rehabilitation.[40]

Primary prevention may be considered as the maximum degree of professional intervention into the very fabric of society. The underlying hypothesis here is that socially patterned behavior is not necessarily "sane," and that some incidents of aberrant behavior may be due to social "insanity," rather than the psychotic states of disordered

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[39] D.C. Klein, Community Dynamics and Mental Health (Toronto: John Wiley and Sons, Inc., 1968), p. 10.

[40] G. Caplan, Principles of Preventive Psychiatry (New York: Basic Books, 1964), p. 16.

individuals.[41] Duhl argues that primary prevention should be the main thrust of social psychiatry and that the major role of psychiatrists would be, "controlling the environment which man has created."[42] Caplan does not share in Duhl's optimism, and concludes that a combination of social, as well as individual patient therapy is probably more viable.[43]

Despite specific ideological disagreements in the literature, there is a strong trend to practice community psychiatry, and deal with specific catchment populations on a consulting basis as well as in direct "one-to-one" terms.

C. Integrated Health Services

As well as providing for comprehensive levels of mental health care, current literature is proposing that mental health at the community level become an integral part of general health programs.[44]

Most of the "theoretical" reasons for integration are based on the holistic view of mental and physical functioning.

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[41] E. Fromm, The Sane Society (New York: Holt, Rinehart and Winston, 1955).

[42] L. Duhl (ed.), The Urban Condition (New York: Basic Books, 1963), p. 73.

[43] G. Caplan, The Theory and Practice of Mental Health Consultation (London: Basic Books, 1970).

[44] M.F. Shore and F.V. Mannino (eds.), Mental Health and the Community: Problems, Programs, and Strategies (New York: Behavioral Publications, 1969).

Shands proposes that the "mind is not in the head," that is, mentation involves the whole body in ways which progressively change with competence.[45] The separation of "mind" from a responding "body," may be a premature limitation of potential therapy and rehabilitation.[46] The practical overlaps between psychiatrists proposing a sociogenic, or "problems in living" hypothesis to mental illness, and those primarily supporting a pathogenic orientation, may in a broad sense support the holistic framework of health.

Integration might encourage communications among the professionals, as well as facilitate clinical attendance for patients who had more than one type of health problem. Furthermore, if mental health services are to also provide for the enhancement of effective social role capacity, then it would be appropriate to include facilities and personnel related to social development. The greater message of integration is that, although there may be many illnesses, the concept of "health" should be unitary, in that the individual is the obvious common denominator in health care programs. It may, therefore, be more appropriate to view the process of health services regionalization as the

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[45] H.C. Shands, "Why the Mind is Not in the Head," in M. Levitt and B. Rubenstein (eds.), The Mental Health Field: A Critical Appraisal (Detroit: Wayne State University Press, 1971),

[46] Ibid., p. 332.

integration of general and mental health services, rather than an independent decentralization of large blocks of separate facilities such as provincial mental hospitals.

In sum, the preceding sections of this chapter have attempted to provide an overview of the literature. Notwithstanding the complexity and diversity of the subjects within the area of Mental Health, the dominant trends indicate:

1. that mental health problems are being explained within a total social and cultural context (social pathology) as opposed to solely dealing with individual psychopathology.

2. that interdisciplinary programs are being organized to bridge the gap between the mental hospital, the community, the family (or extended family) and the patient.

3. that there is a trend toward the redistribution of psychiatric services on a regional basis.

CHAPTER 3

A CONCEPT OF REGIONALIZATION

Current social policy as demonstrated by recent Legislation is promoting the regionalization of mental health services, and ultimately all health care programs. Consistent with these initiatives are the commonplace goals of improving the efficiency and effectiveness of both the regional health organization, and the health bureaucracies at the Provincial level.

The concept of regionalization will likely evolve from the bargaining process between diverse interest groups. However, there are general guidelines around which the process of debate will be centered.

As a setting for the discussions contained in this chapter, a general concept of regionalization will be drawn from selected institutional and geographic factors. The following sections will deal with social and political guidelines leading to regionalization, paying particular attention to legislative parameters.

I. A GENERAL CONCEPT OF REGIONALIZATION

A. Health Services Delivery on a Regional Basis

The concept of health program regionalization generally refers to the systematic distribution of organi-

zational and economic means to promote the overall health status of defined populations.[47] For the purposes of this study the delivery of health services refers to the provision of specific human and capital resources to promote health, rather than the distribution of "health" per se. "Health" in turn, is an outcome of complex professional, environmental and patient interactions, and must, therefore, be established by evaluation, and not by assumption. Regional health programs would attempt to rationalize their consumption of scarce health care manpower and funds, on the basis of promoting real benefits to the population.

Basic to the implementation of regional health care the design and development of organizational structures within which various professional, bureaucratic and participant social units can function. In the ultimate sense such an organization would deal with the effectiveness (outcomes) of particular patient services, and the relative economic efficiency of the regional health delivery system.[48] In

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[47] This definition of regionalization has been derived from J.R. Griffeth, Quantitative Techniques for Hospital Planning and Control (Toronto: D.C. Heath and Company, 1972); and F.D. Chu and S. Trotter (Nader Reporters), The Mental Health Complex, Part I: Community Mental Health Centers (Washington, D.C.: Centre for Study of Responsive Law, 1972).

[48] A. Etzioni, "Two Approaches to Organizational Analysis: A Critique and a Suggestion," in H.C. Schulberg et al. (eds.), Program Evaluation in the Health Fields (New York: Behavioural Publications, 1969).

practice, the understanding of what constitutes an effective, total outcome is far from unanimous. This is partly due to the fact that health care in general, and mental health programs in particular, tend to serve diverse interests. In the face of such diversity, it would appear that the organization will have multiple goals. Therefore, its structure must accommodate the resolution of conflict, as well as provide the capability of delivering multiple health services.

In the final analysis, before real health benefits can be derived at the consumer level, there must be a structural capacity to do. It is also imperative that this organizational structure be conceived as a neutral instrument of service that is responsible to its regional population, and yet remain responsive to the socio-economic, and political interests of Provincial public.

B. Regional Concept of Demand for Services

To facilitate the planned distribution of health service resources on a regional basis, the nature and quantity of demand should be estimated for the projected service population. Demand for services may be analyzed by examining two basic and interrelated variables: (1) the actual "needs" of the region, and (2) the willingness on the part of patients to participate in regional programs. In the area of mental illness, the definition of the "needs" of

the population is enormously difficult.[49] The question of "willingness" is assumed to be demonstrated by the number of voluntary and involuntary patients that participate in (demand) organized programs. The dichotomy between voluntary and involuntary patients is important in that regional mental health programs respond to both the "willingness" of voluntary patients, and the "willingness" of society to commit involuntary cases for treatment.

In terms of regional mental health planning this is an important distinction since the distribution of voluntary versus involuntary patients in a given region will affect the size and characteristics of the regional program. In essence the definition of a regional population based on in-patient psychiatric need, versus preventive and rehabilitative need may be contradictory. It is conceivable that adjacent regional areas may have to share psychiatric hospital facilities, but even here the distribution can be improved. The historical case has been to concentrate "involuntary" and otherwise difficult cases in one of two Provincial mental facilities. Characteristically, this sort of regionalization tended to specialize provincial hospital programs on the basis of a relatively small, but difficult case load.

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[49] The "needs" approach has been previously elaborated in Chapter 2, pp. 17-23 of this study.

Given a more comprehensive approach to program planning, regional services would have to face the demand of a more "normalized" population that would tend to seek a broader array of preventive and rehabilitative services on a voluntary as well as an involuntary basis.

Basic to the resolution of diversified demand is the concept of geographic availability.[50] As an important aspect in geographic accessibility, ecological boundaries would have to be considered prior to establishing a service population. This means that the travel time in rural, as well as urban regions will largely determine whether mental health programs are considered near and accessible, or distant.[51] Although cultural, economic, and psychological accessibility are equal in importance to geographic considerations in structuring programs, these factors are unlikely to be solved by formula. In fact, the over-formulation of such specific policies would contradict tailoring specific programs to meet regional needs. Accordingly, policy formulation within regional areas should be encouraged by the development of regional organizations to monitor demand, and provide rational inputs into higher-

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[50] J.R. Griffeth, op. cit., p. 24.

[51] See J.R. Griffeth, Taking the Hospital to the Patient: Home Care for the Small Community (Battle Creek, Michigan: W.K. Kellogg Foundation, 1966).

level regional, and Provincial authorities.

II. SOCIAL AND POLITICAL CONTEXTS OF REGIONALIZATION

A. Political Underpinnings

The literature is abundant with coherent ideology, and optimistic proposals for regional mental health programs, but these have neither been widely implemented nor proven effective. Mechanic points out that:

> "The operation of mental health programs has proceeded more on an ideological thrust than on any empirically supported ideas concerning the feasibility and the effectiveness of particular alternatives."[52]

In the absence of a unitary concept of mental illness,[53] and diverse models of therapy,[54] the mental health field is particularly open to public as well as professional controversy. It is not surprising that the mental health field is becoming more and more dominated by political

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[52] David Mechanic, Mental Health and Social Policy (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1969), p. 96.

[53] W.A. Scott, "Research Definitions of Mental Health and Mental Illness," in H. Wechsler, L. Coloman and B.M. Kramer (eds.), Social Psychology and Mental Health (New York: Holt, Rinehart and Winston, 1970).

[54] R.N. Butler, A Critique of American Psychiatry and Medicine: Ideals Versus Realities (paper presented at the University of Delaware Health Science Symposium, April 12, 1972).

processes.[55] Part of the reason for this has been the growing conflict between the established mental health professionals and those that are attempting to legitimate their place in the field.[56] The political basis of professional power in health care organizations has been known for some time. According to Vollmer and Mills: "Attempting to influence governmental decisions is one of the historic purposes of organized medicine."[57]

There is no evidence to suggest that the influx of additional professions into the politics of mental health will improve the effectiveness of patient programs. However, it may be possible to increase the scope of services by de-emphasizing the role of medical care provided within institutions. This would mean the development of social support systems and service networks, in combination with the residue of in-patient facilities. Rather than interpreting regionalization as the expansion of treatment domains for the psychiatric profession, or the displacement

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[55] R.H. Connery et al., The Politics of Mental Health: Organizing Community Mental Health in Metropolitan Areas (New York: Columbia University Press, 1968).

[56] A.R. Somers, "Health Care and the Political System," in American Journal of Opthamology 73:4 (April 1972), pp. 600-609.

[57] H.M. Vollmer and D.L. Mills, Professionalization (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1966), p. 321.

of the psychiatric role by non-medical professions, the idea of regionalization should be to provide a comprehensive range of accessible, and coordinated services that would include the rational participation of medical, and non-medical health workers. In essence the political conflict for professional domination of a public service area is interesting, but ignores the basic organizational problem of how to integrate the functions of diverse professionals to serve regional publics.

Despite the enormous complexity of attempting to foster functional as well as political cooperation of regional health programs, this aspect tends to be ignored in the current literature. It is interesting to note that the current panacea to such organizational problems is the so-called "health care team approach."[58] There is no evidence to suggest that the team can simultaneously manage patient care as well as the health care bureaucracy. Furthermore, the team concept does not mitigate the fact that it may once again be captained by a single profession.

It must also be remembered that the patient population is not the only group being served by mental health programs. Organizations tend to deal with many publics, that is, the public in contact, the public served, and the-

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[58] J.E.F. Hastings, The Community Health Centre in Canada (Ottawa: Department of National Health and Welfare, 1972), p. 35.

public-at-large.[59] Similarly, mental health organizations must endeavor to serve and hear diverse publics, namely, the patient, the surrounding community, and the provincial public.

Previously, the majority of public mental health programs were primarily oriented to serve the Provincial public. Despite the regional locale of facilities, most programs were designed for a type and size of patient population that could not have been referred solely from the surrounding community. This being the case, professional and bureaucratic workers in these facilities addressed their responsibilities to the Provincial population. Under these circumstances it would be next to impossible to deal with the regional publics specifically, without distorting the original mission of providing Provincial (as opposed to community) services.

Explicitly, some components of the provincial mental health structure should be responsible to the patient population being served at the regional level. This redistribution of responsibility is an essential feature of regionalization, unless of course, the idea of regionalization is to disseminate Provincial psychiatric facilities throughout the Province. The difficulty of that course, is

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[59] P.M. Blau and W.R. Scott, Formal Organizations (San Francisco: Chandler Publishing Company, 1962), p. 194.

that institutional programs are under economic and social pressure to reduce their provincial orientations in favor of a more regional outlook.

B. Legislative Parameters

The degree to which the development of regional mental health programs can be implemented depends largely on the interaction of elite publics.[60] Therefore, regionalization is likely to be the process and outcome of political compromise. The question is, what are the basic parameters around which the process of compromise will revolve?

The nature and extent of information regarding regionalization imposes certain limits on decision alternatives. In the case of regionalizing mental health services, the fundamental standards for decision-making at all levels are incorporated in Provincial legislation. Although the outcomes of bargaining between bureaucrats, professionals, and diverse publics are not routinely predictable, it is important to review the basic Legislation which will guide their debates.

As a maximum boundary condition to such discussions, public mental health programs have evolved as a Provincial

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[60] R.H. Elling, "The Hospital Support Game in Urban Center," in E. Freidson, The Hospital in Modern Society (London: Collier-Macmillan Ltd., 1963), pp. 73-111.

responsibility.[61] Accordingly, the first stage in regionalization would deal with those personnel and facilities presently under Provincial jurisdiction. The second, and subsequent stages would relate to the functional coordination of private professional practices and the mental health programs being run by hospitals and institutions under the Alberta Hospital Commission, as well as by Federal health programs.

The emphasis here will be to review important legislation dealing with Provincial public mental health services.

1. Decentralization

Despite the regionalized authority of the electorate, the process of legislation is largely centralized at the Provincial capital. Significantly, the administration of public programs, including that of mental health, tends to be centralized as well. Undoubtedly, there are tremendous advantages to central administrative authority, but there is also an increasing difficulty in trying to deal with specific regional as well as Provincial needs. In response to this complex and enormous task, governments are becoming increasingly dependent on the administrative process for the formulation of specific mental health policies as well

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[61] For a brief historical review of the Provincial Mental Health Service, see W.R.N. Blair, Mental Health in Alberta, Vol. II (Edmonton: Queen's Printer, March, 1973), pp. 8-33.

as their execution.[62] This has not only increased the size, and complexity of the civil service branch, but it has also centralized operating control over the network of facilities and programs being operated under Provincial jurisdiction.

While coordinating general financing, and policy formulations are important aspects of central administrative authority, these need not absolutely dominate the operating autonomy of regional mental health programs. For example, Provincial budgetary constraints may be operationalized either by a flexible global budget or the conservative line-by-line budgetary method. Whereas the former recognizes the dilemma between central operating guidelines and regional autonomy, the latter tends to subjugate regional nuances to strict central controls.[63] The reorganization of Provincial mental health services should anticipate the simultaneous need for Provincial control, and regional program autonomy.

Essentially, this structural conflict is the basic

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[62] W.W. Boyer, Bureaucracy on Trial: Policy Making by Government Agencies (New York: The Bobbs-Merrill Company, Inc., 1964).

[63] For a discussion of control versus management orientations to budgeting, see A. Schick, "The Road to PPB: The Stages of Budget Reform," in F.J. Lyden and E.G. Miller, Planning Programming Budgeting: A Systems Approach to Management (Chicago: Markham Publishing Company, 1972), pp. 15-39.

inconsistency between order and freedom.[64] If regionalization is an attempt to reconcile the dilemma between central and regional needs, the decentralization of administrative authority should be considered. In support of this the Blair Report recommended that:

> "The decentralization of control over the operation of mental health facilities and programs to the community level, with Government retaining control over plans, policies, standards and finance. The decentralization would extend to the mental hospitals, clinics and similar units."[65]

This recommendation appears to be embodied in recent legislation dealing with mental health services, namely, the new Mental Health Act (1972). To foster decentralized patient care, and to delegate operational control to communities, the Act provides for the establishment of regional mental health councils. Further to this, the Act allows for the designation of treatment "facilities" in addition to the historical ones of Alberta Hospitals, Edmonton and Ponoka.

2. Comprehensive Regional Services

As well as providing for the decentralization of Provincial mental health programs, there has been some legislative pressure to integrate mental services with those

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[64] P.M. Blau and W.R. Scott, op. cit., p. 247.

[65] W.R.N. Blair, Mental Health in Alberta, Vol. II (Edmonton: Queen's Printer, March, 1973), p. 3.

of other health and social development programs. According to the literature the concept of "health" should be unitary in that the individual is the obvious common denominator in health care programs.[66] Furthermore, if health programs are to enhance the effective social role of patients, then it would be appropriate to relate the functions of social development to the preventive and rehabilitative aspects of mental health services.[67] Another concern has been the possibility of defining regional service boundaries that may be in conflict with existing regional health and welfare service areas, thereby imposing an unnecessary barrier to coordination.

At the present time, government has prepared legislation for the development of regional health services based on co-terminal political and geographic boundaries. Generally referred to as the "Comprehensive Services Act," and known as Bill 219, this act provides for the functional, organizational and financial integration of existing and new health programs on a regional basis. Bill 219 provides for a "regional health board" to coordinate participating services.

Given the present structure of the Provincial dental

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[66] Previously cited in Chapter 2, p. 28 of this thesis.

[67] Refer to discussions contained in Chapter 2, pp. 10-11.

service, regional integration along the lines of Bill 219 would likely reduce the central orientation of current mental facilities. On the other hand, the economic and financial control of present programs, by the Province, may eventually include other health services by absorption. Implicitly, there is an opportunity to functionally integrate diverse health programs at the regional level, as well as implement coordinated planning at the central Provincial level.

More specifically, "decentralization of the control system rests on the fundamental theory that health centres are within the framework of an organization, the (Provincial health network), whose function, beside planning health programs on a regional basis, consists in supporting health centres, providing them with instrumentation and channelling their efforts towards common objectives. Given the requirements of quality in care and efficiency in distribution centres, this organization is irreplaceable. Finally, decentralization signifies that the Department of Health abandons its role of administrator for that of leader and planner, a role which cannot be assumed by another in its place."[68]

At the present time, Bill 219 reads as draft

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[68] Quebec, Report of the Commission of Inquiry on Health and Social Welfare, Part Two (Quebec: Government of Quebec, 1970), p. 65.

legislation; its execution for the moment being optional, and at the pleasure of Provincial and regional politics.

From the foregoing, it can be seen that regionalization is the process as well as the outcome of complex interactions between various publics, regional versus Provincial interests, political bargaining, variable demand for services, and ultimately, the very understanding of mental health. It is also clear that a number of compromises will have to be made in structuring the organizations that will reflect regional autonomy within a framework of Provincial planning. Finally, two basic issues arise out of the many contradictory requirements of regionalization: (1) the degree to which central authority at the Provincial level can be decentralized without compromising overall coordination, and (2) the degree to which the regional integration of diverse services will be possible given the competitive interests of existing programs.

CHAPTER 4

ORGANIZATIONAL ASPECTS OF REGIONALIZATION

The primary purpose of organizational change is to improve the attainment of selected goals. In the case of regionalization, the goals revolve around: (1) the coordination of regional programs to foster comprehensive care for the target population, and (2) promoting an optimal distribution and utilization of human and capital resources to match specific regional demands for output services.

In terms of coordinating regional programs, this chapter will attempt to examine the potential roles of professionals, and bureaucrats working under a modified hierarchy of authority (decentralized). Following this, the structure and process of the budgetary process in government organizations will be examined on the basis that the decision-making process at the regional level, in regard to the planning, management and control of programs will be significantly influenced by the operating interests of provincial health bureaucracies.

I. POTENTIAL ROLES OF PROFESSIONALS AND BUREAUCRATS IN COORDINATING REGIONAL PROGRAMS

The very nature of the services provided by health care organizations requires the input of diverse professionals. At the same time, the complexity and size of supporting

personnel and services necessitates some degree of administrative coordination. Given a regional system of health services delivery, coordination would involve: the functional integration of patient programs, within and without, individual facilities; and the coordination of human and capital resources to provide efficient and effective health services across as well as within specific programs at the regional level. The following sections examine the potential roles of professionals, and bureaucrats in coordinating Regional Programs.

A. Regionalization and the Hierarchy of Authority[69]

If regional services are in fact to be specialized to meet particular regional circumstances, then a certain level of decentralization is essential to foster program flexibility. Many factors would influence the absolute level of regional autonomy including economies of scale, availability of manpower, rural versus urban population densities, and of course the quality of management. On the

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[69] "Hierarchy of Authority" refers to the linear organization of offices for organizational control. "The positions or offices are organized into a hierarchical structure. In the usual case this hierarchy takes on the shape of a pyramid wherein each official is responsible for his subordinates' decisions and actions as well as his own to the superior above him in the pyramid and wherein each official has authority over the officials under him. The scope of authority of superiors over subordinates is clearly circumscribed" (refer to P.M. Blau and W.R. Scott, op. cit., p. 32).

last point, the higher the level of education of unit heads, the greater the decentralization the total (Provincial health network) organization can tolerate.[70] Given responsible management, the major advantage of decentralization is that regional health programs would become more adaptive to their immediate service demands.[71] The basic organizational argument is that the tall vertical specialization of centralized authority can be reduced to promote horizontal specialization.[72]

More specifically, horizontal specialization infers a more professional outlook in serving the health organizations' immediate publics, by reducing its official orientation to its distant public in the form of Provincial authority. In effect the size[73] of the organization dealing with specific regional populations would normally be smaller than the present organization which officially deals with Provincial service demands. A convenient analogy would be

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[70] A. Etzioni, op. cit., p. 28.

[71] The results of several studies of centralized versus decentralized management controls, indicate increases in local experimentation and unit flexibility. An example relating to independent versus centrally controlled systems is contained in A. Etzioni, ibid., p. 29.

[72] Ibid., p. 30.

[73] Size refers to the geographic extent of organizational responsibilities, the volume of patients, and the extent of human and capital resources.

the effect of reducing the service area of Alberta Hospital, Ponoka, from the Southern Alberta catchment area, to the lesser area of the Central Alberta region. The result would be that the institutional size would be reduced, along with its basic orientation to central bureaucracy.

Organizationally, this reduction in size can be interpreted as reducing the hierarchy of authority. Hierarchy functions primarily for routine situations. By introducing the possibility of service specialization at the regional service level, the organization may undergo a degree of de-bureaucratization.[74] At the same time, the increased possibility of providing diverse and less routinized services, introduces a concommitant need for greater coordination. This is particularly important if interdependent (as opposed to parallel) specialization[75] is to be encouraged to reduce duplication, and effect operating economies at the regional community level.

In sum, the effects of regionalization as interpreted primarily by a decrease in size, would appear to flatten the hierarchy of authority. From the standpoint of the central bureaucracy, whose service units are located in remote areas and dispersed over the entire Province, these implications

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[74] P.M. Blau and W.R. Scott, op. cit.

[75] Ibid., pp. 183-186. A discussion of parallel versus interdependent specialization and coordination.

of physical as well as hierarchical distance would have to be countervailed by a coordinated system of long range planning, as well as explicit operating guidelines. Given the dilemma between Provincial versus regional needs, it would appear that two relatively distinct organizations could evolve: those that cater to community service needs and those that serve Provincial interests.

At this point it would be useful to examine the regional organization in terms of its rationalization of means, and its selection of ends in the service of regional needs. Given that a hierarchical structure is essential in the division and coordination of labor,[76] what role does this hierarchy play in the general selection of goals?

Theoretically, "the important point about organizational behavior is that the hierarchical structure permits all decisions, except those defining ultimate objectives, to rest on factual rather than on value premises, that is, to be decisive about means rather than ends."[77] This agrees with the view that public service organizations should be influenced in goal selection by external democratic

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[76] These characteristics are cited by Weber in his model of ideal bureaucracies. A summary is contained in, Charles Perrow, Complex Organizations, A Critical Essay (London: Scott, Foresman and Company, 1972), pp. 53-53.

[77] A. Downs, Inside Bureaucracy (Boston: Little, Brown and Company, 1967), p. 48.

processes.[78] Therefore, there should be a formal, explicitly recognized organ for setting the initial goals and for their amendment. "In practice, goals are often set in a complicated power play involving various individuals and groups within and without the organization."[79] At the regional level, the involvement of public members would introduce a locus of power for the community. This suggests the formulation of a regional health board, with a mixed membership from the regional community, and participating health care agencies.

As with most health boards, specific professional and administrative advice will be required in the selection of ends, and the rationalization of means.

In order to examine the possible relationship of professionals, and administrators to the corporate board, it is useful to examine their respective orientations.

B. Professional and Bureaucratic Orientations

The general attributes which all professions seem to possess include: a body of theory that has been organized into an internally consistent system of knowledge; extensive

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[78] See the section "Bureaucracy and Democracy," in P.M. Blau and M.W. Meyer, Bureaucracy in Modern Society (New York: Random House, 1971), pp. 145-168.

[79] A. Etzioni, op. cit., p. 7.

educational requirements to meet minimum standards of practice; self-regulative code of ethics (peer-review); community sanction of authority; affective neutrality in dealing with clients; and that decisions involving clients must not be based on the practitioner's self-interest.[80] Despite the societal basis of professionalism, the major characteristic of professionals is that they endeavor to primarily serve the individual. Within the context of the health sector, the individuality of service, and ultimate legal responsibility to single clients has far-reaching effects on the authority structure of professionals operating in organized health care programs.

For instance, the source of professional discipline is the colleague group, thereby reducing accountability to the hierarchy of bureaucratic authority.[81] Presently, the fee-for-service structure reinforces the independent status of the physician. In the case of salaried professionals, basic principles such as peer-review conflict with bureaucratic authority. Although it may be argued that the special circumstances of involuntary patients in institutional programs makes it possible for salaried professionals to

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[80] This general list has been derived from H.M. Vollmer and D.L. Mills, op. cit., pp. 10-19; and, P.M. Blau and W.R. Scott, op. cit., pp. 60-61.

[81] P.M. Blau and W.R. Scott, ibid., p. 63.

be responsible to hierarchical authority,[82] would this be the case in a more comprehensive health service program?

Whereas the professional by definition is committed to the representation of individuals, the professional administrator has a legal and structural commitment to represent groups, and the organization as a whole. In the past, the narrow nature of institutional services, and the legal status of their mental patients made it tenable to combine clinical expertise, and organizational responsibility, in the form of the "medical superintendent." However, their rising costs, and the complexity of coordinating socio-economic means to provide regional service favors the use of management professionals.

The basic difference between professional and administrative orientations can be drawn from this analogy: Whereas it is in the interests of the patient to acquire as much global health resources, it is in the public's interest to conserve, and equitably distribute human and capital resources. Therefore, the professional and the administrator may be considered as functional adversaries within the framework of the health care organization. This structural separation is consistent with the organization charts of major Canadian and American health care organizations.

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[82] In Alberta mental hospitals, most professionals including physicians and psychiatrists are salaried, and legally responsible to the Minister of Health.

In contrast, the British National Health Service, has tried to temper the adversary process by attempting to construct management teams consisting of medical, nursing, and "business" personnel. This was largely possible by the almost exclusively salaried status of medical personnel, as well as their full-time occupation of official roles within the hospital system. In addition, patient and professional staff mobility between regional hospital centres was discouraged. It is as difficult and impractical to compare the relative merits of either the British or Canadian system, as it is to suggest that the socio-economic and geographic variables are identical in both countries.[83]

Since, the current Alberta system of mental health services is a mixture of both "private," and public institutional practices, the thrust of regionalized services would have to accommodate salaried and fee-for-service personnel. Finally, "the application of the concept of comprehensive care requires the presence of a number of specialists at all levels: psychiatrists, psychologists, hygienists, epidemiologists, social workers, etc. In the context of the scarcity of these resources, it appears Utopian to recommend that <u>each</u> health centre and each level

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[83]For an informative critique of the British system of management refer to Cyril Sofer, "Reactions to Administrative Hospitals," in <u>Human Relations</u> (1955) 8, pp. 291-316.

of care have 'its' specialist."[84]

In sum, the basic principles of professionalism, as well as the need for increased mobility significantly reduces the hierarchical role of patient practitioners in the organization. On the other hand, this structural detachment from bureaucracy is likely to foster closer professional and interprofessional cooperation in the complex job of providing comprehensive care at the regional level. In turn, decentralization of authority over regional mental health programs, by reducing the size of individual programs may foster closer cooperation between professional and bureaucratic components in that these components identify with similar publics -- that is, the regional service population.

C. Unitary Representation of the Regional Organization

1. Professional and Bureaucratic Components

Ultimately, the success of regionalization will depend on the degree that each member of the organization is willing to modify his own behavior so that it fits in with the behavior of other members.[85] Inconsistent patterns of behavior, in the organizational context, inevitably result

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[84] Quebec, op. cit., p. 92.

[85] A. Downs, op. cit., p. 50.

in conflict. In the interests of organizational efficiency, there is a need to limit the dysfunctional aspects of conflict by coordinating the behavior of members in the organization. While direct behavior modification is a theoretical possibility, the very sociology of large organizations prevents the obtrusive manipulation of each member.[86] The manipulation of structural variables can situate the behavior of members, and thereby exert unobtrusive and less-alienating mechanisms of control. In the case of the inherent adversary positions of professionals and bureaucrats, it is essential to reduce the possibility of conflict without negating the balancing effect of the adversary process.[87]

Furthermore, proper channels of communications are fundamental to the successful interaction of professional and bureaucratic interests in a regional health organization. Of particular interest is the potential source of conflict between professional and bureaucratic sectors when formal (and informal) lines of communication outside the organization unduly favor one sector, at the expense of the other.

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[86] For a critique of the behavioral approach to organizational coordination, see A. Etzioni, op. cit., pp. 41-48.

[87] The advantages of structural mediation of professional versus bureaucratic interests is contained in: W. Kornhauser, "Research," in H.M. Vollmer and D.L. Mills, op. cit., pp. 292-293.

Explicitly, official communications to outside agencies on organizational matters should be unified in order to reinforce, rather than confound its boundaries. Undoubtedly, communication between regional and provincial levels of organization is essential for overall planning and economic control, but this should be on a formal basis designed to represent whole organizations, as distinct from particular parts.[88] An example of the dysfunctional aspects of imperfect organizational boundaries is the current authority structure of medical staff practicing within the Provincial mental hospital system.

In addition to the umbrella of collegial authority, physicians in the Provincial service are legally responsible to the Minister of Health, and on a day-to-day basis there are external sources of power via the division of Mental Health Provincial offices. This structural ability to access external sources of support tends to increase the influence of the practitioner in the internal operations of the hospital. Therefore, the professional is not only able to exercise influence over the informal network of organizational behavior, but is structurally free to manipulate power over the bureaucratic machinery within the hospital. Seemingly, the functional capability of the adversary process between

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[88] B.R. Clarck, "Organizational Adoption to Professionals," in H.M. Vollmer and D.L. Mills, ibid., p. 288.

professional and administrative interests is greatly reduced in the foregoing example.[89]

D. Negotiated Order

The hierarchical orientation of bureaucrats suggests that they be given authority over the economic means for accomplishing organizational goals. This is consistent with the bureaucratic sources of capital and operating funds, as well as the public "ownership" of regional health facilities. Where possible, the community may elect to have a regional health board, in which case this board would communicate regional program needs to Provincial authorities. However, the full-time requirements of financial, and organizational coordination could be vested to a professional administrator. The scale of organized health operations would determine the extent of executive coordination required, and therefore, the number of administrative personnel. To emphasize the need for administrative authority at the regional level, the following excerpts have been drawn from the Castonguay Report.[90]

> "In most countries, great importance is now attached to the management function so that the action of an organization may be marked

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[89] This observation is largely drawn from the writer's experience as an Administrative Resident, in the summer of 1973, at Alberta Hospital, Ponoka, Alberta.

[90] Quebec, op. cit., p. 68.

> with success. The hospital environment, where organization and functioning are highly complex, utilizes very few modern management methods. Operational research and the application of new methods remain exceptional facts. Then, too, management personnel, whose important task is constantly being compared with that of physicians, give the impression of being the poor relative, on the grounds that their contribution to the principal activity of the health centre remains indirect and obscure. Without doubt, the broader participation of various types of personnel in the hospital's objectives and the introduction of a system of evaluation contribute towards making the administrator a partner of the other health specialists and towards enlightening the nature of his contribution. In addition to all this, however, it must be anticipated and shown that with decentralization of decisions respecting management, the management role occupies a far more important strategic position. Also, the health centre must make way for intermediate and high-ranking personnel of the first quality, in sufficient numbers, and enjoying recognized authority."

In addition to bureaucratic controls over the economic and organizational means, there is a fundamental need for the participation of the practicing professional in higher-level administrative divisions. Although the practitioner has often been viewed as a "guest" in the health care organization, the fundamental purpose of this organization is to provide the means by which the professional may exercise his right to practice on behalf of his patient. This implies that professional staff within the mental health organization must coordinate their combined interests in a formal organization of their own to facilitate a functional adversary relationship between

themselves, administration, and ultimately the regional board.

Although it may not be entirely applicable, where diverse professionals are involved, there would appear to be some merit in considering the "joint conference committee" structure currently being used by major health care organizations.[91] The formalization of distinct, but complimentary professional and bureaucratic authority that is functionally contained in the regional health system, should improve day-to-day interactions between both groups by providing consistent lines of responsibility within the organization. In the final analysis the effective negotiation of order may depend on the degree to which the roles of administrators, and practitioners are structured, as opposed to being chaotic. With this in mind, the complicated process of regionalizing mental, and finally all health programs can profit by the inherent and already specialized orientations of the patient practitioners, and professional administrators.

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91. Examples of functional joint conference committees include those of the Edmonton University Hospital, and the Edmonton Royal Alexandra Hospital, Alberta.

II. THE BUDGETARY PROCESS IN GOVERNMENT ORGANIZATIONS AND THE PROCESS OF REGIONALIZATION

Previously, it was stated that the process of regionalization raises the dilemma between Provincial controls, and regional autonomy. Up to this point the discussion has largely been concerned with organizational factors related to fostering regional autonomy. Given government intervention into the public sector, and particularly the control of public expenditures in the health care area, the budgetary process in government will influence (if not dominate) the operating autonomy of regional programs.

A. The Multiple Nature of Budgets

In its simplest form, the budget has been defined as a financial plan serving as an estimate of and a control over future operations.[92]

The need for budgets arises out of the multiple nature of organizational goals, which in turn requires coordination of activities within the organization as well as fitting its overall behavior to its social and economic contexts. From the budgetary standpoint, coordination is more commonly referred to as control. The control aspect of budgets tends to predominate organizational life through a

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[92] E.L. Kohler, A Dictionary for Accountants (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1963), p. 75.

wide assortment of operating constraints, including, work standards on the "acceptable" level of operating efficiency and effectiveness; requisition procedures; reporting procedures; and financial limitations controlling the execution of organizational tasks. This multi-level nature of control throughout the organization has been characterized as the administrative process.

B. Planning Management and Control Aspects

Robert Anthony identifies three distinct administrative processes, namely, strategic-planning, management control, and operational control.[93] In the context of the budgetary process, planning refers to the determination of objectives, the evaluation of alternatives, and ultimately the authorization of programs. Management involves the operationalization of approved goals into specific projects and activities, and the procurement of human and capital resources to carry out approved programs. Ideally, the management process constitutes the linkage between goals and the efficient organization of activities necessary for their effective attainment. The term control, generally refers to the prccess of binding operating officials to the policies and plans of superiors.

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[93]For a detailed explanation refer to Robert N. Anthony, "Framework for Analysis," in L.S. Rosen (ed.), Topics in Managerial Accounting (Toronto: McGraw-Hill Company, Ltd., 1970), pp. 145-157.

In practice, the budgetary elements of planning, management and control tend to be competitive processes, and are rarely given equal priority in the operation of budgeting systems. More specifically, each of these processes often requires different administrative skills, quantity and quality of information, and different time frames for their execution. This historical case has exposed an administrative bias for control, displacing the longer-range concerns of organizational behavior through program planning.

However, an effective system of short-range controls is a prerequisite for higher level planning techniques. To illustrate: the effectiveness of multi-year costing as a forecast of future expenditures is subject to the predictability of cost generating variables.[94] In the author's opinion, preoccupation with long-range plans in the health sector without first having adequate short-range controls over the system has tended to confound planning at all levels.

The critical element in the orientation and implementation of budgetary features depends on the existing administrative biases of governing officials. Generally, budget ideology is largely dependent on the origin of the budgetary process, and the level of authority over budget

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[94] Refer to "Multi-Year Costing," in L.M. Merewitz and Stephen H. Sosnick, The Budget's New Clothes (Chicago: Markham Publishing Company, 1971), pp. 33-41.

decisions in the administrative hierarchy. For organizations in the public sector, such as health care agencies, mecca lies in the direction of government budget bureaus.

The following sections will attempt to describe the setting, and resultant structure and process of budgeting at the government level.

III. BUDGETING AT THE GOVERNMENT LEVEL

A. The Significance of the Approved Budget

The approved budget in government is perhaps the most concrete indicator of current social policy, and political priorities. "Taken as a whole, the (provincial) budget is a representation in monetary terms of government activity."[95] The budget has been conceived as a contract, a strategy, a coordinating mechanism, and even as a method of discipline; but above all, the budget is the major locus of power for government. In short, the budget lies at the heart of the political process.

The bargaining process is fundamental to our system of pluralistic politics, and as such, tempers the technical thrust of budgetary theory. Accordingly, theoretical aspects such as program planning are reduced to being instruments of service to politicians rather than being

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[95] Aaron Wildavsky, The Politics of the Budgetary Process (Toronto: Little, Brown and Company, Ltd., 1964), p. 4.

conclusive factors in budgetary decisions.[96] Technical methods, by virtue of their specific rather than general focus on issues and problems are used sparingly by governments who are already over-burdened with the enormous detail and complexity of running public affairs. Furthermore, elected officials may not only be disinterested in comprehensive budgetary information, but may not be particularly qualified to deal with every aspect of the budgetary process.

The implication is that the successful implementation of comprehensive budgeting may depend on a radical change in our political process, namely, a shift from a bargaining posture to a more technocratic orientation. For the present, the budgetary process continues to be dominated by pluralistic bargaining, and, it is unlikely that political control over the allocation of public funds will diminish in the future.

B. The Bargaining Process

The process of bargaining tends to reduce the applicability of purely technocratic approaches to budgetary decision-making. Despite the theoretical rationality and efficiency of quantitative decision theory, and the precision of information being produced by technical experts; the facts

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[96] M.J. White, "The Impact of Management Science on Political Decision-Making," in F.J. Lyden and E.G. Miller (eds.), Planning, Programming, Budgeting (Chicago: Markham Publishing Company, 1972), pp. 397-417.

are that people must make personal judgements. Roland McKean observes, "that the positive sciences cannot predict all the effects of an action with certainty, people must inject personal judgements about those effects on the basis of whatever clues are available. People can legitimately disagree, therefore, and there is no criterion that can point to the correct public spending choices."[97]

For organizations in the public sector, the ability to bargain tends to offset the coercive nature of government by introducing additional information and viewpoints to matters of public policy. On the other hand, poorly-informed bargaining tends to reduce the decision-making process to developing a coalition large enough to enforce its will upon those who, for whatever reason, disagree with it. Ideally, the process of budgeting should take advantage of the efficiency of economic and organizational theory, and yet provide for the modification of technocratic recommendations by non-efficiency considerations expressed by politicians and the general public. Essentially, the right to dissent, and therefore, the right to bargain ensures that "cost," is not the only criteria for the formulation of budgetary policies and their subsequent execution in the form of approved programs.

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[97] Roland McKean, Public Spending (Toronto: McGraw-Hill Book Company, 1968), p. 41.

The very nature of bargaining instills non-efficiency aspects in setting budgetary policy. In the first instance, the bargaining process is not merely the exchange of official values; unofficial values are also the currency of pluralistic debate. Bureaucratic officials, like all other agents in society are significantly -- though not solely -- motivated by their own self-interests. This combination of individual and official behaviour is due to at least three basic factors:[98]

1. Officials seek to attain their goals rationally but are influenced by their own evaluations of the relative utility of goals. This means that, as the personal and official costs associated with attaining specific goals increases, their relative desirability decreases.

2. Purely official behaviour is unrealistic, in that it is mitigated by a complex set of personal goals including power, income, prestige, security, convenience, as well as the desire to serve the public.

3. The social contexts of the organizations, strongly influence the relative values of their officials.

In addition to the mediation of technocratic, official and personal interests by bargaining, purely technical behaviour is inhibited by real limits to the quantity and

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[98] A. Downs, op. cit., p. 2.

quality of available information. Firstly, these are diverse costs in acquiring and interpreting data, in the form of time, effort, and ultimately, money. Secondly, decision-makers have limited capabilities with which to rationalize complex problems, by virtue of: the time they can spend on decisions; the number of issues they can consider simultaneously; and ultimately the amount of data they can absorb to deal with any one problem. Finally, regardless of the quality of decision-making there are always the elements of source credibility, and uncertainty of outcome.

Given these realities, there are few budgetary decisions which are not in fact compromises. The process of bargaining, however, provides a forum for compromise between so-called non-efficiency considerations (political impact, social customs, and social stability) and those of a more technical nature such as economic and financial efficiency, and pragmatic cost-benefit analysis. In terms of making "correct" decisions, the bargaining process also provides a mechanism for establishing the social as well as quantitative criteria for evaluating decisions.

C. Establishing "Correctness" Through Bargaining

In theory, a decision is referred to as "correct" or "rational" if it can be shown to attain some specified objective. In practice, goals and objectives are difficult to define; and if definitions are possible these tend to be

multiple and contradictory. In the budgetary process, it is a fact that organizational objectives underlying the requisition of funds are usually different than those upheld by the funding agency.

In the face of differing goal orientations, the bargaining process tends to avoid the discussion of program objectives thereby reducing stressful conflicts. For example, the experience in labor relations indicates that labor and management have irreconcilable ideological disagreements, yet arrive at a settlement on specific proposals. In most cases the settlement is based on the means of the proposal, as opposed to its absolute objectives. Similarly, the budgetary process relies heavily on achieving agreements between adversaries. More specifically, budgetary bargaining tends to deal with the determination and selection of means, rather than debating the merits of different program objectives.

Political agreement is, therefore, the primary measure whether budgetary policy is "correct" or "rational." Furthermore, the approval budget arising out of budgetary bargaining normally indicates an agreement of means, and not ends. A good example of this process is the concept of the global budget being used by the Alberta Hospital Services Commission. Despite the control aspects of the approved budget, the hospital administrator can exercise some latitude in the selection of ends or program objectives to

suit particular circumstances. Providing the attainment of the particular hospital's objectives do not subvert the Alberta Hospital Commission's general financial guidelines, administrators and government policy-makers can maintain quite different goal orientations.

In the theoretical sense, the process of bargaining reduces the impact of evaluating policies against objectives. However, objectives and their subsequent evaluations may have no ultimate validity other than the fact that they are agreed upon. Furthermore, "the critical element in evaluation is simply: who has the right, i.e. the power, the influence or the authority, to decide."[99] The dominant exercise of determining, and agreeing on the means for different programs may be just as rational as the tedious process of theoretically connecting means to specific ends. Finally, it is possible that the consideration of means rather than a conflict over ends may foster a functional adversary process between government budget bureaus and program administrators, and ultimately provide a comprbmise between the multiple goals between organizational entities.

The following section will examine the implicit goal orientations of the government budgetary process from the standpoint of centralized budget authority.

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[99] A.H. Neufeldt, Considerations of the Implementation of Program Evaluation (Paper presented at the Fifth Banff International Conference on Behaviour Modification, March 1973).

IV. EFFECTS OF CENTRALIZATION ON BUDGETING

A. Control of Public Funds

Theoretically, democratic government accedes to the will of the electorate in the legislation and execution of public policy. However, despite the political regionalization of provincial electorates, the process of legislation is largely centralized at the Provincial capital. Significantly, the financial administration (and sometimes operating control) of public programs tends to be centralized as well. Undoubtedly, there is a tremendous advantage to centralized budgetary control, but there is also an increasing difficulty in trying to deal with the specific financial and organizational problems of each and every program, agency or institution reporting to government. In addition, there is the difficulty of trying to reconcile the expectations and objectives of regional programs and the interests of central government. In response to this complex and enormous task, governments are becoming increasingly dependent on the administrative process for the formulation of budgets as well as their execution. This has not only increased the size and complexity of the civil service (e.g., the budget bureau), but it has also provided a basis for separation between the budgetary interests of elected and civil service officials. From the budgetary point of view, this separation is basically one between non-routine (political) and relatively routine (civil service control) budgetary

decisions. Both levels, however, have a conservative bias in that politicians try to avoid large shifts in policy to avoid public reaction, and the civil service branch attempts to reduce the visibility of management problems by making small incremental decisions based on previously successful budgetary precedents. At the same time, politicians wish to gain some public visibility by championing popular causes.

The two-level decision-making mechanism is exemplified by the operations of the Cabinet Priorities Committee. Essentially, the Priorities Committee makes general policy decisions in terms of increasing the financial visibility of selected programs. For example, one of the program priorities in the 1972-73 budgetary period was the improvement of Mental Health programs,[100] whereas in 1973-74 the emphasis shifted to programs and facilities for the mentally retarded.[101]

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[100] Specifically, "the Province will be supporting a substantial program for expanded psychiatric facilities in active treatment hospitals in the Province." Refer to: Alberta, 1972 Budget Address (Edmonton: Government of Alberta, 1972), p. 11.

[101] Specifically, "the programs for community based services for handicapped children and adults including community residences, shelter workshops and day training centres will be increased by approximately 1 million for further facilities and services." Refer to: Alberta, 1973 Budget Address (Edmonton: Government of Alberta, 1973), p. 12.

Previously it was stated that the political aspects of the budgetary process are essential to the structure and process of democratic government, and that non-efficiency considerations may be just as socially important as technocratic ones. Furthermore, the political aspects of budgeting tend to respond to the strength and direction of pluralistic bargaining. At the civil service level of budgeting, however, the efficiency and technological level of budgetary decision-making are important considerations. Given the complexity and the mass of "non-political" decisions that accrue to government bureaucracies, what is the nature of decision-making technology being used?

B. Limitations of Centralization on the Budgetary Process

The centralization of both the political and the administrative processes of government reduces its sensitivity to regional problems and issues.[102] In effect, the flow of operating information tends to be vertical, rather than horizontal between related and interdependent programs. Therefore, budgetary information is rarely integrated on a regional basis, possibly effecting operating efficiencies of programs serving similar publics. This is supported by the virtual impossibility of transferring funds between

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[102] W.W. Bover, op. cit, p. 94.

appropriation categories within the same program, let alone between programs, without a special "order in council" by government (based on author's personal experience).

The present structure and process of budgeting for programs and facilities being operated under the auspices of government is largely one of control. Even if accurate and detailed information were available on the operations, and objectives of regional programs, it is unlikely that their planning and management concerns would be similar to those of government. Given the ultimate authority of central government bureaucracies over public funds, the development of management information tailored to the needs of regional programs may be subjugated to the information requirements of government decision-makers. Under the condition of regional versus central competition for resources to develop information systems, local program administrators must make specific policy initiatives to ensure that "secondary" management information systems are developed at the regional level. Failing local initiatives to develop and maintain management information, the gathering and interpretation of operating data often becomes control-oriented. Moreover, if planning aspects enter into budget formulations, they tend to be oriented to provincial, rather than regional priorities. If implemented at the central level, planning features operate as long-range control mechanisms for government and tend to reduce the

flexibility of regional programs.

This dilemma between the need for central controls, and the need for program autonomy on a regional basis is the underlying concern of current efforts to regionalize health service programs. The thrust of the argument is that regional financial and organizational management can effect efficiencies through coordinated and shared services. The concept is similar to the global budgeting system being used in Alberta general hospitals, except that the organizational entity would in fact be the network of health service programs, agencies and institutions operating within a given regional area.

At the central level of budget authority, control aspects would be as important, if not more critical under the financial regionalization of services. The question remains, does central control favor a comprehensive, or an incremental style of decision-making? The following section defines incremental versus comprehensive styles of decision-making, and examines their relative applicability to regional versus central health organizations.

V. COMPREHENSIVE VERSUS INCREMENTAL APPROACHES TO BUDGETARY DECISIONS

A. Limited Comprehensiveness at the Central Budgetary Level

Lindblom categorizes two distinct methods of decision-making: the Rational-Comprehensive approach; and the

technique of Successive Limited Comparisons.[103] The difference between the two is that the Rational-Comprehensive approach purports to investigate alternative courses of action in absolute detail and with theoretical precision; whereas the Successive Limited Comparisons method deals only with relevant differences between alternatives. The latter recognizes that goal attainment is at best partial, and that successive but small incremental changes are more predictable in terms of outcome. A more detailed comparison of the characteristic differences between the two methods of decision-making are contained in Appendix I.

In the context of provincial controls and specialized regional health service programs, the Rational-Comprehensive approach is inhibited by conflicts of interest, and technical limitations.

Conflicts of interest arise from differences in the manifest and latent goal orientations of officials. "In any organization no two members have exactly the same explicit goals, and, as a result, may disagree about what the organization ought to be doing, even if they possess the same information and face no uncertainty."[104] Similar-

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[103] Charles E. Lindblom, "The Science of Muddling Through" in Public Administration Review (Spring, 1959) 19:2, pp. 79-88, reprinted in Robert T. Golembiewski et al. (eds.), Public Administration: Readings in Institutions, Processes, Behavior (Chicago: Rand McNally, 1966).

[104] A. Downs, op. cit., p. 50.

ly the difference in goal orientations between government budget administrators and the administration of reporting organizations obviates a unitary concept of a "rational-comprehensive" approach to budget policy formulations.

Technical limitations occur as a result of the division of labor and the subsequent specialization of knowledge and information. The specialization of tasks common to every large organization inevitably leads to specialization of information, so that every official (or set of officials performing the same task) possesses a different "bundle" of information from every other official.

Previously, it was stated that the budgetary process provides a mechanism for the manifest control of conflicting goal orientations, and the coordination of activities to ensure some measure of efficiency in attaining goals. In most cases budgetary information is designed to suit the purposes of those who are finally responsible for allocating public funds. This often results in an information deficit for planning, management, and control purposes applicable to the efficient operation of the reporting organization. Needless to say, the "bottom-up" design of information might be relevant to the reporting organizations, but result in information overload at central (Provincial) levels. An excellent example of this is the slow and guarded implementation of program planning at the Provincial budgetary level.

Program accounting (PPB) involves classifying expenditures; past, permitted, proposed, or predicted

expenditure, in terms of desired outputs. Two general steps are necessary for the implementation of PPB: (1) the determination of a hierarchy of programs; and (2) ascertaining for each program in the hierarchy the sum of direct and indirect expenditures. An examination of present government organization indicates that few departments are actually organized by function. Therefore, the implementation of PPB usually means a three-way classification of expenditures, that is, by object of expenditure, by agency, and by program.[105]

Failing a massive reorganization of government departments, this three-way classification system would entail additional costs in order to collect, interpret and coordinate information. Given, the basic adversary position of funding agencies, and reporting programs it is doubtful whether such information would be used for the same purposes, thereby providing disincentives to provide "too much" information. In those cases where comprehensive and detailed information was provided, the information being generated has limited value: it reflects arbitrary cost allocations, and it has had little impact on the style of decision-makers in government.[106] Considering the political nature of budgeting

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[105] Merewitz and Sosnick, op. cit., p. 273.

[106] Aaron Wildavsky, "Rescuing Policy Analysis from PPBS," in Public Administration Review 29:2 (March, 1969).

at the government level, and the conservative bias of budget administration officials, why should they be overly-concerned with the objectives and operating information peculiar to each and every reporting organization? Aside from those circumstances where competent internal management is not available to programs, agencies, and institutions, there is little reason for government officials to "manage" organizations outside of their own bureaucratic concerns. Given responsible management within programs, efficiency and effectiveness at the operating level need not necessarily threaten the control aspects of governmental budgeting, nor does the shift from line-by-line controls to more global controls necessarily provide for mismanagement.

B. The Utility of Incrementalism for Central Control

The failure of comprehensiveness may be summarized as being due to: (1) its heavy reliance on data which is beyond that required for control, and expenditure planning at the government level; and (2) the fact that most theory is too imprecise for application to a policy process that moves through small incremental change. In contrast, the method of Successive Limited Comparisons both economizes on the need for facts and directs the analysts attention to relevant and fine differences between the politically-limited alternatives facing decision-makers.

Essentially, the values that are relvant to decision-

making are those increments by which policies differ. The decision rules are based on the rate of change from prior years expenditure level, rather than on the absolute level, purpose, and outcome of expenditure. For example, the general policy on health care expenditures is simply that, "expenditures should increase at a decreasing rate."[107] The control nature of this general, but powerful policy drastically reduces the need for exhaustive information, leaving the analyst with decisions which differ marginally. Changes at the margin of the health service industry fit in well with the conservative bias of government. Obviously, a wholesale cut-back on health care expenditure (even if substantiated by precise comprehensive analysis) would not be well-received by health care professions, and the general public.

Instead, "policy analysts in general do largely limit their analyses to incremental or marginal differences in policies that are chosen to differ only incrementally. They do so, however, because they desperately need some way to simplify their problems; they also do so in order to be (socio-politically) relevant."[108]

The difficulty with comprehensive approaches is that large and highly visible policies may be theoretically indicated to foster program efficiency but constitute an unneces-

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[107] From a personal interview with Mr. Dave Howat, Budget Bureau Officer, Province of Alberta, November 11, 1973.

[108] Lindblom, op. cit., p. 71.

sary administrative gamble. The basic virtue of incrementalism is that small, marginal changes are relatively predictable, and rarely constitute a political gamble. In the event that marginal change is proven ineffective, or highly controversial, the incremental policy may be altered without unduly disrupting the expenditure base of the program in question.

In sum, incremental approaches to budgeting offer the advantage of security in the face of uncertainty due to: (1) the fact that preceding sequences of policy decisions provide a precedent and knowledge about the probable consequences of further similar steps; (2) small incremental changes are more reversible than larger jumps towards objectives; and (3) past errors can be more easily evaluated and remedied by dealing with increments, rather than total policies. The incremental approach, however, is more appropriate to the control interests of government, but may not be adequate for the rationalization and management of regional programs that face limited resources, and diversified demand for services.

In order to implement program planning and evaluation at the reporting organization level, additional information may be necessary beyond that which is required for provincial budgetary purposes. The degree to which this is possible may depend on a shift in the organizations' commitment from a provincial orientation to one that is

more regional. As an intermediary between the budgetary interests of government, and the service interests of the regional population, the organization would more equally face the combined pressure of consumers (the regional publics) and centralized funding agencies.

C. Regional Autonomy

A primary factor in decision-making is the level of uncertainty associated with particular policy initiatives. At the central level, uncertainty tends to be offset by the security of successive sets of incremental policy steps. Given the political nature of government budgeting, most additional information that is generated to reduce "uncertainty" is by the process of bargaining, and agreement; rather than exhaustive comprehensive analysis of the program being considered. In fact, the latter approach tends to overload policy analysts who may simply be concerned with the "effectiveness" of control (that is, the effective accomplishment of their role in the budgetary process) as well as political security. Accordingly, the precise planning and evaluation of specific reporting organizations may be possible only if the concerned regional health organizations take on this responsibility.

The tightening of financial controls in the health care industry, may force specific organizations to plan and evaluate their programs to maximally utilize appropriated funds -- simply because operating deficits and annual cost

inflation may no longer be acceptable to society. At the same time, however, some degree of organizational autonomy would be in order to allow internal flexibility, such that the results of planning and evaluation could be implemented -- provided, however, that this did not increase total costs.

In sum, government budget bureaus are by necessity control oriented, and will likely become more so in the future as the rising costs of health care eventually affect taxpayers, and their politicians. On the other hand, increased levels of general controls, such as global budgeting, may stimulate selective uses and combinations of human and capital resources within the regional health services organization to fill the expressed regional demand for consumer services.

VI. TOWARDS REGIONALIZATION: A SUMMARY OF ORGANIZATIONAL CRITERIA

This chapter has attempted to critically examine selected characteristics of health organizations that have influenced health programs in the past, and are likely to play major roles in the development of regionalized mental health services in the future. Although the exact nature of organizational change cannot be predicted, the foregoing examination allows the presentation of general criteria for the formulation and implementation of regional mental health programs, which include:

1. The separation of bureaucratic and professional responsibility to provide necessary checks and balances between the administration of society's health resources, and their utilization by particular patients and patient practitioners.

2. Employing clinicians, and other health professionals on a regional, rather than an institutional basis in order to maximize the relatively short supply of specialists (especially in rural areas), and to provide consultation to programs in the region and maintain adequate standards in the quality of care.[109]

3. The development of a regional health board to foster the working integration of health care programs, institutions, and agencies operating within the region.

4. The employment of competent full-time administrators who have no clinical or patient-care responsibilities, and who are responsible to the regional board.

5. The decentralization of budgetary responsibility to regional health boards, and the parallel development of management information systems at the regional level in

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[109] This criterion suggests that professionals operating on a regional basis would, through increased mobility, reduce disparities in the standards of clinical services throughout the region. The desired outcome of increased mobility would be to develop a comprehensive mental health service for remote communities that would provide preventive, and after-care for psychiatric patients.

order to allocate, monitor and evaluate the utilization of regional health resources.[110]

The utilization of these criteria in the regionalization of provincial mental health services should not only facilitate the administration of economic resources, but provide an organizational entity that is capable of involving the community in policy decisions. Finally, it should be noted that the process of health regionalization is essentially a community phenomenon and should evolve from within health regions rather than be imposed by extra-regional health authorities.[111]

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[110] It is interesting to note that this criterion has been fundamental in the development of the Community Resources Council in Medicine Hat, Alberta (Source: Mr. David Hart, Administrator, Medicine Hat General Hospital, by personal interview, February 19, 1974).

[111] As stated previously, enabling legislation is an important factor in providing a legal framework for regionalization (see pp. 42-45). Further to this, the possibility of greater autonomy and self-destiny may act as incentives to regional health interests to actively pursue merger, coordination and identification with the regional community.

CHAPTER 5

A QUANTITATIVE APPROACH TO REGIONALIZATION

I. INTRODUCTION

The study up to this point has examined the literature, legislation, and organizational theory in order to develop a supportive framework for the regionalization of mental health services. In summary, there is overwhelming theoretical support in favor of regionalization. Briefly, the objectives of regionalization may be summarized as follows:

1. To develop a manageable health service network that provides comprehensive (rather than competitive) patient programs.

2. To facilitate the distribution of health resources on a service population (rather than institutional entity) basis.

3. To provide a definable consumer population in order to evaluate the efficacy of diagnostic and treatment programs.

4. To foster regional accountability for the management of health dollars by regional boards that are representative of broad community interests.

Although the foregoing objectives enjoy widespread support in the literature, their implementation is

confounded by the lack of practical information on which to base regional programs. In order to provide a fuller examination of regionalization, and to obtain baseline data which would be useful to government and community authorities for decision-making purposes, this portion of the study will undertake a quantitative analysis of the conceivable impact of regionalization on an existing segment of the Alberta mental health system.

II. THE QUANTITATIVE STUDY

A. Purpose and Rational

This study will deal specifically with the impact of regionalization on an existing mental hospital service operating within a defined geographic area, and serving a defined population. The study process entails three complimentary procedures: (1) the definition of a service area population, (2) the simulation of regionalization in order to estimate the demand for services, and (3) a descriptive analysis of the conceivable effects of regionalization on the plant and operating costs of an existing program.

The results of the said procedures should not only provide a quantitative dimension for future decision-making, but hopefully serve as a framework for further research.

B. Methodology

1. Definitions

For the purpose of this study, "regionalization" has been defined as the more or less exclusive service of the Central Alberta Mental Health District by a selected mental health facility, namely, Alberta Hospital, Ponoka (AHP). Regionalization will be simulated by hypothetically restricting admissions to patients who are regional residents.

References to the "non-regional" hospital population refers to patients admitted from outside the Central Alberta Mental Health region.

2. Research Strategy

The research strategy is essentially post-hoc and is an attempt to document inpatient utilization at AHP in order to estimate regional versus non-regional demand. The resulting descriptive analysis is used as base data for the experimental simulation of regionalization of AHP services. The base period selected for review is from January 1, 1970 to December 31, 1972.

In order to provide a macro analysis of the portion of the mental health service system represented by AHP, it has been decided to restrict criterion variables to those that are characteristic of utilization and caseflow. As an aggregative measure of the functioning institutional system, the following base parameters have been selected:

1. Admissions-separations as a measure of caseflow.

2. The length of hospitalization cumulated annually as a proxy of the demand for inpatient care.

These parameters are the basis for constructing a caseflow model to measure differential demand between regional, and non-regional patient populations. Descriptive variables include: age, sex, area of residence, and length of hospitalization.

Finally, the possible effects of regionalization on AHP facilities in terms of inpatient beds, and annual operating costs are discussed.

3. Limitations

This study is subject to two broad limitations. In the first instance, the "regionalization" of a segment of the provincial mental health service is likely to influence referral and treatment patterns outside the regional district; these are not considered within the scope of the study. The justification for this approach is that the hypothetical regionalization of a portion of the system may contribute in "building block" fashion to knowledge regarding the possible future regionalization of Alberta in its entirety.

Secondly, no attempt is made to examine clinical factors related to serving patients on a regional versus central basis. This study assumes that regional availability of mental hospital services is a valid alternative to

centralized institutional care.[112]

4. Data Sources

The primary source of information on psychiatric patients involved with AHP was computer-based data provided by the Division of Mental Health, Alberta. The data compiled by this system reflects patient information documented on admission, and separation.

This system does not provide for a linkage of admission and separation data, but separation records do contain information on the date of admission to hospital. The availability of admission-separation dates on a single patient record facilitated the construction of a caseflow model measuring the precise contribution of each patient (discharged) to the number of annual patient days generated by selected hospital populations. Essentially, each admission-separation is treated as an independent episode signifying demand on AHP facilities.[113]

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[112] There is ample evidence in the literature that this is theoretically more desirable under a comprehensive service philosophy that would provide pre-admission, and post-separation care (refer to pp. 27-29 of this thesis).

[113] If research on the specific patient states and their progress through the system were required, the linkage of data within Alberta Hospital, Ponoka, as well as the entire provincial mental health system would be required. For a description of a provincial data system which incorporates a universal identification number see: A.H. Neufeldt, "A Province-Wide EDP System for Community-Based Psychiatric Services," in Canadian Psychiatric Association Journal 14 (1969), pp. 135-141.

Additional sources of data included:

1. Census of Canada, 1956-1971.

2. Mental Health Statistics, Institutional Admissions and Separations (Statistics Canada), 1956-1972.

3. Public Accounts of the Province of Alberta, 1956-1972.

III. A GENERAL DESCRIPTION OF THE HOSPITAL AND THE REGIONAL SERVICE POPULATION

A. Alberta Hospital, Ponoka

Alberta Hospital, Ponoka (AHP) was opened on July 4, 1911, and was the only provincial institution of its type until 1923 when Alberta Hospital, Edmonton, was opened.

Since its inception AHP served a wide range of male and female patients, admitted from all over Alberta. The hospital itself is situated approximately 1.5 miles south of the town of Ponoka. Ponoka County is in the heart of Alberta, lying approximately 60 miles south of Edmonton, and 120 miles to the north of Calgary. Historically, Alberta Hospital, Ponoka, tended to serve the southern portion of the Province lying below an east-west line running mid-way between Leduc and Wetaskiwin. In general terms, mental hospitals have been centralized in their service of

Albertans.[114]

From an original inpatient population of 216 in the year 1911, AHP maintained as many as 1,637 inpatients in the latter part of 1941. Since 1956, the patient population has shown a steady decline. Admissions and separations, however, have shown a historical increase (see Table 1), with a corresponding decrease in the average inpatient population to the year 1966. However, by 1971, admissions-separations show a decrease of approximately 50 percent.

B. Central Alberta Mental Health District

1. Geographic Area

The region was defined as that area referred to by the Division of Mental Health, as being the immediate regional catchment area for which Alberta Hospital, Ponoka has service responsibilities.[115] The Central Alberta Mental

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[114] During the study period, January 1, 1970 to December 31, 1972, there were still two provincial mental hospitals serving the Province. Alberta Hospital, Ponoka was charged with serving "southern" Alberta, and Alberta Hospital, Edmonton was to serve regions to the north as well as portions of the Northwest Territories.

Although some attempts have been made to designate "mental hospital facilities" in other parts of Alberta, namely Calgary, the provincial institutions at Ponoka and Edmonton continue to be major centres for mental hospital programs. (From a personal interview July, 1973, with Dr. C.P. Hellon, Director of the Division of Mental Health, Department of Health and Social Development.)

[115] This region has been referred to as a major catchment area in a recent publication by AHP on its programs and facilities (September, 1973).

TABLE 1

CHANGES IN PATIENT POPULATION, AHP, 1951-1971

Year	Admissions	Discharges	Registered on December 31
1951	654	594	1,539
1956	658	735	1,592
1961	1,068	929	1,269
1966	1,435	1,483	1,126
1971	740	745	772

Source: Annual Report of the Department of Public Health and Vital Statistics Division (Edmonton: Government of Alberta, 1951-1970).

Health District occupies the central portion of the province roughly bounded between the 47th and the 33rd parallels, from the eastern provincial boundary to the western border of Banff National Park.[116]

Within the Central Alberta area are three Public Health Districts, with a portion of a fourth being included by definition of this mental health district. They are Red Deer H.U., Wetoka H.U., Alberta East Central H.U., and Mountain View H.U. (part). In keeping with the popular philosophy of defining mental health catchment areas in terms of existing health service districts, this study will refer to Public Health Districts in any specific examinations of the regional population served by Alberta Hospital, Ponoka (refer to Map 1, p. 95).

2. Population Characteristics

Within the Central Alberta area is a population of 171,779, of which the largest urban centre is the city of Red Deer (population 27,674 in 1971). Table 2 shows the population shifts between the major urban centres and their rural districts from 1956 to 1971 census dates.

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[116] For a composite listing of counties defining the Central Alberta Mental Health District, and the make up of Public Health Districts, refer to Appendix II.

MAP 1

MAP OF CENTRAL ALBERTA MENTAL HEALTH DISTRICT
BY PUBLIC HEALTH DISTRICT AREA

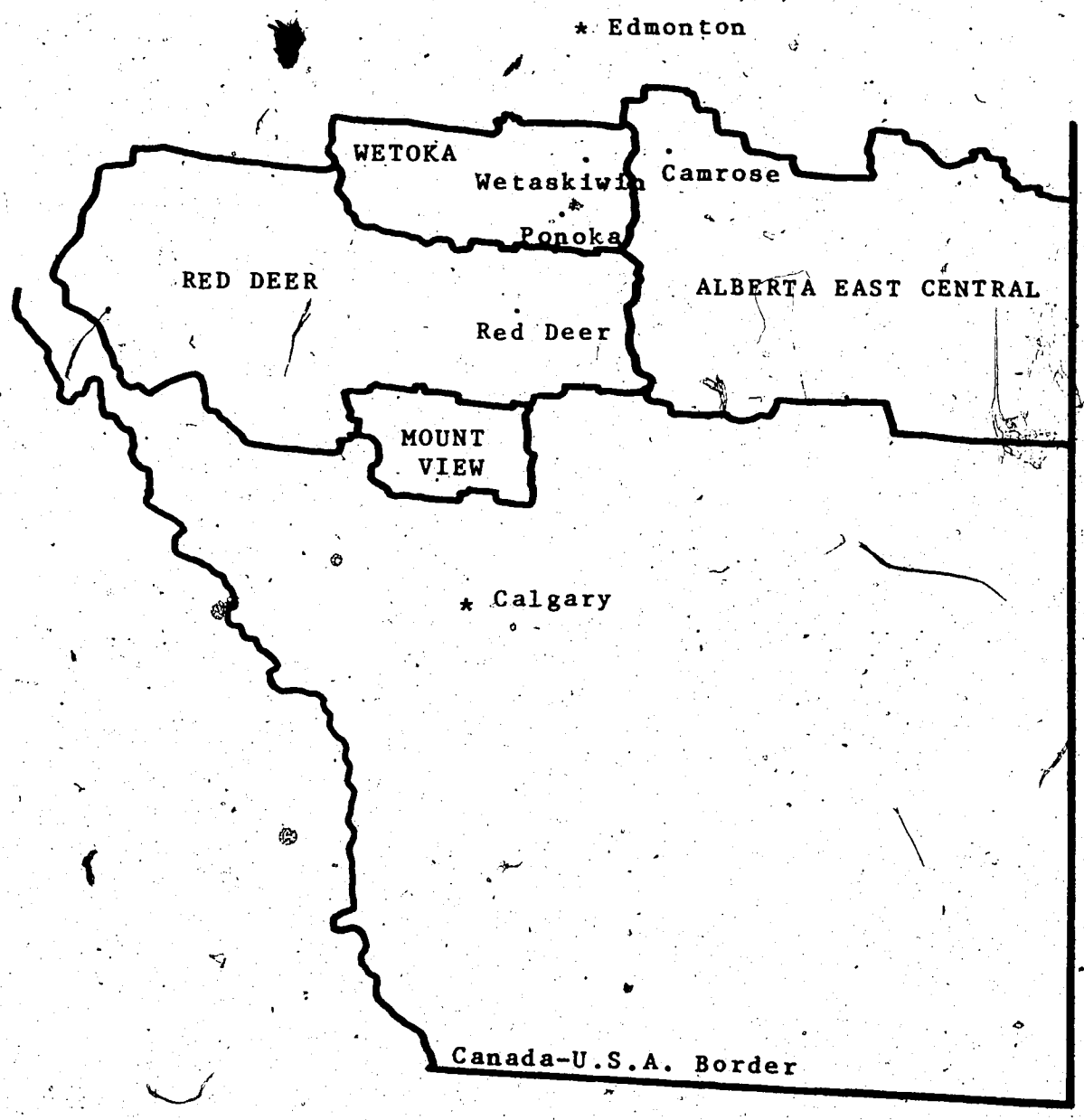

TABLE 2

RURAL-URBAN DISTRIBUTION OF SELECTED POPULATION CENTRES IN THE CENTRAL ALBERTA MENTAL HEALTH DISTRICT

Centre	Census Year			
	1956	1961	1966	1971
Red Deer (Urban)	12,338	19,612	26,171	26,674
(Rural)	12,338	13,477	12,943	12,735
Camrose (Urban)	5,817	6,939	8,362	8,673
(Rural)	9,626	9,041	8,285	7,653
Wetaskiwin (Urban)	4,476	5,300	6,008	6,267
(Rural)	9,466	8,707	8,435	8,023

Source: Dominion Bureau of Statistics, Census of Canada (Ottawa: Queen's Printer, 1951-1971).

While there is evidence from the above table of a rural to urban shift, the whole of the Central Alberta area is predominantly rural. The regional population shows an increase of approximately 15 percent from 1956 to 1966 census dates, but appears to be stabilized through 1966 and 1971. Table 3 reflects these patterns by public health districts.

TABLE 3

GENERAL POPULATION BY PUBLIC HEALTH DISTRICTS OF THE CENTRAL ALBERTA MENTAL HEALTH DISTRICT, 1956-1971

Public Health District	Census Year			
	1956	1961	1966	1971
Alta. East Central H.U.	51,655	51,542	52,328	50,119
Wetoka H.U.	29,351	30,634	31,942	30,470
Red Deer H.U.	53,476	63,556	72,745	75,742
Mount View H.U. (part)	13,852	14,553	14,833	15,448
Total General Population	148,334	160,285	171,848	171,779

Source: Dominion Bureau of Statistics, Census of Canada (Ottawa: Queen's Printer, 1956-1971).

IV. PRESENTATION AND ANALYSIS OF THE DATA

A. Descriptive Statistical Data

1. Total and Regional Service Populations

In practice, the service population for Alberta Hospital, Ponoka consisted of all patients admitted; however, the actual study population was patients who were either discharged from or admitted to this hospital over a three-year period (January 1, 1970 to December 31, 1972).

The theoretical service population was defined as residents of the Central Alberta Mental Health District who had been involved with the hospital during the study period.

In total, there were 2,300 discharges and 2,202 admissions between January 1, 1970 and December 31, 1972. Of these discharges, 747 were identified as being generated by the Central Alberta population. In addition, 72 "transient" cases were randomly assigned out of a total of 203 which were attributed to patients with no-fixed address, or who were non-Alberta residents.[117] The number of discharges due to the Central Alberta region was finally calculated at 819.

A similar technique was used in the determination of

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[117] This assignment was based on the fact that some proportion of "transient" cases could conceivably be the responsibility of AHP under regionalization. Specifically, $\frac{747}{2300 - 203} \times 203 = 72$ non-resident cases.

regional versus total admissions to AHP. Out of 199 admissions generated by "transient" patients, 72 were randomly assigned to the regional service area. After assignment, there were 804 admissions from the Central Alberta region (versus 2,202 in total).[118]

From this information it is clear that Alberta Hospital, Ponoka served a large number of patients from outside the Central Alberta Mental Health District. The fact that only 820 discharges, and 804 admissions were derived from the regional service population, has relevance to AHP in planning for regionalization. Tables 4 and 5 give a further breakdown of discharges and admissions between the Central Alberta and non-regional service populations.

B. Statistical Information on Regional Versus Non-Regional Patient Populations

In order to provide a further breakdown of the AHP population, this section provides a descriptive comparison between regional versus non-regional patient characteristics. Data was obtained from both separation and admission records reflecting caseflow over the period 1970-1972. The variables selected for examination include age, sex, area of residence, and length-of-hospitalization. With the exception that length-of-hospitalization data is only

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[118] Specifically: $\frac{732}{2202 - 732} \times 199 = 72$ non-resident cases.

TABLE 4

REGIONAL AND NON-REGIONAL SEPARATIONS FROM AHP, 1970-1972

Patient Source	Annual Separations 1970	1971	1972	Totals
Regional				
Alberta East Central H.U.	76	65	66	
Wetoka H.U.	85	48	72	
Red Deer H.U.	124	123	124	
Mount View H.U. (part)	19	18	3	
Regional Total	304	250	265	819
Non-Regional				
Edmonton	34	24	41	
Calgary	252	197	239	
Other	266	221	209	
Non-Regional Total	547	445	489	1,481
Total Separations	851	695	754	2,300

TABLE 5

REGIONAL AND NON-REGIONAL ADMISSIONS
TO AHP, 1970-1972

Patient Source	Annual Admissions 1970	1971	1972	Totals
Regional				
Alberta East Central H.U.	84	73	67	
Wetoka H.U.	71	49	82	
Red Deer H.U.	103	120	127	
Mount View H.U. (part)	14	12	2	
Regional Total	272	254	278	804
Non-Regional				
Edmonton	23	66	18	
Calgary	219	201	244	
Other	203	267	262	
Non-Regional Total	445	496	457	1,398
Total Admissions				

available from separations data, these variables are common to all patients on admission and discharge.

Age: An analysis of the age distribution of patients on admissions and discharge reflects differences in the median, mode and the minimum/maximum age between the regional and non-regional patient groups. The following illustration presents these statistics calculated in years over the study period. In addition, Tables 6 and 7 provide the age group distributions of regional and non-regional patients who were either admitted or discharged over 1970-1972.

Admission Data	Median	Mode	Min	Max	Cases
Central Alberta	42.3	29.0	12	92	804
Non-Regional	39.9	21.0	12	98	1,398
Separation Data					
Central Alberta	42.4	28.0	12	99	819
Non-Regional	39.8	21.0	12	98	1,481

From the above, Central Alberta patients tend to be generally older on admission, as well as at the time of separation. This phenomenon is difficult to explain other than to suggest that the age differential may be due to regional differences in the incidence, treatment and/or referral patterns of psychiatric patients which may have included: (1) a greater demand for adolescent and young adult psychiatric care outside the Central Alberta area; (2) highly visible services available to older residents of the region; (3) availability of patient services for younger

TABLE 6

DISTRIBUTION OF REGIONAL VERSUS NON-REGIONAL PATIENT AGE ON ADMISSION, 1970-1972

Age Group	Central Alberta		Non-Regional	
	Cases	Percent	Cases	Percent
10-14	4	0.5	21	1.5
15-19	59	7.3	131	9.4
20-24	70	8.7	202	14.4
25-34	152	18.9	295	21.1
35-44	143	17.8	241	17.2
45-54	126	15.8	205	14.7
55-64	98	12.2	132	9.4
65+	152	18.9	171	12.3
Totals	804	100.0	1,398	100.0

TABLE 7

DISTRIBUTION OF REGIONAL VERSUS NON-REGIONAL PATIENT AGE ON SEPARATION, 1970-1972

	Central Alberta		Non-Regional	
Age Group	Cases	Percent	Cases	Percent
10-14	3	0.4	13	0.9
15-19	54	6.6	122	8.2
20-24	74	9.0	192	13.0
25-34	155	18.9	295	19.9
35-44	144	17.6	242	16.3
45-54	136	16.6	216	14.6
55-64	103	12.6	175	11.8
65+	120	18.2	226	15.3
Totals	819	100.0	1,481	100.0

age groups in the region from facilities such as Linden House in Red Deer.[119]

Sex: In both the regional and the non-regional groups, the proportion of males to females was approximately 2:1 for regional and non-regional residents. From the following distributions, more males than females required hospitalization over the study period (1970-1972). However, there were proportionately less males (61.2 percent) admitted from Central Alberta, than were admitted from outside the region (68 percent). It is interesting to note that the male to female ratio remained approximately the same on discharge, as well as admissions.

	Central Alberta		Non-Regional	
Admission Data	Cases	Percent	Cases	Percent
Males	492	61.2	950	68.0
Females	312	38.8	448	32.0
Totals	804	100.0	1,398	100.0
Discharge Data				
Males	511	62.4	1,030	69.5
Females	308	37.6	451	30.5
Totals	819	100.0	1,481	100.0

[119] Linden House serves disturbed children. Source: W.R.N. Blair, Mental Health in Alberta, Vol. II (Edmonton: Queen's Printer, March, 1973), p. 58.

Area of Residence: From previous discussions it was obvious that the greater proportion of patients served by AHP were referred from areas outside the Central Alberta region. Approximately 67 percent of patients discharged, were derived from non-regional areas.

Within the Central Alberta Mental Health District, the greatest proportion of patients (on discharge) came from the Red Deer Health Unit (371 from 1970-1972). Mount View Public Health District provided the least number of cases (40). The greatest number of non-regional separations were identified as residents of Calgary (664 cases).

An examination of admissions over the same period produced similar results, with the greatest number of admissions being due to non-regional residents. For a further breakdown of admissions and separations, refer to Tables 4 (page 101) and 5 (page 102).

Length-of-Hospitalization: The median, mode and the minimum/maximum length of stay for the Central Alberta and the non-regional separations were different. The following statistics illustrate the differences in days. Table 8 provides the distribution regional versus non-regional cases by selected length of stay groups.

	Days				
	Median	Mode	Min	Max	Cases
Central Alberta	61.3	10	1	15,365	819
Non-Regional	90.0	28	1	20,990	1,481

TABLE 8

DISTRIBUTION OF REGIONAL VERSUS NON-REGIONAL CASES BY SELECTED LENGTH OF STAY (LOS) GROUPS, 1970-1972

LOS Group (days)	Central Alberta		Non-Regional	
	Cases	Percent	Cases	Percent
1-30	219	26.7	325	21.9
31-91	295	36.0	422	28.5
92-182	134	16.4	238	16.1
183-365	70	8.5	153	10.3
366-547	24	2.9	67	4.5
548-730	16	2.0	28	1.9
731-1195	14	1.7	61	4.1
1196+	47	5.7	187	12.6
Totals	819	100.0	1,481	100.0

From the foregoing comparison, Central Alberta residents were hospitalized for shorter periods, than were non-regional cases. An examination of Table 8 reveals that the proportion of regional cases staying from 1 to 91 days was greater at 62.7 percent, whereas the same length of stay group accounted for 50.4 percent of non-regional cases. Conversely, for patients staying one year or more, the non-regional proportion was 23.1 percent, versus 12.3 percent for the Central Alberta group.

C. Summary of Descriptive Statistical Data

The foregoing descriptive analysis of the Central Alberta versus non-regional patient groups raises the following observations.

1. That the median and modal age of Central Alberta (regional) patients on admission and separation tends to be higher than non-regional residents.

2. That the proportion of males (approximately 2:1 females) was generally less on admission/separation than that of non-regional cases (2.3:1).

3. That the regional patient group generally exhibited shorter lengths-of-hospitalization. This is supported by the fact that 62.7 percent of regional versus 50.4 percent of non-regional separations stayed 91 days or less. For patients staying a year or more, the case proportions were: 12.3 percent of Central Alberta

residents, and 23.1 percent for non-regional residents.

4. That the ratio of non-regional to regional cases was approximately 2:1 from both admission and separation records.

Given these differences in the age/sex distributions between Central Alberta patients and those referred from outside this region, it is clear that the regionalization of AHP services could have an effect on the ultimate composition of patient programs and facilities at AHP. Finally, it is conceivable that shorter lengths of stay, combined with a lesser number of inpatients under regional service conditions could result in an overall decrease in the facilities required at AHP.

The following sections of this chapter attempt to simulate the possible effects of reduced inpatient demand on AHP given the act (hypothetical) of regionalization.

V. ANALYSIS OF INPATIENT DEMAND

A. Description of Caseflow Analysis

The demand for inpatient services at AHP has been defined in terms of the annual number of patient-days generated by the admission-separation process; and is calculated from length-of-stay information obtained from patient discharge records.

The caseflow analysis undertaken for this study accounted for the patient-days contribution of the follow-

ing admission-separation patient cohorts:

1. Patients admitted prior to January 1, 1970 but discharged at any point during the study period 1970-1972.

2. Patients admitted and discharged within the study period.

Although caseflow information is obtained from separation records, the analysis assigns the length-of-stay of each patient during the study period by admission and separation dates. For example, a patient admitted on March 2, 1970, and discharged on January 4, 1971 would have the length-of-stay portion occupying 1970 assigned to 1970, and likewise for that segment of his length-of-stay occupying 1971. Thus, the utilization of AHP facilities by inpatient caseflow was measured for all patients which had been separated during 1970-1972.

The foregoing caseflow analysis excludes demand expressed by patients not accounted for by separations data, namely: those patients who had been admitted but were not separated over the 3-year period; and those patients who were in hospital throughout the period. In order to estimate the number of patient-days generated by these two groups, the difference between the published number of patient-days and those accounted for by separation records was used. Within the context of this study, these cases are referred to as "the inhospital service base."

B. Regional Versus Non-Regional Demand

With the exception of inhospital service patients, residence codes were available for a breakdown of regional versus non-regional inpatient demand. An examination of Table 9 presents regional/non-regional demand expressed in patient-days. This table was compiled from two sources of patient information.

In the first instance, the caseflow analysis developed for this study provided a measure of demand from separation records. The compilation of annual patient-days accounted for by separations is illustrated in Appendix III. The second source of information on the annual number of patient-days expressed by AHP cases was published data reporting total patient days. As indicated previously, the total number of patient-days (published), less the number of patient-days accounted for by discharges, provided an estimate of the demand being expressed by patients who were not separated during the course of the 3-year study period (1970-1972).

Table 9 integrates demand obtained from caseflow analysis, and estimates of the demand being expressed by inhospital patients. An examination of this table reveals that regional demand measured in annual patient-days accounts for approximately 28 percent of total demand being expressed on AHP In addition, Central Alberta demand appears to be relatively stable, ranging from 85,830 to 87,896 patient-days, whereas demand expressed by non-regional residents reflects

TABLE 9

PATIENT-DAY DEMAND EXPRESSED BY REGIONAL AND NON-REGIONAL CASES, 1970-1972

Demand Source	Annual Patient-Days		
	1970	1971	1972
Regional Residents			
1970-72 Admissions	19,815	25,261	17,185
Admissions prior to 1970	27,070	11,067	3,248
Caseflow Analysis	46,885	36,328	20,433
Patients in Hospital*	38,945	45,039	67,413
Total	85,830	81,367	87,5
Non-Regional Residents			
1970-72 Admissions	32,511	46,962	27,719
Admissions prior to 1970	93,058	42,003	12,048
Caseflow Analysis	125,569	88,965	39,767
Patients in Hospital	104,305	110,296	131,201
Total	229,874	199,263	170,968
Total Source of Demand			
Inhospital Patients	143,250	155,337	198,614
Caseflow Patients	172,454	125,293	60,200
Patient-Days all Sources**	315,704	280,630	258,814

*Estimated from regional versus non-regional caseflow, that is Regional Inhospital Patient-Days = $\frac{\text{Regional Caseflow}}{\text{Total Caseflow}}$ x Total Inhospital Patient-Days; for example, $\frac{46,885}{172,454}$ x 143,250 = 38,945.

**Calculated from, Public Accounts of the Province of Alberta, 1970-1972 (Edmonton: Queen's Printer, 1970, 1971, 1972).

TABLE 10

REGIONAL PATIENT-DAY DEMAND BY PUBLIC HEALTH DISTRICT, 1970-1972

Demand Source	Annual Patient-Days		
	1970	1971	1972
Alberta East Central			
Caseflow	10,891	9,168	5,266
Inhospital*	9,047	11,366	17,374
	19,938	20,534	22,640
Mountain View			
Caseflow	2,855	1,591	387
Inhospital*	2,371	1,972	1,277
	5,256	3,563	1,664
Red Deer			
Caseflow	20,955	17,637	9,348
Inhospital*	17,406	21,866	30,841
	38,361	39,503	40,189
Wetoka			
Caseflow	12,184	7,932	5,432
Inhospital*	10,120	9,833	17,921
	22,304	17,765	23,353
Regional Total			
Caseflow	46,885	36,328	20,433
Inhospital*	38,945	45,039	67,413
	85,830	81,367	87,846

*Estimated by: $\frac{\text{Health District Caseflow}}{\text{Total Caseflow}} \times \text{Total Inhospital}$ Patient-Days; for example, Alberta East Central = $\frac{10,891}{46,885} \times 38,945 = 9,047$.

a decline over the study period from 229,874 patient-days to 170,968.

A further breakdown of patient-day demand originating within the Central Alberta region by Public Health District is provided in Table 10. Inhospital patient-days are estimated for each Health District region, and are integrated with caseflow demand to provide an overall estimate of total patient-day demand for each of the four health districts.

From Tables 9 and 10, it can be concluded that overall demand for AHP services in general is falling, and that regional demand for inpatient care is considerably less (28 percent) than the demand being expressed by non-regional admissions. Clearly, the possibility of reduced demand under regional service conditions could conceivably reduce the number of beds, and the annual operating costs of AHP. These possible effects are the subject of further examination in Section VI, pp. 118-122 of this study.

C. Acute Demand

As stated previously, inhospital demand refers to caseload at AHP which is not accounted for by patient separations. In the previous analysis, inhospital demand was estimated, and added to caseflow demand to provide information on the distribution of patient-day demand between regional and non-regional area populations. This was necessary to overcome the limitations of the caseflow

analysis which does not adequately measure inhospital demand.

Although it is not possible to measure either chronic or acute care demand by the caseflow analysis of separations data, a caseflow examination of patient groups who were admitted and separated in one year periods should provide an insight into the general status of patients staying one year or less.

Table 11 illustrates the results of limiting demand analysis to three admission-separation cycles over the study period 1970-1972. A perusal of the patient-day demand being expressed by short term patients from regional and non-regional areas suggests that acute demand is relatively stable over the study period. It is also interesting to note that regional patients accounted for 40 percent of this sample of acute cases, compared to 28 percent of overall demand. This agrees with the previous finding that the regional patient group exhibits shorter lengths-of-hospitalization than patients admitted from outside the region (refer to pp. 107-109 of this study).

VI. ANALYSIS OF DEMAND UNDER REGIONALIZATION

A. A Simulation Approach

The foregoing descriptive analysis of regional and non-regional patients has disclosed that the regionalization of AHP could alter the nature and extent of inpatient services required. This section of the study attempts to

TABLE 11

REGIONAL VERSUS NON-REGIONAL ACUTE DEMAND BY CASES ADMITTED-SEPARATED DURING THE ANNUAL PERIODS, 1970, 1971, 1972

Length of Stay Group	Source	Patient-Days by Admission/ Separation Year		
		1970	1971	1972
1-30 days	R	1,112	1,076	1,265
	NR	1,731	1,975	2,142
31-91 days	R	5,163	3,840	3,439
	NR	7,096	5,598	7,060
92-182 days	R	4,294	3,235	3,159
	NR	6,873	6,373	4,938
183-365 days	R	2,401	1,417	2,094
	NR	2,099	2,451	1,924
Total	Regional (R)	12,970	9,618	9,957
	Non-Regional (NR)	17,799	16,397	16,064

examine the conceivable effects of regionalizing AHP in terms of shifts in demand, the number of beds, and total operating costs.

Regionalization in the context of AHP would mean the implementation of a policy restricting admissions to those patients who are residents of the Central Alberta Mental Health District. The anticipated general effect on AHP would be a reduction in the demand for inpatient care.

The effect of regionalization on overall inpatient demand was simulated over the study period 1970-1972, and is based on the hypothetical regionalization of AHP as of January 1, 1970. Given the implementation of an administrative policy to restrict admissions to AHP to permanent residents, two general results could be anticipated.

The first would involve an increased demand for inpatient services outside the Central Alberta region, in areas such as Calgary and Edmonton. This demand would, of course, have to be planned for in advance of regionalization.

Secondly, the demand being expressed on AHP would decrease as non-regional patients in hospital were discharged over time, and as the inpatient population became increasingly composed of Central Alberta residents. It is anticipated that a decrease in acute admissions would have a relatively immediate effect, whereas chronic demand would decrease at a slower rate. At some point, however, the level of patient-days would stabilize, resulting in an overall decrease in the

number of beds required to service the region.

B. Results of Simulation

The examination of the anticipated effects of regionalization is divided into two complimentary phases. The first phase measures the shift in demand that would have occurred from January 1, 1970 to December 31, 1972. In the second phase, the effects of reduced demand on AHP inpatient beds, and annual operating costs are estimated for the study period.

1. Inpatient Demand

Table 12 illustrates the anticipated decrease in overall inpatient demand. The sharpest decline occurs between 1970 and 1971, and represents a 17.5 percent decrease in patient-days. The period between 1971-1972 shows a lesser decrease, and may be partially due to the slower separation rates associated with longer-term patients.

In general, it appears that regionalization may not have an immediate impact on AHP due to the substantial demand being expressed by longer-term patients resident in this hospital. This may in fact ease the transition from a provincial-based service to one that is regionally-oriented since program changes at AHP could be implemented gradually.

2. Beds Required

A general decrease of inpatient demand after regionalization could effectively reduce the number of beds

TABLE 12

COMPOSITE PATIENT-DAY DEMAND UNDER SIMULATED REGIONALIZATION, 1970-1972

Demand Source	Annual Patient-Days		
	1970	1971	1972
Regional	85,830	81,367	87,846
Non-Regional	229,874	199,263	170,968
(less) 1970-72 Non-Regional Admissions	(32,511)	(46,962)	(27,719)
Total Patient-Days under Regionalization	283,193	233,668	231,095
Actual Patient-Days	315,704	280,630	258,814
Net Change (loss)	(32,511)	(46,962)	(22,719)

required at AHP. Assuming that historical occupancy rates of approximately 95 percent were applicable, the following distribution of beds would be required.

Utilization Source	Annual Bed Complement 1970	1971	1972
Regional	247	234	252
Non-Regional	661	573	492
(less) 1970-72 Non-Regional Admissions	(93)	(135)	(80)
Beds required under Regionalization	815	672	664
Actual Beds Required	908	807	744

From the foregoing illustration, the number of inpatient beds required under regionalization would have decreased by approximately 308 over the 3-year period. If this decrease were to continue at a similar rate beyond 1972, the number of beds required may be reduced to approximately 250 by the year 1977. There is insufficient information to make more accurate forecasts, but it is conceivable that AHP would have been reduced to a predominantly regional facility by 1978 with a bed complement in the range of 225-250, primarily serving Central Alberta patients.

3. Costs

A thorough examination of the effect of decreased demand on the costs of operating AHP under regional conditions is not possible within the limited scope of this

study.[120] Therefore, only a preliminary estimate of cost ranges that could be anticipated under regionalization is provided for consideration.

Estimates of the annual operating costs are calculated from published expenditure information. The results of this aggregative costing are presented in the following illustration. The reader is cautioned in interpreting this data since it does not discriminate between fixed, variable, separable and non-separable costs.

Cost Generators	Estimated Annual Costs* 1970	1971	1972
Regional Patient-Days	$1,356,119	$1,506,918	$1,958,972
Non-Regional Patient-Days	3,632,004	3,690,349	3,812,580
Estimated Cost under Regionalization	4,475,449	4,327,531	5,153,418
Actual Expenditure Reported	$4,988,126	$5,197,278	$5,715,483
Cost Change	$ 513,677	$ 869,747	$ 562,065

*Calculated from published cost per patient-day rates.
Source: Alberta, Public Accounts of the Province of Alberta, 1970-1972 (Edmonton: Queen's Printer, 1970, 1971, 1972).

[120] A thorough examination would involve: (1) cost-finding studies to determine the ratio of fixed to variable costs; (2) cost per case analysis to differentiate cost changes due to the apparent increase to a more chronic service; (3) external costs to the patient, and the provincial government arising out of a decreased transportation distances for non-regional cases; and, of course, (4) the determination of the costs of meeting non-regional demand in facilities outside the Central Alberta area.

Under regionalization, the foregoing estimates reflect a possible expenditure decrease in the order of $1,454,489 over the period. This figure cannot be considered as a cost saving to the Province since alternative facilities, and/or forms of care would have to be provided for non-regional caseflow. Conversely, the process of regionalizing AHP might make such "excess" funds available for mental health programs outside the Central Alberta area.

Despite the inadequacies of estimating expenditure changes by direct proportions, it is a fair assumption that the regionalization of AHP could conceivably have reduced its operating costs over the period. Assuming that AHP would become a regional mental hospital unit of approximately 225-250 beds by 1978, operating expenditures may be reduced by as much as 65 percent.

VII. SUMMARY OF CONCLUSIONS

Throughout the chapter, conclusions have been drawn following the presentation of specific descriptive data regarding the process of regionalizing Alberta Hospital, Ponoka. Assuming that the design of the simulation experiment elicited valid information, a summary of conclusions is now presented.

While the implementation of an administrative policy to regionalize mental hospital services may be considered a radical initiative, the effect on inpatient demand is

gradual. It is concluded that the theoretical advantages of providing health services on a regional basis cited in Chapters 2 to 4, may be tested without wholesale change in the operational nature of AHP. Whether provincial and community authorities decide to initiate the process of regionalization or maintain this hospital as a central psychiatric resource, there is a definitive need for mental hospital services outside the Central Alberta region, particularly in Calgary. A high referral rate from Edmonton suggests that the AHP counterpart, Alberta Hospital, Edmonton, be examined with regard to its regional responsibilities.

From the decreasing number of beds required both under regionalized, and provincial service conditions, the investigator concludes that the facilities of AHP could effectively be reduced.

It is further concluded that operating costs under regionalization could be reduced over the longer-term, thereby freeing up provincial resources for the development of other regional mental health programs elsewhere. Since the investigator is aware of the economic contribution of AHP to the town of Ponoka, it is further concluded that the possibility of reduced cashflow be anticipated by both municipal and provincial authorities.

Caseflow analysis illustrated several limitations

in the quality and availability of inpatient data. In general, linkage of separation, and discharge records was not readily possible, nor was EDP data available on chronic patients who were resident in the hospital during the study period. If the process of regionalization is to provide an improved geographic and potentially political framework for mental health planning, it is suggested that initiatives be undertaken to redesign the present mental health information system. Provisions should be made to integrate provincial mental hospital data with other hospital programs -- possibly through the PAS[121] information system.

The summary, and recommendations arising from the study as a whole are presented in Chapter VI.

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[121] PAS is short for The Commission on Professional and Hospital Activities, Ann Arbor, Michigan, which compiles monthly discharge summaries for participating hospitals.

CHAPTER 6

SUMMARY AND RECOMMENDATIONS

I. SUMMARY

This study was undertaken to determine the feasibility of regionalizing mental hospital programs in Alberta, and to identify the potential effect of regionalization on a selected facility, Alberta Hospital, Ponoka. The expected utility of this approach is to provide baseline information which, in conjunction with data from other health programs, would be useful to government and local health authorities for planning and decision-making purposes.

The study process was divided into two complimentary stages. The first stage was directed towards an examination of: (1) contemporary trends in mental health and social policy; and (2) the organizational parameters which would have to be considered in the process of regionalization. In the second stage, this study was directed towards a quantitative investigation of the potential effects of regionalization on Alberta Hospital, Ponoka.

A review of social policy regarding mental hospital services indicated professional and social support for the delivery of all phases of mental health on a regional basis. Interdisciplinary programs are being attempted in order to bridge the gap between the mental hospital, the community,

and the patient. Contemporary literature is not only stressing the role of preventive intervention in the community, but the utilization of the community itself as a locus of rehabilitative therapy. The inescapable conclusion is that a common community defined in geographic and political terms on a regional level, could enhance the delivery of comprehensive mental health services -- including inpatient care provided by mental hospitals.

The process of health regionalization is primarily a political undertaking. Notwithstanding the theoretical advantages of economic savings, organizational coordination, and integration of multiple patient care levels, the success of the process of regionalization depends on: (1) the separation of administrative and clinical responsibility; (2) the employment of clinicians and other health professionals (including administrators) on a regional rather than institutional basis; (3) the development of a regional health board with broad fiscal and organizational powers over health programs operating in the region; (4) the provision of management autonomy to regional health boards by central government health bureaucracies; and (5) the formulation and implementation of on-going operations research in order to integrate information at the regional health program level, and to provide local authorities with valid data with which to plan, manage, and control health programs in the region. Furthermore, regional data need not

be confounded with information required by central government bureaus since central functions are primarily concerned with province-wide health management.

The quantitative examination of potential regionalization on Alberta Hospital, Ponoka revealed the gradual nature of change in demand, inpatient beds, and operating costs. This was found to be due to the chronic service nature of AHP. Specifically, the differences were found to be as follows:

	1970	1971	1972
Patient-Day Demand			
Actual	315,704	280,630	258,814
Regionalized	283,193	233,668	231,095
Difference	32,511	46,962	27,719
Beds Required			
Actual	908	807	744
Regionalized	815	672	664
Difference	93	135	80
Operating Costs			
Actual	$4,988,126	$5,197,278	$5,715,483
Regionalized	4,475,449	4,327,531	5,153,418
Difference	$ 513,667	$ 869,746	$ 562,065

Although there is insufficient data to forecast the rate of decline in the demand expressed by non-regional residents, the demand on AHP by Central Alberta residents could in the future approximate the trends arising out of the study period, 1970-1972. Specifically:

	1970	1971	1972
Patient-Days	85,830	81,367	87,846
Beds	247	234	252
Estimated Annual Costs	$1,355,255	$1,476,811	$1,939,639

Depending on the elasticity of the patient-per-day costs to the reduction of patient-day demand, operating costs could be reduced by as high as 65 percent. This would mean that the size of AHP would be reduced to approximately 250 beds given the act of regionalization.

Although the study was based on a combination of theoretical information from the literature, and historical caseflow data, it was concluded that the regionalization of Alberta Hospital, Ponoka to service Central Alberta residents could provide a valuable adjunct to the health care of Central Albertans. From the level of demand being expressed by non-regional referrals, it was also concluded that active review of the availability of mental health programs in Calgary and Edmonton be undertaken by local and government officials.

II. RECOMMENDATIONS

The recommendations are based on the findings and conclusions offered throughout the study, and are a reflection of contemporary ideas expressed in the literature. They are developed around three parameters: (1) the general

process of organizing regionalization; (2) the apparent feasibility of regionalizing Alberta Hospital, Ponoka; and, (3) further research in relation to the planning, management and control of mental health programs on a regional basis.

A. Process of Regionalization

The theoretical basis underlying the regionalization of health programs in general, and mental hospital programs in particular, is that a fuller and more integrated cycle of patient services can be provided ranging from prevention of hospitalization, to early discharge into rehabilitative programs in the community. Due to the relatively low rate of hospitalization of patients in mental hospitals as compared to that of general-acute hospitals, a degree of centralization is inevitable. Centralization at the provincial level, however, unnecessarily complicates pre-admission checks, follow-up and functional integration with other health programs.

Although the foregoing theoretical propositions enjoy wide support in the literature, there is insufficient evidence to either substantiate or refute the economic and organizational benefits accruing out of regionalization. However, social policy as indicated by recent government legislation appears to be in favor of regionalization. Accordingly, it is recommended:

1. that regionalization of a selected portion of the provincial mental service be undertaken on an

experimental basis.

2. that evaluation become an integral element of any regionalization experiment.

The organizational process of regionalization would involve the participation of diverse publics, professionals, and hopefully patient representatives. On the assumption that regionalization of mental hospital programs is widely acceptable on an experimental basis, it is further recommended:

3. that the definition of mental hospital districts coincide with existing health administration units, namely public health districts and mental health regions.

4. that regional mental health management boards be developed in order to facilitate a regional outlook in providing programs.

5. that day-to-day administrative coordination and control of regional mental health resources be vested in a professionally-trained administrator who is not himself a clinician, and who is responsible to the regional board.

6. that psychiatric, and para-psychiatric personnel be given the responsibility of regional follow-up of mental hospital patients. Ideally, these personnel would become involved with pre-admission checks, and provide consultation to practitioners in the community <u>before</u> the patient was admitted to hospital.

7. that initiatives be undertaken to exchange

information on mental health services between mental hospitals, acute and auxiliary hospitals, and agencies operating at the regional level.

B. Feasibility of Regionalizing AHP

It will be recalled that the regionalization of Alberta Hospital, Ponoka need not traumatically change existing facilities, and programs -- the gradual change in demand after simulated regionalization suggests that reorganization could take place over a period of years. Nevertheless, some recommendations on the nature of these changes are provided:

9. that AHP be characterized over the longer term as a mental hospital facility primarily serving Central Alberta residents, with a rated bed capacity of approximately 250. It is not possible to determine the future date at which only 250 beds would be required, but 250 would be sufficient to serve Central Albertans, barring sudden shifts in the population and/or the incidence of hospitalization.

10. that the demand for Mental Health services being expressed by out-of-region areas such as Calgary be investigated, in order to estimate the size and type of facilities required as alternatives to AHP under regionalization. This may mean the development of a third mental hospital program serving Calgary, and environs.

C. Future Research

If the operationalization of mental hospital programs is in fact to provide an economical, and manageable service, it is crucial that management information systems be developed at the regional level. Previously, it was stated that the centralization of administrative information, and control of hospital programs is complicated by the fact of "information-overload," and the political bargaining process. In order to allow the development of detailed information for regional management of resources, and the complimentary development of simpler indicators for central government purposes, it is recommended:

11. that a mental health management information system be formulated at the regional level by competent systems research experts.

12. that this regional system be developed initially at Alberta Hospital, Ponoka, and subsequently for other designated district mental hospitals.

13. that this information be primarily provided to the regional mental health board, and secondarily for reporting purposes to central government authorities.

If management information systems are to provide clinical, as well as administrative information, and to foster on-going research, caseflow should not only be identified in terms of mental hospitals, but for the province as a whole. Accordingly, the suggestions are made:

14. that admission-separation records be integrated in order to allow the measurement of those cases admitted to hospital but not separated -- without having to resort to census.

15. that unique patient identification numbers be assigned and routinely checked for validity.

16. that access to a central EDP service be provided for the use of managers, clinicians and researchers interested in province-wide mental health problems.

Finally, this study is concluded by the general suggestion that the regionalization of mental hospital services be undertaken on an experimental basis, and that on-going evaluation be undertaken to determine whether the regionalization of the total Alberta Mental Health system is in fact a worthwhile change. In this regard, the present provincial mental health service is at an advantage over general hospital programs, since there is at the present time a central organization which can be decentralized.

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APPENDIX I

COMPARISON OF COMPREHENSIVE VERSUS INCREMENTAL METHODS OF DECISION-MAKING

Rational-Comprehensive	Successive Limited Comparisons
1a. Clarification of values or objectives distinct from and usually pre-requisite to empirical analysis of alternative policies.	1b. Selection of value goals and empirical analysis of the needed action are not distinct from one another but are closely intertwined.
2a. Policy-formulation is therefore approached through means-end analysis: First the ends are isolated, then the means to achieve them are sought.	2b. Since means and ends are not distinct, means-end analysis is often inappropriate or limited.
3a. The test of a "good" policy is that it can be shown to be the most appropriate means to desired ends.	3b. The test of a "good" policy is typically that various analysts find themselves directly agreeing on a policy (without their agreeing that it is the most appropriate means to an agreed objective).
4a. Analysis is comprehensive; every important relevant factor is taken into account.	4b. Analysis is drastically limited: i) Important possible outcomes are neglected. ii) Important alternative potential policies are neglected. iii) Important affected values are neglected.
5a. Theory is often heavily relied upon.	5b. A succession of comparisons greatly reduces or eliminates reliance on theory.

Source: Charles E. Lindblom, "The Science of Muddling Through," in Public Administration Review 19:2 (Spring, 1959), reprinted in Robert T. Golembiewski et al. (eds.), Public Administration: Readings in Institutions, Processes, Behavior (Chicago: Rand McNally, 1966).

APPENDIX II

COMPOSITION OF CENTRAL ALBERTA MENTAL HEALTH DISTRICT BY PUBLIC HEALTH UNITS AND COUNTIES

Health District	County
Alberta East Central	Camrose County 22 Flagstaff County 29 Stettler County 6 Paintearth County 18 Municipal District 52 Special Area 4
Mount View (part)	Mountain View County 17
Red Deer	Lacombe County 14 Red Deer County 23 Improvement District 10
Wetoka	Ponoka County 3 Wetaskiwin County 10 Improvement District 11

APPENDIX III, Part 1

TOTAL PATIENT-DAYS FALLING IN THE ANNUAL PERIOD 1970, BY YEAR OF ADMISSION AND SEPARATION

VAR022 SEPARATION YEAR

VAR016	COUNT / ROW PCT / COL PCT / TOT PCT	70.00	71.00	72.00	ROW TOTAL
ADMISSION YEAR	12.00	7	0	0	7
		100.0	0.0	0.0	0.0
		0.0	0.0	0.0	
		0.0	0.0	0.0	
	29.00	0	365	730	1095
		0.0	33.3	66.7	0.6
		0.0	0.6	1.8	
		0.0	0.2	0.4	
	30.00	324	0	0	324
		100.0	0.0	0.0	0.2
		0.4	0.0	0.0	
		0.2	0.0	0.0	
	31.00	7	0	0	7
		100.0	0.0	0.0	0.0
		0.0	0.0	0.0	
		0.0	0.0	0.0	
	33.00	226	0	0	226
		100.0	0.0	0.0	0.1
		0.3	0.0	0.0	
		0.1	0.0	0.0	
	34.00	240	365	0	605
		39.7	60.3	0.0	0.4
		0.3	0.6	0.0	
		0.1	0.2	0.0	
	35.00	350	1095	1095	2540
		13.8	43.1	43.1	1.5
		0.5	1.9	2.7	
		0.2	0.6	0.6	
	COLUMN TOTAL	76072	56164	40218	172454
		44.1	32.6	23.3	100.0

(CONTINUED)

VAR022 SEPARATION YEAR

VAR016 ADMISSION YEAR		70.00	71.00	72.00	ROW TOTAL
36.00	COUNT	599	0	365	964
	ROW PCT	62.1	0.0	37.9	0.6
	COL PCT	0.8	0.0	0.9	
	TOT PCT	0.3	0.0	0.2	
37.00	COUNT	245	730	0	975
	ROW PCT	25.1	74.9	0.0	0.6
	COL PCT	0.3	1.3	0.0	
	TOT PCT	0.1	0.4	0.0	
38.00	COUNT	297	365	730	1392
	ROW PCT	21.3	26.2	52.4	0.8
	COL PCT	0.4	0.6	1.8	
	TOT PCT	0.2	0.2	0.4	
39.00	COUNT	344	365	365	1074
	ROW PCT	32.0	34.0	34.0	0.6
	COL PCT	0.5	0.6	0.9	
	TOT PCT	0.2	0.2	0.2	
40.00	COUNT	506	365	365	1236
	ROW PCT	40.9	29.5	29.5	0.7
	COL PCT	0.7	0.6	0.9	
	TOT PCT	0.3	0.2	0.2	
41.00	COUNT	0	0	730	730
	ROW PCT	0.0	0.0	100.0	0.4
	COL PCT	0.0	0.0	1.8	
	TOT PCT	0.0	0.0	0.4	
42.00	COUNT	274	0	730	1004
	ROW PCT	27.3	0.0	72.7	0.6
	COL PCT	0.4	0.0	1.8	
	TOT PCT	0.2	0.0	0.4	
COLUMN TOTAL		76072	56164	40218	172454
		44.1	32.6	23.3	100.0

(CONTINUED)

VAR016 ADMISSION YEAR	COUNT / ROW PCT / COL PCT / TOT PCT	VAR022 SEPARATION YEAR 70,00	71,00	72,00	ROW TOTAL
43,00		0	0	365	365
		0,0	0,0	100,0	0,2
		0,0	0,0	0,9	
		0,0	0,0	0,2	
44,00		490	730	730	1950
		25,1	37,4	37,4	1,1
		0,6	1,3	1,8	
		0,3	0,4	0,4	
45,00		1022	365	365	1752
		58,3	20,8	20,8	1,0
		1,3	0,6	0,9	
		0,6	0,2	0,2	
46,00		229	365	730	1324
		17,3	27,6	55,1	0,8
		0,3	0,6	1,8	
		0,1	0,2	0,4	
47,00		537	730	1095	2362
		22,7	30,9	46,4	1,4
		0,7	1,3	2,7	
		0,3	0,4	0,6	
48,00		0	1095	730	1825
		0,0	60,0	40,0	1,1
		0,0	1,9	1,8	
		0,0	0,6	0,4	
49,00		14	365	365	744
		1,9	49,1	49,1	0,4
		0,0	0,6	0,9	
		0,0	0,2	0,2	
COLUMN TOTAL		76072	56164	40218	172454
		44,1	32,6	23,3	100,0

(CONTINUED)

VAR022 SEPARATION YEAR

VAR016 ADMISSION YEAR		70,00	71,00	72,00	ROW TOTAL
50,00	COUNT	358	365	730	1453
	ROW PCT	24,6	25,1	50,2	0,8
	COL PCT	0,5	0,6	1,8	
	TOT PCT	0,2	0,2	0,4	
51,00	COUNT	0	730	0	730
	ROW PCT	0,0	100,0	0,0	0,4
	COL PCT	0,0	1,3	0,0	
	TOT PCT	0,0	0,4	0,0	
52,00	COUNT	272	0	0	272
	ROW PCT	100,0	0,0	0,0	0,2
	COL PCT	0,4	0,0	0,0	
	TOT PCT	0,2	0,0	0,0	
53,00	COUNT	167	365	365	897
	ROW PCT	18,6	40,7	40,7	0,5
	COL PCT	0,2	0,6	0,9	
	TOT PCT	0,1	0,2	0,2	
54,00	COUNT	211	0	730	941
	ROW PCT	22,4	0,0	77,6	0,5
	COL PCT	0,3	0,0	1,8	
	TOT PCT	0,1	0,0	0,4	
55,00	COUNT	194	365	1095	1654
	ROW PCT	11,7	22,1	66,2	1,0
	COL PCT	0,3	0,6	2,7	
	TOT PCT	0,1	0,2	0,6	
56,00	COUNT	207	0	0	207
	ROW PCT	100,0	0,0	0,0	0,1
	COL PCT	0,3	0,0	0,0	
	TOT PCT	0,1	0,0	0,0	
COLUMN TOTAL		76072	56164	40218	172454
		44,1	32,6	23,3	100,0

(CONTINUED)

VAR016 ADMISSION YEAR	VAR022 SEPARATION YEAR 70,00	71,00	72,00	ROW TOTAL
57,00	486	0	365	851
	57,1	0,0	42,9	0,5
	0,6	0,0	0,9	
	0,3	0,0	0,2	
58,00	0	1095	365	1460
	0,0	75,0	25,0	0,8
	0,0	1,9	0,9	
	0,0	0,6	0,2	
59,00	617	730	730	2077
	29,7	35,1	35,1	1,2
	0,8	1,3	1,8	
	0,4	0,4	0,4	
60,00	525	365	365	1255
	41,8	29,1	29,1	0,7
	0,7	0,6	0,9	
	0,3	0,2	0,2	
61,00	1322	730	3650	5702
	23,2	12,8	64,0	3,3
	1,7	1,3	9,1	
	0,8	0,4	2,1	
62,00	695	365	365	1425
	48,8	25,6	25,6	0,8
	0,9	0,6	0,9	
	0,4	0,2	0,2	
63,00	205	1460	365	2030
	10,1	71,9	18,0	1,2
	0,3	2,6	0,9	
	0,1	0,8	0,2	
COLUMN TOTAL	76072	56164	40218	172454
	44,1	32,6	23,3	100,0

(CONTINUED)

VAR022 SEPARATION YEAR

VAR016 ADMISSION YEAR	COUNT / ROW PCT / COL PCT / TOT PCT	70.00	71.00	72.00	ROW TOTAL
64.00		337	730	365	1432
		23.5	51.0	25.5	0.8
		0.4	1.3	0.9	
		0.2	0.4	0.2	
65.00		1618	2190	1095	4903
		33.0	44.7	22.3	2.8
		2.1	3.9	2.7	
		0.9	1.3	0.6	
66.00		1543	1825	1095	4463
		34.6	40.9	24.5	2.6
		2.0	3.2	2.7	
		0.9	1.1	0.6	
67.00		3937	2555	4015	10507
		37.5	24.3	38.2	6.1
		5.2	4.5	10.0	
		2.3	1.5	2.3	
68.00		3597	6205	4745	14547
		24.7	42.7	32.6	8.4
		4.7	11.0	11.8	
		2.1	3.6	2.8	
69.00		23301	11680	5840	40821
		57.1	28.6	14.3	23.7
		30.6	20.8	14.5	
		13.5	6.8	3.4	
70.00		30769	17109	4448	52326
		58.8	32.7	8.5	30.3
		40.4	30.5	11.1	
		17.8	9.9	2.6	
COLUMN TOTAL		76072	56164	40218	172454
		44.1	32.6	23.3	100.0

APPENDIX III, Part 2

TOTAL PATIENT-DAYS FALLING IN THE ANNUAL PERIOD 1971, BY YEAR OF ADMISSION AND SEPARATION

VAR016	COUNT / ROW PCT / COL PCT / TOT PCT	VAR022 SEPARATION YEAR 71,00	72,00	ROW TOTAL
ADMISSION YEAR	29,00	36	730	766
		4,7	95,3	0,6
		0,1	1,2	
		0,0	0,6	
	34,00	287	0	287
		100,0	0,0	0,2
		0,5	0,0	
		0,2	0,0	
	35,00	294	1095	1389
		21,2	78,8	1,1
		0,5	1,8	
		0,2	0,9	
	36,00	0	365	365
		0,0	100,0	0,3
		0,0	0,6	
		0,0	0,3	
	37,00	353	0	353
		100,0	0,0	0,3
		0,6	0,0	
		0,3	0,0	
	38,00	221	730	951
		23,2	76,8	0,8
		0,4	1,2	
		0,2	0,6	
	39,00	287	365	652
		44,0	56,0	0,5
		0,5	0,6	
		0,2	0,3	
	COLUMN TOTAL	63080	62213	125293
		50,3	49,7	100,0

(CONTINUED)

VAR016	COUNT / ROW PCT / COL PCT / TOT PCT	VAR022 SEPARATION YEAR 71,00	72,00	ROW TOTAL
ADMISSION YEAR	40,00	89	365	454
		19,6	80,4	0,4
		0,1	0,6	
		0,1	0,3	
	41,00	0	730	730
		0,0	100,0	0,6
		0,0	1,2	
		0,0	0,6	
	42,00	0	730	730
		0,0	100,0	0,6
		0,0	1,2	
		0,0	0,6	
	43,00	0	365	365
		0,0	100,0	0,3
		0,0	0,6	
		0,0	0,3	
	44,00	454	730	1184
		38,3	61,7	0,9
		0,7	1,2	
		0,4	0,6	
	45,00	109	365	474
		23,0	77,0	0,4
		0,2	0,6	
		0,1	0,3	
	46,00	332	730	1062
		31,3	68,7	0,8
		0,5	1,2	
		0,3	0,6	
	COLUMN TOTAL	63080	62213	125293
		50,3	49,7	100,0

(CONTINUED)

VAR016		VAR022 SEPARATION YEAR		
		71,00	72,00	ROW TOTAL
ADMISSION YEAR	COUNT	379	1095	1474
	ROW PCT	25,7	74,3	1,2
	COL PCT	0,6	1,8	
	TOT PCT	0,3	0,9	
	COUNT	495	730	1225
	ROW PCT	40,4	59,6	1,0
48,00	COL PCT	0,8	1,2	
	TOT PCT	0,4	0,6	
	COUNT	197	365	562
	ROW PCT	35,1	64,9	0,4
49,00	COL PCT	0,3	0,6	
	TOT PCT	0,2	0,3	
	COUNT	71	730	801
	ROW PCT	8,9	91,1	0,6
50,00	COL PCT	0,1	1,2	
	TOT PCT	0,1	0,6	
	COUNT	393	0	393
	ROW PCT	100,0	0,0	0,3
51,00	COL PCT	0,6	0,0	
	TOT PCT	0,3	0,0	
	COUNT	25	365	390
	ROW PCT	6,4	93,6	0,3
53,00	COL PCT	0,0	0,6	
	TOT PCT	0,0	0,3	
	COUNT	0	730	730
	ROW PCT	0,0	100,0	0,6
54,00	COL PCT	0,0	1,2	
	TOT PCT	0,0	0,6	
COLUMN TOTAL		63080	62213	125293
		50,3	49,7	100,0

(CONTINUED)

VAR016 ADMISSION YEAR	COUNT / ROW PCT / COL PCT / TOT PCT	VAR022 SEPARATION YEAR 71,00	72,00	ROW TOTAL
55,00		44	1095	1139
		3,9	96,1	0,9
		0,1	1,8	
		0,0	0,9	
57,00		0	365	365
		0,0	100,0	0,3
		0,0	0,6	
		0,0	0,3	
58,00		952	365	1317
		72,3	27,7	1,1
		1,5	0,6	
		0,8	0,3	
59,00		122	730	852
		14,3	85,7	0,7
		0,2	1,2	
		0,1	0,6	
60,00		48	365	413
		11,6	88,4	0,3
		0,1	0,6	
		0,0	0,3	
61,00		190	3650	3840
		4,9	95,1	3,1
		0,3	5,9	
		0,2	2,9	
62,00		117	365	482
		24,3	75,7	0,4
		0,2	0,6	
		0,1	0,3	
COLUMN TOTAL		63080	62213	125293
		50,3	49,7	100,0

(CONTINUED)

VAR022 SEPARATION YEAR

VAR016 ADMISSION YEAR	COUNT / ROW PCT / COL PCT / TOT PCT	71.00	72.00	ROW TOTAL
63.00		724	365	1089
		66.5	33.5	0.9
		1.1	0.6	
		0.6	0.3	
64.00		160	365	525
		30.5	69.5	0.4
		0.3	0.6	
		0.1	0.3	
65.00		1309	1095	2404
		54.5	45.5	1.9
		2.1	1.8	
		1.0	0.9	
66.00		604	1095	1699
		35.6	64.4	1.4
		1.0	1.8	
		0.5	0.9	
67.00		1425	4015	5440
		26.2	73.8	4.3
		2.3	6.5	
		1.1	3.2	
68.00		2610	4745	7355
		35.5	64.5	5.9
		4.1	7.6	
		2.1	3.8	
69.00		4973	5840	10813
		46.0	54.0	8.6
		7.9	9.4	
		4.0	4.7	
COLUMN TOTAL		63080	62213	125293
		50.3	49.7	100.0

(CONTINUED)

		VAR022 SEPARATION YEAR		
	COUNT / ROW PCT / COL PCT / TOT PCT	71.00	72.00	ROW TOTAL
VAR016 ADMISSION YEAR	70.00	19238	8760	27998
		68.7	31.3	22.3
		30.5	14.1	
		15.4	7.0	
	71.00	26542	17683	44225
		60.0	40.0	35.3
		42.1	28.4	
		21.2	14.1	
	COLUMN TOTAL	63080	62213	125293
		50.3	49.7	100.0

APPENDIX III, Part 3

TOTAL PATIENT-DAYS FALLING IN THE ANNUAL PERIOD 1972, BY YEAR OF ADMISSION AND SEPARATION

		VAR022 SEPARATION YEAR	
	COUNT ROW PCT COL PCT TOT PCT	72.00	ROW TOTAL
VAR016 ADMISSION YEAR	29.00	58 100.0 0.1 0.1	58 0.1
	35.00	164 100.0 0.3 0.3	164 0.3
	36.00	242 100.0 0.4 0.4	242 0.4
	38.00	256 100.0 0.4 0.4	256 0.4
	39.00	100 100.0 0.2 0.2	100 0.2
	40.00	270 100.0 0.4 0.4	270 0.4
	41.00	303 100.0 0.5 0.5	303 0.5
	COLUMN TOTAL	60300 100.0	60300 100.0

(CONTINUED)

VAR016 ADMISSION YEAR	VAR022 SEPARATION YEAR 72,00	ROW TOTAL
42,00	130	130
	100,0	0,2
	0,2	
	0,2	
43,00	315	315
	100,0	0,5
	0,5	
	0,5	
44,00	277	277
	100,0	0,5
	0,5	
	0,5	
45,00	59	59
	100,0	0,1
	0,1	
	0,1	
46,00	337	337
	100,0	0,6
	0,6	
	0,6	
47,00	404	404
	100,0	0,7
	0,7	
	0,7	
48,00	267	267
	100,0	0,4
	0,4	
	0,4	
COLUMN TOTAL	60300	60300
	100,0	100,0

(CONTINUED)

VAR016 ADMISSION YEAR	COUNT / ROW PCT / COL PCT / TOT PCT	VAR022 SEPARATIC YEAR 72,00	ROW TOTAL
49,00		102	102
		100,0	0,2
		0,2	
		0,2	
50,00		106	106
		100,0	0,2
		0,2	
		0,2	
53,00		59	59
		100,0	0,1
		0,1	
		0,1	
54,00		549	549
		100,0	0,9
		0,9	
		0,9	
55,00		704	704
		100,0	1,2
		1,2	
		1,2	
57,00		73	73
		100,0	0,1
		0,1	
		0,1	
58,00		10	10
		100,0	0,0
		0,0	
		0,0	
COLUMN TOTAL		60300	60300
		100,0	100,0

(CONTINUED)

VAR016 ADMISSION YEAR	VAR022 SEPARATION YEAR 72,00	ROW TOTAL
59,00	158	158
	100,0	0,3
	0,3	
	0,3	
60,00	50	50
	100,0	0,1
	0,1	
	0,1	
61,00	1941	1941
	100,0	3,2
	3,2	
	3,2	
62,00	10	10
	100,0	0,0
	0,0	
	0,0	
63,00	55	55
	100,0	0,1
	0,1	
	0,1	
64,00	39	39
	100,0	0,1
	0,1	
	0,1	
65,00	392	392
	100,0	0,7
	0,7	
	0,7	
COLUMN TOTAL	60300	60300
	100,0	100,0

(CONTINUED)

VAR016 ADMISSION YEAR	VAR022 SEPARATION YEAR 72,00	ROW TOTAL
66,00	636	636
	100,0	1,1
	1,1	
	1,1	
67,00	2419	2419
	100,0	4,0
	4,0	
	4,0	
68,00	2381	2381
	100,0	3,9
	3,9	
	3,9	
69,00	2530	2530
	100,0	4,2
	4,2	
	4,2	
70,00	3343	3343
	100,0	5,5
	5,5	
	5,5	
71,00	14169	14169
	100,0	23,5
	23,5	
	23,5	
72,00	27392	27392
	100,0	45,4
	45,4	
	45,4	
COLUMN TOTAL	60300	60300
	100,0	100,0

COUNT
ROW PCT
COL PCT
TOT PCT