

UTILIZATION MANAGEMENT IN AN ACUTE CARE HOSPITAL:
A CASE STUDY IN POLICY IMPLEMENTATION

By

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A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

MASTER OF SCIENCE

Department of Community Health Sciences
Faculty of Medicine
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BY

CONSTANCE MONTGOMERY

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EXECUTIVE SUMMARY

Utilization management, actions to increase the efficiency and effectiveness of the delivery of health care services by health care management, is an emerging issue in Canada. Provincial government policies of regulation, mandate or decreases in global budgets provide the incentive for implementation of utilization management in acute care hospitals. However, the presence of utilization management does not guarantee that measures of service delivery demonstrate increased efficiency and effectiveness; decision making within hospital organizational structures must also be present.

A multimethod case study was done in an acute care hospital where utilization management was implemented to improve hospital utilization by patients. The goal of the study was to determine if, how, and why utilization changed and the role of utilization management program in effecting the change(s). In the nine years under study, the hospital began an organization transition that resulted in the implementation of utilization management. The organizational transition was necessary for its implementation. Utilization was improved by increasing quality of care and with some evidence of cost containment. Statistically, hospital admission and patient day rates decreased and length of stay increased after utilization management was implemented. The gap between autonomous physicians and hospital management was narrowed. This was done by the appointment of a physician managers for surgery and medicine as hospital management.

The physician managers have complete control over medical and surgical beds and the Emergency Room, including veto power over admissions. The hospital gained indirect control of ninety-eight percent of its beds through the physician managers.

Utilization management is the efficient and effective use of resources.

Demonstration of further changes due to utilization management may be limited by the two patient populations and the ability to measure change using admission and patient day rates. Future improvements in utilization may be possible by improving the utilization of the hospital by non-acute care patients and by acute care patients using non-bed based services.

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CHAPTER 1

INTRODUCTION

“Utilization management programs are intentional actions taken by health care administrators and/or organized payers of health care services to increase the efficiency and effectiveness with which health care services are provided.”¹ Utilization review, a utilization management method, is the review of a patient’s medical record to implicit and/or explicit criteria by physicians and/or non-physicians. It results in an admission and/or patient day being deemed appropriate or inappropriate. Corrective actions by hospital management may result in decreased admission and patient day rates with concomitant decreases in hospital costs.² Utilization management also ensures that hospital resources are saved for those who need them and that standards of care are defined. Quality of care improves by decreasing nosocomial infections and iatrogenic illness and is maintained by matching patient care to patient need. Utilization management is used as a quality of care or cost containment program, or both.

Utilization management is an emerging issue in Canada with programs being implemented in Canadian acute care hospitals in the last six years. Inappropriate care, patient care that does not match patient need, may account for 10% to 30% of bed-based acute care services in Canada.³ Panned patients in acute care hospitals who are, by

definition, non-acute would add to the percentage assuming that the above percentages do not include non-acute care patients.

In the United States, utilization management is credited with decreasing acute care patient days and realizing cost savings by increasing the efficiency of health services delivery.⁴ Decreased patient days with concomitant cost savings are not apparent yet in the Canadian health care system. As trends, separations and patient days increased, and length of stay decreased over the last three decades.⁵ If indeed utilization management is being implemented in Canada without the resultant decreases in admissions, patient days, and cost savings, it might be due to different goals or implementation methods. The effects, if any, of utilization management on aggregated acute care utilization statistics are unknown.

Anderson suggests that the Canadian application of utilization management programs addresses different issues and questioned the usefulness of imported methods and policies in Canadian hospitals, but did not elaborate.⁶ Accreditation may be one of those issues and the hospital's medical standards committee might be another.⁷ Implementations are taking place, and as the history will document, utilization management is supported by the major actors in the Canadian health care system. What has emerged is a Canadian definition of utilization management. As a government or hospital policy, utilization management can be used for quality of care, cost containment, or both. In Canada, government policies of regulation, mandate, or decreases in global budgets, provide the incentive for implementation. In Manitoba, decreases in global funding to hospitals provide an incentive for implementation of utilization management if

the hospital so chooses. However, policy implementation may result in intended and unintended outcomes due to modifications made during implementation at the hospital level.⁸ This may impact future evaluation activities.

Payne considers utilization management a radical change because it influences the relationship between hospitals and physicians where the hospital “is an active participant, influencing the scheduling, location and process of providing care.”⁹ Its implementation requires commitment, decisions, and changes in behavior by hospital management and physicians. The relationships between hospital and physicians may also influence the methods of implementation and the results.

Hospital experiences from the literature suggest that rates of inappropriate hospital utilization may be linked with decision making behavior surrounding its production and management. The presence of a utilization management program in a hospital does not mean that it will influence decision-making on inappropriate utilization. Cooperation between hospital management and autonomous physicians must occur to realize increases in appropriate hospitalization and possibly realize decreased costs at the hospital level. The organizational changes and their nature surrounding the implementation of utilization management are not well known.

The roles and inter-relationships of hospitals, physicians, and environmental factors in producing and managing appropriate hospital utilization are not well understood. An example of an environmental factor is the availability of other types of health care facilities in the health care system. The literature suggests that physical, behavioral, and cultural

factors, organizational structure, and decision making have a relationship to appropriate hospitalization that cannot be determined based on available empirical evidence.

Case Study Synopsis

As a first step in understanding the roles and relationships among hospital, physician and environmental factors, a multimethod case study was done in a selected acute care hospital. In this hospital, hospital management was confident that up to 25% of patient days could be saved by implementing a number of utilization actions. The study's goal was to determine if, how, and why hospital utilization by patients changed and the role of utilization management in facilitating the change(s).

The hospital's utilization management was the result of the passage of the organization (organizational *transition*) from one identity to another. It consisted of organizational changes to functional responsibilities and administrative policies which included actions for acute and non-acute care patients. For example, two highly respected physicians were given hospital management appointments with direct control of surgical and medical beds, including responsibility for the Emergency Room. They also have veto power over all admissions. Improving quality of care was the initial motivation for the implementation of the hospital's utilization management program. Later, the cost containment capabilities of utilization management were used in response to reduced funding from government.

Statistically, utilization management resulted in a decrease in hospital admission and patient day rates with an increase in hospital length of stay. As a result, the hospital appears to be more efficient in producing acute care and non-acute care services with, at least, the same level of effectiveness as before. Since utilization management addresses the appropriate utilization of hospital resources, *interventions* must include actions for

acute and non-acute care patients to realize changes in hospital or aggregate statistical measures. To ensure the ability to measure continuing improvements in utilization management, non-bed based acute care and non-acute care measures need to be developed. As well, future utilization management actions need to be designed to ensure the appropriate utilization of hospital resources by non-acute care and non-bed based acute care services.

The review of the literature is found in chapter two. The methodology is found in chapter three. The results of the case study are found in chapters four to eight, and the discussion is found in chapter nine.

CHAPTER 2

LITERATURE REVIEW

Introduction

Utilization management is a complex topic that spans quality of care and cost containment. The scope of this review is limited to acute care appropriate and inappropriate hospitalization of patients and the actions taken to eliminate inappropriate utilization by management. Structural, management, and physician variables, which have the potential to influence utilization management programs, are identified. Manitoba's involvement with utilization management is noted whenever possible. There is a body of literature on the variation of medical and surgical procedures among acute care hospitals. This, too, is labeled inappropriate utilization and is not the topic of the review. There may be a relationship between the inappropriate procedure use by physicians and inappropriate hospitalization of patients, but this is out of the scope of this review.

The review has four objectives. The first and second are to examine whether utilization management in Canada and the United States are the same by comparing and discussing definitions and their respective histories. The third is to critically review the few studies on appropriate hospital utilization in Canada; and lastly, to examine and discuss the factors associated with appropriate hospital utilization.

Methods

The literature on utilization management was defined by searching the Medline and HealthPlan databases from 1982 to October 1994, and 1975 to October 1994, respectively. Search variables included utilization management, utilization review, length of stay, appropriateness, appropriateness of care, inappropriate care, cost containment, efficiency and health or hospital services, effectiveness and health or hospital services, quality of care, and evaluation. Canada was used as an additional variable to narrow the search response rather than "Canadian" which narrowed the response too much. References were often duplicated between the two databases. In addition, the indexes and tables of contents of Medical Care, Medical Care Review, The Millbank Quarterly, Inquiry, and the Canadian Journal of the Medical Association were consulted for references on utilization management and utilization review. The references or bibliography of review papers were also consulted for additional references.

The literature on utilization management is not self-defining. Over a hundred references and abstracts from the Medline and HealthPlan databases were examined for this review. The criteria used to determine if a paper made it into the review were: the title explicitly contained "utilization management", the paper used implicit or explicit criteria to assess appropriateness in a Canadian acute care hospital.

Background

The idea of utilization management, incorporating the familiar utilization review, to contain costs and promote quality of care was relatively unknown until about ten years

ago.¹⁰ The background on utilization management as an emerging issue in the Canadian health care system and the conceptual foundation are presented in this section.

Utilization Management as an Issue

Canada has the second most costly health care system when compared to the United States and health care expenditures have increased 50% in constant dollars over the last ten years. Most provincial health reform policy papers have highlighted cost containment in some way to address the issue of cost based on evidence for inefficiency, ineffectiveness and inappropriateness of health care provided in the current system.¹¹ The concern is real; the health appropriation is about one-third of the total provincial budget. Spending more on health care does not produce more health in the population.¹² The dollars spent on the health care system cannot be spent on other government programs.

Costs are an issue in Manitoba. To address the high cost of health care, the 1992 health reform goals stressed efficiency and effectiveness in service delivery and changes in system and hospital structure to produce decreased costs while maintaining quality of care. Government first froze hospital global budgets and applied percentage decreases in recent years.¹³ Faced with dwindling hospital budgets and high occupancy rates, health care management in Canada searched for strategies to increase hospital efficiency and effectiveness, and have been implementing utilization management programs.¹⁴

Their expectations are based on the results of utilization management programs in the United States. At the health care system level, utilization management programs may not influence overall costs due to redistribution of resources and patients into "unmanaged care" while producing decreases in patient days and in the rate of increase of hospital

costs.¹⁵ Private insurers in the United States, however, estimate that the implementation of utilization management avoided \$2.55 billion dollars in insurance claims from 1980 to 1988.¹⁶ Some maintain that the evaluation of utilization management programs in the United States has not given a clear answer to whether utilization management programs provided the intended policy outcome, a reduction in costs for the same quantity and quality of health care.¹⁷ The same group later found that utilization management programs are capable of decreasing costs, patient days, and admissions at the hospital level in the United States.¹⁸

The impact of utilization management on quality of care is debatable.¹⁹ The fear behind cost containment is that it threatens quality of care and leads to poorer population health. While mortality was not affected, some patients were discharged prematurely in the United States as acute care hospitals sought to keep their per case expenditures within the DRG based reimbursement from public insurers. This led to increased acuity of the same patient upon readmission. This is known as the “sicker and quicker” result.²⁰ This consequence may have been generalized as a result of any cost containment strategy rather than the result of per-case reimbursement. Although Ontario may recently have started to reimburse hospitals on a per case basis and Alberta has plans, the remaining provinces do not. The “sicker and quicker” consequence experienced in the United States has not been reported for Canadian hospitals. In the minds of some, utilization management may not contain costs and lead to poor quality of care.

The evaluation of utilization management or utilization review is also an issue. There is concern in the literature over the apparent lack of solid evaluation of utilization

management or utilization review.²¹ This is heightened by the implementation of these strategies in Canada: "it is imperative that evaluation of UM programs begins to occupy a more prominent position in health services research."²² The statements are not accompanied by specific reference to what should be evaluated, by whom, and for what purpose. It also assumes that policy makers want to know the answer. They may be asking whether utilization management caused decreased health care costs and improved or maintained quality of care which is a rational approach to evaluation.²³ They could also be referring to the collection of baseline data to assess the impact of the implementations across Canada. Due to health reform activities, hospitals are reorganizing and changing the way health care is provided. This will likely impact on hospital utilization in some way. Evaluation efforts for utilization management, should they occur, may be confounded by these changes unless the effects of utilization management programs can be separated from reorganization and process changes.

The Concepts behind Utilization Management

The goals for utilization management include efficiency, effectiveness, and appropriateness of services or care provided to patients in an acute care setting. According to Last, efficiency is "end results achieved in relation to the effort expended in terms of money, resources, and time. The extent of which the resources used to provide a specific intervention, procedure, regimen, or service of known efficacy and effectiveness are minimized." Effectiveness is "the extent to which a specific intervention, procedure, regimen, or service, when deployed in the field, does what it is intended to do for a defined population".²⁴ There are four dimensions to appropriateness: the location of care,

its timing, the intensity of services, and volume of services. Appropriate hospitalization is medically necessary and timely; the level of care matches the patient's needs.²⁵

In a model of quality of care as structure, process, and outcome, efficiency relates to the process of care and effectiveness relates to the outcome(s) of care. Structure consists of hospital resources, the organizational structure including inhouse structures for physicians, the presence or absence of quality review, the size in beds, ownership, and the type as teaching or community, geographic area, insurance, the financing of health care, and the regulatory environment. Process is the interaction between patient and care providers and among care providers, and it has technical and interpersonal aspects. Measures of efficiency are length-of-stay, number and appropriateness of admissions, number of procedures, and cost per patient day. Outcome(s) are the changes in a patient's health status as a direct result of care. Measures of effectiveness generally look at the outcome of care as mortality or morbidity.²⁶

Efficient hospitals provide care that matches the needs of its patients and, when this occurs, utilization is appropriate. Outcomes are accurately associated with costs per patient day and with utilization measures such as admission and patient day rates, length of stay, or the number of tests. When care or services are provided in absence of need, utilization is inappropriate. Inappropriate care that exceeds or does not meet the needs of patients is overutilization or underutilization, respectively. An example of overutilization is a patient occupying an acute care bed when the patient does not require acute care services or any health care service. In either case, the relationship(s) between outcome (effectiveness) and measures of process (efficiency) is less direct. Overutilization leads to

increased costs per patient day and underutilization leads to decreased costs; both have quality of care implications. Overutilization redirects resources from those who could realize health benefits from them, and can result in underutilization from a limited pool of resources.

Definitions for Utilization Management

Determining a definition for utilization management is not straightforward as Linton and Peachey observe: "This difficult topic is not made easier by the semantic confusion that surrounds it."²⁷ Should the results of utilization management programs differ from country to country, province to province, or, for that matter, hospital to hospital, this may be due to the actors having different concepts of utilization management. To examine the possibility of a difference in the meaning of utilization management, a discussion of the definitions from the USA and the Canadian literature follows.

Payne defines utilization management programs as intentional actions taken by health care administrators and/or organized payers of health care services to increase the efficiency and effectiveness with which health care services are provided. Utilization review is a component of utilization management which concerns the efficiency of medical care usually by review of the medical record by health care providers. Utilization management is a program with goals, objectives, methods to identify inappropriate care, implementation plans, information and data aspects, interventions such as feedback based on peer comparison, redesigning benefit plans, alternative locations and types of care, and sanctions, and evaluation.²⁸ Another utilization management definition states that it is "a

set of techniques used by or on behalf of purchasers of health benefits to manage health care costs by influencing patient care decision-making through case-by-case assessments of the appropriateness of care prior to its provision".²⁹

The Ontario Hospital Association (OHA) and The Ontario Medical Association (OMA) define utilization management as "proactive, joint medical staff/management process in which a health facility continually works toward maintaining and improving the quality of care through the effective and efficient use of resources. It is a commitment not only to review the facility's utilization patterns but also to take action on any areas of inappropriate utilization." where utilization review is a method used in a utilization management framework.³⁰ The Canadian Council on Health Facilities Accreditation (CCFHA) cites the above definition in their document, *Utilization Management*. Utilization review includes activities that judge the appropriateness of resources used to deliver care and/or services. The Council states that "we will use the term utilization management to describe the monitoring, and integration of activities involving quality of care and the appropriate utilization of resources."³¹ Another definition is "all activities (measurement, comparison, development of standards, feedback response and monitoring of effect) be included under the umbrella of utilization management".³²

Barer and Evans consider utilization management and review to be "the appropriateness and effectiveness of care - its relation to needs."³³ Jackman interprets the OHA/OMA definition as: "Utilization review and management is a process in which we continually work toward maintaining and improving the quality of care through the effective use of resources." The review of practice and its impact on resource use and

taking action on inappropriate utilization of resources were said to be implicit in this definition. Here the concept of utilization management is explained as a dynamic evaluation of resource management to pre-determined standards.³⁴ While not a definition, Anderson and Lomas paraphrase Payne and state two components, one that compares performance to explicit standards of appropriate care and the other is interventions to correct identified problems by feedback, education, redesigning the benefit coverage, and sanctions.³⁵ Utilization management is also defined as “a process of information gathering, strategic planning, and resource allocation to ensure the most cost-effective utilization of resources.”³⁶ A recent definition comes from The Working Group of Health Services Utilization (WG-HSU), a federally sponsored group. Utilization is the use of services or resources. Utilization management is: “Changing practice behavior based on information gained from utilization review.” and utilization review is “comparison of standards of resource use against actual practice.”³⁷

Decision-maker	Goal	Review method	Reference
<u>US definitions</u>			
administrators and/or organized payers	increase efficiency and effectiveness of services	intentional actions	Payne 1987
purchasers of benefits	to manage health care costs	case assessment	Scheffler et al 1991
<u>Canadian definitions</u>			
medical staff and management	maintain and improve quality of care	review and actions	OHA, OMA 1988
physicians ¹	effectiveness and appropriateness of care	utilization review and analysis	Linton & Peachey 1989
management ¹	quality of care and appropriate utilization of resources	monitoring, management and integration of activities;	CCHFA 1992
physicians ¹	appropriateness and effectiveness of care	utilization review	Barer 1992
management and physicians ¹	maintain and improve quality of care	utilization review ¹	Jackman 1992
physicians ¹	most cost-effective utilization of resources	process	Eagle 1993
management and physicians ¹	change practice behavior	utilization review	WG-HSU 1994

(1) inferred from context;

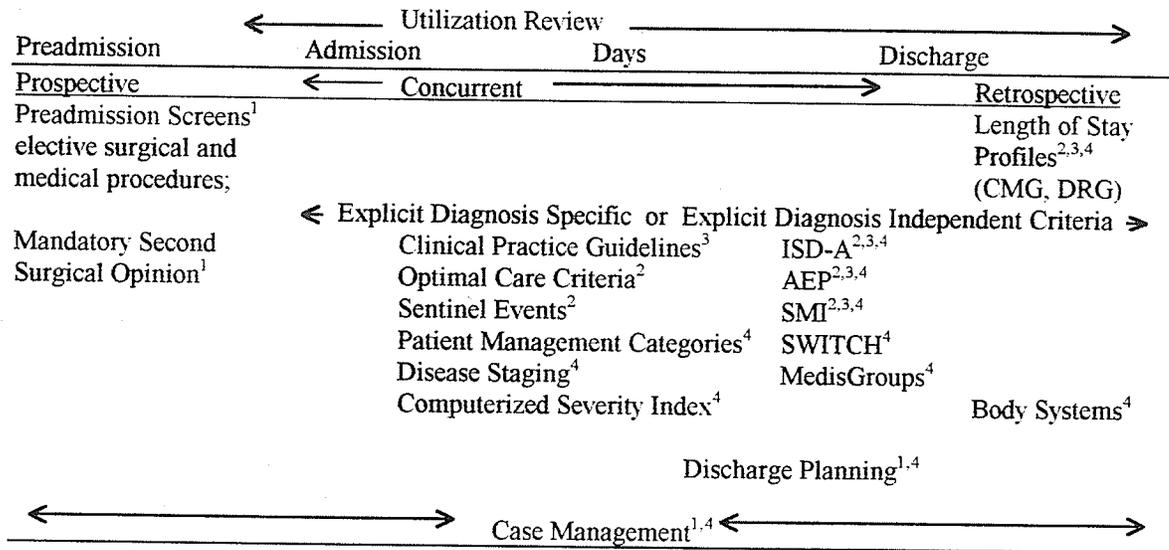
Figure 1. Comparison of definitions for utilization management

There appears to be no substantive difference in the definitions for utilization management in Canada and the United States when comparing decision makers and goals (Figure 1). Decision makers are management and/or physicians. The goals include the concepts that were discussed in the last section and, after 1993, cost concerns replaced quality of care terms. The methods range from individual review activities to more comprehensive approaches. Payne's definition is quoted in the Canadian literature and

may explain why the definitions appear not to be different.³⁸ The CCHFA uses the term “quality-utilization management ... as a comprehensive plan to increase the effectiveness and efficiency of services provided. It is a two fold process which involves the comparison of performance to appropriate clinical service standards and the development of measures to correct deficiencies ... can be implemented through ... Total Quality Management (TQM).”³⁹ This reflects a convergence of concepts relating to quality, including utilization management, that has occurred over the years in Canada and in the United States.

Utilization Review Methods

A discussion of utilization management would not be complete without looking at the range of methods available for utilization review. Utilization review and related methods were mapped to a hospital stay to demonstrate the ability to identify appropriateness and to indicate that methods target different parts of the stay in hospital (Figure 2). The map is based on Payne. This is an updated version and relates to a hospital stay.⁴⁰ The methods themselves will not be discussed in depth as this has been done by others.⁴¹



(1) Scheffler et al 1991.; (2) Payne 1987.; (3) CCHFA 1992.; (4) Aronow 1989.

Figure 2. Mapping of utilization review and related methods to hospital stay

Utilization review includes admission, concurrent, and retrospective review of the patients' medical record. Prospective review takes place before a patient's admission and is suitable for elective surgical and medical admissions. Concurrent review assesses the admission and/or selected days while the patient is in hospital. Retrospective review tends to take place after discharge, but review can also take place after a course of treatment.⁴² Most methods depend on the medical record as a primary source of information, supplemented by other information when required.

Implicit criteria, length of stay profiles, and explicit diagnosis-specific and diagnosis-independent criteria are the main categories of review methods that determine appropriateness of hospitalization. Implicit criteria have the ability to include all information about a patient. The criteria are inexpensive to develop and rely on physicians

to perform the review; the judgments about appropriateness are subjective. Length of stay profiles cannot determine the appropriateness of hospitalization, but can identify patients for review by other methods. The profiles are suitable for use by physicians and non-physicians. The profiles are based on International Classification of Disease (ICD) categories and are best known as Diagnostic Related Groups (DRGs) in the United States⁴³ and Case Mix Groups (CMG) in Canada.⁴⁴

Examples of explicit diagnosis-specific methods include clinical practice guidelines, optimal care criteria, sentinel events, Patient Management Categories, Disease Staging, Body Systems, and Computerized Severity Index. Because they are based on diagnosis, sometimes in combination with severity (sickness) measures, the methods are subject to initial misclassification and errors introduced by grouping diagnoses into manageable categories. Severity of illness and intensity of service measures were introduced to reflect a gradient of illness corresponding to intensity of service in part to address the unexplained variance of DRG or CMG to length of stay correlation.⁴⁵ In general, the methods are adequate screens but are not designed to measure appropriateness of hospitalization.

Methods independent of diagnosis include Intensity of Service, Severity of Illness, and Discharge Screens with an appropriateness screen (ISD-A), Appropriateness Evaluation Protocol (AEP), Standardized Medreview Instrument (SMI), MedisGroups, and in Canada, Signs, Wounds, Intramuscular Injections, Tubes, Consultive (Active) and Hospice (SWITCH), an inhouse initiative.⁴⁶ The value of the methods is their ability to screen patients based on pre-established criteria and inform the physician at the time of hospitalization. However, the methods allow the reviewer to override the review's results

and can threaten reliability. ISD-A and AEP are generally reliable and valid methods. SMI is an unreliable method.⁴⁷

MedisGroups, a proprietary system, is a diagnosis independent method relying on information from the medical record (Figure 2). A severity of illness and an intensity of service score is awarded to patients upon admission. Patients with a score of zero may have no abnormal clinical findings or no data was found in the medical record. An overestimation of inappropriateness can result when the system is used alone. There are a number of critiques in the literature on MedisGroups.⁴⁸ It has been referred to as a “black box” system in need of extensive review.⁴⁹

AEP and ISD-A collect the reasons and responsibilities for inappropriate utilization so that actions can be implemented while the patient is in hospital when used for concurrent review. Using AEP for retrospective review also provides this information for planning purposes. Without knowing who and why, interventions by hospital management and/or physicians lack focus.

Hospitals design and implement their utilization management programs. In practice, hospitals will use more than one review method in their program. Utilization review methods can be purchased from vendors to run inhouse or from third parties, which is common in the United States.⁵⁰ Review methods in the public domain are available at no cost; an example is AEP.

History Of Utilization Management

This section describes and contrasts the evolution of utilization management programs in the United States and Canada by discussing policy actors and their interests. The balance between cost containment and quality of care is tracked to see if the focus of utilization management programs changed over the years.

"Born in the USA"

What are known today as utilization management programs began in the United States in the seventies as government's response to escalating costs of Medicare and Medicaid.⁵¹ Professional standard review organizations (PSROs), local physician managed organizations, monitored the quality and quantity of all health care services received by Medicare and Medicaid recipients. While government saw PSROs as a way to address costs by eliminating unnecessary care, physicians' associations considered PSROs to promote quality of care by minimizing inappropriate care. Quality assurance and cost containment by eliminating unnecessary care came to represent opposite views held by physicians and government, respectively. The goal of cost containment was not achieved by PSROs. The application of economic evaluation to quality assurance programs by government further alienated physicians.⁵²

Utilization and Quality Control Peer Review Organizations (PROs) replaced PSROs in 1982. PROs were combined with Medicare's Prospective Payment System (PPS) that reimbursed hospitals for inpatient admissions at a rate predetermined by the patient's diagnosis related grouping (DRG). As Hayes and her colleagues observe "PRO responsibilities shifted from focused review activity for detecting unnecessary and

inappropriate admissions in an effort to control costs to identifying individual cases of quality of care problems."⁵³ This served to intensify the belief that identifying unnecessary and inappropriate admissions to contain costs was contrary to quality of care. PROs had the power to sanction hospitals and physicians ranging from educational activities to expulsion from participating in Medicare. The twin goals of cost containment and quality assurance "proved inclusive with regard to impact on either cost control or quality assurance."⁵⁴ Others contend that utilization management had the desired effect on health care costs and influenced the autonomy of physicians.⁵⁵ There was also some discussion of regulating utilization management; that did not occur.⁵⁶

In 1991 the Health Care Financing Agency (HCFA) proposed revising PROs as the Health Care Quality Improvement Initiative (HCQII) to improve the quality of care to Medicare patients. Under this initiative, PROs would determine the patterns of care and outcomes for populations in their area and share the results of the analyses with health care providers to improve the process and outcomes of care. The minimum number of admissions which must be reviewed by PROs decreased from 15-20% to 6-10%. An Uniform Clinical Data Set to be used with a Patient Care Algorithm system was added to allow system level analysis. Perhaps the most significant change was that third party contractors could be contracted to obtain, process, and report the data for a hospital at the request of the Health Care Financing Agency. The reason was that medical record abstraction by nurses demonstrated considerable variation within an institution and from state to state.⁵⁷

Private insurers of health care benefits also implemented utilization management programs starting around 1983. The common method is utilization review with the use of second surgical opinion and ambulatory surgery as optional methods. The driving force for employer groups was to reduce costs associated with the health care benefits offered to their employees. Under private health care insurance, the onus is on the patient to follow the insurance policy rules, and if not followed, the patient faces financial penalties rather than the hospital or physician.⁵⁸ The results of private utilization management programs target the patient's behavior by using incentives or disincentives.

In the US, federal and state governments legislated what was to become utilization management by adding regulations over the years. The private sector adopted the idea in their own policies. The policies were implemented in an incremental manner.⁵⁹ The focus of private and public utilization management programs in the US shifted from cost containment in the early eighties to quality of care in the nineties. Existing utilization management programs were repackaged to emphasize quality of care. In the US, cost containment came first, followed by quality of care.

Utilization management in Canada

As early as 1986, the concern expressed by the Ontario government about hospital utilization and its related costs prompted one Ontario hospital to start developing a utilization management program.⁶⁰ In 1988, the Ontario Hospital Association published a utilization review and management guide for Ontario hospitals.⁶¹ On the academic front in 1988, "*Reviewing Utilization: The Methods and Promise of Utilization Analysis for the Canadian Health Care System*" was the theme of the First Annual Health Policy

Conference sponsored by the Centre for Health Economics and Policy Analysis at McMaster University. Papers were read from a number of academic research centres across Canada. The goal of utilization analysis is to ensure that the performance of the health care system matches its goals. It does this by measuring the performance of the health care system, comparing it with the system's goals, and formulating statement(s) about actions to realign the system with its goals. Subordinate goals of cost control, effectiveness, efficiency, and equity link health and health care resources with either health care and/or improved health.⁶² The actors involved in utilization analysis are governments, providers, institutions, and consumers. Utilization analysis is a system level activity that rationally evaluates policy implementation using database information. In contrast, utilization management is an institutional and provider program, the result of policy implementation at the hospital level.

In 1989 the Canadian Council on Health Facilities Accreditation (CCHFA) approved the Outcomes Monitoring Project which is affiliated with the Case Mix Research Group of Queen's University in Ontario. The program's outline refers to utilization management methods including chart review using explicit criteria and discharge planning. Its goal is to develop "innovative and cost-effective approaches to the monitoring of outcomes of care".⁶³ The document places more emphasis on quality of care than cost containment.

The 1989 regulation of the Public Hospitals Act in Ontario requires that hospitals implement utilization review methods.⁶⁴ This is the first legislation in Canada regarding utilization management. In that same year, an editorial on utilization management

appeared in the Canadian Medical Association Journal. Its authors, Drs. Linton and Peachy from Ontario, advocate that physicians should take responsibility for utilization management to preserve physician autonomy. They acknowledged the need for improved effectiveness of health care services in times of increasing financial constraint. The editorial ended with "participation by medical societies ... will prevent utilization management from becoming a "witch-hunt" for outliers. The choice is ... who will design and control the management system."⁶⁵ Cost containment and quality of care issues are equally prominent themes of the editorial. In that same issue, a response points out that physicians, no matter how well intentioned, do not have the expertise or time for utilization management. It called for a cooperative approach with health planners and administrators, and "Physicians should be satisfied with having a major influence."⁶⁶ Also in 1989, *Reducing Inefficiency: Utilization Management* appeared in Hospital Trustee, a CHA publication, describes an implementation in British Columbia which is of interest later.⁶⁷

In October of 1990, the National Congress on Utilization Management was sponsored by the Canadian Medical and Hospital Associations, the Canadian College of Health Service Executives (CCHSE), and the Hospital Medical Records Institute (HMRI). The CCHFA, the Canadian Nurses Association (CNA), and the Management Information Systems (MIS) Group contributed to the planning. A major theme is the types of information and databases to manage utilization of health care resources. The need to consolidate utilization management, and quality of care or quality assurance activities at the facility level is another major theme.⁶⁸ While some contributors to the congress

acknowledged the cost containment component of utilization management, quality of care was more prominent.

Anderson et al's 1990 survey found that 80% of acute care hospitals over 100 beds had utilization management programs implemented. The methods used for utilization review were not reported. Utilization management was not defined in the paper and it did not report offering a definition to the respondents. Eight of twelve (67%) acute care hospitals in Manitoba participated in this survey, but the results were grouped with Alberta and Saskatchewan. The reasons given by senior management for implementing utilization management programs were improving bed use and addressing high occupancy rates; the results were used for peer review and education. Medical staff were reported to be supportive and positive, but were not interviewed.⁶⁹ It is difficult to know what concept was the basis for response since a definition was not offered. Those interviewed would be unlikely to answer no to the survey since most hospitals over 100 beds are accredited, and accreditation requires utilization review. Medical standards committees also use utilization review.⁷⁰ Answering yes might mean that they have the requisite policies and procedures in place. However, utilization management activities based on the results of utilization review may not be in place. There is no way of knowing which results applied to Manitoba or what the status of utilization management programs is in Manitoba.

The second provincial action on utilization management occurred in British Columbia where hospitals were to implement utilization management programs in 1990.⁷¹ In that same year, the Canadian Medical Association launched its Quality of Care

Program. It addresses the ethical, legislative, regulatory, administrative and legal issues known to impact quality of care. These include quality assurance, continuous quality management, utilization management, risk management, and outcome indicators. The development of clinical practice guidelines is included in the program as well.⁷² The tone of this large document focuses equally on cost containment and quality of care with the latter being at least maintained, if not improved, in an environment of cost containment. Changing practice behavior relative to admissions, patient days and discharge is an objective of utilization management. The Program is a well-conceived response to the pressures of the day to ensure and protect the autonomy of physicians and, perhaps, be more responsible and accountable to the Colleges and to government.

In May of 1990, government released *Quality Health for Manitobans*, the health reform document. The document refers to:

Appropriateness of Hospital Care...Inappropriate use of hospital resources can result from either the admission of patients who do not require hospital resources or the failure to discharge patients after they have received the required services.⁷³

Also of interest is the policy envelope approach to managing health services across hospital boundaries "to evaluate and improve the appropriateness, efficacy and cost-effectiveness of hospital services in each."⁷⁴ The policy paper addressed quality of care by linking outcomes as health status to health care services. It also drew on a CCHFA document on utilization management that suggested applying Total Quality Management or Continuous Quality Improvement to all levels of a health care organization. An additional criterion was that the services be cost-effective.⁷⁵ The document did not identify utilization management, per se, as a programmatic method of identifying and/or producing efficient, effective services of assured quality. Overall, the tone of the

document considers cost containment and quality of care to be of equal merit as health reform policy outcomes.

The Canadian Council on Health Facilities Accreditation (CCHFA) included utilization review in the standards for the governing body and management of a hospital for the first time in 1991. The standard reads:

The governing body is accountable for the effective and efficient management of resources." ...
"Management develops and implements utilization review activities throughout the facility."⁷⁶

This clearly lays out responsibility and accountability in a hospital. While CCHFA can make recommendations in its survey report and award an accreditation status based on its findings, it has little other authority.

In 1991, a literature review on utilization management is published for health care administrators. The section on utilization review in Canada is very brief and is mainly a description of three purchased systems. The authors claimed that utilization management development and research are not as mature as in the US. The two reasons are the relatively contained cost of health care in Canada due to global budgeting and a reluctance to change the relationship between health care management and medical staff.⁷⁷

The Canadian Hospital Association published *An Open Future: A Shared Vision* in 1993; the result of its national health policy reform project started in 1991. The document speaks to cost containment and quality of care issues. It also includes references to quality improvement processes such as quality assurance, utilization review and total quality management, and continuous quality management.⁷⁸

The Canadian Hospital Association ran a series of articles on utilization management in *Leadership*. The last in the series in 1993 focused on reducing costs while

improving service. Cost containment and quality of care components of utilization management received equal treatment.⁷⁹

In June 1994, the federal government released *When Less is Better: Using Canada's Hospitals Efficiently* by the Working Group on Health Services Utilization made up of hospital administrators and physicians. The Group was formed by The Conference of Federal /Provincial/ Territorial Deputy Ministers of Health. The opening paragraph of the document expresses concern about health care costs. Of the twenty recommendations in the report, utilization management occurs in ten and utilization review in eight. The first recommendation of the working group's report is "that hospitals identify provision of inappropriate care, work to reduce inappropriateness by implementing tools of utilization review and utilization management.". The document speaks to cost containment for acute care hospitals: "imperative that the governments and hospital administrators examine this expenditure to ensure that the system is operating efficiently."⁸⁰ Cost containment is the predominant theme throughout the document. Utilization management is a method of cost containment while ensuring quality of care.

The idea of utilization management was imported from the United States. Policy content was developed over the years with participation from the major institutional interests, academia, CMA, CHA, CCHSE, CCFHA, CNA and provincial and federal governments to ensure "buy-in". Utilization management programs were tailored to the interests of institutions and its scope was expanded to include all hospital services.⁸¹

In Ontario and British Columbia, implementations are a result of explicit government policies mandating or endorsing utilization management in hospitals. Other

provincial governments have not discouraged implementation. Decreased global hospital budgets are a likely incentive. Implementations in Canada then result from explicit policy on utilization management and from decreases in global budgets. In Canada, utilization management is an example of incremental policy, drawing on past policies and programs.⁸² In Canada, the focus of utilization management shifted from quality of care in the late eighties to cost containment in the nineties.

Canadian Literature On Utilization Management

The review is restricted to studies assessing the level of inappropriate hospitalization by using utilization review methods. If inappropriate hospital utilization is not present in Canada, utilization management programs cannot contain costs and improve or maintain quality of care. Four reports on the appropriateness of hospital utilization in Canada are the subjects of this review. There are three on the appropriateness of pediatric hospitalization and one paper on adult hospitalization. The papers suggest that inappropriate hospital care does exist for the Canadian pediatric and adult populations.

Inappropriate Pediatric Hospitalization

The purposes of the following studies were to describe the level of inappropriate hospital utilization and to examine the role of funding. Kasian et al reported a 16.2% rate of inappropriate patient days using Pediatric Appropriateness Evaluation Protocol (PAEP) in approximately 50 pediatric beds of a 600 bed tertiary care hospital in Saskatchewan.⁸³ (Table 1). Also using PAEP, a retrospective study by Gloor et al in a 94 bed tertiary care pediatric hospital in Ontario found a 24% rate of inappropriate inpatient days.⁸⁴ In a 142

bed tertiary pediatric hospital in British Columbia, rates of 29% for admissions and 22% for patient days were classified as inappropriate using PAEP.⁸⁵ In each study, the rates for inappropriate medical days (21 to 27%) were higher than inappropriate surgical days (9.7% to 21%). The rates are similar to rates of 21% inappropriate days in a US pediatric hospital that also used PAEP.⁸⁶ A technical analysis of the research designs is found in Appendix 1.

Table 1.--Rates of inappropriateness of hospitalization in Canada - pediatric population

	Admissions (%)			Patient days (%)		
	Total	Medical	Surgical	Total	Medical	Surgical
Kasian et al 1992				16.2	21	9.7*
Gloor et al 1993				24	27	21*
elective				14		
emergency				7		
transfers in				3		
Smith et al 1993	29	19	44*	22	24	18
elective	15					
emergent	7					
urgent	6					

* P < 0.05

While Kasian found an inverse relationship of inappropriate days to age, Gloor reported a statistically significant increase with age. The Smith study did not find a relationship to age using 6 age strata, whereas Gloor used four. When the data were regrouped into three broad age strata, patients less than one year of age had inappropriate patient day rates of 19.3% (Kasian et al), 17% (Gloor et al), and 15.6% (Smith et al). Respectively by author, the regrouped inappropriate patient day rates for the age range 1-

5 were 14.9%, 25%, 19% and over 5 years, 15.5%, 28%, 26%. This suggests that children aged 1-5 may have higher rates than younger children. It also suggests that factors other than age influenced the lower rates found by Kasian et al.⁸⁷

Gloor et al found that elective admissions accounted for the majority of total inappropriate days. The rate of inappropriate days from elective admissions (14%) was significantly higher than the rate for emergency admissions. Emergency and transferred-in admissions were followed by 20% of the inappropriate days each, and accounted for 7% and 3% of the 24%.⁸⁸

Smith et al assessed admissions using PAEP. Surgical admissions were 2.4 times as likely to be inappropriate as medical admissions, but did not find a difference among rates of inappropriate days by type of admission. Most (79%) elective admissions were inappropriate and were due to elective surgery admissions occurring during the day and on the first few days of the week. Both urgent and emergent admissions had inappropriate rates of 23% and 14% respectively. Smith et al found that appropriate or inappropriate admissions did not dictate the appropriateness or inappropriateness of the following patient days, nor did gender or place of residence. However, the study did not link appropriateness of an individual's admission with subsequent appropriateness of patient days; they were sampled independently (Appendix 1).

Inappropriate days are not equally distributed throughout a stay in hospital. Most days found to be inappropriate by various methodologies belong to the first and last third of a hospital stay.⁸⁹ Kasian et al reported that 25.6% of the inappropriate days belonged to the beginning and middle of the stay, and 21.9% toward the end of the hospital stay.⁹⁰

overall medical rate of 27%. However, due to the small sample sizes, the data were not compared to the mean.⁹⁴ It is difficult to interpret the data; only hematology appears to have a consistently low rate among the medical services.

	Kasian et al 1992 (%)	Gloor et al 1993 (%)
Overall surgical rate	9.7	21
Ear, nose, and throat	17.4	7.5
Urology	5.4	14
Ophthalmology	9.1	17
Neurosurgery	13.7	19
Plastic surgery	8.3*	21
Orthopedics	4.0*	26
General surgery	15.1	27
Cardiovascular		50

* significantly different from surgical rate

Ear, nose and throat (ENT), neurosurgery, and general surgery have higher rates of inappropriate patient days than the overall surgical rate of 9.7% but are not statistically significant (Table 3). Based on an overall surgical rate of 21%, plastic surgery, orthopedics, general surgery and cardiovascular surgery tended to have higher rates of inappropriate patient days. The rates for urology and ophthalmology may be consistently lower. The rates from the Kasian study are lower, with the exceptions of ENT and hematology, than those found in the Gloor study (Tables 2, 3). There is no clear pattern.

One of the strengths of PAEP is collection of the reasons for inappropriate admissions and patient days (Table 4). Most inappropriate admissions were due to premature admissions or being admitted for procedures suitable for an outpatient.

Table 4.--Percent distribution of reasons for inappropriate hospitalization

	Smith et al		Kasian et al	Smith et al
<u>Admissions</u>		<u>Patient Days</u>		
Premature admission	55	Continued hospitalization required	7.9	20
Outpatient or diagnostic procedure	29	Inattention to prompt discharge	27.9	15
Lower level of care required	5	Suitable for outpatients	27.8	36
Day surgery more appropriate	4	No institutional care required	25.6	10
Other	6	Lower level of care required	4.7	9
		Other	6.1	9

Not being discharged readily, being in hospital for outpatient procedures, and days when hospital care was not required were the three most frequent reasons for inappropriate days in Kasian's study. Smith et al also found days in hospital for outpatient procedures and not being discharged readily. They found that continued hospitalization was required in 20% of the inappropriate days because the purpose for the hospitalization had not been achieved. This could be due to scheduling problems or premature admission. Kasian's study found a lower rate (7.9%). The low percentage for the Kasian study may be due to the researcher's classification of their data into Smith's categories. However, the 7.9 consists of being admitted for observation and waiting for the operating room.

Gloor did not collect reasons during the review for patient days. When they went back to the medical records for the admitting diagnosis, over half of the medical inappropriate days were for investigations, some of which could be done as an outpatient. Fourteen inappropriate days were for parental relief and five days for patient education and an unknown number for observation following therapy. The reasons given for surgical patients included observation, receiving nursing care did not meet need criteria, bed rest, and not receiving services.

The Smith and Kasian studies reported inappropriate hospitalization by responsibility (Table 5). The hospital and/or physician was the most responsible for inappropriate days, then environmental factors such as a lack of alternative facilities, with the patient or family being marginally responsible. The percentages reported for pediatric inappropriate days are well within the ranges reported for adult acute care and have the same pattern of responsibility.⁹⁵

Table 5.--Percent responsibilities for inappropriate hospitalization			
	Smith et al 1993	Kasian et al 1992 ¹	Payne 1987
Physician/hospital	75	84	72 to 86
Environment	17	5	12 to 24
Patient/Family	8	5	2 to 5
Other		6	

(1) calculated

The lower rates of inappropriate patient days reported by Kasian are due to the practice of utilization review for all admissions to and discharges from the pediatric wards in the hospital (Table 1). The chief of service for a ward reviews all patients four times a week. In addition, a bed utilization committee, consisting of the chiefs of service, nursing unit managers, and hospital management, admitting and social services, meets weekly to address utilization concerns. The authors consider the level of inappropriate days found in his study "a waste of medical resources."⁹⁶ It appears that their utilization review has an impact on inappropriate utilization. However, the scope of their review may need to include a concurrent review for appropriate days.

Inappropriate Adult Hospitalization

At the time of this literature review, one unpublished working paper from the Centre for Health Services and Policy Research at the University of British Columbia is the sole report on inappropriate adult medical admissions and patient days in Canada. The purpose of the study was to evaluate the implementation of utilization management programs in two hospitals.⁹⁷

Using a quasi-experimental time series design (Appendix 1), the study followed two controls and two hospitals with utilization management programs as the intervention over one “before” and one “after” year. There was no change in the rate of inappropriateness on admission and rates of inappropriate days were less in the intervention hospitals. The reasons for inappropriate utilization were not collected.⁹⁸

The appropriateness of days and admissions were assessed using Severity of Illness and Intensity of Service (ISD-A/InterQual) criteria that are independent of diagnosis. Interrater reliability and validity were acceptable. The data were collected retrospectively from the patients’ charts in the four hospitals. Sample one contained data from emergent medical admissions who gained entry into hospital by the emergency department. Sample two contained data from all medical admissions.⁹⁹

Before the intervention, the inappropriate medical and “emergent” admission and patient day rates across the four hospitals ranged from 26 to 15%, and 19 to 36%, respectively (Table 6). The term “emergent” caused difficulty because the participating hospitals used different definitions, but apparently this was rectified. After implementation of the utilization management program in hospitals C and D, the inappropriate medical and

“emergent” admission and patient day rates across the four hospitals ranged from 13 to 38%, and 18 to 25%, respectively (Table 6). After adjusting for age, gender, and route of admission to hospital, the utilization management programs did not appear to have an effect on inappropriate admissions. However, adjusting for age, gender, and route of admission to hospital, the decreased rate of inappropriate patient days was significant for Hospital D ($p < 0.01$) (Table 6). With similar adjustment, there was a significant decrease in inappropriate patient days subsequent to appropriate admissions from 18 to 8% in Hospital C (data not shown in table). Except for Hospital C, the control and intervention hospitals experienced decreases in length of stay, and there was no significant decrease in length of stay associated with concurrent review. The authors concluded that the utilization management programs were effective.¹⁰⁰

	Medical admissions		Medical patient days ²		ALOS ³
	All	Emergent	All	Emergent	
Summary Total	24	22	27	34	
After	25	23	23	21	
Hospital A	18	15	19	34	7.8
After	13	20	18	19	6.7
Hospital B	23	21	19	36	9.5
After	30	38	25	18	9.2
Hospital C	24	24	30	31	6.9
After	29	35	25	25	6.9
Hospital D	26	26	33	33	7.9
After	23	30	23*	24	7.2

(1) data from Anderson et al 1993.

(2) patient days judged independently of admission appropriateness

(3) all adult medical wards admission in the hospitals two years before and after (Appendix 1)

* statistically significant

The study of Anderson et al confirms that lower rates of inappropriate patient days follow appropriate admissions.¹⁰¹ If one disregards admission appropriateness, the rate for inappropriate patient days tends to have a higher value as one would expect since it is a blend across patient days. This was also confirmed by the Anderson study. In this study, patient days were randomly sampled for concurrent review and as a result, the rates of inappropriate days are a blend including some days before discharge.

Two measures monitored the effect of the utilization management program, specifically concurrent review, on quality of care. The program did not have an adverse effect on quality of care based on readmission rates for the before and after the intervention. MedisGroups (Medical Illness Severity Grouping System) followed “sickness” at admission and outcomes in one of the intervention hospitals. The premise was that concurrent review would lead to “sicker” patients being admitted, presumably due to premature discharge. Based on comparing before and after morbidity and mortality of the four most prevalent diagnoses, there was either no change or a decrease in three of the four. For cerebrovascular disease there was a increase in morbidity (3.0 to 6.7%) and mortality (6 to 13%).¹⁰²

After a year of concurrent review for adult medical admissions (Hospitals C and D), the inappropriate admission and days rates were about 25% (Table 6). In either hospital C or D, the MedisGroup scores for severity of illness were consistent with the findings of concurrent review. For example, 88% of the patients with medical back problems and 69% with a gastrointestinal diagnosis without complications had MedisGroup severity scores of zero (0). The same patients also received services, but it is

not known if they were flagged for review.¹⁰³ Concurrent review did not affect admissions to either Hospital C or D.

Anderson's study excluded paneled patients who, by definition, are non-acute patients. Had these patients been included, the rates of inappropriate days would have been higher. A small community hospital in British Columbia was cited as having rates of 32 to 60% inappropriate days, and could have included paneled patients.¹⁰⁴

Hospital A, a control hospital, has half the inappropriate utilization of C or D; the reasons were not reported. The control and intervention hospitals were not described in this study. A true control group has all of the attributes of the experimental group except the intervention. For hospitals to be controls, they should have the same organizational structure, bed capacity and occupancy, funding, inpatient and outpatient services, staffing, and access to external services.

Evaluation Literature

The findings of three system-level impact evaluations show consistent decreases in rates of admissions and patient days with associated decreases in hospital and medical expenditures due to hospital preadmission and concurrent reviews (Table 7).¹⁰⁵ Two studies are cross-sectional designs comparing private and public insurance plans with and without utilization review. The other is a descriptive study without a comparison group showing results of private insurance plans that require utilization review (Appendix 2). Hospital preadmission and concurrent reviews are generally used together and it is difficult to associate changes in rates due to one method from the other. One would expect preadmission review to affect admission rate and patient days. Concurrent review should

affect length of stay and the use of ancillary services, but the relationship between appropriateness and length of stay is not well understood.¹⁰⁶

Table 7.--Impact evaluation of utilization management and its methods at the system level.

Reference	Utilization review methods	Findings
Feldstein et al 1988	hospital preadmission certification, admission review on site and concurrent review	12.3% decrease in admissions ¹ 8% decrease in patient days ¹ no significant change in length of stay 11.9% decrease in hospital expenditures 8.3% decrease in total medical expenditures
Wickizer et al 1989	hospital preadmission certification and concurrent review	13% decrease in admissions ¹ 11% decrease in patient days ¹ no significant change in length of stay 7% decrease in hospital expenditures 6% decrease in total medical expenditures
Scheffler et al 1991	preadmission certification and concurrent review	5.3% decrease admissions ² 4.8% decrease patient days ² no significant change in calculated length of stay 4.2% decrease in inpatient payments
	payment denial as part of retrospective review	2.2% decrease length of stay ² 4.4% decrease inpatient days ² 1.6% decrease inpatient payments ²
	retrospective review mandatory second opinion	not statistically related to hospital utilization
	discharge planning ³ case management ³	not statistically related to hospital utilization

(1) per 1000 insured persons;

(2) 1000 plan members per year

(3) recently implemented strategies in 1984, 1985 respectively

The three studies did not find a significant change in length of stay due to preadmission and concurrent reviews. Some hospitals could have realized decreases in length of stay; others may have increased with no net effect on length of stay. As well, in

some hospitals there may have been increases in length of stay associated with a greater number of appropriate patients being admitted which offsets the “saved” days found by concurrent review. The effect of hospital preadmission and concurrent review on length of stay, however, may also take longer than a year to become apparent in the absence of financial incentives. This may explain why Feldstein et al did not find a decrease in length of stay in their 1988 study which looked at one years’ implementation. The follow-up study, using two years’ data, found a small change of 0.4 days which was not significant.¹⁰⁷ Due to the longitudinal nature of Scheffler’s study, they observed that length of stay and payments increased slightly with decreased admission rates, then payments decreased. They speculated that this was due to a “learning curve” (my emphasis) with the preadmission and concurrent methods. Denial of payment to the plan holder, when used as part of a retrospective review, did significantly decrease length of stay from 6.4 to 6.0 days.¹⁰⁸ Financial disincentives to patients may modify their decision making.

Decreases in length of stay may not be a sensitive measure of increased efficiency using data aggregated across plan members, hospitals, physicians, and review agencies. It also suggests that decreases in length of stay might not be realized without financial incentives. By their nature, the studies cannot know if the results are due to the identification of unnecessary hospital care and actions taken to eliminate it.¹⁰⁹ Outcome information was not reported and the nature of the review criteria, implicit or explicit, was not described. The insurance plans or employers groups could have changed criteria to more effective ones during the study time period. The studies demonstrate that the cost

containment component of utilization management can be achieved resulting in savings to plan holders and employer groups.

Bailit and Sennett reviewed the cost containment aspect of utilization management in the public and private sectors. By 1991, 90% of privately insured employees and Medicaid and Medicare recipients were subject to some form of utilization management for their care. Hospital admission precertification programs decreased admissions to community hospitals by 18% from 1981 to 1988 with a lowering of the rate of increase in hospital costs. Total hospital costs, however, decreased slightly because hospitals redirected resources to outpatient services. The authors conclude that utilization management as a cost containment strategy efficiently controlled unnecessary care.¹¹⁰

A quality of care evaluation on the prospective payment system (PPS) for Medicare patients hospitalized during 1981-2 and 1985-86 focused on five conditions which are congestive heart failure, acute myocardial infarction, pneumonia, cerebrovascular accident, and hip fracture. PPS is a national utilization management policy that was implemented as a cost containment initiative using a fixed fee based on length of stay. The results include lower or unchanged mortality at 30 and 180 days post-discharge and sustained improvements in the process of care. There was an increase in unstable patients at discharge, and patients were sicker at admission, presumably due to early discharge.¹¹¹

A comprehensive literature review on PPS by Coulam and Gaumer, which is evaluative in nature, had a number of findings that are relevant to this review. Fee-for-service per DRG length of stay reimbursement did control hospital costs by increasing

efficiency and decreasing the volume of services provided to patients. Mortality did not increase, the adoption of new technologies did not slow, and uncompensated care did not decrease as was suggested by opponents of PPS. The authors also point out that PPS is not a substitute for discharge planning decisions and did not cause patients to be discharged in an unstable condition. To undertake a formal evaluation would require timely, quality databases capable of being linked; the databases are not currently available. They conclude "PPS appears to have saved Medicare money without causing systemic, documented harm to patients or the health care industry."¹¹²

Discussion

The acceptable rates and variances for inappropriate hospital utilization are unknown, and rates of zero are probably unobtainable goals. There may always be some inappropriateness. Overall, the rates from Canadian studies are within the ranges reported for hospital services in the United States; the general pattern for rates also agrees (Table 8). For example, inappropriate admissions tend to be followed by greater rates of inappropriate patient days. Appropriate admissions usually have fewer inappropriate patient days. The rate for the days before discharge is usually the highest. The first third and last third of a stay are more likely to have inappropriate days, although the distribution of inappropriate days within a length of stay is not clearly established. The relationship of inappropriate utilization to length of stay is not well understood. Surgical admissions and medical days are more likely to be inappropriate. As for the four studies of the review, two did not associate length of stay with inappropriate rates and the Smith and Anderson studies found no significant relationship.¹¹³ There is not a clear picture of the surgical and

medical services that tend to be associated with inappropriate admissions and/or days, and may vary from hospital to hospital.¹¹⁴

Table 8.--Summary of inappropriate hospitalization rates - Canada

Reference	Admission rate (%)			Patient day rate (%)			Review Method
	Medical	Surgical	Total	Medical	Surgical	Total	
Kasian et al 1992				21*	9.7	16.2	AEP
Gloor et al 1993				27	21	24	AEP
Smith et al 1993	19	44	29	24	18	22	AEP
Anderson et al 1993	25 ¹			23 ¹			ISD-A
Hospital A	13			18			ISD-A
Hospital B	30			25			ISD-A
Hospital C	29*			25*			ISD-A
Hospital D	23*			23*			ISD-A
Turner 1991						32 to 60 ²	Unknown
Payne 1987			6 to 40 ³			12 to 35 ³	AEP, ISD-A

(1) Average medical rates after the intervention in treatment and control hospitals;

(2) Service unknown; (3) US values; (*) presence of utilization review or utilization management;

The rates are calculated as the number of admissions or days found to be inappropriate for acute care divided by total admissions or days reviewed per year.

The rates for medical inappropriate admissions and days ranged from 13 to 29% and 18 to 27%, respectively, despite concurrent review in hospitals C and D and utilization review practice in Kasian's hospital (Table 8). The rates belong to patients of different ages, gender, and locales where appropriateness was assessed using two different review methods.¹¹⁵ Others find that the rates of adult medical and surgical inappropriate admissions and days using AEP are significantly different among hospitals from different locations, but appropriate rates are not. The difference in inappropriate rates remained after adjusting for age, gender, health status, ethnic origin, income and education of the patient populations.¹¹⁶ Geographic variation is unlikely to explain the range of rates for

Hospitals A to D, which are in the greater Vancouver area. Rates should be adjusted for age and gender to allow comparison of rates across populations. Such adjustment does not provide insight into variables, not associated with age and gender, that may be associated with the observed differences among rates.¹¹⁷

Often the approach to an analysis assumes that the hospital is a "black box" and adjusts for patients coming into hospital relative to outcomes such as morbidity and mortality. An example of hospital variables commonly used for adjustment are bed size, ownership, urban or rural, and size of training programs.¹¹⁸ They are also readily available. The adjustment, in this case, is limited to four variables and cannot adjust for the effects, if any, due to other structural variables. The adjustment may be insufficient (under-specification) for structure or may not be the right ones (mis-specification), or both.¹¹⁹ Burns and Wholey included more physician variables than is usually the case to predict length of stay using multivariate regression and found a large relative contribution of the added variables to length of stay. Under-specification of physician variables by previous studies was an explanation.¹²⁰ Independent variables associated with structure were not used to adjust rates of inappropriate admission and days from hospitals.¹²¹

Structure is much more than the above four variables suggest. Structure consists of hospital physical, financial, and human resources, the organizational structure including inhouse structures for physicians and nurses, the presence or absence of quality review, bed capacity, beds staffed, occupancy by service of the bed and by patient, ownership, and teaching or community status, geographic area, insurance, the financing of health care, and the regulatory environment. It is described as the environment for patient care.¹²²

Donabedian described structure as being stable and, in 1980, it likely was. That may no longer be the case. Welch and Grover observe: "the contribution of the structural aspects of health care settings to the relationship between the caregiving process and the overall quality of care provided needs further specification".¹²³

Assuming that there are additional variables associated with inappropriate utilization, what are the possible candidates? The rates (Table 8) also belong to hospitals with organizational structures and cultures and different mixes of inpatient and outpatient services, and to physicians with practice patterns. Insight into inappropriate hospitalization is available from the list of reasons collected by pediatric and adult versions of AEP. While a hospital can add and/or modify the reason list to suit their needs, the categories for reasons remain the same across hospitals. The reasons provide a way to explore inappropriate hospitalization from another perspective. As was mentioned earlier, inappropriate admissions of patients are associated with premature admissions, being admitted for diagnostic or therapeutic services that are suitable for outpatient services, not requiring acute care services, and patient distance to hospital. Inappropriate patient days are associated with delayed discharge, delayed treatment or procedures due to scheduling, receiving services that could be done on a outpatient basis, not requiring acute care services, and not requiring any services. These reasons inform hospital management about the actions that can be taken to correct inappropriate hospitalization to the extent that they are within the hospital's control. If the above reasons are addressed successfully, the number of inappropriate admissions and days would be minimal. They can be considered independent variables associated with the production of inappropriate admissions and

patient days. They would be a different set of variables than those usually associated with multivariate analysis for inappropriate utilization.¹²⁴

Responsibilities for inappropriate hospital utilization are grouped into family and patient, the environment, and physician/hospital categories. The physician and/or the hospital are estimated to be responsible for about 75% of inappropriate patient care. This concerns behaviors surrounding admitting and discharge practices of individuals, both physicians and hospital personnel. The behaviors may be modified by the availability of beds. There is some evidence that inappropriate admission rates may be linked to small numbers of beds and occupancy rates may be associated with inappropriate days. The relationships among hospital structural variables, inappropriate utilization, and hospital and physician behaviors are not clear. Environmental factors may account for 12 to 15% of inappropriate patient care. For example, it includes the organizational structures within the system, reimbursement, number of physicians practicing in the area and their organization, and nursing home beds per capita. The patient and his or her family are estimated to be responsible for about 5% of inappropriate hospitalization.¹²⁵ As the dependent variable, the management of inappropriate hospitalization has the family and patient, the environment, and the physician and/or hospital as its independent variables. Actions targeting the patient and family may not be worthwhile and are not discussed further.

The hospital experiences from the four reviewed papers suggest that rates of inappropriate hospital utilization may be linked with decision making behavior surrounding its production and management. Utilization management is "intentional actions" by

management after all. But little is known about the complex behavioral interactions that are fundamental to health care decision making.¹²⁶ Decisions are made or not made by hospital management and physicians based on differing incentives and managerial and professional accountabilities. To explore this possibility, the experiences are discussed, augmented with the literature.

High occupancy and improved bed use are the reasons why management implemented utilization management programs, according to Anderson's 1990 Canadian survey.¹²⁷ The programs or activities reviewed here have varying degrees of success. In one hospital, clinical chiefs conducted length of stay reviews to control occupancy and admissions. In another hospital, admissions, transfers and discharges were monitored and sanctioned. The efforts did not control admissions or occupancy in either hospital, so they added discharge planning teams. The result was that most admissions still came through emergency and surgery cancellations were about 10%. Whether the clinical review or bed monitoring remained in place and discharge planning teams were added, or the teams replaced the review was not clear. Next, a formal utilization management program was established with concurrent and retrospective methods. Because they did not control admissions as part of the program, the results of the Anderson et al study were modest.¹²⁸

In the hospital from Kasin's study, utilization review of all admissions and discharges to the ward apparently worked well enough to influence their rates relative to the other studies (Table 1). They acknowledged that additional actions need to be implemented.¹²⁹ In the Smith et al study, early attempts using subjective criteria formulated by nurses and house medical staff reportedly failed. Preservation of the status

quo underlying the subjective criteria was suggested as the reason for failure. A lack of information about the cost of providing health care and the inability to separate hospital and physician factors contributed to inappropriate utilization.¹³⁰

In the Kasian study, five pediatricians were responsible for 91% of the medical inappropriate patient days.¹³¹ Gloor did not mention hospital programs to measure and correct utilization problems, but noted that "Physicians are free to admit and discharge patients at their discretion."¹³² Anderson et al recall "a number of challenges from medical staff in particular."¹³³ Variance days are days deemed inappropriate upon review. When the program was first implemented, reporting of variance days by physician often identified the wrong physician as being responsible and created ill will. The medical staff did not support the idea of variance days, collecting the data, or linking variance days to individual physicians. Senior management abandoned the collection and reporting of variance days by physician. In place of the variance day, the reviewer contacts the "correct" responsible physician and "suggests" alternatives. This was a very unfortunate decision as the variance day is the link between the results of concurrent review and physicians. This decision may have contributed to the marginal success of the program. In Anderson's study, physicians were surveyed on their thoughts about concurrent review. Most (63%) said they supported concurrent review and 61% said that it had no effect on quality of care. Most (86%) said that it had no impact on access to hospital (i.e., admissions), and 66% said that it had not resulted in patients being discharged too soon. Fifty percent said that concurrent review helped them to refer patients to other facilities.¹³⁴ If this survey reflects the attitudes of physicians practicing at the intervention hospitals, it

is not surprising that the changes in the rates of inappropriate utilization, while significant, were small (Table 6). The presence of a utilization management program does not mean that it will influence decision-making on inappropriate utilization.

In summary, the utilization review approach used in the hospital in Kasian's study appears to be reasonably effective for surgical patient days and there is anecdotal evidence of decisions being made to decrease inappropriate utilization (Table 8). In Anderson's study, several different approaches were used including a formal program. There is little evidence of decisions being made to decrease inappropriate utilization (Table 8). Simple utilization review methods in Smith's study failed presumably due to a lack of leadership and not being supported by the culture. In Gloor's study, there was no utilization review or management and no evidence of decisions on utilization. The presence of a utilization management program or utilization review may not lead to effective decisions to decrease inappropriate utilization.

In a controlled trial to evaluate the effectiveness of feedback reports on inappropriate rates to eleven hospitals, four hospitals refused to participate further after receiving their first less than favorable report due to the reaction of medical staff. In the remaining seven hospitals, only three distributed the reports to attending physicians. There was a decrease in inappropriate days when the feedback reports were distributed to attending physicians and no change in days when the reports did not reach attending physicians. Physician leadership was a key factor in promoting and implementing the report's findings as was the report reaching the right party. Hospital commitment and willingness to enforce performance standards were equally important.¹³⁵ Again, the

presence of a utilization management program does not mean that it will influence decision-making on inappropriate utilization.

Incentives and accountability influence decision making. Management and health professionals, notably physicians, make decisions or not make decisions in hospital settings. Physicians make decisions that result in resource allocation for which they may not be directly accountable. They admit patients to hospital and the hospital provides patient care resources from its capital and operating budgets. They may not be accountable for the use of resources within the hospital. Physicians have professional and technical accountability to the provincial College of Physicians and Surgeons, not managerial accountability.¹³⁶ Canadian physicians enjoy an autonomy from hospital management and government that is considered by some to be greater than in the United States.¹³⁷

The hospital board is accountable for its expenditures to government. The board has managerial accountability that is based on resource allocation. Cooperation between hospital management and autonomous physicians must occur to realize increases in appropriate hospitalization and possibly realize decreased costs at the hospital level. A vehicle for that cooperation could be a utilization management program. The link between the effects of utilization review and management research has not been reported and there is no systematic, concrete picture of how the changes were made.¹³⁸

The papers also contained information about the effects of environmental factors on inappropriate utilization. Funding is an example of an environmental factor. Both Kasian and Gloor hypothesized that there would be higher rates of inappropriate days in a

Canadian setting due to the differences in funding, i.e. global funding from the public purse versus fee-for-service reimbursement to hospitals in the US system. They concluded that the rates were similar enough that hospital funding differences were an unlikely explanation for inappropriate days.¹³⁹ However, they did not look at relative changes in global budgets, but rather, the type of budget. In the Canadian system, the global hospital budgets are established, in part, by politics, and a policy to contain costs is a decrease to the global budget. In this way, resources, i.e., funds, programs and organizations, available to physicians practicing in a hospital setting are limited indirectly, and conflict between physicians and government is avoided.¹⁴⁰ A result is decreased capacity and as Barer and Evans point out "a key component of utilization management is capacity management".¹⁴¹ The constraints on physicians are available funds, programs, and the organizations that are determined by government.¹⁴²

Medical patients generate a daily fee for physicians and surgical patients generate a "flat fee" for the procedure and recovery period. In theory, medical practitioners would be interested in keeping the bed filled and surgeons would be interested in turning the bed over to maximize their billings assuming this is the only incentive. Hospital budgets may be adjusted downward if the budgeted patients days are not met. So they have an interest in matching the budgeted patient days; exceeding the budgeted days may result in additional funds. There is no incentive to the hospital or to physicians treating medical patients to discharge. Differences in physician practice was also an explanation in Kasian's study. They conclude: "The only impetus for efficient use of beds by physicians is a commitment to practice good medicine."¹⁴³ To achieve this end, physicians and

hospital will need to change their behavior if technical efficiency is to be realized.¹⁴⁴

Kasian's results may be explained by lack of financial incentives for the hospital and physicians treating medical patients to discharge readily in combination with a utilization management program. The lack of external incentives tends to increase inappropriate days and the utilization review tends to decrease inappropriate days with the result being somewhere in the middle. The relative combination of these two factors may vary from service to service within a hospital.

Conclusion

Increasing the efficiency and effectiveness of health care services by taking actions to decrease inappropriate hospital utilization is the goal of utilization management. That health care is efficient, effective and appropriate in its location, time, volume, and intensity are the supporting concepts. Canada and the United States have the same meaning of utilization management. In Canada, utilization management is being applied to a wider scope of services and activities within a hospital and should result in greater efficiency.

Perceived differences of utilization management between the United States and Canada may be due to the relative importance of cost containment and quality of care through time. Utilization management began as a cost containment policy and now focuses on quality of care in the United States. In Canada, quality of care came first and, as pressures of the day dictated, the focus turned to the cost containment capabilities of utilization management.

There is evidence of inappropriate hospitalization in Canadian acute care pediatric and adult general hospitals. This has a number of implications if the rates of inappropriate

hospitalization persist throughout the hospital system in Canada. The relationships among the outcomes of hospital care and care provided to the patient are not strengthened by the presence of inappropriate hospitalization. Measures of efficiency such as admission and patient day rates, and length of stay and cost per DRG or CMG, which are based on length of stay, are muddled.

Anecdotal evidence from seven Canadian hospitals suggest that the presence of utilization management programs or utilization review activity without decision making may not translate into efficiency and effectiveness. The latter being measured by decreased admission and patient day rates. The specification of structural variables needs to be revisited in the light of health reform activities and organizational change in Canadian hospitals and would aid evaluation activities.

Utilization management spans managerial and professional accountability and highlights the diffuse strings of accountability in the health care system. Confusion as to who is responsible and accountable for what in a practical sense lies at the very heart of utilization management. Utilization management may be perceived as a threat to physician autonomy unless physicians take a responsible and accountable leadership role. Physician "buy-in" is crucial for the success of the utilization management program.

The roles and inter-relationships of hospitals, physicians, and environmental factors in producing and managing appropriate hospital utilization are not well understood. The nature of the relationship between structural and management events and the effects of utilization management has not been described. The papers reviewed here suggest that physical, behavioral, and cultural factors, organizational structure, and decision making

have a relationship to appropriate hospitalization that cannot be determined based on available empirical evidence. As a first step in understanding the roles and relationships, a study to determine if, how, and why hospital utilization by patients changed and the role of utilization management in facilitating that change should be done in a selected hospital.

CHAPTER 3

METHODOLOGY

The literature review suggested that physical, behavioral, and cultural factors, organizational structure, and decision making have a relationship to appropriate hospital utilization by patients. Physicians, who are decision makers for hospital resources, are identified as modifiers of utilization management interventions implemented by hospital management. It also suggested that the presence of utilization management in a hospital may not be reflected in statistical measures such as length of stay. Statistical information alone cannot provide definitive data on decision-making by physicians and hospital management. Implementation of utilization management interventions and the program content is assumed when statistical information alone is used. Decision-making may be inferred from statistical changes, but one cannot know if the inference is valid. Such inferences may assume that active decision making occurred, when, in fact, no decision was made, and statistical changes were serendipitous. Other assumptions are that the changes in statistical measures occurred after decision making, and that the measures are consequences of a utilization management program. An active decision or a series of decisions may have been not to act, and would appear as if a decision were not made. A research design that matches decision making behavior by physicians and hospital management over time with statistics over time is needed. It should be flexible and

responsive to allow for and to take advantage of unanticipated events during data collection and analysis. Such a design would allow for the investigation of the utilization management phenomenon and its relationship to statistical changes.

Research Approach

The research approach must provide guidance across complex events in an uncontrolled environment and promote description and exploration. Field study and case study research strategies can provide this flexibility.¹⁴⁵ A field study design, however, does not have the structure to link structural and management, i.e., organizational, variables with utilization statistics. Case studies are ideal for the development and testing of complex models of organization and when the results are individualized, i.e. specified as "how and/or who?"¹⁴⁶ Yin provides a definition of a case study:

...an empirical inquiry that investigates contemporary phenomenon within its real life context when the boundaries between phenomenon and context are not clearly evident and in which multiples sources of evidence are used.¹⁴⁷

Case studies use repeated measures of a phenomenon in the same way an experiment uses repeated measures, for example, three readings of a sample are averaged to derive the experimental value. Variation of the phenomenon is demonstrated by sampling across data sources, and by including opposing points of view.

The results of a research case study are generalizable to theory or can be used to generate theory in some experimental designs. An advantage is that the reader has the knowledge to know if the results are consistent or not with ones' own experience. This is known as transferability of the case study results.¹⁴⁸ Case study results are not generalizable to statistical populations and this could be considered a weakness. This is a

criterion for quantitative design where statistical sampling occurs and is not applicable to qualitative case study designs. Transferability of qualitative results is analogous to the generalizability of quantitative results as will be discussed later. The strength of qualitative design is its ability to be unique, and to describe a phenomenon.¹⁴⁹

Study Rationale

The idea for the case study came from a very strong subtheme of an interview conducted in the fall of 1992. The management informant stated concern with the hospital's poor performance. Utilization guidelines were implemented and improved utilization of the Emergency Room (Emerg) and its Observation Unit (OU), Surgery, and Medicine. Among the results were decreased length of stay and the implementation of alternative services according to the informant. The informant was confident that patient days could be saved. During an interview about health care efficiency and effectiveness, a management informant of an acute care facility stated:

When we were compared using 89/90 and 90/91 data...in fifteen categories to the other hospitals, **we were the worst in fourteen...** The way they controlled Emergency before I arrived was there were nineteen patients in the hall, the stretcher bay was full; all the beds in the OU (Observation Unit) were full and there were patients in the hall...

I had implemented utilization guidelines and in 91/92 we **eliminated the overcrowding in Emerg** and we **eliminated the overcrowding in the OU...** In our medical beds we have managed not to overflow into surgery, **we've guaranteed surgical beds** We have not canceled elective procedures because of bed problems. We have done **more cases in medicine and have shortened the length of stay**, we've done **more cases in surgery and shortened the length of stay**, we've developed a **pre-admission clinic** and we're now doing patients the day of their surgery...so we've implemented **all of those utilization approaches..**we think that we can **save up to 25% of patient days...**¹⁵⁰

The change in hospital utilization is obvious. What is not obvious is how or why this occurred and what role utilization management played in effecting the change. The situation is analogous to a "natural" experiment having pre and post time periods with

known interventions by management. Does the hospital save up to 25% of the patient days, reduce length of stay, reduce costs, and how did the hospital do it? Did the utilization approaches alone produce the changes in patients days?

The goal of this study is to determine the change, if any, in hospital utilization by patients, how and why hospital utilization by patients changed, and the role of utilization management in facilitating the change(s) in the aforementioned acute care hospital. The study asks if there were changes in hospital statistics as a result of the utilization guidelines as was stated by the above management informant. It also asks how the changes were caused and by whom, along with the reasons and purposes for their implementation. For example, what were the reasons why hospital management decided to act when they presumably did? Eight subordinate objectives were identified to further define and expand the goal statement. The subordinate objectives are based on variables identified from the literature as those that may influence hospital utilization management. The use of multiple objectives guards against the possibility of one becoming obsolete during data collection and analysis.

1. To determine the operational definition(s) of utilization management and its components with respective intended and actual targets;
2. To describe pre-existing conditions for the utilization guidelines;
3. To describe the reasons, circumstances, and participants for the implementation of the utilization components;
4. To determine what decisions are made and how the decisions are made on the results of utilization management and to identify formal and informal decision-makers;
5. To describe the changes, if any, in hospital policy associated with the utilization components;

6. To determine the information requirements and availability by source(s);
7. To describe and compare the feedback process, if any, to decision makers from formal and informal perspectives; and
8. To determine the organizational impact of the utilization guidelines in the hospital.

A single case study should be critical, unique or extreme, or revelatory by nature.

It can also be the groundwork for future study.¹⁵¹ In the absence of information about the status of utilization management in Manitoba, one cannot know if this case study is unique, critical, or revelatory. Its purpose is descriptive and exploratory.

Research Design

Since the purpose of the research is to gain insight into how and why utilization changed, if it changed, and to characterize the role that utilization management played, a multimethod approach is needed using qualitative and quantitative methods. The design is a single case study with embedded units of analysis (Figure 3). An embedded unit of analysis is a subordinate research objective. The design provides a structure to both describe the case and to identify and analyze variables relative to the larger picture, i.e., the hospital or case. The case is the hospital and established boundaries for data collection and analysis. Within the case there are two analyses, the qualitative and quantitative case descriptions in time, before and after the interventions. The interventions are actions by management to improve hospital utilization by patients. A feature of a single case study with embedded units of analysis is that the unit of analysis varies among the embedded units. For example, the unit of analysis for one research objective is different from the unit of analysis for another.

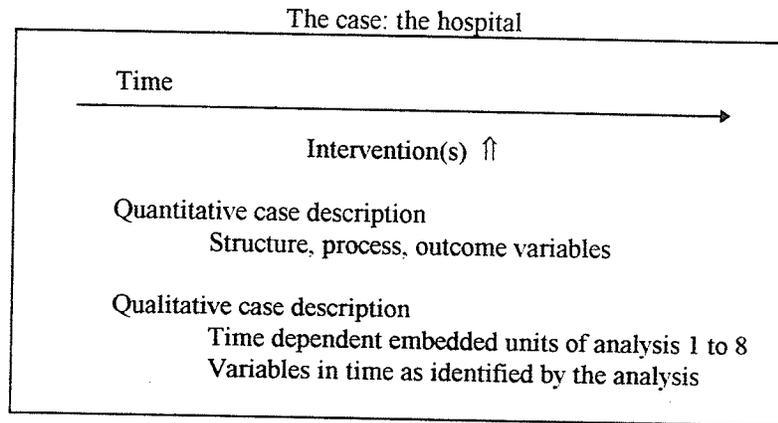


Figure 3. Case study design

The multimethod design integrates qualitative and quantitative structure, process, outcome, patient, and organizational variables through time. In qualitative design and analysis, a variable can be independent or dependent depending on the perspective of the analysis. The nature of qualitative variables, i.e., themes, are identified by data analyses.

The design is staged (Figure 4). The structure, process, and outcome variables are the quantitative independent variables, and are numerical measures where hospital utilization is the dependent variable (Appendix 3). For each research objective, variables were identified to guide data collection across multiple sources for data (Appendix 4). The collection variables are interventions, pre-existing conditions, who, why and when (implementation), decision making, information requirements, hospital policy change(s), feedback, and organizational change. To supplement and compliment the variables identified from the research objectives, i.e., the embedded units, the design provided a guiding framework for qualitative data collection and initial analyses to be identified from

the data (Appendix 5). Initial interview questions were drafted and revised before the interviews took place (Appendix 6).

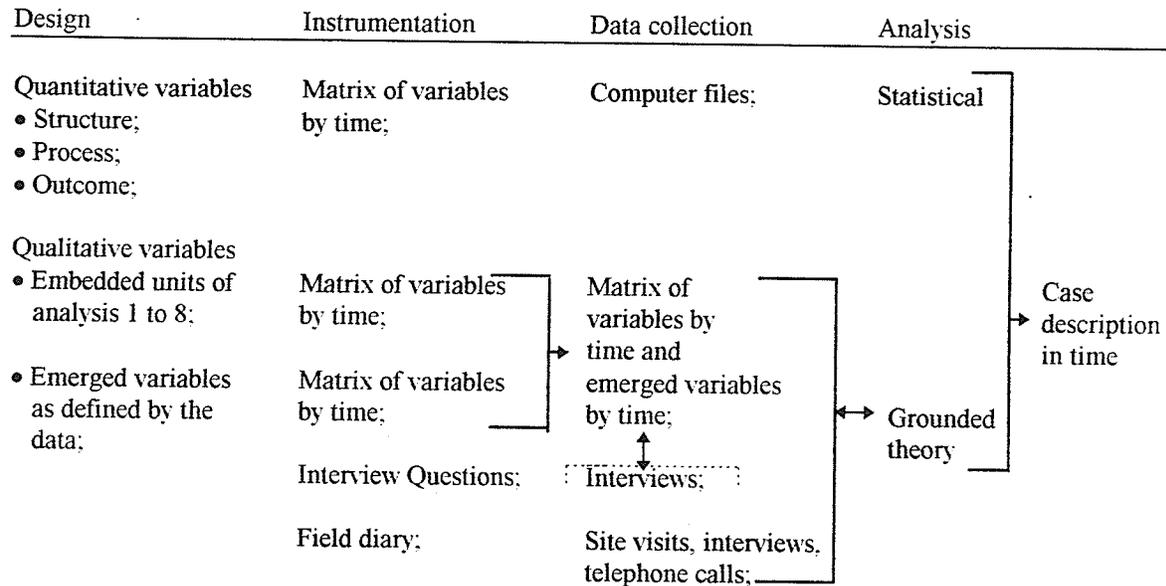


Figure 4. Case study model

The result of the design at this stage was a matrix of qualitative variables against time. The matrix was then summarized by identification of descriptive themes in time using grounded theory. The case description is a product of grounded theory analyses of qualitative data and a quantitative analyses of structure, process, and outcome statistical variables. Grounded theory is an inductive analytic method that systematically derives themes and their relationships from qualitative data. The nature of research findings using grounded theory is a theoretical construct of the reality under investigation.¹⁵² In this case study, the qualitative research findings are a theoretical description of utilization management phenomenon.

Site Selection

The case study site is the hospital described in the study rationale and self-selected.

Qualitative Credibility, Transferability and Dependability

Qualitative credibility and transferability are analogous to the internal and external validity of numerical methods. Dependability of qualitative methods is analogous to reliability of numerical methods.¹⁵³

This case study is descriptive which ordinarily does not need to address internal validity. Credibility, or internal validity of the case study, is supported by the time series nature of the case study which may also be considered a panel of one followed across time.¹⁵⁴ Credibility is strengthened when descriptions or interpretation of the case are recognized by others as a shared experience.¹⁵⁵ Credibility is threatened when informants provide stereotypic responses to queries. Using multiple informants who remain associated with the hospital and documents to answer the same research question addresses this design issue. The use of informants no longer associated with the hospital also guards against the loss of credibility. Maintenance of an appropriate relationship (i.e., distance) between a respondent and the researcher also promotes credibility. Convergence of independent lines of evidence, also called triangulation, during data collection and analysis also promotes credibility. Investigator subjectivity is a concern for any design using one observer and tentative results were confirmed by the informant(s). The use of a field diary to document the influences of the researcher on interviews, data collection procedures, and analyses also promotes credibility. Specifically, it documented data collection objectives and biases on a on-going basis (Appendix 7). A field diary is a

method used by researchers to document objectives, biases, observations, preliminary findings and unexpected events during data collection and analysis. The field diary is an example of non-participant observation. Complete documentation of data collection procedures also promotes credibility.

Transferability, an analogue of external validity, deals with the generalization of the study's findings. The findings are not statistical in nature and, therefore, are not statistically generalizable to the population, but are analytically generalizable to theory.¹⁵⁶ The purpose of the case study is descriptive and transferability is not considered a relevant criterion.¹⁵⁷ Transferability occurs when an observer can transfer the findings outside the case study based on the observer's experience. The amount of description provided to support themes promotes transferability. Involving the hospital in the selection of informants promoted transferability by identifying relevant informants. Transferability is also dependent on the amount of information given about the identity of the hospital and the informants to allow observers to judge how transferable the results may be within their experience. Maintenance of confidentiality tends to decrease transferability since the identities of the hospital and the informants cannot be shared.

Dependability, the analogue of reliability, is supported by the use of a standardized approach and the use of the same researcher. The use of different data collection techniques to offset weaknesses promotes dependability. Peer review of the methodology enhanced dependability. Triangulation also supports dependability.¹⁵⁸

The quantitative variables for patient and hospital statistics are part of the qualitative research design. Measurement validity concerns the ability of the quantitative

variables to represent what they appear to measure. Measurement validity consists of construct, content, and criterion validity.¹⁵⁹ Using patient and hospital statistics from the literature as measures of utilization, structure, process, and outcome, supports measurement validity as part of the study design. However, the application and collection of patient and hospitals statistics by hospital personnel through time as measures of utilization, structure, process, and outcome is assumed, and is a limitation.

Ethics

Patient-specific information was not used by this case study. With regard to statistics which are derived from patient specific information, only aggregated statistics from readily available printed reports were used.

The informants' experience and insight into the events surrounding the implementation of utilization management interventions builds a composite narration around the variation in hospital statistics. Key events elicited from the narration were associated with an organizational position to provide perspective and do not identify an individual. The identified positions within the hospital are board member, management, and health professional.

Due to the intimate nature of elite interviewing within a small group, maintaining confidentiality presents an additional challenge, especially since an informant may state that confidentiality is not a consideration when consenting to an interview. It is also possible that they may change their mind about confidentiality for whatever reason. Absolute confidentiality cannot be assured in this small group since the source for some information will be obvious to the knowledgeable person. However, a high degree of

discretion was appropriate and was achievable within the small group. The approach to ensure the utmost discretion was as follows: The most conservative approach is to assume that confidentiality is desired by an informant and will be maintained by a number of measures. A code replaced the informant's name and position and the key to the code is kept in a locked place. A copy of the interview transcript or notes was provided to each informant and review and revision was encouraged. The informants may perceive potential political risk, but every effort was made to decrease the perceived risk as outlined above. The benefits to informants are a contribution to the knowledge of health care decision making and clarification of its role in policy implementation.

The proposed research was presented to the University of Manitoba Ethical Review Committee in May 1994 and was approved July 4, 1994. The approved consent form and project summary are found in Appendix 8.

Data Collection

Data collection techniques were elite interviews, a field diary, and coding from documents. The field diary documented site visits, telephone calls, biases, interview objectives, and preliminary findings. Data collection had three phases: statistical data collection, qualitative data collection from documents, and interviews. All data collection techniques were evaluated to established criteria for strengths and weaknesses and found to be complimentary and synergistic.¹⁶⁰

Instrumentation

Using an accepted model for the definition of quality of care as structure, process and outcome,¹⁶¹ an initial list of patient and hospital statistics was made for the nine fiscal years, 1985/86 to 1993/94 (Appendix 4). The statistics were identified from the literature. Frameworks, one based on the research objectives and the other for emerged variables, guided data collection across documents from the hospital (Appendix 4, 5). Interview questions were drafted based on the research objectives and revised (Appendix 6). A field diary, a type of non-participant observation, was kept (Appendix 7).

Execution

From winter 1992 to the summer of 1994, periodic contact was made with the management informant of the initial interview to ensure that the site would remain available for the case study. This also gave the management informant an opportunity to choose not to continue with the study, if so desired. This allowed recruitment of an alternative site for the study should this become necessary. Continuing interest was expressed on the researcher's part in using the hospital for the study, but only if the informant was comfortable with the idea.

In June 1994, hospital commitment to the study was obtained. The management informant stated that board approval was not warranted for the study. Concerns of the informant were that the study would impact on staff time and that it would not be sensitive to morale due to staff cutbacks within the last year (1993/94). To address these issues, all data collection was done by the researcher. Interviews were scheduled at the convenience of potential informants to include before or after the working day. A list of potential

informants who work at the hospital was supplied to the management informant. It was also agreed to be unobtrusive in conducting the research.

Patient and hospital statistics

Data collection began in June 1994 at a meeting where a list of "ideal" statistics was reviewed by the management informant (Appendix 3). The informant was not aware which statistics, if any, would be available, and provided a contact person to aid in the identification of data sources.

Before the interviews and as part of the quantitative and qualitative data collection, annual reports for fiscal 1985 to 1993 were obtained from the hospital's library. The documents were the Departmental Annual Reports, Medical Staff Annual Reports, the Annual Reports of the Foundation, and the Annual Reports of the hospital. As well, Accreditation Survey Reports for 1988, 1990, and 1993 were also obtained from the library. The availability of the Departmental and Medical Staff Annual Reports had not been anticipated and proved to be qualitative and quantitatively informative. The Reports contain the manager or clinical chief's report on the department or clinical section for the year as goals and objectives proposed and met, staffing statistics, professional affiliations and activities of employees, service statistics such as workload, patient counts etc., and opinion on the past year.

The Health Records Department publishes detail and summary yearly statistical information in its section of the Departmental Annual Reports each year. The detail and summary statistical sections from Health Records were photocopied as backup and to verify data in the computer files. This served as the primary statistical data source for the

case study. Financial data and some patient and hospital statistics were gathered from the hospital Annual Reports for the years under study. Statistical information was entered into spreadsheet files by hospital service and/or patient statistic and year. A note to file was made when there was a change in recording statistics by hospital personnel.

Examples are a change in the system generating the statistics, for example, updating the workload measurement system, and that yearly statistics were not reported with the reason, if any.

Qualitative data collection - documents

The statistical data collection and initial qualitative analyses guided interview questions, validated interview findings, and promoted objectivity of the researcher. The objectivity comes from recognizing and managing possible stereotypic responses by informants and/or from documents.

The Departmental, Medical, and Hospital Annual Reports from fiscal 1985 to 1993 and Accreditation Survey Reports for 1988, 1990, 1993 were sources for qualitative data collection. The hospital provided a document recounting the hospital's experience in solving emergency utilization. The document is written by two key participants in the events surrounding solving the problem of Emergency utilization and other interventions.

Notes and statements were recorded from the Department Reports for each year by department name in computer files (Appendix 5). Coding from the documents by fiscal year took place using the guiding framework and the one based on the research objectives (Appendix 4, 5). Examples of the variables are utilization, efficiency, effectiveness, and reallocation of departmental resources which were not limited to human resources in

addition to the variables listed in Appendix 5. On occasion, the departmental manager felt strongly about an issue and editorialized; these were copied as quotes. Observations by the researcher while coding were recorded on a note pad as part of the field diary.

Due to the small number of pages involved, the Hospital Annual Reports were photocopied. Two approaches were used to code the reports. Coding of the reports was done by ranking the first five issues spoken to in the reports by board chair, the most senior manager, and the medical director. Coding for these reports was also done using a framework (Appendix 5)

The Annual Reports of the Medical Staff were also photocopied because at that time there was no way to know what information would become relevant as data collection and analysis continued. Coding of the reports was done using the variables efficiency, quality assurance, shortage of physicians, admitting practices, conflicts, and feelings in addition to the variables listed in Appendix 5. The messages of the president and the medical director or vice president - medical were placed into computer files for subsequent analysis.

The Accreditation Survey Reports for 1988 and 1990 were photocopied. The report for 1993 was not photocopied because it was labeled confidential.

While the literature review provided clues to what might be important to the production and management of hospital utilization, it also had the potential to dictate the data. To guard against this, the perspective and context of the statements was documented by attributing the comments to a health professional or manager in time. This approach had two advantages. It maintained a sensitivity to the perspective being

conveyed and allowed the data to identify its own categories and themes in time.

Qualitative data collection - interviews

The interview questions were open ended and derived from the study objectives and were revised after the statistical and qualitative data collection from hospital documents (Appendix 6). Because the questions are open-ended and since there is no right or wrong answer, the questions were not pilot tested. The interview questions also incorporated reviewers' comments.

Interviews were planned for the board, health professional and managers. Board member interviews were not done. Hospital management indicated that the implementation of the interventions was an operating decision that did not require board approval before proceeding. The board was informed of management's intentions to improve utilization by implementing interventions. Since interviews were done with health professionals and managers, a subset of questions was defined for each position (Appendix 6). Management and health professional designations characterize the informant's perspective. For example, a nurse or physician in a management position is classified as health professional to distinguish her or his perspective from an individual who is a manager but not a health professional. In a functional sense, all informants were and are management.

Informant selection was done after an initial analysis of hospital management documents. An initial list of thirteen potential informants, four managers and nine health professionals, was made from the hospital reports. Health professionals were over sampled to reflect the perspective of physicians and nurses in management positions. The

subjects self-selected by virtue of their organizational position and their involvement in the events under study as management or a health professional. In general, they comprise a small group who are known to each other. Further selection criteria included a preference for individuals who could speak to the entire period of time under study (1985/86 to 1993/94) at the hospital as a personal experience and as a decision maker, and that the same individual was mentioned across documents as being a key participant in the case study events.

One health professional, a potential key informant, was no longer in the province, leaving twelve potential informants. Five health professionals and three managers of the twelve were identified as key informants with three health professionals and one manager identified as informants. It was decided to concentrate on eight potential informants consisting of five health professionals and three managers who could be key informants. The four remaining informants would be interviewed should circumstances warrant further data collection.

A list of informants, who are associated with or work at the hospital, was made available to the management informant as requested. To keep the research momentum, it was suggested that the potential informants would be contacted after a certain date. This would allow sufficient time for discussion with the potential informant by the management informant if this were deemed necessary. It is important for the informants to know that the research is sanctioned, and adds to the credibility of the research by potential informants.

The hospital helped arrange the interviews and suggested that a particular

individual be approached for an interview, and that was done. The person had been identified as a key potential informant. While the list appeared to identify four persons, a position on the list was actual two positions, not one. The extra interview was included in the case study because attempts to contact one health professional were repeatedly unsuccessful. The extra interview replaced the unsuccessful contact since the organizational positions matched. While an interview would have been preferred, the unsuccessful contact person did document his or her role and accomplishments at length.

Arrangements were made for interviews with the five persons who are associated with or employed by the hospital who may be considered survivors. Interview dates and times were set up by the researcher and the potential informant or the informant's secretary. All informants were asked if the interview could be taped during negotiation for the interview. The ethically approved consent form and project summary were used (Appendix 8). The measures to ensure confidentiality and discretion are discussed under Ethics.

The interviews were open-ended, focused elite interviews. The signed consent and project summary forms were retained by the informant in the first interview. For subsequent interviews, informants were asked if they were comfortable with receiving the original signed consent and project summary forms with the tape transcript or notes. This allowed the researcher to retain a copy. All indicated that this was acceptable.

Notes were made during two interviews. In one interview, the informant agreed to be taped, but the tape was inserted into the machine improperly and did not record. In the other interview, the informant preferred notes to be taken during the interview. In each

case, interview notes were supplemented with additional notes immediately after the interview's conclusion. The interview notes were written up within six hours of the interview to guard against loss of information. A copy of the interview notes were supplied to each informant, and revisions were promptly made at their request. In general, the revisions were omissions of information that each thought important.

Taped interviews were completely transcribed. A tape transcript or interview notes along with the signed forms were hand delivered in a plain eight by eleven envelope with the name and "Personal" on the outside to each informant within a week of the interview. While maintaining confidentiality by avoiding loss in the mailing systems, it also afforded another site visit. A disadvantage for the purpose of confidentiality was that the researcher's presence may have signaled that a discussion or interview took place.

Interview assessment

Six informants remain associated or employed by the hospital and two are employed elsewhere. Two of the six joined the hospital after the intervention year, 1990/91, one joined during the pre intervention period from fiscal 1985 to 1989, and three have been with the hospital for the entire time period under study. One informant, who is no longer with the hospital, was with the hospital for the pre-intervention period and some of the post-intervention period. Another informant was with the hospital for pre-intervention period.

Of the eight persons asked for an interview, seven agreed for an overall response rating of 87.5% (Figure 5). The response rate among management was 67%, and among health professionals was 100%. The calculations do not include the 1992 interview. The

length of the interviews ranged from thirty-five minutes to an hour and forty-five minutes.

The reason given by the person who declined was:

... the frailties of human recollection, I would not be able to provide information that I would consider to have the integrity required for the study. It would not be appropriate for the hospital, its staff, me or you.¹⁶²

After introduction of the subject matter during a telephone call, this person was the only potential informant to request in writing the interview questions before giving a decision on consent. The informant was concerned about recall bias of events almost ten years ago. The remaining informants were more casual about the interview.

	Agree	Format	Revision
Health Professional	yes	notes	yes
Health Professional	yes	tape	no
Management	yes	tape	no
Health Professional	yes	notes	yes
Management	yes	tape	no
Health Professional	yes	tape	no
Health Professional	yes	tape	no
Management	no

Figure 5. Informant interview characterization

There are two managers and three health professionals who can speak to events before 1990/91, and to the intervention year, 1990/91 (Table 13). Three managers and five health professionals can speak to the events after 1990/91. The interview of the management informant in 1992 was added to the study and is not included in Table 13. Additional characterization is constrained by maintenance of confidentiality.

Before	Interventions	After
2 managers	2 managers	3 managers
<u>3</u> health professionals	<u>3</u> health professionals	<u>5</u> health professionals
Totals 5	5	8

Interview documents consisted of the consent and project summary forms, and the written questions as cues for the investigator not the informant. Verbatim texts were recorded using a tape machine. When the interview was being taped, notes were not made during the interview as not to distract either the informant or the interviewer. Six interviews were conducted in offices and one was conducted in a restaurant. The tape machine was turned off when the informant answered the phone and was noted in the transcript.

The health care community in the city is small. Five informants are known to the researcher; three were strangers. The interviews took advantage of insider perspective in that local language was used. Insiders are at risk of under-recording an interview, and perhaps missing things that would be obvious to an outsider. The use of a tape recorder for the interviews guarded against loss of information due to insider bias. Interviews between insiders are also at risk when the interviewer does not request additional information from the informant to provide his or her perception of the context for the information being provided. The interviewer's questions and comments to the informant should probe for additional information to guard against this loss of contextualization.

Question assessment

A composite profile of the interview questions was determined using Whyte's directiveness scale for the five taped interviews (Table 14). Whyte's directiveness scale is listed on the left of Table 14.¹⁶³ Each interviewer's comment or question for an interview was assessed and graded according to the scale. The opening and closing remarks of the interviews are not included in the analysis. All interviews started with a direct question. The results for each item of the directiveness scale were expressed as a percent of the number of interviewer's questions or statements to allow comparison across interviews. Most of the interviewer's activity probed for further information. The interview approach tended to be non-directive while probing for further information.

Table 14.--Taped interview assessment using a directiveness scale

Interview:	2	3	5	6	7	Total
Encourage to continue	12%	25%	12%	10%	25%	17 ± 8
Reflection	14%	23%	29%	28%	25%	24 ± 6
Probe last remark	30%	26%	38%	33%	29%	31 ± 4
Probe idea earlier in last remark	9%	4%	5%	3%	0%	4 ± 3
Probe idea earlier in interview	14%	8%	10%	10%	10%	10 ± 2
Introduce new topic	21%	15%	7%	18%	10%	14 ± 6
Number of questions/statements	43	53	42	40	48	45 ± 5

Data Analysis

Statistical Data Analysis

Totals, percentages, and rates per 10,000 or 1,000 population, as appropriate, were calculated. The population figures used are from Table 1 of the Manitoba Health Services Commission and Manitoba Health Annual Reports from 1985 to 1992. The

population of 1992/93 was used to estimate the population for 1993/94 since the Manitoba Health Annual Report for 1993/94 was not published at the time of analysis. The statistical data were grouped into before intervention years from fiscal 1985/86 to 1989/90 ($n = 5$), and the after intervention years, fiscal 1991/92 to 1993/94, ($n = 3$). The statistical data for the intervention year, 1990/91, were not used for the statistical analysis for the following reasons. The utilization interventions that improve hospital utilization were implemented by management in 1990/91. Also, the nurse's strike closed the hospital effectively to all but emergent and urgent patients, and the bed map was changed.

Statistical analysis consisted of one way analysis of variance and descriptive statistics, mean and standard deviation, as appropriate.¹⁶⁴ The one way analysis of variance tests the difference, if any, between measures before and after the intervention year. It assumes that the data are normally distributed and that all treatment groups are equally variable.¹⁶⁵ The null hypothesis was that there is no difference between measures before and after the intervention year and was rejected when $p < 0.05$. The results are reported as means and standard deviations, F factor values and the level of significance as a p value when the null hypothesis was rejected. When the null hypotheses was not rejected, the result is reported as n.s., meaning not significantly different. Often, graphic representation of the data against time were generated by computer. On occasion, linear regression was used to describe the data after visual inspection of the graph warranted this additional analysis.

Qualitative Data Presentation

The findings of the qualitative analyses are presented as an organizational ethnography or description using grounded theory. The descriptions are themes that were labeled by informants or emerged from the data and labeled by the researcher. Themes are italicized. Within an informant's statement, pertinent terms and/or phrases are bolded in statements that have a number of lines. In statements with few lines, there generally is no bolding as the entire statement is applicable to the theme being described. To demonstrate and support the themes, the evidence is presented in paragraph form. Each paragraph contains the identity of the informant as management, health professional, or the document, the informant's or document's statement, and the context of the statement. The statements are representative and demonstrate thematic variation. Interpretation(s) of the statement and correlation(s) of the theme being demonstrated with other theme(s) is also within the paragraph as appropriate.

Limitations

The results of the case study are descriptive of the case study hospital for the years 1985/86 to 1993/94. In this case study, the analytic method of grounded theory provides a theoretical description of reality. The maintenance of confidentiality is a limitation in that it limits the readers' ability to transfer the findings to their own experience since the hospital and the informants cannot be identified. Construct validity is usually associated with verification of the case study findings of factual nature with key informants and this was done by asking informant to verify key findings. The results of the thematic description have not been shared with informants at the time of this

document.

Possible limitations include researcher's subjective bias and the questioning style, the selection of informants and availability of informants, and their recall of events in the past (recall bias). A limitation is the use of one researcher that may result in bias being introduced into data collection and analysis. This was addressed by using a field diary and by triangulation of the data.

The sample size for the statistical analysis is small, and there is no control group. The use of a control group is relevant to certain quantitative research designs such as a randomized control trial. In this case study design, the statistical analysis is interpreted in the context of the qualitative analysis. The quality of the statistical information limits the findings of the case study to the hospital itself. There is no evidence that statistics are collected according to established definitions and therefore are subject to differing interpretations by hospital personnel through the years. Staff turnover also affected departmental recording of statistics. It would appear that there is no central repository for departmental statistics. The availability of patient information from the provincial abstracting system is limited, and in turn, limited the case study. Apparently, only paper printouts of requested reports are stored by the hospital and are available for the last few years. An assumption is that patients coming to this hospital represent the same population from 1985/86 to 1993/94. The hospital is unable to reconstruct an historical time line from data on hand to determine if the population has changed. The abstracting information is not available on disk for analysis.

CHAPTER 4

OVERVIEW OF CASE STUDY RESULTS

Introduction

Restating the research goal provides a starting point for the results. It is to determine if, how, and why hospital utilization by patients changed, and the role of utilization management in facilitating the change(s). Yes, hospital utilization did change after the interventions as measured by decreases in hospital admission and patient day rates while the hospital average length of stay increased. The answer to how and why utilization changed and the role of utilization management is less straightforward. How utilization changed is that the hospital learned that it was possible to solve utilization problems, and it solved the problems using utilization *interventions*. The *interventions* are actions by management to improve hospital utilization by patients. Why is because the hospital experienced seven events in fiscal 1990/91 that started the hospital, as an organization, on a passage from one identity to another. The *interventions* are symbolic of the change in identity. The role of the utilization *interventions* is that they represent strategies by management to improve utilization of the hospital by patients. The hospital learned that utilization could be controlled and controlled it.

How and Why Utilization Changed and the Role of Utilization Management

The answer to how and why utilization changed and the role of utilization management lies within the major finding of the case study. Hospital utilization is described by three themes for the fiscal years, 1985/86 to 1993/94 (Figure 6). Before fiscal 1990/91, the *acute care hospital belief* characterized the hospital's relationship to hospital utilization by patients. In fiscal 1990/91, *transition* added to the characterization and led to the *innovative health care facility*. In 1994, all three themes are resident in the hospital. The *acute care hospital belief* is waning. The passage from one identity to another, organizational *transition*, continues, and the *innovative health care facility* is emerging.

Antecedent	Core Theme	Consequence
<i>Acute care hospital belief</i>	<i>Transition</i>	<i>Innovative health care facility</i>

Figure 6. The thematic case description

The hospital's approach to solving utilization problems from 1985/86 to 1989/90 was and is customary for many hospitals. Examples of utilization problems included canceling inpatient surgeries due to bed shortages and an overcrowded emergency room and observation unit that functioned as an inpatient ward, had scheduled outpatient clinics, and as a trauma unit. Another example is that acute care patients were mixed with non-acute patients throughout the hospital. The non-acute care patients included a large

number of persons, called panelled patients, who were waiting placement in non-acute care health facilities. There were other non-acute care patients in the hospital who were people waiting to be panelled and chronic care patients. The staff was concerned about the influence of the non-acute care patients on the hospital's ability to provide acute care services. For example, on surgical care areas, a patient could be a surgical patient or a non-surgical patient, either as another type of acute care patient, i.e., medical, or a non-acute care patient.

The case study hospital addressed the overcrowded conditions, the non-acute care patients, and the perceived threat to acute care services in a consistent way. The hospital added beds, added stretchers and treatment spaces in Emergency, added new services and equipment, and expanded the delivery of existing services. All required an increase to the hospital's budget. The hospital even established a foundation to fundraise and ensure a continued source of funds for capital equipment and program operating expenses.

Quality of care was perceived to have a direct relationship to the hospital budget that established the standards of care and its content and delivery. The hospital solved utilization problems by methods of expansion and/or increase which made the utilization problems larger. In turn, the hospital added more resources and capacity and the utilization problems became larger. Because the hospital relied upon increases in capacity and/or expansion to solve utilization problems, the underlying causes were not addressed.

The hospital had no authority and no basis for authority over who was admitted to about seventy percent of its rated bed complement. There was no organizational structure that associated physicians with the hospital to control admissions, length of stay and

discharge. As a result, there was no control of utilization by the hospital and no method of control. Utilization was out of control before 1990/91 according to the informants. The hospital was also characterized as being formal, conservative, bureaucratic, and centralized. The hospital was captive to the belief that it was an acute care hospital despite a large population of non-acute care patients whose presence, for the most part, was denied. This briefly summarizes the *acute care hospital belief* which characterizes utilization of the hospital by patients from 1985/86 to 1989/90.

The uncontrolled utilization problems, which were described earlier, were a reason why the *interventions* were implemented according to informants. The utilization problems led to organizational *transition* in fiscal 1990/91. The hospital's poor performance when its length of stay was compared to other city hospitals in a public comparison report in 1992 also sustained the passage from one identity to another. In 1992/93 and 1993/94, limited increases and then, decreases to the hospital's budget by government also sustained organizational *transition*. The passage of the hospital from its belief system of 1985 to 1990, the *acute care hospital belief*, to the emerging identity, the *innovative health care facility* as the organization characterized itself in 1993/94, is called organizational *transition*.

In fiscal 1990/91, four one-time events and three on-going events started the passage of the hospital toward its new identity (organizational *transition*). The four unique events of 1990 are the two executive replacements of the board chair and senior manager, physically aggregating all long stay, i.e., non-acute care, patients in preparation for a nurses strike, and the nurses strike in January 1991. Non-acute care patients consist

of panelled patients, waiting to be panelled patients, and chronic care patients. The nurses strike provided an opportunity to control utilization by hospital management. The hospital also had to plan for the strike, and among the plans were pilot implementations of actions that went on to become utilization *interventions*. Three events, which began in 1990/91 and continue to unfold, are the start of power shifts among individuals and groups within the hospital, a change in the hospital's internal working arrangements, and local cultural change. The balance of power among physicians, nurses, and departments within the hospital started to change after the nurse's strike. The hospital, as an organizational entity, also started to change to a less formal, aggressive, risk-taking, and egalitarian organization. These changes also penetrated hospital departments and started to change the day-to-day working arrangements of the hospital. Also following the nurses strike, the beliefs and customs of people at the hospital (i.e., local culture) started to change. This summarizes the core theme of the analysis which was labeled by an informant, the passage of the hospital from one identity to another, organizational *transition* (Figure 6). The implementation of the utilization *interventions* was part of that passage.

The interventions consist of ten actions by management that were implemented in 1990/91 and 1991/92. The interventions in 1991/92 are refinements of those implemented in 1990/91. Five actions were taken by hospital management to improve the utilization of the hospital by patients in 1990/91. The most important action was the appointment of Physician Managers for surgery and medicine with hospital authority and responsibility. The Physician Manager for medicine also had responsibility for the Emergency Room and its Observation Unit. Another intervention was the change in admitting policies used by

Physician Managers. This was and is the authority to deny a potential admission should the person be deemed inappropriate for hospitalization. The use of criteria by Physician Managers to assess an admission is another intervention. The admission criteria ranged from the Physician Manager's clinical opinion to a written list that reflects a patient who warrants admission. Physically aggregating all long stay patients in preparation for the nurses strike is also an intervention. Long stay patients, also called non-acute care patients, include panelled patients, waiting to be panelled patients, and chronic care patients. Acute care patients were also physically aggregated into one care area in preparation for the strike. The Utilization Committee was renamed the Bed Utilization Committee, and is another intervention implemented in 1990/91. The five utilization actions are part of the *interventions* taken by hospital management to improve hospital utilization by patients in 1990/91.

In 1991/92, five additional actions were added by management, and are refinements. The verbal clinical opinion of the Physician Manager was partially replaced by admission criteria from automated clinical practice guidelines. Clinical practice guidelines are standards of clinical care developed by physicians which are based on research and consensus that describe best practice. The clinical opinion of the Physician Manager is still used when a clinical guideline is not available. This was a refinement of the implicit criteria first used by the Physician Managers. In October 1991, the Pre-admission Clinic, Short-Stay Unit, and After Surgery Admissions, were implemented by the hospital for surgical inpatients. The Pre-admission Clinic and After Surgery Admissions decrease length of stay by avoiding pre-surgery inpatient day(s) for those

patients who are medically appropriate. The Short-Stay Unit serves surgery patients whose length of stay is less than five days, and is closed on weekends. The nature of discharge planning was also changed by management. Physicians play a more active role in discharging their patients. The expected length of stay of a patient is monitored by the Physician Manager and the planning for discharge may begin at the time of admission or before hospitalization. Together, the ten actions implemented over two fiscal years are called *interventions*, and are the actions by management to improve utilization by patients. In general, the *interventions* are either changes in functional responsibility or changes to administrative policies. The *interventions* are a consequence of the passage of the hospital from one identity to another (*organizational transition*). Indirectly, the interventions were a prerequisite for its new identity.

By implementing *interventions*, the hospital started to control utilization of its resources by patients. The hospital and its Physician Managers provide control over admissions to hospital and control over the patient's stay in hospital. The hospital learned that utilization could be controlled resulting in improvements to quality of care at reduced costs. This gave the hospital confidence that it could solve utilization problems. In short, a track record of utilization successes was established. The hospital first implemented the *interventions* to address quality of care issues. Later, the same *interventions* are used to provide cost containment in 1992/93 and 1993/94. This is how the hospital chose to respond to government's policy of reduced funding to hospitals. Decreased funding is no longer automatically associated with decreased quality of care as it would be according to the *acute care hospital belief*. The summarizes the *innovative health care facility*.

As the new identity developed, changes in individual and group *autonomy* became evident. As individuals, physician managers lost some independence (*autonomy*) as they became part of the hospital's management structure. Individual physicians with hospital privileges lost some independence (*autonomy*) over their admission decisions due to veto power of physician managers. As a group, the medical staff, including all physicians with hospital privileges, also lost some independence as more organizational connections were established between the medical staff organization and the hospital as an entity. As a group, nursing's presence in the hospital's management structure was equalized relative to other hospital divisions. This reduced the independence of nursing division and its department. Individual nurses are thought to have also lost some independence by being integrated into patient care teams. The hospital gained independence (*autonomy*) by adopting a corporate image to its employees, the government, and the public.

Instead of relying on monitoring, measuring, and reporting utilization problems to groups and individuals who do not have the authority and responsibility to take action, the hospital has matched the right decision makers with the right information at the right time. The decisions, to admit and to discharge, are central to controlling utilization. Physicians make these decisions; no one else does. The hospital purchased an automated clinical practice guideline system to provide information to support patient care decision making when the patient is in hospital. To improve hospital utilization of patients-to-be and patients in hospital, the hospital now provides timely admission criteria, diagnosis, treatment and care options to the patient's physician. A patient's expected length of stay is now part of the patient's chart. The idea of matching the right decision makers with the

right information at the right time is a characteristic of the new identity, the *innovative health care facility*.

The overview continues with a profile of the hospital and its financial performance. Selected process variables provide a brief answer to the question, "did utilization change?". The thematic descriptions are found in chapters five, six, and seven. The remaining structure, process, and outcome variables are found in chapter eight.

Hospital Profile

The anonymous hospital is a medium-sized community hospital that is governed by a board of trustees and is privately incorporated. The hospital is not licensed under The Hospitals Act and is not affiliated with a religious group. The hospital received successive three year accreditation awards during the years under study. It provides adult hospital services that do not include obstetrics. The hospital serves an immediate catchment area that is ethnically and socially diverse in a city of approximately 750,000. In 1985, a foundation was incorporated as a separate entity from the hospital.

Did Utilization Change?

The hospital implemented actions to improve hospital utilization (*interventions*) beginning in fiscal 1990/91. Selected results of the statistical analyses are reported for the fiscal years, 1985/86 to 1989/90 and 1991/92 to 1993/94, and omit the *intervention* year, 1990/91 (Table 15). The remainder of the statistics are found in Chapter 8.

The admission rate decreased by 15% or 10 admissions/10,000 population (Table 15). Hospital patient days per 1,000 population per year decreased by 7% or 7 days/1,000

population. As a hospital total, average length of stay increased from 14.8 to 17.7 days for the two study time periods. The separation rate mirrored the admission rate by decreasing 15%. Hospital occupancy decreased about 4% over the two time periods.

Table 15.--Summary of inpatient utilization before and after *interventions*

	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Admissions per 10,000 ¹	64.8 ± 2.3	55.1 ± 2.0 ^{***}	37.82; p < 0.0008
Patient days per 1000 ¹	97.7 ± 1.8	90.6 ± 5.2 [*]	8.322; p < 0.0278
Average length of stay	14.8 ± 1.3	17.7 ± 1.1 [*]	9.623; p < 0.021
Separations per 10,000 ¹	64.7 ± 2.3	55.1 ± 1.8 ^{***}	37; p < 0.00089
Hospital occupancy	93.9 ± 1.0	89.7 ± 3.2 [*]	8.067; p < 0.03
ST ² admissions per 10,000 ¹	59 ± 2	52 ± 2 ^{**}	17.503; p < 0.006
LT ³ admissions per 10,000 ¹	2.7 ± 0.3	2.8 ± 0.3	0.038; n.s.
ST ² patient days per 1000 ¹	64 ± 1	51 ± 4 ^{***}	51.84; p < 0.0004
LT ³ patient days per 1000 ¹	34 ± 1	40 ± 5 [*]	9.4812; p < 0.0217
ST ² length of stay	10 ± 0.5	9 ± 1	1.907; n.s.
LT ³ length of stay	80 ± 19	65 ± 10	1.430; n.s.

^{*} p < .05.; ^{**} p < .01.; ^{***} p < .001.;
 (1) per year per population
 (2) Short term hospital defined services
 (3) Long term hospital defined services

The hospital separates utilization statistics into short and long term where short term includes data for medicine, surgery, psychiatry, gynecology and intensive care. Long term refers to geriatrics, psychogeriatrics, and long term care with the latter being reported after 1992.¹⁶⁶ The short term admission rate decreased significantly by 7/10,000 population; the long term admission rate did not change. The change in the total admission rate is due to the change in short term admission rates, not long term admission rates. The patient day rate for short term services decreased by 13 days/1,000 population

or 20%. The patient day rate for long term services increased by 6 days/1,000 population, or about 18%. The hospital total patient day rate decreased by 7 days/1,000 population, or 7.3%. The average length of stay for short term services is not different from that before 1990/91. The average length of stay for long term services is also not different from that before 1990/91. Overall, there is a trend toward decreased length of stay for short and long term services, but the decreases are not statistically different. The hospital average length of stay increased significantly when the two time periods were compared. This may be due to the discharging of very, very long stay patients to new personal care homes in 1993.

The summary picture for the hospital is fewer admissions of patients who stay longer resulting in fewer patient days with lower occupancy. For short term services, there are fewer admissions and patient days with trend toward decreased length of stay. For long term services, there are the same number of admissions with increased patient days and a trend toward decreased length of stay. The hospital did not report short and long term occupancy.

The Financial Picture

Government provides funding to hospitals as global and out-of-globe funds. Funds within the global budget may be reallocated by the hospital without notification to government. Out-of-globe funds represent designated expense categories that the hospital cannot reallocate without permission. A distinction between global and out-of-globe funds is that the hospital is thought to have no control over expenses identified for out-of-globe funding. Deficits and/or surpluses may result then from either global and out-of-

globe funds or both. In general, government funds out-of-globe deficits and receives in-globe surpluses over two percent. In December 1986, the government stated that it would not fund deficits.¹⁶⁷

The hospital receives a significantly smaller share (7%) of the annual provincial appropriation to hospitals as funding (Table 16). From fiscal 1986 to 1988, its share was a constant 5.5%. The share decreased to 5.3% for fiscal 1989 and 1990. In fiscal 1992, the share decreased to 5.1%; in fiscal 1993, the share was 4.9%. Reliance on provincial funding to the hospital as the primary source of operating fund income is greater in the last three fiscal years. The income from patients for non-insured services decreased 30%. This income is generated by selling semi-private and private accommodation to patients. Offset income, gained by the sale of hospital services, did not change.

Table 16.--Hospital income and expenses as percent annual income or expense.

	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Funding to the hospital % expenditures	5.5 ± 0.1	5.1 ± 0.2*	9.54; p < 0.027
% Faculty annual income			
Manitoba Health funding	93 ± 0.1	93.9 ± 0.6*	11.61; p < 0.014
Income from non-insured patients	2.6 ± 0.2	2.0 ± 0.4*	8.82; p < 0.025
Offset income	4.4 ± 0.2	4.0 ± 0.3	3.67; n.s.
% Facility annual expenses			
Medical remuneration	4.1 ± 0.3	6.6 ± 0.2***	129.3; p < 0.0000
Staff salaries	59.7 ± 0.5	59.0 ± 0.3	4.73; n.s.
Employment benefits	5.2 ± 0.8	7.5 ± 0.4**	21.46; p < 0.0035
Medical and surgical supplies	4.4 ± 0.3	3.6 ± 0.2**	13.05; p < 0.0112
Drugs and medicines	2.5 ± 0.2	2.4 ± 0.0	0.703; n.s.
Physical plant	3.1 ± 0.4	3.5 ± 0.4	2.302; n.s.
Other administrative/operating	10.0 ± 0.4	9.4 ± 0.4	4.62; n.s.
Interest	6.5 ± 1.0	3.8 ± 0.3**	19.76; p < 0.0044
Debt structure and depreciation	4.4 ± 0.4	4.1 ± 0.3	1.62; n.s.

* p < .05.; ** p < .01.; *** p < .001.;

Expenses increased significantly for medical remuneration (61%) and employment benefits (44%) after fiscal 1991 (Table 16). Medical and surgical supply expenses decreased by 18% and interest expenses decreased by 42%. Expenses for staff salaries, drugs and medicines, physical plant, other administrative and operating expenses, and debt structure and depreciation maintained their percentage within annual expenses.

Is There a Cost Containment Result?

Based on information from the Annual Reports and Departmental Annual Reports, the hospital had a deficit in 1986/87 due to a property tax increase that was not funded by government. For the other years to 1989/90, the hospital had in-globe surpluses. The strikes in 1990 resulted in both in and out of globe surpluses for fiscal 1990/91. The moneys were spent on government authorized repairs to the hospital's physical structure. The hospital had a deficit in fiscal 1991/92 that was attributed to an out-of-globe shortfall. There was a balanced budget in 1992/93 despite an overall decrease in global funding due to provincial fiscal restraint and health reform. In fiscal 1993/94, there was a surplus produced by the hospital despite a continued decrease in global funding. Within this surplus, the hospital identified a "respectable" amount due to unspecified "bed efficiencies". The hospital did not state what was done with the surplus. Decreased hospital funding by government could be considered moneys to the health system as enforced cost containment. There is some evidence to support cost containment for the hospital and the hospital system that may be indirectly associated with the *interventions*.

In chapter five, the characteristics of the hospital before organizational *transition* are presented as the *acute care hospital belief*. Next in chapter six, the themes that characterize the hospital's organizational *transition* passage, including the utilization *interventions*, are described. In chapter seven, themes describe the qualitative outcome of the case, the *innovative health care facility*. The results of the remaining quantitative structural, process, and outcome variables are presented in chapter eight. Lastly, in chapter nine, the case study is discussed along with the conclusions.

Definition and characterization of the themes are the product of qualitative analyses of Annual reports, Departmental, and Medical Staff Annual reports from fiscal 1985 to 1989 and the findings across seven interviews. What follows is the unfolding of each theme by presenting the evidence that led to its identification and, at the end of the chapter, a summary of the theme is found. As the story unfolds, statements from interviews and documents provide qualitative evidence to support the themes. In some statements, the text is truncated to both preserve and honor the informants' anonymity and the promise of confidentiality.

CHAPTER 5

ACUTE CARE HOSPITAL BELIEF

Introduction

For those who remember newspaper reports during the mid to late eighties, descriptions of overcrowded Emergency Rooms and concerns about bed shortages and patients who block beds (bed blockers) will be familiar. For those who do not, this was a common occurrence in that day. The hospital in this case study also had an overcrowded Emergency Room with an equally overcrowded Observation Unit. It also had and has a large number of people who are awaiting placement in non-acute care health facilities. There was concern about the influence of the non-acute care patients on the hospital's ability to provide acute care services. The non-acute care patients include panelled patients who are unkindly referred to as bed blockers, patients who were waiting to be panelled, and chronic care patients. All of the above represent *utilization issues* in hospitals.

Antecedent	Core Theme	Consequence
<i>Acute care hospital belief</i>	<i>Transition</i>	<i>Innovative health care facility</i>

Figure 6. The thematic case description

Like other hospitals, the case study hospital approached the overcrowded conditions, the non-acute care patients, and the perceived threat to acute care services (*utilization issues*) in a consistent way. The hospital added more beds, stretchers and treatment spaces in Emergency, added new services and equipment, and expanded the delivery of existing services. All require an increase to the hospital's budget. To ensure a secure source of funding for capital equipment and program enhancement to sustain expansion, a foundation was established by the hospital to ensure that expansion would continue. There is also an aptly named Gift Shop that donates equipment to the hospital through the Foundation. The Foundation and The Gift Shop ensured a source of income independent of the hospital's budget from the department of health. Because the hospital chose to address the conditions in Emergency, the presence of non-acute care patients, and the perceived threat to acute care services by increasing its physical capacity and by increasing costs, the problems became larger and more costly. The cycle continued. The underlying causes apparently were not addressed or could not be addressed by the hospital for the fiscal years 1985/86 to 1989/90. The *utilization issues* were addressed by increasing capacity which in turn led to *utilization issues*. This summarizes the *acute care hospital belief*.

As described in the methods chapter, informants are designated as management or health professional. All informants were and are management personnel by function. The designation of health professional is used to separate the perspective of a nurse or physician in a management position from a manager who is not a health professional.

Acute Care Hospital Belief

In support of the above summary, a core theme and subthemes describe conditions at the hospital from fiscal 1985/86 to 1989/90 before management took action to improve hospital utilization (*interventions*) beginning in fiscal 1990/91 (Figure 7). The relationship among the themes of the *acute care hospital belief* is that in the presence of *utilization issues*, an *acute care hospital belief* leads to *problem solving* behavior of increasing capacity, and of creating alternative sources of capital and operating funds that lead back to *utilization issues*. While the model appears to be linear, the dynamic among the themes is cyclical.

Antecedent	Core Theme	Consequence
<i>Utilization issues</i> Boat people Emergency	<i>Acute care hospital belief</i> Budget conscious Measurement myth Triumvirate organization	<i>Problem-solving</i> Increase capacity The gift shop

Figure 7. *Acute care hospital belief*

The theme, the *acute care hospital belief*, is embodied in the following statement from a 1987 annual report. The hospital formulated its mission statement, and apparently did not consider the programs and services required by non-acute care patients. This is remarkable since panelled patients were about one-third of the hospital's patients. This is because the number of beds that may be occupied by panelled patients, called the trigger number, was set at seventy-five beds by the provincial department of health. The trigger

number beds are twenty three percent of the hospital's rated beds. Patients who are not yet panelled and who are not acute care patients but are occupying a bed, are not "counted" toward the trigger number. These patients may be waiting to be panelled and chronic care patients who at that time were not part of the paneling procedure controlled by government. The patients, who are represented by the trigger number, usually exceeded the allowable number. The reference in the statement below to inpatients waiting placement is about panelled patients in the hospital whose presence is acknowledged as a concern to hospital utilization. If, however, the hospital believes itself to be an acute care hospital, then non-acute care patients are not legitimate. There is an awareness in the statement that utilization of the hospital needs some attention. These represent *utilization issues* of the *acute care hospital belief*. In December 1986, the department of health stated that deficits would not be funded and is a source for the reference to economic pressures and cost effectiveness. The reference to productivity indicators and comparison of patient utilization data are representative of the *measurement myth*. The hospital's idea of cost effectiveness is to ensure that services are being provided in this way. Presumably, this is the cost effectiveness of acute care services. In 1986/87, senior management discussed the implementation of a nursing workload measurement system and stated:

With the stabilization of the patient services, more time was devoted by management and medical staff to reviewing and investigating departmental productivity indicators and patient utilization data in comparison with other hospitals. With **growing economic pressures** and changes in clinical practice, these activities will demand a substantial increase in organizational effort to ensure that we are providing appropriate services in a cost effective manner. One particular **area of concern to our facility utilization** which has continued to be studied over the year is the **number of inpatients awaiting placement in alternate facilities, particularly personal care homes**. As at the end of the fiscal year, there were increasing indications that **we may soon have to reconsider our Mission Statement to take in to account the services and facilities required by these patients in the context of our acute care environment.**¹⁶⁸

The next paragraph concerned a change in the hospital's budgeting method by government as well as not funding deficits of city hospitals. Previously, the government would fund hospital deficits. The action by government reinforces underspending or matching the budget which is the result government wants. It also places an undo focus on the budget per se, rather than what the budget represents. This is being *budget conscious*.

The following statement from an earlier annual report also demonstrates the *acute care hospital belief*, and demonstrates that the belief was not unique to 1987. The presence of panelled patients is at odds with the *acute care hospital belief*. According to the writer, their presence prevents the hospital from fulfilling its purpose, acute care. It is as if panelled patients prevent acute care services in the hospital. This disregards who was responsible for admitting them, physicians, and the hospital's responsibility to control admissions. The panelled patients are perceived to be a problem, and are labeled as such. The comment about commonplace suggests that panelled patients were a problem in other hospitals, and also suggests that the theme may be applicable to other hospitals in the middle eighties. After discussing the good relations among groups at the hospital, quality assurance events, new staff, and the opening of a new service, senior management states:

The challenges of the future are also threefold, and are **commonplace** to all hospitals. **The problem of blocked beds by panelled patients** continues to challenge our staff. As of (date), there were (number) panelled patients occupying hospital beds. **This situation requires an emphasis on custodial care which is contrary to our primary purpose.**¹⁶⁹

The writer went to identify technology and conflicts among provincial and federal governments and health professionals as the other two challenges.

Additional characterization of the *acute care hospital belief* is presented as *budget conscious*, the *measurement myth*, and the *triumvirate organization*. The conditions that

lead to this belief, the *utilization issues*, and the consequences of the belief, *problem-solving* follow.

Budget Conscious of the Acute Care Hospital Belief

How the hospital managed the financial aspects of its performance are described by the being *budget conscious* theme that emerged during analysis. The behavior is to underspend or match the budget without looking at whether the entire service or activity could be delivered in a different way. In that day, this was the way most publicly funded organizations managed their budgets. The hospital's financial performance was normative because other hospitals were doing it this way as well.

The hospital's idea of the budget took various forms. The budget was apparently a boundary that dictated the health care that should be or could be provided. This is consistent with an increased budget means increased health care, a direct relationship. A connotation of this is that quality of care is directly related to the size of the budget. If the budget were decreased, the amount of service is decreased and quality of care is not optimal. In the following statement, the sequence of the determinants for health care at this hospital are budget, personnel, and other resources. The following narrative is prominently placed within an annual report. There is no text on either side.

(The hospital) mission is based on the fundamental belief that our principal goal is to to [sic] **provide health care of the highest possible standards which our budget, personnel, and other resources can offer.** A commitment to render service to patients and their families with courtesy, consideration, and respect is integral to our mission.¹⁷⁰

Because government establishes the hospital's budget, this statement is almost an abdication of responsibility on the hospital's part since the budget sets the standard and the hospital must manage within its confines. Budget is listed first among the conditions

for health care, and people are listed second. The reference to other resources may include the hospital's Foundation and the Gift Shop which is run by volunteers. The commitment of the hospital to health care in this statement is subject to the budget, personnel and other resources, in that order.

The boundaries for health care are established by external financial forces, not by patients in the following statement from an annual report. This statement was the background to the mission statement in the previous example and from the same annual report. The inference is that the problem is the provincial economy and not something that can be controlled by the hospital. The preceding paragraph was about establishing the committee that is referenced in the statement. When faced with financial pressures like a change from line-by-line to global funding and the directive from government that it would not fund deficits, senior management states:

After establishing its operative procedures, the Committee directed its efforts to developing a **Mission Statement** and revising the wording for our Hospital objectives. The importance of these accomplishments cannot be stressed enough for they **will guide our deliberations and priorities as we determine resource allocation within the constraints of our Provincial economy.**¹⁷¹

The next paragraph concerns the Minister of Health who confirmed that the hospital would not have a service reinstated. On the basis of the above mandate, the Committee formulated a mission statement that has as its priority, the budget.

The next year, 1988, found the hospital stating that its primary objective was not to provide patient care of the highest possible standards, but to manage within the approved budget. The cost reduction plan includes summer closures and position freezes which limits or withdraws resources for a time, and are not permanent changes. This is consistent with *problem solving* by increasing capacity and/or increasing resources. When

problems are solved by increasing budget and the problem is the lack of budget, then withdrawing the budget for a limited time until the budget is re-established or balanced will solve the problems. The reference to the program for panelled patients is the physical aggregation of a small number of panelled patients, about one-third of the patients represented by the trigger number. The hospital was not unaware of effects of mixing non-acute and acute care patients in the same care area, and began to address this *utilization issue*. The above actions resulted in a surplus that is referred to in the last sentence. The preceding paragraph is introductory in nature.

The **primary objective** for the (number) fiscal year as adopted by the Board of Trustees was “**to find solutions for managing within our approved budget.**” Involving the trustees, medical staff, and management personnel, a **Cost Reduction Plan** with its primary components of summer bed closures for Surgery Service, introduction of an (program for panelled patients) on Geriatric Medicine, and a position freeze was successfully implemented. In addition, hospital personnel vigorously pursued a number of other **cost containment** activities. The Board of Trustees is very pleased with the results of these efforts which are reflected in the financial statements elsewhere in this report.¹⁷²

The next paragraph is about achieving a three year accreditation. The cost containment activities would likely include careful attention to not overspending a budget, with the best result being to underspend a budget.

Additional evidence on the meaning of cost containment before 1991 comes from a department report. The hospital's idea of promoting cost containment behavior to hospital staff is contained within this statement from a nursing progress report.

To increase awareness of budgeted and actual spending, monthly printouts of supply expenditures are posted in each conference room and are discussed with staff.¹⁷³

The posting of supply expenses will increase an awareness of the cost of the supplies and the budget variance. It does not provide motivation or incentive to take action assuming that the nursing staff have control over the supply expenses. This places an undue focus

on the budget because the expense is relative to the budget. The nursing staff have some control over a nursing units' supply costs by keeping inventory down, but their salaries are the largest cost to the unit. If the printouts of budgeted and actual spending are posted, supply spending will decrease as a result according to the *measurement myth*. If not much can be done to influence spending, a result is a sense of no control. Again, the budget is the boundary and being *budget conscious* is the behavior.

The Measurement Myth of the Acute Care Hospital Belief

Actions involving measuring, monitoring, auditing, and reporting on *utilization issues* without necessarily engendering the desired change(s) characterize the *measurement myth* that emerged during analysis. Quality assurance activities, required by accreditation, are an example. Automated information systems would also support this theme. In the previous financial example, the posting of a portion of a financial report was supposed to influence behavior, somehow and is another example. There is a mismatch between the measuring, monitoring, auditing, and reporting of data and/or information, decision makers, and time in the *measurement myth*. In a sense, the distribution of data and/or information is almost exclusively to non-decision makers where decision makers are operationally defined as those who make utilization decisions. The utilization decisions are to admit and to discharge; physicians make these decisions.

The monitoring, measurement, and reporting of utilization activities were being practiced at the hospital. In the following statement, the hospital's discharge planning efforts are described as planning, coordination, and communication of admission, discharges, and discharge planning. While the effort was well intentioned and

coordination was needed, nursing, registration, and the Utilization Committee do not make the decision to admit or to discharge. To improve bed utilization, the Utilization Committee assessed and communicated with nursing and registration. The information accumulated by the discharge planning coordinator was turned over to the Medical Director and the Utilization Committee for action. Any subsequent action would depend on their ability, responsibility, and authority to act. The statement below comes from a nursing department's progress report:

The position of Discharge Planning Coordinator was established and developed over the past year to facilitate the planning, coordination and communication of admissions, transfers, discharges and discharge planning. Bed allocation has changed to involve the Discharge Planning Coordinator. Through assessment of patients awaiting a hospital bed or alternate service, and communication with Nursing and Registration Services, this process has assisted in ensuring improved bed utilization. Communication with members of the Health Care Team has aided in the **monitoring of bed utilization** and **a number of case summaries have been presented to the Medical Director and Utilization Committee for their recommendations and follow-up.** The Discharge Planning Coordinator provided orientation to nurses on a monthly basis emphasizing the role of the general duty registered nurses' assessment in implementing early discharge planning.¹⁷⁴

The function and role of the multidisciplinary discharge planning team and the Discharge Planning Coordinator and the hospital's involvement with a city-wide bed registry followed these statements. In this example, everyone but the patient's physician is involved in discharge planning.

The nursing department for surgery also monitored, audited, and reported as evidenced by the following progress on departmental objectives for a year. The complaint about physician's late discharges occurred every year. Whatever actions were being taken to solve the late discharges, it did not appear to resolve this perceived issue. The preceding statements concerned the distribution of surgical beds by surgical subspecialty.

To assess the admission time of elective surgical patients with the goal of earlier admissions to the ward in order to prevent excessive workload on the evening shift. This was completed in April, 1989 and discussions are under way with the admitting department to work toward earlier admissions.

The statement continued. Discussing the timing of admissions with the admitting department, and not physicians, to prevent excessive workload was well intentioned. But it is not as effective as discussing the timing with physicians. The excessive workload could have been due to the distribution of nursing resources across shifts and not with the timing of admissions.

To monitor the number of physician's late discharge orders monthly and the impact on delaying elective admissions. These are audited monthly. The situation has not improved over the past year. To monitor the number of off-service patients admitted/transferred to this service. The number remained relatively stable, at approximately 11% of the surgical patient census.¹⁷⁵

The actions of monitoring and auditing of physician's late discharges and the numbers of off-service patients do not have the desired result. This builds frustration. The acts of monitoring, auditing, and reporting should result in the desired change(s) according to the *measurement myth*. Apparently the desired changes did not occur according to the writer. It is not clear who received the information. The reference to off-service patients is a *utilization issue*.

In another yearly departmental progress report for surgery, nursing is still monitoring late discharges and has decided to take a study to the Utilization Committee, presumably for action. Off-service patients are still being monitored, counted and tabulated. Before the statement below in the report, there was a similar report for medicine where the presence of undue numbers of panelled patients was noted.

Late discharges were continually monitored. They create an ongoing problem which greatly increases workload on the evening shift for all hospital departments. Results of a six month study were presented to the Utilization Committee. ... The number of off-service patients on Surgery were monitored on a daily basis and results tabulated each month-end.¹⁷⁶

The statement concludes with a comment about summer bed closures as a cost-saving measure and that the department was under budget for the year. There is little the

Utilization Committee can do about late discharges or the off-service patients. The medical director, who as chair is a member of hospital management, has no authority over beds. Both the decisions to admit and to discharge are made by individual physicians who are not represented on this Committee.

The Medical Staff also monitored, measured, and reported (*measurement myth*). In their report for 1988/89, the Utilization Committee, comprised of six physicians, five nurses and a health records representative, also sustain the theme. The position of Discharge Planning Coordinator was created in this year

The Utilization Committee met (number) times this year with active participation of all its members. (Person's name) joined us this year as the new Discharge Planning Coordinator. As a Committee we have **developed a monthly reporting mechanism by the Discharge Planning Coordinator in which the various areas of her daily activities are summarized and reported on a monthly basis**. She has also brought to our attention various problems that need to be dealt with to give us an illustration of the complexities of a Discharge Planning Coordinator's role. It has helped the Committee to appreciate the work that needs to be done in this position.

The Committee is aware that an expected length of stay provides a reference against which to gauge the actual length of stay. Apparently shorter lengths of stay, which might be indicative of underutilization of hospital services, would not be pursued. Retrospective review of the patient's stay was being conducted before 1987 when the Utilization Committee concluded that review of the patient's stay while the patient was still in hospital would be preferable. It would appear that reports available to them at that time lacked an expected length of stay. The length of stay on historical reports was the actual length of stay of the patient. Actual length of stay may exceed the expected length of stay for reasons not related to patient need. Using the actual length of stay information as the "truth" may validate the status quo, and if the status quo includes inappropriate days, these too are validated. The information that they were seeking is how long should a

patient with this diagnosis be in hospital. Realizing this shortcoming, they made arrangements at their expense to augment reports with the expected length of stay. The value of an expected length of stay is that it supports a decision maker's ability to say to a physician that the patient should be discharged. This is an effective strategy only when the patient is in hospital. By 1989/90 this information began to be available to them.

However, the match between the right information at the right time with the right decision maker was yet to come.

Our two major projects for the year have been: 1) **Length of Stay Statistics** - We have submitted to (organization) **an expected length of stay for medical and surgical diagnosis**. This, when it is incorporated into a computer program, **will allow us to monitor all patient length of stay and investigate those that are longer than the anticipated number**. We expect this to come onstream in (month, year) and will soon have an idea as to the role this will play in reducing length of stay statistics.

Revision of the manual is an admirable undertaking, but does not deal with those who make admission and discharge decisions and who are not part of the hospital.

2) **Revision of the Admission/Discharge Manual** - This has been an arduous task, but very important, as this is the first revision for the original manual. We feel that it is very important to have this done thoroughly as many practices are not reflected in the manual and need to be discussed and incorporated in order to have **all involved in the admission/discharge of patients in the Hospital on the same wavelength**.

As a hospital **our Utilization Committee has concentrated on bed utilization**. It is imperative that a larger evaluation of utilization throughout the Hospital occur as budgetary and other resource restrictions become reality.¹⁷⁷

The text ends with expressions of appreciation. There were some activities prior to 1990/91 which established precedents for events after 1991. One is the acknowledgment that expected length of stay by diagnosis is needed to manage length of stay.

Triumvirate Organization of the Acute Care Hospital Belief

The hospital presents itself to the public through three documents. This presentation is interpreted as three parallel organizational structures of the hospital. The

annual report from the board of trustees and senior hospital management including remarks from the medical director and president of the medical staff represents one organizational structure. This is the organization which referred to “our acute care environment”. The medical staff are represented by a document in which they report their yearly progress of their organization, and are the second organizational structure. The third parallel organizational structure is the annual report from operating management, the departmental report, that is dominated by nursing organizations. In this and succeeding chapters, the three organizations are referred to as the parallel organizational structures of the hospital, physicians, and nursing. The three documents indicate a traditional vertically organized hospital. It also describes incomplete horizontal integration, especially for the medical staff and the physicians who practice at the hospital. There is some integration between the physicians and the hospital at the board level. The three co-existing parallel organizations are called the *triumvirate organization* that emerged during analyses. This is a traditional way to organize hospitals.

An example of the nursing organization acting on its own demonstrates this theme (*triumvirate organization*). Nursing had physically aggregated ten long stay patients in 1986 on its initiative. A health professional informant was discussing panelled patients and stated:

We had on medicine, we had agreed that we would group ten paneled patients together - **so we had done that without telling anybody - we just made our own internal decision and grouped people**, but it was difficult because it was 10 beds within a 30 ward and so it was difficult, I mean - you couldn't see any savings from staff, changing staff mix or whatever because you had to have the staffing there for the other 20 patients who were acute for the most part, but at least there was some things that you could do because you had ten people together, but it was difficult trying to run a ward that way.¹⁷⁸

The informant went on to discuss the nurses strike. It is likely that quality of care

improved for the ten patients. As a demonstration project to sell the idea to senior management, the small scale precluded cost savings. Other examples are not offered at this point, but are demonstrated as the story unfolds.

Utilization Issues, a Condition of the Acute Care Hospital Belief

The presence of non-acute care patients including panelled patients, the overcrowded Emergency Room with its equally overcrowded Observation Unit, and the concern for the integrity of acute care services characterize the *utilization issues* theme. In qualitative analysis, thematic conditions concern “the events or incidents that lead to the occurrence or development of a phenomenon.”¹⁷⁹ *Utilization issues* is an example of a conditional theme where the phenomenon is the *acute care hospital belief*. *Utilization issues* describes hospital conditions observed across the three sets of documents from fiscal 1985 to 1989 and across interviews.

Panelled Patients as a Utilization Issue

Non-acute care patients are panelled patients, those waiting to be panelled for personal care homes, and chronic care patients. They are a distinct patient population from acute care patients. Some might argue that chronic care patients are also a distinct patient population. For the purpose of this analysis, chronic care patients are included with non-acute care patients. Non-acute patients are present in acute care hospitals when they are admitted as acute care patients, and then become non-acute care patients as their condition progresses. They may also be in hospital waiting to be panelled for non-acute care facilities including personal care homes. The provincial department of health established an “allowable” number of non-acute care patients for each city hospital, called

a trigger number, in the eighties. The trigger number was based on the historical number of non-acute care patients in the hospital. The care requirements of non-acute care patients are different from the care required by acute care patients. In general, non-acute care patients do not use diagnostic services, but may use therapeutic services such as physiotherapy, occupational therapy and social work. However, the therapeutic services have a different nature than those provided to acute care patients who tend to be much younger.

Part of the hospital's cost reduction plan was the physical aggregation of a small number of panelled patients. Short stay patients may be considered a synonym for acute care patients and long stay patients, a synonym for non-acute care. According to a health professional informant, perceived inappropriate care describes the over and underutilization of services that was provided to non-acute care patients. The informant states that having non-acute and acute care patients together on a unit is not an optimal use of resources for either patient population. When non-acute care patients are mixed with acute care patients, there are quality of care implications for both populations according to the informant due to over and underutilization. Poor staff morale is mentioned as a result. The term, "boat people" was used by the informant to refer to how panelled patients were perceived by others. After talking about actions by management to improve utilization (*interventions*), then:

Informant: The other thing that we did, just to back track just a few years, when we brought the discharge planning coordinator on board, what we thought we should be doing is grouping all long stay patients in one area and

Interviewer: Makes sense

Informant: Yeah, we thought it did, obviously not to everybody. At the (function) end we were looking at what can we do to make sure that we're able to address patient needs **we're not providing quality patient care when we have long stay patients integrated with short stay**

patients. What can we do - because you know it affects morale - you can see all the problems that come from people not being adequately cared for because your attention goes to the acute care person and not the long stay patients and kept describing them as the **boat people of the hospital because nobody wanted them**. So they really did get, maybe not intentionally - because by virtue of the fact that they were integrated with the acute care patients, **they either got more care than they needed or they got less care than they needed, because the focus was on acute care**. Whatever it was, it was **not the appropriate care for their needs**. So we were concerned with that and **it was using a lot of our resources, and inappropriately**. So we decided that it would be a good idea to group patients, so we went forward with a recommendation ...¹⁸⁰

The informant went on to discuss a presentation to the board. Having panelled patients mixed with acute care patients resulted in suboptimal quality of care and suboptimal resource use. The reference to not everyone thought it was a good idea may come from two sources. It could be perceived by others as taking beds out of service, when in fact, the beds were already occupied by non-acute care patients. Secondly, aggregating panelled patients makes them visible as a group, and at odds with the concept of being an acute care hospital. The panelled patients, who were physically aggregated in the care area, are estimated to be about twenty-five percent of the non-acute care patients in the hospital at the time of the statement.

The commentary on non-acute care patients, panelled, waiting to be panelled, or chronic, is pervasive across the different sets of hospital reports. The following example is from a nursing progress report. Panelled patients leave fewer beds for acute care which may be perceived as a bed shortage by some. The reference to the lack of resources is consistent with problem-solving by increasing resources. This is to say that the problem would and could be solved if resources were added. The reference is consistent with an interpretation of underutilization of hospital services by non-acute care patients. After documenting that the nursing division was under budget for the year and that beds were opened, the writer states.

The increased number of **panelled patients and others** awaiting alternate care facilities **depleted the availability of acute care beds in all areas**. The lack of resources to provide appropriate programs to prevent deterioration of these patients will continue to plague us.¹⁸¹

The writer went on to describe the high numbers of after hours surgeries that were being performed when fewer nursing staff were available. Again, nursing staff could have been adjusted to provide an appropriate level of staffing after hours surgeries. The hospital also participated in the Manitoba Health Services Commission Adult Patient Bed Study in October 1985. The Study found that 58% of medical patients in hospital on the day of the study required less than 4 hours of care daily.¹⁸² Whether the medical patients were only acute or a mix of acute and non-acute patients is unknown. The *utilization issues* of the case study hospital appear to be long-standing.

The presence of non-acute care patients was perceived as a threat to acute care services such as surgery. There are medical patients in surgical beds and panelled patients in surgical beds in the following statement. In this example from surgery, taken from another progress report, the writer states that it has been a productive and challenging year, and then states:

The number of off-service medical and panelled patients being admitted and/or transferred from Medicine and the Observation Unit, is steadily increasing. The present focus on care of the surgical patient may have to altered in the future if the needs of all patient types are to be met.¹⁸³

The report went on to describe a new surgical policy that gave nursing specific direction to check surgical procedure, anatomical site and the consent form. The *utilization issues* in this example are off-service patients, panelled patients, and the integrity of the surgical program and are highly suggestive of inappropriate care where care does not match need. The comment about surgical patients suggests that the presence of non-surgical patients jeopardized surgical services.

Emergency Department as a *Utilization Issue*

Overcrowded with inpatients waiting for a bed described the conditions in the Emergency Department and its Observation Unit before 1990/91. The Emergency Department was and is the major route of access by patients to the hospital. All medical admissions are routed through the department. An overcrowded Emergency Department is also an indirect way to increase bed capacity without adding rated beds. The Emergency Department and its Observation Unit apparently functioned as an acute care emergency room, an inpatient ward, and an outpatient clinic.

The Observation Unit of the Emergency Room was overcrowded and six stretchers were added to ease the overcrowding. The patients being observed in the Observation Unit overflowed into Emergency Room treatment spaces. This led to canceling of scheduled outpatient visits to the Emergency Room. The writer states that the situation made it difficult for the service to function as an Emergency Room. According to the writer, patients were discharged from the Emergency Room having spent their inpatient stay in this hospital area. After an editorial about the challenge of the past year, a nursing progress report on the Emergency Room and Observation Unit states:

The remaining (number) stretchers in the Observation Unit were officially opened in (month, year) when approval was obtained for the required increase in the nursing staff complement. Although the Observation Unit was designed to function as an assessment unit where a patient's maximum length of stay would be 24 hours, **the majority of the patients** are now awaiting inpatient beds and **may spend their entire hospital stay in this unit....**With increasing frequency, **the number of patients requiring admission to the Observation Unit exceeds the (number) stretcher capacity** of the unit. On occasion, as many as (number) **patients are held** in the (number) **treatment spaces** in the Emergency Room. This situation **impedes effective assessment and treatment of patients presenting to Emergency**. This situation is further complicated by the need to accommodate scheduled patients in two treatment spaces each weekday morning.¹⁸⁴

The report ended after these statements. The *utilization issues* involve quality of care and the appropriate use of hospital resources. The addition of the stretchers is an example of

trying to solve a *utilization issue* by *problem solving* by increasing capacity. This approach provides short-lived relief because the cause is not addressed. The stretchers also reinforce the use of the Observation Unit and the Emergency Room as an inpatient ward. Adding the stretchers made the *utilization issue* larger.

By 1989, the situation is unchanged according to another example from a nursing progress report. The term "OU" is the Observation Unit. Minor surgery has been moved to Day Surgery and the Emergency Room is having staff turnover problems according to the writer, who then states:

The OU occupancy rate has remained unchanged from the previous year. A ninety-one (91) percent occupancy rate in the unit is due to patients awaiting admission to an inpatient bed. To improve patient comfort, spare hospital beds are borrowed for use in the unit with increasing frequency.¹⁸⁵

The writer went on to note that the implementation of nursing workload measurement system in Emergency was delayed. Improving patient comfort is laudable, but borrowing hospital beds to increase their comfort is a stopgap measure, and does not solve the *utilization issue*. It is also an example of *problem solving* by focusing on resources rather than addressing the cause(s) of Emergency Room mis-utilization.

A medical staff member, writing in a medical annual report, refers to the conditions in Emergency in one sentence in a five page progress report. Preceding text in the same paragraph concerned establishing a separate area in the Emergency Department for orthopedic and elective procedures. By inference, those who are occupying the acute care beds and are in the Observation Unit are non-acute care patients. Somehow, their presence is perceived to make the financial situation worse. The writer states:

This [sic] financial crunch is exacerbated by the increasing numbers of patients who are occupying **our acute care beds and the Observation Unit** for extended periods of time. As (position) I must deal daily with the pressures from various groups that forget our area was meant to serve acutely ill patients. We need the support of all staff members in solving these problems.¹⁸⁶

The writer went on to express appreciation. The reference to non-acute care patients and patients in the Observation Unit almost blames them for making financial conditions worse. These are *utilization issues*. As the informant states, it is costly to provide inappropriate care to acute and non-acute care patients in a care area which is not physically designed to provide inpatient care such as an Emergency Room. Also, *the acute care hospital belief* is well demonstrated by the references to "our acute care beds" and "meant to serve acutely ill patients".

Problem Solving Consequences of the Acute Care Hospital Belief

The way the hospital approached, recognized, and resolved *utilization issues* including quality of care, overcrowding, and the financial component are described by *problem-solving*. Problems were solved by adding beds, services and/or staff as proposals to government for additional resources. The hospital also created an additional funding source for equipment that is consistent with increasing hospital capacity.

A perception of the hospital's ability to *problem-solve* before 1990/91 is related by a management informant. The familiar conditions in the hospital's Emergency Department and its Observation Unit are the subjects of the comment. Before the following comment, *utilization interventions* were being discussed, and then the management informant stated.

What have we done here? Well, we controlled emergency. The way they controlled Emergency before I arrived was there were nineteen patients in the hall, the stretcher bay was full; all the beds in the OU (Observation Unit) were full and there were patients in the hall just like (another hospital)...¹⁸⁷

The informant went on to recall the implementation of the utilization *interventions*. The overcrowded conditions were common to other hospitals.

Problem Solving and Utilization Issues

A health professional informant states that *problem solving* led to increased costs with quality of care implications. Before 1990/91, there was a suggestion to try a different way of *problem solving*. It would improve quality of care and reduce costs savings and was implemented on a small scale. The suggestion was to place some panelled patients in the same physical area (grouping), change the staffing to a more appropriate mix of health care personnel, and provide appropriate services. The approach being suggested is reallocation of existing resources. The informant's use of long stay patients may refer to chronic and/or patients waiting to be panelled. According to the informant, the board was not aware of the effects of mixing acute and non-acute care patients.

Interviewer: I'd like to go back a little bit to how you remember the board being involved or not being involved in trying to make changes in utilization.

Informant: I think the first big involvement with the board when was we decided that we were going to group long stay patients in one area and that was taken to the board for their input - certainly got their input - and it really challenged their thinking too. I don't think that they had really given any consideration to the impact of the long stay patients and the paneled patients who were waiting placement and how that was affecting the delivery of services and actually costing the organization. ...

The informant went on to discuss how the suggestion was received by the board. The reference to reorganization is what the informant calls "grouping panelled patients". The suggestion was perceived as taking beds out of service by creating a small long stay ward by the physicians and the board. When *problem solving* tends to be done by adding beds, taking beds away is a threat to the *acute care hospital belief*. The story has a happy ending for the those panelled patients, and the hospital reduced costs.

the board members were apoplectic, I mean they were like the docs - you know you're going to be **taking beds out of service** and these people aren't going to get cared for and I said - look what's happening now, we can't guarantee that they are getting the kind of care they need, you can't do it when you've got one over here, two over there and someone someplace else - can't do effective programming. ... - its costing us money, it means that **these people are deteriorating** ... So, it was quite a selling job. You know **the board ... said yes**. The decision was that we will do it with one ward,... I mean we saved a bundle of money, but the people were actually better cared for and we had programs. the first time we talked about reorganizing.¹⁸⁸

The informant went on to discuss creating the first group of ten panelled patients which nursing authorized without asking anyone. This was done in the previous year, 1986. The hospital was the authority for the group of twenty-six panelled patients discussed above in 1987. The unilateral action by nursing is an example of the parallel organizational structures of the hospital, physicians, and nursing (*triumvirate organization*). A way to solve one *utilization issue* was known, but implementation was limited, and so were the results. At this point in its history, the hospital was not ready or able to *problem solve* differently on a large scale, but the hospital made an effort.

Problem Solving by Increasing Capacity

Another way the hospital practiced *problem solving* was by increasing its capacity. The addition and expansion of services, usually by proposals to government, and adding rated and non-rated beds and stretchers characterize *problem solving* by increasing hospital capacity. From 1985/86 to 1989/90, there are a number of examples in addition to those already presented in the context of other themes.

After acknowledging the need for a mission statement for the hospital, senior management states the hospital's reliance on additional beds to resolve *utilization issues*. The presence of non-acute care patients in the hospital is seen as a threat to acute care and is consistent with the *acute care hospital belief*.

With all beds in operation, we lost our flexibility in addressing the periodic problems commonly associated with overflowing emergency departments and increasing numbers of patients waiting for personal care home beds. The rising number of panelled patients in the Hospital is having a detrimental effect on our (medical specialty) programs and other acute care services.¹⁸⁹

The next paragraph concerned a submission to government that had not been answered. By inference, the hospital was "opening" beds as a way to address overcrowding in the Emergency Room and to provide bed-based acute care services to patients. With rising numbers of panelled patients in acute care beds, acute care patients may have been accommodated by "opening" beds that were waiting for funding. The hospital became accustomed to dealing with *utilization issues* by opening beds.

A similar approach addressed the overcrowding in the Emergency Department and its Observation Unit. Previously, the hospital added stretchers to the Observation Unit based on increased funding from government. The increase in capacity by *problem solving* did not eliminate overcrowding. It made the *utilization issue* larger. In the statement below, treatment spaces are added to the Emergency Department. A report of the Emergency Department states:

With increasing frequency, the Observation Unit census exceeded the (number) stretcher capacity of the unit and caused a backlog of these patients in the (number) treatment spaces in the emergency room. To facilitate assessment and treatment of patients to emergency, **2 additional treatment spaces were created on a permanent basis and 4 additional spaces were designated for use on a temporary basis.** Lack of call bells, oxygen and suction outlets in the temporary treatment spaces limits the type of patients to be placed there.¹⁹⁰

The report went on to state that the minor surgeries performed in the Emergency Department were canceled due to crowded conditions. Rather than address the cause(s) of the Emergency Room and Observation conditions, the hospital added more treatment spaces, and the *utilization issues* became larger.

Problem solving and the Gift Shop

As a method to raise money to fund capital equipment purchases and program support either through the Gift Shop or through the hospital foundation, the theme, Gift Shop, emerged during analysis. The theme includes activities for the Gift Shop and the foundation. The Gift Shop creates an additional source of funding for new technologies or to expand existing technology-based services. The Gift Shop provides a budget independent from government, and is consistent with being *budget conscious*. Increasing the budget should lead to a higher standard of care according to the *acute care hospital belief*. The Gift Shop promoted the notion of increased capacity and distracted attention away from the underlying causes and consequences surrounding *utilization issues*.

Examples of donations of equipment and program support by the Gift Shop, which is operated by the volunteer department, are from departmental reports for 1986 to 1989:

Gift Shop donated (amount) to the hospital towards the (patient care program).¹⁹¹

Gift Shop donated (amount) to the (purchase of a piece of Laboratory equipment).¹⁹²

Gift Shop donated (amount) to the hospital towards the purchase of (Radiology equipment).¹⁹³

The donated funds are turned over to the hospital's foundation who then purchases the item for the hospital.

The role of the foundation in *increasing hospital capacity* is explicitly stated in this introductory paragraph from an annual report:

The (hospital) Foundation was established almost ten years ago as an appendage to the Hospital Board - with a very specific and important function - to raise funds for the purpose of assisting the Hospital in funding or acquiring equipment, furnishings, facilities and, in general, such items as would be necessary for the most effective and comfortable use of the Hospital. It does this by raising funds in support of special needs and equipment not readily provided by current government funding sources. In this way, the Foundation assists the Hospital in achieving its goal to provide the highest standard of health care to the patients.¹⁹⁴

The next paragraph concerns the reorganization of the foundation from a committee to a corporate entity that allows the foundation to fundraise. There is an inference in this paragraph that the hospital is underfunded by government. The hospital's budget is also considered insufficient to meet the hospital's standard of patient care as dictated by its mission statement. In turn, the mission statement identifies the hospital's budget as the boundary for the standard of care. The following list is from a number of Foundation Annual Reports and demonstrates the scope and nature of the Foundation's activities to supported *problem solving* by increasing capacity:

The Foundation raised funds for the (Radiology equipment).¹⁹⁵

The Foundation raised funds and purchased a machine that aids in the monitoring of patient's vital signs, a ventilator, and another piece of Radiology equipment.¹⁹⁶

The Foundation raised funds and purchased a piece of Laboratory equipment and began to raise funds for a CT Scanner.¹⁹⁷

For the most part, the donations support patient care and cost less than \$150,000. The CT Scanner, however, is a very costly piece of equipment. Except for the program support donated by the Gift Shop, the activities support acute care and the *acute care hospital belief*. Non-acute care patients, in general, do not require further diagnosis and treatment; they require care. While the hospital's foundation was fund-raising to purchase the CT Scanner, a proposal for its purchase was sent to government.

Summary of the *Acute Care Hospital Belief*

The *utilization issues* apparent in the Emergency Department and its Observation Unit, the non-acute care patients, and other service mis-utilizations are symptoms of the way problems or issues were solved or not solved by the hospital. There were small,

significant pockets of recognition of the actions needed to resolve the problems by attempting to address the cause of some *utilization issues*. An example is the physical aggregation of some non-acute care patients.

According to the *acute care hospital belief*, the hospital is described as being *budget conscious*, having a *triumvirate organization*, and reliant on the *measurement myth* to continuously measure, monitor, and report *utilization issues*. There is little evidence for an effective connection between decision makers and the continuous monitoring and reporting of utilization and *utilization issues (measurement myth)*. The budget was the goal to be attained, but not surpassed, and defined what could be done. The hospital and physicians were integrated by committees at the board level. Otherwise, physicians with hospital privileges had a parallel organizational structure from the hospital proper. Day-to-day operation of the hospital, especially patient care, was handled mostly by nursing personnel. Nursing was a parallel organization. The results of measuring, monitoring, and reporting did not lead to a resolution of the underlying factors associated with *utilization issues*.

This concludes the chapter on the *acute care hospital belief* that thematically characterized the hospital's approach to utilization from fiscal 1985/86 to 1989/90. In the next chapter, the hospital experiences an organizational *transition* that began in 1990/91. The interventions that were implemented by management to improve hospital utilization are a result of organizational *transition*.

CHAPTER 6

TRANSITION

Introduction

This chapter describes the dynamic core theme of the case description (Figure 6). The hospital had an overcrowded Emergency Room and panelled patients were scattered throughout the hospital. Inpatient surgeries were often canceled due to bed shortages (*utilization issues*). The issues were solved by adding more resources as beds, stretchers, and equipment. This way of dealing with how patients utilize the hospital generally led to increasing the problem because the cause(s) were not addressed. This summarizes the *acute care hospital belief* which characterized the hospital before 1990/91.

Antecedent	Core Theme	Consequence
<i>Acute care hospital belief</i>	<i>Transition</i>	<i>Innovative health care facility</i>

Figure 6. The thematic case description

By 1994, the overcrowding in the Emergency Room no longer occurs, and panelled patients have their own care area. Surgery is rarely canceled. Instead of always adding more resources to address *utilization issues*, the approach tends to be one of reallocation of existing resources. This paragraph briefly describes the *innovative health*

care facility.

What happened? Transition is what happened. Transition means passage of the hospital organization from one identity (*acute care hospital belief*) to another (*innovative health care facility*). Individuals and groups within the organization are also undergoing passage, and may be doing so with different rates of change. In 1990/91, the hospital experienced a series of *circumstances* called organizational *transition* that set into motion a change in identity, leading to its redefinition as the *innovative health care facility*.

Overview of Transition

The analysis suggests that *transition* began and continues to play a role in the hospital's quest for its new identity. Organizational *transition* centers around seven key events in 1990/91. Four of the seven are unique to 1990/91, and three continue to 1994. The four unique events of 1990 are the two executive replacements of the board chair and senior manager, physically aggregating all long stay, i.e., non-acute care, patients in preparation for the nurses strike, and the nurses strike. Non-acute care patients consist of panelled patients, waiting to be panelled patients, and chronic care patients. The nurses strike occurred in January 1991 and lasted for thirty-one days. There were also strikes by other unions, but these strikes would not effectively close a hospital which the nurses strike did.

The three events, which began in 1990/91 and continue to be played out, are the start of power shifts, organizational transformation, and local cultural change. The balance of power among physicians, nurses, and departments within the hospital started to shift (i.e., power shifts). The hospital, as an organizational entity, also started to change.

A formal, conservative, bureaucratic, centralized organization started to be replaced with a less formal, aggressive, risk-taking, and egalitarian organization. These changes also penetrated hospital departments and started to change the day-to-day working arrangements of the hospital. This is called organizational transformation. As well, following the nurses strike, the beliefs and customs of people at the hospital (i.e., local culture) also started to change. Collectively, the seven are thematically labeled as *circumstances of organizational transition* (Figure 8).

Antecedent	Core Theme	Consequence
	<i>Transition</i>	
<i>Reasons</i>	Circumstances	<i>Interventions</i>
Utilization issues	Two executive replacements	Physician manager
Poor performance	Grouping paneled patients	Admitting policies
Financial limitation	Nurses strike	Criteria (clinical practice guidelines)
	Power shifts	Bed utilization committee
	Organizational transformation	Grouping long stay patients
	Local culture	Pre-admission clinic
		Short-stay unit
		After surgery admissions
		Discharge planning

Figure 8. The *transition* theme

Now that the summary character of *transition* has been sketched, the three conditions that led to it are briefly described (Figure 8). The conditions (*reasons*) occurred at different times. One set of conditions was the overcrowded Emergency Room, the panelled patients who were scattered throughout the hospital, and the canceling of surgeries due to bed shortages. In addition, there was a perceived threat to acute care services and programs presented by the presence of panelled patients in the hospital

(*utilization issues*). The *utilization issues* were the first set of conditions leading to *transition* in fiscal 1990/91. The second set of conditions are related to the hospital's poor performance when its length of stay was compared to other hospitals in a public comparison report in 1992. The analysis suggests that power shifts, organizational transformation, and local cultural change (*transition*) were sustained by the hospital's poor performance. This maintained the direction of organizational *transition*. The third set of conditions at first involved limited increases, and then, decreases to the hospital's budget by government that began in 1992/93 and continued to 1994 (financial limitation). Financial limitation also sustained power shifts, organizational transformation, and local cultural change and maintained the direction of passage from one identity to another (organizational *transition*). This is the passage of the hospital from its belief system of 1985/86 to 1989/90, *the acute care hospital belief* to the emerging identity, *innovative health care facility*, as the organization characterized itself in 1993/94. The above may be restated as *utilization issues*, poor performance, and financial limitations were and are the *reasons* that gave rise to organizational *transition*. It is an on-going multi-staged dynamic theme.

In 1990/91, there were immediate consequences (Figure 8) due to the overcrowded Emergency Room, the scattered panelled patients, canceled surgeries, and the perceived threat to the delivery of acute care services and programs by the presence of panelled patients in the hospital (*utilization issues*) because the hospital was passing from one identity to another (*transition*). Five actions were taken by hospital management to improve the utilization of the hospital by patients in 1990/91. The first and most

important action was the appointment of Physician Managers for surgery and medicine with hospital authority and responsibility. The Physician Manager for medicine also has responsibility for the Emergency Room and its Observation Unit. The second was a change in admitting policies used by Physician Managers. This was and is the authority to deny a potential admission should the person be deemed inappropriate for hospitalization. The third was the use of criteria by Physician Managers to assess an admission. The admission criteria range from the Physician Manager's verbal clinical opinion to formal lists which describe a patient who warrants admission based on a diagnosis. The fourth action was physically aggregating all long stay patients in a separate care area in preparation for the nurses strike. Long stay patients, also called non-acute care patients, include panelled patients, waiting to be panelled patients, and chronic care patients. Acute care patients were also physically aggregated to a care area that was separate from the non-acute care patients in preparation for the strike. The last of the first five actions in 1990/91 concerns the renaming of the Utilization Committee to the Bed Utilization Committee. The five utilization actions are part of the *interventions* taken by hospital management to improve hospital utilization by patients in 1990/91.

In 1991/92, five actions were added by management. The verbal clinical opinion of the Physician Manager was partially replaced by admission criteria from automated clinical practice guidelines. Clinical practice guidelines are standards of clinical care developed by physicians which are based on research and consensus and define "best practice". Because not all diagnoses are included in the clinical practice guidelines, this action results in a partial replacement of the criteria first used in 1990/91. The clinical

opinion of the Physician Manager is used to fill the gaps. The clinical practice guidelines include admission criteria, the expected length of stay for a patient, treatment options and are in a format that can be shared with the patient's physician. This was a refinement of the initial implicit criteria. In October 1991, the Pre-admission Clinic, Short-Stay Unit, After Surgery Admissions, were implemented by the hospital for surgical inpatients. The Pre-admission Clinic and After Surgery Admissions decrease the length of stay by avoiding pre-surgery inpatient day(s) for those patients who are medically appropriate. The Short-Stay Unit serves surgery patients whose length of stay is less than five days and is closed on weekends. This policy avoids staffing the unit on weekends. Discharge planning was also mentioned by the informants as an action implemented by management to improve hospital utilization by patients. While the hospital has had discharge planning in place since 1988, the nature of discharge planning is different. Physicians play a more active role in discharging their patient. The expected length of stay for the patient is monitored by the Physician Manager and the planning for discharge may begin at the time of admission or before hospitalization. Together, the ten actions implemented over two fiscal years are called *interventions* and are actions by management to improve utilization by patients. The *interventions* are a consequence of the passage from one identity to another (*transition*).

To demonstrate and support the themes, statements from informants are used. As described in the methods chapter, informants are designated as management or health professional. All informants were and are management personnel by function. The designation of health professional is used to separate the perspective of a nurse or

physician in a management position from a manager who is not a health professional.

The core theme, organizational *transition*, is presented first by describing the *circumstances* of organizational *transition*, then the *reasons* that led to *transition*, and lastly, the *interventions* which are the result of organizational *transition*.

Transition

The organizational *transition* theme was labeled by a management informant. The term "new things" in the informant's statement below refers to new ways of providing patient care and services. Trying out new things brings uncertainty and concern about how the changes may affect patient care. After discussing the financial concerns of 1994 and the possible impacts of budget cutbacks on patient care, the informant stated:

I think some of things are simply **because we're in transition, trying out new things**, and of course, there is always the issue of morale during change periods¹⁹⁸

The informant went on to discuss morale and changes in the local culture of the hospital.

Circumstances of Transition

Executive replacements, aggregating all long stay patients in preparation for the nurse's strike, the nurse's strike, and the start of power shifts, organizational transformation, and local cultural change describe the *circumstances* of organizational *transition* (Figure 9). What is remarkable about the *circumstances* or the set of key events is that all occurred in the same year (1990) and all promoted actions by management to improve utilization (*interventions*). There is no way to know what the minimal number of *circumstances* would be to initiate organizational *transition*. For this hospital, seven within one year demanded change.

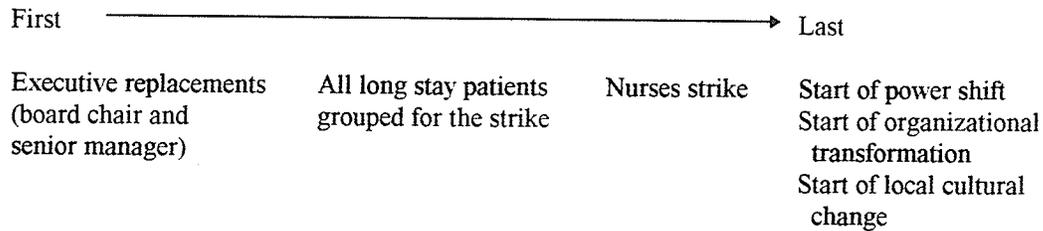


Figure 9. The time line of the circumstances in 1990/91

Executive Replacements as a *Circumstance of Transition*

There were two changes of hospital senior management in 1990. A change in the chair of the board of trustees was documented in an annual report.¹⁹⁹ In 1990, the board chair resigned and remained on the board of directors. A new board chair was elected from the board of directors. Some informants were and are in a position to be aware of changes in board leadership. Those who were in a position to be aware of the changes in board leadership were asked about the role of the board in fostering changes in hospital utilization by patients. The informants did not mention this change in leadership when they were listing what they perceived to be the changes made at the hospital regarding utilization. However, the informants were not specifically asked about the importance of the leadership change. The new senior manager was recruited by the board after the change in leadership. The new board chair was and is a member of the board. The change in board chair and the role of the new board chair in organizational *transition* cannot be assessed due to a lack of key informant information on its relevance.

The informants for this case study did have comments on the appointment of the new senior manager and that appointment's role in organizational *transition*. For

example, notes made at an interview with a health professional indicate that he saw the appointment of the new senior manager as a key event and regarded the change as positive for the hospital. The informant's statement (below) also infers that the previous senior manager was less involved with physicians and did not have an open door policy. The perception about physicians is consistent with three parallel organizational structures of physicians, nursing, and the hospital as an entity, from 1985/86 to 1989/90 (*triumvirate organization*). The open door policy perception would contrast with a formal organization. Before this statement, the health professional was giving a definition of utilization management.

Key events that facilitated the implementation of the changes included the latest change in CEO - "very good change". in that the individual is more involved with physicians, has an open door policy where anyone can meet with the CEO, ...²⁰⁰

After the comment on the senior manager, the informant went on to discuss other organizational examples.

Another management informant also recalls the change of senior manager in a positive light. The use of the term "open" again in the informant's statement is interesting choice of words because it infers that the previous senior manager was less "open". This also confirms the previous informant's statement. In contrast to the new senior manager, the informant perceives the previous senior manager as formal, authoritarian, and given to centralized decision making which limited participation. This is consistent with the statement on centralized authority. The following statement was made while the informant was discussing the start of changes to local culture and organizational transformation, which the informant associated with the appointment of the new senior manager.

... in terms of participation, the current CEO has made a difference, he's a much more kind of open individual and has created a kind of climate, you know, where the kind of high-handed centralized kind of authority will not be tolerated and I think that he has really tried to make an real effort to open things up ...²⁰¹

The informant went on to comment on the organization. The two management informants drew contrasting portraits of the previous and new senior managers. Of the informants who were present in the hospital in 1990/91, no one saw the appointment of the new senior manager as a constraint on the unfolding events of organizational *transition*.

Additional evidence supports this observation and clarifies the placement of the *circumstances* in time. Another management informant, who was at the hospital in 1990/91, also considers the appointment of the new senior manager to be a key event because the new senior manager had experience dealing with similar situations. This informant perceives the person and the person's skills to be a key event. The reference to the hospital's poor performance upon inter-hospital comparison and the role of the new senior manager is implicated later in the chapter.

Interviewer: When I was doing the time line for the statistics' changes and ... some of the other changes that you've spoken to - a lot of them really started to happen when there was a change in CEO.

Informant: That's right

Interviewer: If you would have recruited someone other than this particular individual, do you think the same thing would have happened?

Informant: Well, any CEO would have provided a different approach or flavor to the impact of the culture of the organization, and I think its because of (name) background that he, we were able to come up with solutions so quickly - because some of it he had done before and he brought his - and I guess what I'm leading up to is - I think that (name) brought a particular skill set to the hospital that happened to fit when we were confronted with the inter-hospital comparison and we and (another hospital) scored very poorly and basically what we had the government telling us that we were inefficient and we had to respond and I think we responded very quickly ... And I think that it was **(name) skill set** that allowed us to move so fast

The informant perceives the new senior manager to have a unique set of skills which were applied with some success in solving the problem of the overcrowded Emergency Room

and its Observation Unit. This informant confirmed the new senior manager as a critical success factor and did not agree that anyone could have accomplished this feat.

Interviewer: Yeah, for example, if I had someone to say to me "for someone to do (that) well, all of the planets were in their right place and - virtually anyone could have walked in and exactly the same things would have happened".

Informant: Oh, I don't believe that was the case

Interviewer: Okay - I'm trying to get a handle on to what extent that he was a critical success factor

Informant: And useful - just resolving the public embarrassment of trying to treat patients in the hallway in emergency -- that had very significant financial savings for the hospital because all the extra nurses we had to hire, I can recall that we had four or five extra nurses hired above their budget simply to look after overflow patients after the Observation Unit was full so we'd have patients in the hallway and there's a couple of hundred thousand dollars a year and these changes were direct savings of several thousand dollars a year because we solved the problem in emergency...²⁰²

The informant went on to recall how the overcrowded conditions in the Emergency Room and its Observation Unit came about. The above statements by the informant also associated improved quality of care and cost savings to *problem solving* in a different way instead of adding stretchers. The informant credits the new senior manager with solving the overcrowded conditions in the Emergency Room and its Observation Unit (*utilization issues*).

The arrival of the new senior manager was a positive change for the hospital and most informants agreed that this was a key event. One informant had a different opinion which is presented in the next section on grouping long stay patients.

Grouping Long Stay Patients as a Circumstance of Transition

While it is also an action to improve utilization (an *intervention*) according to one informant, grouping all long stay patients, which includes panelled patients, waiting to

panelled patients and chronic care patients, is also a key event. This was the first time that all non-acute care patients, as they are also called, were segregated from acute care patients. Before this occurrence, most long stay patients were scattered throughout the hospital and mixed with acute care patients. Grouping all long stay patients was done in preparation for the nurse's strike as is recounted by the following health professional informant. There are two related themes in the informant statement. One is about grouping all long stay patients, and the other is whether the arrival of the new senior manager was a key event. In the statement below, the informant states that the hospital was ready for change and the new senior manager's arrival was serendipitous. In other words, anyone could have been appointed as the new senior manager and the result would have been the same, i.e., improvements in utilization. This informant states that planning for the nurse's strike was the important event of organizational *transition*. The informant recalls the preparation for the nurses strike by aggregating all long stay patients.

Interviewer: There appears to be in history, a number of things that occurred in almost a six month window, (name) left to go to (organization), then (name) came aboard, then there was the nurse's strike - and just all sorts of things happened. **To what extent was the fact that you had a new CEO, did that help things happen or did it (not) - was there a facilitating role because it was a new person?**

Informant: **No, I think it would have happened away** because I think what we all - when we were planning for the strike we were looking at who are the patients that we have to keep - well all of the ones that are paneled because they don't have a place to go to - the personal care homes aren't going to open up any more space - I mean they're all ready full. Anybody who was dischargeable was discharged, so all of the long stay patients were grouped in one area which was on (location) and then all of the acute care people were on (location), so we combined medicine and surgery for the duration of the strike. you can see how much more effective it is to have all the long stay patients together.²⁰³

The informant was then asked about the hospital's local culture. The informant perceived the senior manager and planning for the nurses strike as mutually exclusive events. The hospital while holding the *acute care hospital belief* could and would have planned for the

strikes. It is unlikely that the hospital, before 1990/91, would have used the strikes as an opportunity, let alone sustain the changes to improve hospital utilization (*interventions*).

Nurses Strike as a *Circumstance of Transition*

The nurses strike was a key event for the hospital in organizational *transition*. In preparation for this event all patients who could be discharged, were discharged. This resulted in about fifty percent occupancy of the hospital and it was effectively closed to new patients. Some intentional actions by management to improve the utilization of hospital resources by patients (*interventions*) were implemented as pilots. The term, "pilot" means to try out an action for a limited time to see if it produces the intended result(s) and to determine unintended results as well. The nurse's strike and the other concurrent strikes became an opportunity to start anew. The hospital also had to plan for the events.

At the time of the strike in January 1991, utilization was not under control. A management informant was talking about the way the hospital used to control conditions (*problem solving*) in the Emergency Department before the strike, and then related:

When we closed during the strike, we pared down to (number) beds, of course the OU (Observation Unit) was closed because Emergency was closed and I said that we weren't going to open until we have utilization under control...²⁰⁴

The informant went on to relate a number of *interventions*. This informant appears to make a commitment to control utilization and perceives the nurses strike as an opportunity. When the conversation turned to the hospital's poor performance on comparison reports, the informant stated:

What I had done in 90/91 is, that is before the strike, I had implemented utilization guidelines...²⁰⁵

The informant continued to list actions to improve hospital utilization (*interventions*). The utilization guidelines refer to plans made before the nurse's strike which included pilot *interventions*. The nurses strike served as a opportunity to test actions to improve utilization (*interventions*). Because the hospital was at fifty percent occupancy after the strike, there was an opportunity to change how new patients were admitted to the hospital.

Another management informant discussed the sequence of events surrounding the nurses strike. An *intervention*, Physician Managers, is being discussed as part of the strike planning. The informant mentions the improvement of Emergency Room and Observation Unit utilization due to the presence of Physician Managers which is perceived to be a strategic move. The reference to "doing poorly" concerns the hospital's poor performance based on length of stay from unknown comparison reports before the nurses strike. The exact source of the reports which are referenced cannot be determined from the informant's statement. The following narrative confirms that there were plans made before the nurses' strike to address *utilization issues* and included pilot *interventions*.

It was a **very key, strategic move** - there were results, immediate results and it happened around the nurses' strike so it was a good timing issue too.

Interviewer: The question of emergency room utilization started to be addressed just by the fact that there happened to be a nurse's strike?

Informant: No, I think that the timing, sort of contributed, but I think **there was a deliberate plan to do that because there was a recognition, even then, that we were doing very poorly in terms of our length of stay** - so it was somewhat of a timing issue because with the nurse's strike and I think that it started before the nurse's strike - it started simply as an utilization initiative and because of the problem in emergency the fact that we were so backlogged and people were waiting and there was, a lack of, sort of, emphasis on that process so, its sort of opposed to get things done on the front end as opposed to the back end, so **that I think was very, very key strategy making very significant changes in utilization patterns**

Interviewer: So these, I guess, were working, considered, and started to be put in place, and then along came the nurses' strike? I'm trying to get the sequence straight here.

Informant: No, I think the nurse's strike happened first - you know. I have to go back and get it straight myself- I think - I'm trying to think now **I think actually the nurse's strike did occur but my feeling is that the plans were in place** by then in terms of assessing patients yeah, the nurse's strike happened first there was some correlation but it wasn't the only thing - it was more the situations with what was going on in nursing and nursing departments and that was a lot of backlog, a lot of crowding, a lot of people waiting in line, a lot of dissatisfaction from the patients themselves, but I think it was just a number of things happening at once but it had been going on for a long time

Interviewer: Yeah, it really had for a number of years I mean that pattern seemed to be characteristic of hospitals everywhere

Informant: I don't think it was unique to us²⁰⁶

The informant's narrative went on to focus on the differences in hospital utilization patterns. In the above statement, there are references to the perception of compromised quality of care, off-service patients (both *utilization issues*), and staff morale. Planning for the nurses strike is confirmed. The informant also considered the overcrowding in the Emergency Room to be a common experience in hospitals of the day.

A health professional informant related that the nurse's strike forced the hospital to look at the patient populations in hospital. These are the long stay patient population including panelled patients, waiting to be panelled patients, and chronic care patients, and the acute care patient population. At that time, there were inpatients who could be considered inappropriately placed in the hospital according to the informant. The nurses' strike was instrumental in forcing a review of all patient care services and activities because the hospital had no alternative. As the informant states, the hospital starts to learn that situations can be managed by changing *problem solving* behavior in that additional resources may not solve problems. Physicians' practice behavior began to modify, according to the informant's reference to the questioning of medical interventions. Nurses' practice behavior was also questioned.

Interviewer: I'd like to go back to something that you mentioned earlier and that's the nurse's strike. What role, if any, did the nurse's strike play in the overall utilization pattern at the hospital?

Informant: Well, I think there was a recognition that **not every one who was admitted needed to be admitted. And not everyone who was in hospital needed to be in hospital** that there were other alternatives available and it really forced people to be resourceful and start looking at those other alternatives. We really questioned a lot of the treatments, a lot of the medical interventions that were ordered because they didn't seem appropriate questioned some of the things that the nurses were doing that weren't appropriate and it was just a total reevaluation of what we were doing. I think that there were some good lessons that were learned from it, there were some lessons that weren't learned at all, but there were some good lessons learned and I think that some of those were used afterward. **I mean, if it worked during the strike why can't we learn from this and use this information in some way so we can be more effective all the time, not just when there is a crisis.**²⁰⁷

The informant went on to relate the dynamics among physicians and management during the nurse's strike concerning patient care.

The informants consider the nurse's strike to be a key event. It provided an opportunity to plan and test ways of improving utilization. Acute care and long stay patients were physically separated. Because of reduced occupancy, there was an opportunity to start with a "clean slate" after the nurses strike was over, especially in the Emergency Room and its Observation Unit. An informant pointed out that the hospital learned that controlling utilization was possible and achievable. The strike also had a number of unintended effects as will be seen.

So far the first four events as *circumstances* of organizational *transition* have been presented. The next three *circumstances* are the beginnings of power shifts, organizational transformation, and the change to local culture. They are contextual in nature rather than being discrete events in time. Context can be thought of as the fabric of the organization, or internal environment against which the events unfold. The three further characterize organizational *transition* by defining what within the organization is

changing and its direction.

Power Shifts as a *Circumstance of Transition*

The start of power shifts among important hospital groups is another circumstance of organizational *transition*. It would appear that physicians, unspecified professionals, and patient care teams started to gain in power within the hospital. The power of departments in general, nursing, registration, and administration started to wane with the eventual result of a more balanced organization. A management informant was discussing participation in the present management group and was asked:

Interviewer: As a group within the hospital, would you care to comment on whether you think that nursing, for example, is as powerful as it was, or enjoys the same stature or what?

Informant: **Nursing is powerful in the hospital period.** Nursing is simply (unintelligible word) with the recognition that it is a very key service so it always enjoys a power that other departments do not, but I would say that the power is, because, you know, I said it earlier and I tried to qualify that departments are simply having to work together a lot more, **that the turf power is changing somewhat too.** You know, of course, that they're strategically placed, they have a kind of power in that, and they can promote their interests at the same time because they are really part of it, that they're so - an important part of that. **But they don't have, certainly in our facility, that power that they once had is not there;** largely because the leadership, the types of leadership, have made a difference and again, the recognition, the major recognition that we just can't operate with any kind of unbalanced power structure because, you know, it just doesn't work to have one department that is so dominate and unbalances another's ability to work, so it doesn't have that same power that it once had. **I also think that it lost some of its power after the strike.**²⁰⁸

The informant then discussed staffing patterns. According to this informant, nursing power decreased and is associated by the informant with the nurses strike. The strike sent nursing management and non-nursing management onto patient care areas to work. They observed, reviewed, and thought about doing things in different ways. The nurse's strike started a loss of power which has been sustained by subsequent actions to be unfolded in the next chapter. The leadership being referred to may be nursing or senior management leadership, or both. The informant talked about the dominance of nursing departments

which is consistent with the parallel physician, nursing, and hospital organizations before 1990/91 (*triumvirate organization*).

Power shifts between physicians and administration, and among physicians, nursing and registration were related by the following informant. Before bed control, the informant perceived physicians as beings less powerful and the administration more powerful. The informant credits bed control (i.e., bed ownership) as a source for the power shift. The phrase, bed ownership or bed control, as used by the informant, means that physicians are responsible for decisions regarding beds and were given hospital authority to make those decisions. The Physician Managers, an action by management to improve utilization (*intervention*), have bed ownership. According to the informant's statement, bed control is how responsibility and accountability for hospital resources by physicians was accomplished in 1990/91. Legitimizing physicians within the hospital by making them part of management is a later result of the start of the power shift. After discussing competition in the health care system, a health professional informant related:

Another key event was the increased managerial and professional accountability of physicians practicing with a hospital with leads to a synergistic relationship between the two types of accountability. As an example at the system level, The College of Physicians and Surgeons is more public with its decisions on practice matters that concern the public. All in all, the system is being integrated horizontally. At this hospital, the previous administration was too powerful and the professionals- primarily physicians were too weak. The current administration has empowered physicians (bed control) and has integrated physicians into the day-to-day running of the hospital. This was easier to do in a smaller hospital, a teaching hospital is too big. This hospital has always had a good board of directors who are concerned with the profession (physicians), agreeable to innovative changes and receptive to change(s).²⁰⁹

The informant went on to discuss quality of care. In the context of admitting patients to hospital and before 1990/91, registration and nursing had more hospital authority than the admitting physician. After discussing Physician Managers, the same informant commented further on the distribution of power relating to admitting patients:

Before the Physician Managers took control of the beds, registration and nursing had a more prominent role in admitting patients to hospital. Control of the beds by physicians provided a framework for the admitting function and was reflective of a more active role for physicians in admitting a patient to hospital. **Bed control effectively linked responsibility with admitting privilege and promoted accountability for the admitting decision.** The Physician Manager must agree with the decision by other doctors to admit a patient. The Physician Manager of Surgery controls the OR slate as well.²¹⁰

The informant went on to discuss constructive utilization management as a label for the activities implemented by the hospital to address *utilization issues*. The informant mentions bed control again as if to underline it. Bed control is how managerial and professional responsibility and hospital accountability were merged.

The informants associated the start of power shifts to events such as bed control, admitting practices, and hospital authority among and between physicians, administration, registration, and nursing. The nurses' strike served as a focal point for the start of power shifts.

Local Cultural Change as a *Circumstance of Transition*

Shared beliefs, customs (habits, practices), common experiences, and memories describe the meaning of local culture. The hospital's local culture is a contextual factor of organizational *transition*. To determine whether there was a change in local culture of the hospital during the time under study (1985/86 to 1993/94), a standard question was used during the interviews.

A management informant discussed the evolution of the hospital's local culture from a dynamic to status quo, and now, to a culture that is in change. The informant associated previous changes in local culture with changes in senior management. The hospital has experience with local cultural change. The informant associates the start of

this local cultural change with the appointment of the new senior manager in 1990/91, and its timing makes it a circumstance of organizational *transition*. The latest change in local culture is from a bureaucratic organization to one that is team-oriented. The informant states that the current culture results in more sharing of information with staff who are encouraged to participate. The informant perceives that staff morale has improved, although there is room for improvement. Some of the current staff morale issue may be associated with the staff cutbacks of 1992 and 1993. This contrasts to the source of perceived poor morale before 1990/91, off service patients, cancellation of surgeries, and the concern for the integrity of acute care services due to the large numbers of non-acute care patients in the hospital (*utilization issues*). The informant describes the local culture today (1994) by contrasting it to the informant's recall of what the local culture was like before 1990/91. In the statements, some characteristics of organizational transformation are also described which are the working arrangements within the hospital.

Interviewer: People talk about hospitals having culture - do you think that's true?

Informant: Absolutely

Interviewer: Think that the culture today or even two years ago is different from what it was five years ago?

Informant: Yes, we're changing ... it evolved into a very controlled, bureaucratic organization ... what evolved was a very well run organization from a financial perspective but perhaps not as well as others from a patient care perspective and again with a change in management, a significant change in management over the last few years here - looking toward to how we are going to succeed in the future. ... it was a risk adverse organization, we are that much more aggressive, a lot more aggressive, more willing to take chances that we feel will benefit the organization, and there's the whole total quality management initiative is changing the organization ... this is Friday and I could be very casual and this was very formal organization ... -whereas the CEO introduced the change in the culture and so people modeled what the CEO did ... and so the organization is **undergoing a very significant change in culture to involve the staff in much more in decision making**, taking their advice and trying to make it a more interesting place to work and we did have, still do have less, of a morale problem, ... so we are making a concerted effort to change the organization in many ways and a lot of *innovative* things have happened and we've done an absolutely lousy job of telling our story both internally and externally.

The new senior manager provided the model for local cultural change. One strategy used to change local culture and/or to facilitate organizational transformation, as perceived by the informant, was to reduce the number of management layers. While the number of management positions appears to have been reduced, the scope of management responsibility has increased

Informant: ...part of the culture that originally evolved there wasn't good communication, they didn't know what was happening and now we're sharing everything - its much more open communication - (name) has an open door policy and any staff can meet -... we now have expanded management, , and we just removed whole layers of bureaucracy ... - it was very, very bureaucratic and just full of bureaucratic systems and reporting systems and I think wound up with a better organization -... we're working with a different system and to change the system we have fewer - its well worth the effort - **anyway we have to change** -- although it appears that there are too many beds and perhaps maybe too many hospitals in (city name) and we've shown that we can make significant improvements in bed utilization and I guess when it all shakes out we want to be one of successful hospitals and indeed that's the way it should be.²¹¹

The informant discussed total quality management next. According to this informant, the hospital organization (*triumvirate organization*) of the *acute care hospital belief* was formal, controlling, bureaucratic, opposed to risk, and a poor communicator where quality of care was perceived to be compromised. This contrasts with the other organization being described. The other is open, less formal, aggressive or willing to take risks, implementing total quality management, perceived to provide better quality of care, and *innovative*. In short, this describes the *innovative health care facility* which is the third theme of the case study. The hospital wants to be successful "when it all shakes out". This could be interpreted as the hospital intends to survive and be successful.

Another management informant was specifically asked about change in local culture at the hospital. The informant echoed the evolution of cultures provided by the previous informant. As was noted earlier, the label for the core theme came from this informant who points out the organizational *transition* is still occurring at the hospital.

Notice that the term, "open", is used to describe the current management environment in 1994. After the informant stated that the hospital is undergoing organizational *transition* which persists to the present day (1994), then:

Interviewer: Since you've been with the facility so long, it sounds to me as if you're describing a different culture in the institution that perhaps it was some years ago

Informant: Well, we've had a number of different kinds of cultures occurring at (the hospital) ... the styles of the leaders has a bearing on how we do business, ... but it was largely centralized kind of authority - ... With the new kind of culture, **the culture is changing**, in terms of participation the current CEO has made a difference, he's a much more kind of **open** individual and has created a kind of climate, you know, where the kind of high-handed centralized kind of authority will not be tolerated and I think that he has really tried to make an real effort to open things up, and so as result the organization is , there are still issues of - there some confusion, as with everything, there is always some confusion as to who does what, because people are still feeling things out and not quite sure, but generally the opportunities, they use the excellent opportunities to participate, to have influence on and to make some pretty positive changes so because of some of the staffing changes there are some kind of, what is the word, strategy, to create the kind of people who will make that happen...²¹²

The informant then discussed the distribution of power within the hospital. The appointment of the new senior manager is associated with the start of changes to local culture. The issue of staff morale is also present in the informant's remarks. This informant also states that current (1994) managers were selected as a management strategy. In a sense, the managers survived. This is similar to the previous informant's comment about the hospital intending to be successful and survive.

Not everyone remembers the change in culture in a positive light, and not everyone remained with the hospital for whatever reason. A health professional informant was talking about long stay patients and the benefits of having them in the same physical area, and then was asked:

Interviewer: ... I've got one, two last questions. There's been a lot of discussion in the literature about institutions have culture - for this particular hospital do you think there was a change in culture, no change in culture or whatever in the (number) years that you were there?

Informant: Yeah, **there was a change in culture** and I think that I'm going to leave it at that.

Interviewer: Can I ask whether that coincided with any activity that you would care to name?

Informant: A lot of the culture is shaped by the personalities at the top of the organization and I think that there had been a **change from, I think, a sort a family-oriented mutual respect approach to something that became more divisive** and some of the working relationships weren't there, yeah, so **there was a change and it continues to change**, and I mean, from the people who talk to me **it doesn't seem to be for the better**. I'd prefer not to comment on that other than that.

Interviewer: That's entirely your prerogative, I understand.²¹³

The informant discussed definitions for utilization management. This informant offers a non-survivor's perspective on local cultural change. The informant refers to others at the hospital who share this perception who may contribute to the staff morale issue. The senior manager is associated again with local cultural change. The informant infers that senior management is purposefully shaping the change in local culture. The continuing change to local culture is supported by this informant. Where other informants described the organization before 1991 as bureaucratic, this informant recalls it as "family-oriented".

This local cultural change is associated with the appointment of the new senior manager in 1991 just as previous local cultural changes were associated with changes in senior management. Not all informants agreed that the local cultural change is positive for the hospital.

Organizational Transformation as a *Circumstance of Transition*

Replacing a bureaucratic institution with a more team oriented or egalitarian institution describes organizational transformation that began in 1990/91. Organizational transformation includes the working relationships between and among personnel including hospital departments and physicians. In addition to the evidence already presented by informants while discussing local cultural change, two other informants provide additional information.

In response to the first question of the interview, a management informant discussed changes in the working arrangements at the hospital and the hospital system. The informant's reference to "parochial approach to departmentalization" is consistent with the existence of parallel nursing, hospital, and physician organizations (*triumvirate organization*) characteristic of the hospital before 1990/91. The term "parochial approach" means that the approach was narrow and limited in scope. Parochial activities would be focused inward and, perhaps, without regard to outside departments or organizations. The informant contrasts the parochial approach with people having to work together, an example would be people working in teams, i.e., teamwork.

Interviewer: The changes - what do you think the changes are?

Informant: Well, I think some of the changes are in the working arrangements in organizations - they're changing a lot - they're moving from sort of **parochial systems** to people who, I think, are a lot more global in their approaches and they're learning that there has to be a lot of teamwork. I noticed that people while they might be reluctantly hanging on to, I'm talking about hospitals, for example **the parochial approach to departmentalization** that's really not going to work any longer. I think we're learning to work much more in concert with each another, they see things more in systems' terms. Those are some of the organizational changes that I see.²¹⁴

The informant went on to discuss the changes in health and concerns about utilization.

Although the informant appears to be speaking to hospitals in general, the comments are relevant to the case study hospital.

A health professional credits the use of teams to address the existence of parallel nursing, hospital, and physician organizations (*triumvirate organization*) before 1990/91. Organizational transformation includes addressing the "more formal hierarchy" and the restructuring of nursing. Before this statement, the informant assessed the appointment of the new senior manager as a "very good change", and then stated:

... the switch to a team philosophy effectively addressed the previous more formal hierarchy of the hospital, nursing was restructured and as a result nursing is integrated into the team. Previously, a departmental structure dominated the hospital.²¹⁵

The informant went on to discuss the nurses strike. An example of a hierarchy that was addressed by changing the working arrangements (organizational transformation) was that of the nursing departments (*triumvirate organization*).

Summary of Circumstances

Seven key events took place in fiscal 1990/91 and all promoted actions by management to improve utilization (*interventions*). Four of the one-time *circumstances* are the two executive replacements, the aggregating all long stay patients, and the strike by the nurse's union which effectively closed the hospital for a month. Other unions also went on strike at the same time. The other *circumstances* are the start of a change in hospital culture following the strikes, the start of a shift in intra-hospital power among nursing, other departments, and physicians, and the start of a organizational transformation from a bureaucratic hospital to one that is becoming more team oriented. These are collectively the *circumstances* of organizational *transition* that led to actions by management to improve utilization at this hospital (*interventions*).

The appointment of the new senior manager was and is a key event. Planning for the nurses strike included pilot *interventions* and the strikes became an opportunity to do things differently. The informants associated the appointment of the new senior manager with changes to the local culture of the hospital. One informant described the hospital as being a family oriented place to work. The same hospital was described by other informants as bureaucratic, formal, and centralized with a closed communication style. The common notion of family has an established hierarchy. It is, perhaps, the replacement

of that familiar hierarchy with a more egalitarian structure that is being spoken to by power shifts, local culture, and organizational transformation. The parallel physician, nursing, and hospital organizations (*triumvirate organization*) are being replaced.

Collectively, these are the *circumstances* and individually are key events. Each key event could have predictable consequence(s). However, their occurrence and sequence in time was and is synergistic, each building on the presence of the other(s). Collectively the *circumstances* are the context for the passage of the hospital from one identity to another. Without the occurrence of organizational *transition*, there would be not be actions by management to improve utilization (*interventions*) and the *innovative health care facility* would not have been borne. This is because the hospital before 1990/91 could not have implemented and sustained improvements to utilization (*interventions*). For example, to solve the problem of an overcrowded Emergency Room, the hospital, while holding the *acute care hospital belief* would have enlarged the Emergency Room and added more stretchers, observation bays and nurses. The hospital, at that time, did not know that *utilization issues* could be solved. The hospital, in 1990/91, appoints a Physician Manager to act as a "traffic cop" in the Emergency Room

As the core theme of the case description, the analysis suggests that organizational *transition* was the locus for change to 1993/94, and may serve as a locus for change into the future. *Transition* is still occurring in this hospital. A bureaucratic, centralized organization is being replaced by what appears to be a matrix organization which is characterized by teams of individuals from different hospital departments. This results in a decentralized organization. The shifts in organizational power and authority and changes

in local culture continue to be played out as adjustments are made in working arrangements and as new customs replace old. Some *circumstances* are now historical and add to local culture, the nurse's strike for example.

Two subthemes provide additional characterization of organizational *transition*, and are the conditions (*reasons*) that led to *transition* and the consequence of the passage from one identity to another, *interventions*.

Reasons as Conditions for Transition

Before 1990/91, an overcrowded Emergency Room, an Observation Unit with length of stay statistics, canceled surgeries, and perceived bed shortages characterize *utilization issues*. In 1992, the hospital's length of stay was compared with other city community hospitals by a government-related group. The hospital's length of stay performance was also labeled with the term, "poor", by hospital personnel. Government funding in 1991/92 to the hospital was a limited increase to its budget, and in 1992/93 and 1993/94, funding was reduced. The overall result is called financial limitation.

When responding to questions about what were the changes to utilization of the hospital by patients, the informants often spoke about the perceived motivations (*reasons*) behind the actions to improve hospital utilization (*interventions*). For the most part, the evidence to support the *acute care hospital belief* came from historical documents and not from personal experience. In the context of personal experience, *utilization issues*, poor performance, and financial limitations provide motivation for actions by people.

The *utilization issues*, poor performance, and financial limitations are the *reasons* informants gave for the actions by management to improve utilization (*interventions*).

Utilization Issues, Reasons as a Condition for Transition

The overcrowded Emergency Room, bed shortages, and canceled surgeries (*utilization issues of the acute care hospital belief*) were among the *reasons* that led to organizational *transition*. The following paragraphs are from a document written by two individuals who participated in the events of 1990/91. The document is their report on how the hospital solved the overflow problem in Emergency and its Observation Unit. The document was written after the implementation of actions to improve utilization (*interventions*). The paragraphs, entitled "the problems", describe and confirm that *utilization issues* before 1990/91 led to organizational *transition*. The paragraphs demonstrate the subtheme, *reasons*. Some *utilization issues* are familiar, panelled patients, off-service patients, threatened acute care services, and a perceived compromise to quality of care. The paragraphs also include a perceived bed shortage, being over budget due to underutilization and overutilization of hospital resources, and the impact on staff morale. There is a reference to two wards for panelled patients. The wards provide beds for less than half of the "government quota", or trigger number as it is also called, for panelled patients. The trigger number is the number of beds that may be occupied by panelled patients who are waiting for placement in a personal care home. The trigger number beds do not have to be in one area of a hospital. The remaining panelled patients, patients waiting to be panelled and chronic care patients were off-service elsewhere in the hospital. The government quota does not include chronic care patients whose numbers may exceed half the quota. The presence of the panelled patients was perceived as a threat to acute care services by the authors of the document. The preceding paragraphs in

the document describe the hospital.

Additional stress was put on bed availability by the **high number of "panelled" patients**, i.e. those awaiting personal care home beds. At any one time, up to one-half of the geriatric beds and one-third of the medical beds could be occupied by this particular patient group. **Together, they always equaled or surpassed the government assigned quota of (number) "panelled" patients.** Although the "panelled" patients were both a large and unique patient group, only one (number) bed medical unit and a (number) bed geriatric ward had been designated exclusively for their care. The placement of the **"panelled" patients on acute care wards created several problems.** Nursing staff were frustrated in their attempts to appropriately care for long term "panelled" patients, and **physicians and hospital staff alike feared the integrity of specialty programs was being compromised.**

When there are non-acute care patients in acute care beds and off-service acute care patients, there is a mismatch between hospital resources including staff and the needs of the patient. An example of an off-service acute care patient is a surgery patient in a medical bed. The perceived bed shortages were due the absence of control over admissions coming through the Emergency Department and the resulting high numbers of patients in acute care beds. Bed shortages go away when beds are added; this would be an increase in capacity (*problem-solving*).

The high number of **"panelled" patients in medical beds resulted in a domino effect** on other services and departments. Many of the **acute medical patients went "off-service"** to surgical beds and again nursing staff were faced with caring for patients whose needs were at variance with their area of expertise. In addition, the **resultant shortage of surgical beds led to cancellation of elective surgeries**, further increases in waiting lists, and last minute conversion of elective surgeries to Day Surgeries or ASA's (After Surgery Admissions).

Also, cancellations of surgeries are costly and not all patients and/or procedures are suitable for Day Surgery. Another by-product of *utilization issues* and *problem-solving* was the morale of the hospital's staff that may be continuing into the present. It is particularly notable that the document linked staff morale to organizational *transition* underway in the hospital at the time. *Problem-solving* of the *acute care hospital belief* was costly in financial and patient care terms as measured by off-service patients and canceled surgeries. The reference to ASA, After Surgery Admissions, by the informant

may be recalling yesterday's decisions by using terminology in current use. ASA were implemented in 1991 to be used in conjunction with the Pre-Admission Clinic.

When inpatient beds were full, the patient overflow backed up into Emergency Department/Observation Unit. Patients were frequently diagnosed, treated, and discharged for stretchers filling the Observation Unit and the corridors of the Emergency Room. **Patient care and safety was a major concern. Overages occurred in the nursing budget** due to increased staffing demands created by the almost constant patient overflow. Conversely, as the overcrowding problem spiraled upward, **staff morale sank.** Feelings of lack of control intensified and the vicious cycle of blame and lack of ownership of the problem grew. Staff felt that management was inattentive to patient welfare and staff needs. Nursing staff were frequently in the difficult position of pursuing discharge plans from physicians with no physician backup. **Physicians responded that bed shortages were a result of administrative or government mismanagement.**²¹⁶

The document went on to describe how the hospital solved the problems. The above also indicates that nursing staff were going "one-on-one" with physicians to discharge patients. The reference to "no physician backup" means that Physician Managers were not available at that time (before 1990/91) to apply pressure to physicians to make discharge decisions.

A management informant confirms the nature of the problems in 1990/91 depicted in the above document from the hospital. Providing quality acute care services in an overcrowded Emergency Room would be a challenge. Canceling surgical cases (i.e., OR cases) due to bed shortages is confirmed as a major problem. The bed shortages obviously occur when there are no beds, but the inference here is that surgical beds were occupied by non-surgical patients who could be acute care or long stay patients.

Interviewer: ... In the years that you have been here there have been a number of changes that occurred in the utilization of this hospital by patients. Can you tell me what you think the those changes are?

Informant: There has most definitely been a difference and several years ago we did have a lot of problems - we had problems with backups in Emergency, canceled OR cases because we couldn't we couldn't get elective patients in and that was one of the major problems in the hospital, and some of the changes that have been made ...²¹⁷

The informant went on to list the actions by management to improve utilization. Again, *utilization issues* are mentioned as a *reason* that led to the passage of the hospital from

one identity to another (organizational *transition*).

Poor Performance, *Reasons* as a Condition for *Transition*

Two informants independently identified poor performance of the hospital as a *reason*. The hospital's length of stay for selected acute care diagnoses were compared to other city hospitals and found to be excessive. The comparisons were based on data from the provincial abstracting system for 1989/90 and 1990/91 and were made public in 1992.²¹⁸ A management informant was speaking about implementing clinical practice guidelines to decrease length of stay, and then went on to state that the report did not reflect the changes in utilization apparent in the hospital in 1992.

When we were compared using 89/90 and 90/91 data that ended march 91 in fifteen categories to the other hospitals, we were the worst in fourteen - I'd only been here 4 months at that point

Interviewer: and that's using the abstract database?

Informant: from the commission ... What I had done in 90/91 is that is before the strike, I had implemented utilization guidelines and in 91/92 we eliminated the overcrowding in Emerg and we eliminated the overcrowding in the OU and we actually turned off the lights in the OU for ten nights because we didn't have any patients ...²¹⁹

The informant went on to recall actions that improved hospital utilization (*interventions*). The external comparison report was almost a disincentive for decreasing inappropriate utilization because of its historical nature. The findings of the report are consistent with *utilization issues* before 1990/91, and with the hospital's own concern with the integrity of acute care services, also before 1990/91. In 1989/90, the hospital was inefficient as measured by length of stay for selected diagnosis in the public report. By 1992, the hospital had implemented actions to improve utilization (*interventions*). The *utilization issues* were a reason why the *interventions* were implemented. By its nature, the comparison report could not reflect that the Emergency Room is no longer overcrowded,

that surgeries are rarely canceled, and that panelled patients have their own care unit.

A second management informant also identified the hospital's poor performance in 1992 as a *reason* of organizational *transition*. The ability to respond to the above government report is associated with the appointment of the new senior manager. The informant states that the new senior manager's skills and previous experience were very helpful in responding quickly. The preceding discussion concerned the appointment of the new senior manager as a key event.

... and I guess what I'm leading up to is - I think that (name) brought a particular skill set to the hospital that happened to fit when we were confronted with the inter-hospital comparison and we and (another hospital) scored very poorly and basically what we had the government telling us that we were inefficient and we had to respond and I think we responded very quickly ... And I think that it was (name) skill set that allowed us to move so fast.²²⁰

The informant was then asked for additional information on the individual being referred to as a key event. The comparison report was published halfway through fiscal 1991/92 using data from 1989/90 and 1990/91 which included the nurses strike. By 1991/92, the *interventions* were in place as will be seen. If anything, the hospital's poor performance sustained organizational *transition* by continuing power shifts, organization transformation, and local cultural change. In turn, organizational *transition* sustained the *interventions* which were previously implemented. The Pre-admission Clinic, After Surgery Admissions, and the Short Stay Units were established in 1991, and accordingly cannot be a result of the comparison report. The report may have served as an added incentive for the hospital to match the expected length of stay from the automated clinical practice guidelines system which the hospital had purchased before the report was published.

Financial Limitation, *Reasons* as a Condition for *Transition*

The third reason to sustain organizational *transition* for the hospital is financial limitation. A health professional informant was asked about incentives for the actions by management to improve utilization (*interventions*). The informant states that hospital funding in 1992/93 and 1993/94 requires a different approach to providing hospital services. The inferred decreases in funding are offset by increases in technical efficiency which may be accomplished by producing more services with fewer resources.

When asked about the incentives for these changes, the reply was that funding is not available to support doing things the way they were done in the past, and that the hospital has to be efficient - use less people and produce more "service" with less money.

The informant continued with comments on patient education.

After recalling how the problems in the Emergency Room were solved, a management informant gave an example of the inefficiencies inherent in *problem solving* where resources are added and lead to additional costs. The overcrowded conditions in the Emergency Room increased staffing costs. When the problem was solved, costs associated with problem were reduced. With decreased funding, different ways of *problem solving* must be considered because the level funding no longer supports *problem solving* by increasing capacity or resources.

I can recall that we had four or five extra nurses hired above their budget simply to look after overflow patients after the Observation Unit was full so we'd have patients in the hallway and there's a couple of hundred thousand dollars a year...²²¹

The informant then related an impact of *problem solving* in a different way.

Summary for *Reasons*

Validation of the *acute care hospital belief* as an antecedent to organizational *transition* was offered by informants and documents. This is because *utilization issues* are characteristics of the *acute care hospital belief*. Utilization issues in 1990/91, poor performance in 1992, and financial limitations beginning in 1992/93 characterize the *reasons* that led to and sustain on-going organizational *transition*.

There must be evidence of inappropriate utilization of hospital services by patients (*utilization issues*) for *interventions* to be effective. This is because *interventions* target inappropriate utilization. As a theme, *reasons* associates the *utilization issues* of the *acute care hospital belief* with *interventions*.

Interventions as a Consequence of Transition

Because of *utilization issues*, poor performance, and financial limitations, there were actions implemented by hospital management to improve utilization (*interventions*). The *interventions* did not target specific diagnostic groups of patients or groups of patients; the hospital used a very broad approach in 1990/91, and still does in 1994. The *interventions* were implemented as a management response to the overcrowded Emergency Room, canceled surgeries, and the care of panelled patients among other issues (*utilization issues*). As was stated earlier, the *interventions* were implemented in two stages in 1990/91 and 1991/92, each with five *interventions* (Figure 10).

1990/91	1991/92
Physician managers	Criteria (clinical practice guidelines)
Admitting policies	Pre-admission clinic
Criteria (implicit)	Short stay unit
Grouping long stay patients	After surgery admissions
Bed utilization committee	Discharge planning

Figure 10. The time line for the *interventions*

The first and most important action was the appointment of Physician Managers for surgery and medicine. The Physician Manager for medicine also has responsibility for the Emergency Room and its Observation Unit. The second was a change in admitting policies used by Physician Managers who has the authority to deny a potential admission. The third was the use of criteria by Physician Managers to assess an admission ranging from the Physician Manager's expert opinion to explicit written lists. The fourth action was physically aggregating all long stay patients in preparation for the nurses strike. Acute care patients were also physically aggregated into one care area in preparation for the strike. The last of the first five actions concerned the renaming of the Utilization Committee to the Bed Utilization Committee.

In 1991/92, five additional actions were added by management. The clinical opinion of the Physician Manager was partially replaced by admission criteria from the automated clinical practice guidelines. In October 1991, the Pre-admission Clinic, Short-Stay Unit, After Surgery Admissions, were implemented for surgical inpatients. Discharge planning was redefined by management. Together, the ten actions are called *interventions* and are actions by management to improve utilization. The *interventions* are a

consequence of the passage from one identity to another (*transition*).

In an interview about efficiency and effectiveness in the health care system, a management informant mentioned implementing utilization guidelines: "we've implemented all those approaches."²²² The list of utilization guidelines from that interview could have been used as a list. However, a standard interview question was to ask informants what they thought the actions were that improved utilization (*interventions*). *Interventions* is used rather than utilization guidelines because *interventions* are actions by hospital management, and could include utilization guidelines. Utilization guidelines are not necessarily actions by hospital management. The *interventions* were intentional actions by management and did not occur randomly in time.

The *interventions*, which were identified by the number of informants out of seven, are the appointment of Physician Managers for medicine and surgery (6/7), criteria including clinical practice guidelines (6/7), the pre-admission clinic, after surgery admissions and the associated short stay unit (5/7), the bed utilization committee (5/7), discharge planning (5/7), admitting policies (4/7) and grouping panelled patients (1/7). The *intervention* of grouping panelled patients was listed first by a health professional informant. Although this action provided a separate care area for panelled patients, when the numbers of panelled patients exceed the number of beds, panelled patients spill over into other care areas of the hospital. It is to the hospital's advantage to keep the numbers of panelled patients at or below the capacity of the separate care area. Otherwise, the panelled patients will be off-service and care is not optimal. Grouping panelled patients was also mentioned by another informant, but not in the context of being an *intervention*.

Collectively, these are the methods of utilization management at the hospital and are further defined by the informants in the following pages.

Physician Managers as *Interventions, a Consequence of Transition*

Six out of seven informants identified Physician Managers as an *intervention*, and generally referred to this as the key *intervention*. They were appointed in surgery and medicine in December 1990, partly in preparation for the union strikes that began in January of 1991. In February 1991, the positions were made permanent. There were Physician Managers in two specialty medical areas, so the idea was not new to the hospital. The existing Physician Managers controlled forty percent of the hospital's beds, but did not include responsibility for the Emergency Room. With the appointment of two more Physician Managers, the hospital had indirect control of ninety-eight percent of the beds and the Emergency Room and its Observation Unit.

The functions of the Physician Managers are to control bed utilization by using hospital authority to veto an admission. After admission, they monitor the length of stay and ensure that the patient's physician has a discharge plan.

Paragraphs from a report of the Utilization Committee in the Annual Report of the Medical Staff in 1990/91 provide background to the appointment of the new Physician Managers and the planning for the nurses strike. Although the text refers only to one existing Physician Manager, there were two. The Physician Managers were implemented as pilots in preparation for the nurses' strike, perhaps as a result of the recommendation of the Committee. The Nurse Manager function referenced in the text probably was not implemented during the nurses' strike. The Utilization Committee planned for its

succession as the Bed Utilization Committee. The preceding text mentioned sub-committee reports on noisy patients and difficult discharges.

a final recommendation was made to model the bed utilization in the Department of (name) with a Physician Manager and a Nurse Manager running the admission - discharge programme. It was recommended **that Physician Managers for Medical Beds and Surgical Beds be appointed** and this would then complete the process of bed control with the Discharge Planning Coordinator playing a supportive role for the entire Hospital bed utilization process. **This was partially implemented during the nurse's strike and completed in March 1991.** With the new bed utilization form the Terms of Reference of the **Utilization Committee** were reviewed and it was recommended that the Committee be dissolved to be **replaced by the Bed Utilization Committee.**²²³

The Committee's report ends with appreciation and a list of members.

Although the statements below are specific to the Physician Manager for surgery, the Physician Manager for medicine has analogous responsibility including the Emergency Room and its Observation Unit. When asked about Physician Managers, a health professional informant stated:

Physician Manager is a title and a function; the later includes **resolving any conflict** with surgical admissions to the designated (number) surgical beds, **policies regarding surgical practice**, OR slating, and patient outcomes as patient complaints. Many of these issues are discussed in the (Clinical) Committee with the **Physician Manger** as chair. The VP of Medical Administration sits on all medical and surgical committees.²²⁴

The informant went on to discuss admission policies. Later in the interview, the informant returned to the Physician Manager topic after discussing information to support decision making. The importance of bed ownership, its association with the appointment of the new Physician Managers, and overcrowded Emergency Rooms and off-service patients (*utilization issues*) was stated:

To deal with the issues of an overcrowded emergency room and the presence of medial patients in surgical beds, **(Physician Mangers) were given total control of their respective bed complements.** They have a gentleman's agreement - if some surgical beds are needed for medical patients, this could be accommodated - an example is an influenza outbreak. Before the Physician Mangers took control of the beds, registration and nursing had a more prominent role in admitting patients to hospital. Control of the beds by physicians provided a framework for the admitting function and was reflective of a more active role for physicians in admitting a patient to hospital. **Bed control effectively linked responsibility with privilege and promoted accountability of the admitting decision. The Physician Manager must agree with the decision by other doctors to**

admit a patient. The Physician Manager of Surgery controls the OR slate as well.²²⁵

The informant went on to discuss a definition of constructive utilization management which is quality care based on criteria. It might be argued that bed ownership is not policy. In this case study, the conveyance of bed ownership from the hospital to the Physician Managers should be treated as such. Surgical and medicine bed ownership is the basis for hospital authority and control by the hospital's Physician Managers. The point of control is that the Physician Manager must agree to the admission and, apparently, there is no appeal. While the Physician Manager controls beds, the Physician Manager is under the authority of the hospital. The hospital retained control of the beds indirectly through the appointment of the Physician Managers. With the appointment of the new Physician Managers, the hospital provides bed control for ninety-eight percent of its beds.

When it comes to influencing admissions and length of stay, the source of the influence must be credible to physicians. In general, this means another physician who is respected and whose clinical judgment is valued by other physicians. This may explain why efforts such as discharge planning by non-physicians may not be effective. In the following statement, another health professional informant states that only physicians can effectively influence another physicians' practice behavior.

Interviewer: In the changes that have gone on over the last number of years, do you think that you could make a list of those? So particular things come to mind, some of the changes that you have heard about?

Informant: Well, actually I wasn't here for all of them, I would think that there are a number of major milestones or highlights that are probably worthy of noting. I think that one of them, **the most significant in my mind is the development of the physician managers.** The individuals who are monitoring bed utilization and are relating the physicians and surgeons on a daily basis with respect to their bed utilization practices - is a physician and I think was a key element for members of our medical staff who physicians, I think, tend to have some resistance, let's say more resistance, to professionals other than physicians trying to influence their practices in any respect. And I'm not saying that in a judgmental manner - I'm saying that as a matter of fact. **Physicians don't particularly, in general, don't particularly take kindly to any one, even other physicians, trying to influence their practices, but certainly will accept it from another**

physician much more readily than from other professionals, provided that a reasonable approach is taken, ... **And I think that's the key.**²²⁶

The informant went on to discuss physician leadership. This informant was not with the hospital when the Physician Managers for medicine and surgery were appointed.

However, the informant can speak to why they have been successful, and that the *interventions* have been maintained by the hospital.

Before 1990, there were numerous references in Medical Staff documents to Physician Managers training courses for clinical chiefs at the hospital. Meanwhile, the *utilization issues* that have been discussed were occurring. The presence of Physician Managers and their training is not sufficient for utilization improvement to occur. A combination of hospital authority and bed ownership are needed before Physician Managers can be effective, and is confirmed by the management informant in the statement below. Bed ownership must also apply to a sufficient number of beds to make a difference. There must be control over admissions through the Emergency Room. At the time of this interview, the list of *interventions* had been established. Validation and ranking of *interventions* is being asked of the informant. The informant discussed changes at the hospital and then:

Interviewer: even in pre 1989 there was discussion of physician managers, there would be references to quality and that kind of thing - and then there was the key year, 1990 - 91 and it would suggest to me that some of the critical things that happened were admission policies and physician managers?

Informant: That was a key event

Interviewer: Although, the label might be the same, there is something very different about the physician managers and admission policies pre-91

Informant: Well, that was a **very, very strategic move, a very smart one** I thought what really essentially happened was the emergency which most of our medical admissions are coming from today, as you probably know, became sort of a focal point for evaluation of patients and there was a far greater emphasis on assessing the patient for potential hospitalization and discharge potential right in the emergency level, right in the emergency room, instead of the more traditional approach

of just getting them upstairs and then, in retrospect, trying to discharge them, there was a lot more emphasis placed on evaluation, a through evaluation, right in the emergency department, and physicians became very involved with that, there was a **physician manager appointed to do that work and it proved very, very worthwhile** again the literature had a lot to do with it and rate...

The same management informant confirms that only physicians can be effective in modifying another physician's practice behavior. The informant also suggests that some physicians may not have been aware of the consequences of their individual decisions regarding patients on the overall utilization of hospital resources. The Physician Managers also act as an advocate for the hospital to the medical staff.

.... and he was able to convince his peers that and represent back to the medical staff what some of the problems were and I think that made was a tremendous change that system, of course, today is being followed and is being followed and I think that there have been some improvements to it, and so **its really key and again, part of that is physicians educating physicians** - that's made a big difference - the way they prefer to do business anyway - ... **but physicians don't like anybody telling them what to do, but they will listen a little more to a physician telling them what to do** ... that really made the change right there, the emphasis changed from the admission of these people to assessment and re-evaluation,...²²⁷

The informant continued with the story of the revitalized Emergency Department. The Physician Manager for medicine is credited with "cleaning up" the Emergency Department because inappropriate admissions were not accepted. Patient care is said to be more appropriate. This also confirms that physician to physician interaction is key to effective *utilization decision making*.

Admitting Policies as Interventions, a Consequence of Transition

The admitting policies that really count are verbal agreements between or among physicians. Documents such as admitting procedures are not admitting policies. The documents are procedures performed by hospital personnel after the decision to admit is made. The admitting policies of interest for this case study are those for surgery and medicine. The application of admitting policies in the Emergency Room by the medical

Physician Manager also affects hospital utilization. The change in admission policies for surgery and medicine also followed precedents established in the two specialty areas with Physician Managers who must also agree with the admission.

Before 1991, a physician with admitting privileges could admit patients to any bed outside of the two specialty areas with Physician Managers. For example, general practitioners could admit medical patients to surgical beds. This could be described as laissez-faire, every physician for him or herself. The admission policies at that time belonged solely to physicians, the hospital had no basis for involvement other than providing resources. The result was there was no control, and no possible control on the hospital's part. The admission policy changes were from no hospital policy to hospital policy, and from physician policy to hospital policy. Admission policies remain a verbal understanding between physicians, but in this case, one physician is a member of hospital management and has the authority to deny the admission should this be warranted in his or her professional judgment. Now, the hospital has a legitimate involvement in these decisions since the physician manager is part of the organization.

It is difficult to separate admission policies and criteria when the two *interventions* were first implemented. When the criteria were first implemented, the criteria were the professional opinions of the Physician Manager. The admission policies remain verbal, but the criteria used to support that decision now include explicit diagnosis-specific criteria for admission.

Admission policies appear to be the understood rules by which physicians admit their patients to hospital. When the Physician Manager's opinion is the admission criteria,

that individual must be a respected physician whose clinical judgment is valued by other physicians. After discussing how patients like the new surgical services, a health professional informant was asked:

Interviewer: Earlier you were talking about admission criteria ... the policies, I guess. Are those documents or what are they?

Informant: **They're not written per se. I think that initially anyway when we first got into the physician manager program basically it was all based on the assessments and the medical judgments and opinions of the physician manager** who, you know, when somebody who wanted to admit someone with pneumonia who wasn't that sick, the physician manager could then try to reason with that person this person doesn't need oxygen, can be treated with oral antibiotics just as well as intravenous we're not going to add anything to this person's care by bringing them into hospital **and that was all done based on the clinical, I guess, experience of the physician manager and, in the case of medicine in particular, you, therefore, needed someone who had a very, very strong clinical background and was respected by the other members of the department.**²²⁸

The informant went on to discuss care maps which are addressed later.

Confirmation of the verbal nature of admission policies comes from another health professional who stated:

When asked if the admission policies were documents, the answer was that "admission policies can't be legislated". Admission policies vary with procedures and are based on understanding, mutually held values, and consensus - very much part of the team concept. The surgeons must be team players when it comes to admission policies. Education (of surgeons) plays a major role in dealing with those who choose not to abide by admission policies.²²⁹

The informant went on to discuss emergency surgeries. Admission policies will likely remain verbal. When the admission policies were changed, the unwritten rules were changed.

Criteria as Interventions, a Consequence of Transition

In 1990/91, the physician manager's opinion on the merit of an admission to a medical or surgical bed, i.e., a type of implicit criteria, was used to assess an admission. The starting point for this *intervention* was simple and may indicate that criteria were not

available or not available in timely fashion, due to the impending nurse's strike. The hospital began to use clinical practice guidelines by late 1991 and now uses explicit admission criteria available from the guidelines for a range of acute care medical and surgical diagnoses and procedures. Implicit criteria, i.e., the Physician Manager's opinion, are still used to assess an admission when a practice guideline is not available. The clinical practice guidelines include admission criteria, the expected length of stay for a patient, treatment options and are in a format that can be shared with the patient's physician. This was a refinement of the initial implicit criteria.

When asked about implementing *interventions* at the hospital, a management informant stated that the hospital used opinion in 1990/91 to assess admissions and now uses criteria from the clinical practice guidelines. The informant may have misspoke when referring to an attending physician. The informant is discussing the interaction between the Physician Manager and the patient's physician:

Interviewer: Do you use some kind of criteria?

Informant: The criteria that we were using at that time was simply that, physicians judgment, the judgment of the attending physician who wanted the actual admission... there wasn't a lot of criteria to use. Now what we have is the clinical practice guidelines...²³⁰

The informant went on to discuss clinical practice guidelines and the hospital's expectations of decreased length of stay.

The use of opinion or implicit criteria in 1990/91 by the Physician Managers is confirmed by the following health professional informant. Respect as a requirement for Physician Managers by peers is confirmed by this informant. The informant was discussing the disruption of a hospital stay to a person's life, and then:

Interviewer: Earlier you were talking about admission criteria ... what are they?

Informant: They're not written per se. I think that initially when we first got into the physician manager program basically it was all based on the **assessments and the medical judgments and opinions of the physician manager** who, you know, when somebody who wanted to admit someone with pneumonia who wasn't that sick, the physician manager could then try to reason with that person - this person doesn't need oxygen, can be treated with oral antibiotics just as well as intravenous - we're not going to add anything to this person's care by bringing them into hospital and **that was all done based on the clinical, I guess, experience of the physician manager** and in the case of medicine in particular, you, therefore **needed someone who had a very, very strong clinical background and was respected by the other members of the department.**²³¹

The informant went on to discuss the development of medical care maps.

As an *intervention*, implicit criteria, the Physician Manager's opinion, came first and was followed by clinical practice guidelines. The hospital did not or could not wait to address *utilization issues* with explicit criteria and chose implicit criteria as a starting point to improve utilization. Instead of being sidetracked by the methodology to support decision making, decisions about the merit of admissions were made by Physician Managers using the expert opinion and professional judgment.

Grouping Long Stay Patients, an *Intervention as a Consequence Of Transition*

This point has been made and is covered briefly as an *intervention*. This *intervention* occurred in two stages. The aggregating of all long stay patients before the nurse's strike, and then the reorganization of beds to create a long term care unit after the strike. If the hospital had not aggregated the long stay patients before the strike, the long term care unit may not have been created. Since they were already segregated, it increased the likelihood of their remaining segregated for two reasons. First, the benefits of more appropriate, consistent care became apparent. Second, nothing would be accomplished by redistributing them among the acute care patients after the strike.

One health professional informant referred to this as an *intervention* and listed it

first. Another health professional informant referred to the aggregating of panelled patients while discussing the maldistribution of medical and surgical beds before October 1991 when the bed map was changed. There was a reorganization of beds in 1992 and a long term care unit was created. The informant associates the segregation of panelled patients to their own care area with acute care utilization. The segregation reallocated resources and improved acute care services according to the informant. Quality of care for both populations improved. This health professional informant discussed the overflow conditions in emergency and its relationship to surgery beds, and went on to relate:

So I think a number of things happened at the same time, first of all there was a regrouping and there was a redistribution - that is, medicine was given some extra beds. All of the long term care patients were grouped on one level into an area where the programming was appropriate, the medial wards and surgical wards were staffed in such a way and the programming was such that the people who came in with whatever the condition might be, medical or surgical - were going to be dealt with in an optimal area as well so that all the patients were being matched to the needs or matched to services that met their needs. ...

The *interventions* are interrelated as pointed out by the same informant. Providing appropriate care areas for acute and non-acute care patients by itself does not prevent inappropriate admissions, off-service patients and/or inappropriate patient days due to no discharge planning from occurring. The expectations or principles as outlined by the informant were the new rules of the game. The buy-in or cooperation by physicians was important for the success of *interventions*. Certain expectations or principles were established due to the interrelationships according to the informant. The Physician Managers made sure that "new rules of the game" are upheld. The buy-in or cooperation by physicians was crucial for the success of *interventions*. The informant's reference to regrouping is the establishment of the long term care unit.

But when you just do a regrouping, I mean, how do you still then prevent the overflow of medicine into surgery and I think this is where the physician managers and the clinical practice guidelines came in and that we started to look very, very hard at length of stay and ensuring, in fact, the

turnover of beds both on medicine and surgery became more appropriate and, at the same time, **certain principles were adopted:** Number one, we won't cancel elective surgery and number two, we won't tolerate overcrowding in emergency or hallway patients in emergency and I think that the elements of redistribution of beds in terms of location and numbers as well as development of, I guess, stricter admission criteria where physicians managers could, in fact, could in essence veto the admission I mean they wouldn't turn the patient out the door, but influence the behavior of the physicians who was, perhaps because of family pressure or whatever, was attempting to admit an inappropriate patient. And also **on the discharge side, moving people toward discharge a lot faster**, basically, we managed to live within the confines of the beds that we have. And I think it required a lot of effort on a lot people's parts but it involved, even before that, **buy-in by the medical staff, I mean, that they came to realize that there was a lot to gained by this approach.**

The informant continued and stated that improved quality of care is associated with the bundle of *interventions*. Because of the interrelationships among the *interventions*, the aggregation of panelled patients resulted in improved quality of care for both acute and non-acute care patients.

Number one patient care is better provided in a bed, on a ward with medial nurses, as opposed to in a hallway in the emergency department with emergency nurses who really are busy really looking after the newly arriving casualties who really don't have a lot of time to deal with the needs of an acutely sick medical patient - so the physicians realized, everyone realized, I mean that it was obvious that it was better - there was buy-in - let's give this a try and secondly, the surgeons who were having their cases canceled, even though they had fewer beds, everyone was pretty sure that they could get their elective slates in with that smaller number of beds. In fact, it became a "prove it to me scenario", that, in fact, it was done. The bottom line for surgeons, anyway, is not the number of beds.²³²

The informant went on to discuss the number of surgery beds. Grouping long stay patients allowed services and programs to be matched to their care needs. The same may be said for acute care patients. Care would be based on appropriate utilization of hospital resources for both patient populations. It was also an acknowledgment and legitimatization of the presence of panelled patients in the hospital. A significant portion of the hospital was subsequently remodeled to provide a home-like environment which further testifies to the acknowledgment and legitimatization. Staffing this portion of the hospital according to personal care home guidelines also reduced costs. What makes this an *intervention* is the influence of paneled patients on acute care services. When acute

care services are provided to panelled patients and acute care patients, panelled patients are overserved with respect to acute care and underserved with respect to long term care. The acute care patient may receive services that are not optimal due to small numbers of acute care patients on a care area with mixed acute and non-acute patients.

Bed Utilization Committee as *Interventions, a Consequence of Transition*

The Bed Utilization Committee was mentioned as an *intervention* by five out of seven informants, but they did not discuss it at length. What makes this Committee an *intervention* is its coincident timing and the changes in its composition. As indicated earlier, the Utilization Committee was renamed as the Bed Utilization Committee in 1991 with changed terms of reference which were not available. The overall representation from nursing, health records and social work did not change, but the clinical areas represented by physicians did change significantly. The number of nurses on the committee was increased by one, presumably to replace a nursing representative who became the chair of the Bed Utilization Committee.

Before 1991, one of the two physician managers was represented on the Utilization Committee. This meant that thirty-four percent of the hospital's beds were represented on the Committee. Medicine and surgery were represented on the Utilization Committee, but the clinical chiefs did not have hospital authority and/or bed control of medicine and surgery. Other physician representative were specialty services without designated beds. Nursing was well represented. The chair of the Utilization Committee was the medical director who did not have an explicit mandate for bed utilization.

The number of physicians did not change, but their representation did. All four

Physician Managers now sit on this Committee as do the Emergency Room Director and the clinical head of the intensive care unit. All hospital's beds are now represented on the Bed Utilization Committee. The current chair of the Bed Utilization Committee is the Bed Utilization Manager. This is the new name of the discharge planning coordinator who reports to the Vice President Medical who has an explicit mandate for bed utilization. The above information is based on the last available committee report in 1992. The Vice President Medical was added to the committee in 1993 according to a health professional informant.

As the Utilization Committee, the committee's report appeared in the Annual Report of the Medical Staff. In 1991/92, the report of the Bed Utilization Committee appeared in the hospital's Departmental Annual Report. The report of the Bed Utilization Committee was not found in either document after 1991/92. This could be interpreted as a physicians' committee becoming a hospital committee as the reports of hospital committees are not part of the Departmental Annual Report.

An opinion on why the Utilization Committee before 1990/91 was not, perhaps, as effective as it could be was offered by a health professional who sits on the Bed Utilization Committee. The difficulty in coordinating large numbers of people, each with their own interests, may explain the lack of results as improvements to utilization when it was the Utilization Committee. Another explanation is that there was no basis for authority and responsibility for admission and discharge decisions or beds among the people being coordinated. The informant interprets the power shift as a gain in power where someone now has authority and responsibility to take action. This is interpreted as the Physician

Manager. The results of the *interventions* had been discussed, and then:

Interviewer: One reads that there were admission policies and discharge planners in place and, on paper all of the things that you would make a list of if you were going to do something about overcrowding or bed blocking or things like that - they were all on paper - and then all of a sudden things start to work

Informant: Right

Interviewer: Sometimes that can come from a change in content or it can also take place with a change in power

Informant: Yeah, I think there was a change in power in that there was a person dedicated to having those kinds of things happen whereas before there may have been the on-paper planning that you have to do this to admit someone and you have to do this to discharge someone, but there were 70 different people who had to cooperate every month in order to make that happen and it never happened ...

The informant was then asked about the clinical practice guidelines.

Pre-Admission Clinic, Short-Stay Unit, After Surgery Admissions, as *Interventions, a Consequence Of Transition*

Five out of seven informants identified this grouping of services as *interventions* implemented in 1991. While the services were listed by informants, they did not elaborate very much. In contrast, most informants talked at length about Physician Managers and clinical practice guidelines. This could be because of the insider nature of the informant and interviewer relationship. It was as if the services were self-explanatory.

The Pre-Admission Clinic and After Surgery Admissions (ASA) shorten length of stay for surgical procedures by avoiding inpatient day(s) at the beginning of hospitalization. Diagnostic procedures, when needed, are done on an outpatient basis. The Short Stay Unit was created for inpatient stays of three to five days and is not staffed on weekends. The hospital has always had a Day Surgery service.

Selection criteria for patients suitable for the Pre-Admission Clinic and After

Surgery Admissions (ASA) were established. A health professional informant was listing changes to utilization, and continued with the following statements:

The admission policies were also changed which made the 50% decrease in surgical beds possible. The "content" of the policy is to perform the surgery on an outpatient basis or perform the surgery the day of admission. At present, 70 to 80% of all surgeries are day surgery. **Two new services** make this possible. One week prior to the surgery, the patient may attend a **Pre-admission Clinic**. For those patients without pre-existing conditions that match established risk criteria (i.e. pre-screening), a telephone interview is conducted by the nurse in the Pre-admission Clinic. Those patients whose history meets criteria as a anesthetic risk are seen by the anesthesiologist. This strategy avoids inpatient admissions and patient days for diagnostic procedures; although this may still occur for those patients whose physical condition requires extensive pre-operative testing. **After Surgery Admissions (ASA) is the other strategy.** Patients are admitted on the day of their surgery. ... A result is that **cancellations of surgeries is virtually zero.... The Pre-admission Clinic and ASA have decreased the length of stay for surgical procedures based on HMRI reports.** Surgeon cooperation and education were also responsible to some degree for decreased length of stay.²³³

The informant then discussed care mapping. The policy for surgical admissions is that procedures are done as an outpatient when possible. This avoids an inpatient admission for the surgical procedure. For those who are admitted, the Pre-admission Clinic and the After Surgery Admissions have resulted in decreased length of stay according to the informant. This may be interpreted as increased efficiency in providing surgical services. This approach has also decreased the number of surgical beds required by the hospital to produce the same number of surgeries stay according to the informant. While the informant stated that the number of beds had been decreased by fifty percent, the hospital lists a twenty percent reduction in beds (Table 21). The surgical beds were reallocated toward the creation of the long term care unit. On paper, surgery may have lost beds, but in reality surgery may not have lost beds at all.

Although a management informant considered the Pre-admission Clinic and After Surgery Admissions to be major changes, the comments were not extensive. The informant was listing changes in utilization of the hospital by patients, namely the clinical

practice guidelines as a major *intervention*, and then:

the other (major things), **pre-admission clinic** for surgical patients - all the tests are done before the patients come in which has allowed us to go to a **same day surgery program**, a lot of the procedures that were done on an inpatient basis are done on an outpatient basis made possible by expansion of day surgery ..²³⁴

The informant went on to discuss discharge planning. Later the informant was asked about the relative effectiveness of *interventions* on utilization measures such as length of stay.

Interviewer: Do you think that any one of those, perhaps, was more effective than the others - in ranking terms?

Informant: I think the **clinical practice guidelines** were effective and the pre-admission clinic along with same day surgery and perhaps **the easiest one to do would be the pre-admission clinic along with surgery the day of admission...**²³⁵

The informant then discussed how the services are regarded by patients. According to the informant, clinical practice guidelines and the pre-admission clinic are effective utilization *interventions*.

Discharge Planning as *Interventions*, a Consequence of Transition

While discharge planning was mentioned by five out of seven informants, it is difficult to segregate this activity. Like some *interventions*, it was listed but not discussed at length. The hospital has had discharge planning in place since 1988. By 1994, the nature of discharge planning is different, it was redefined by the hospital. Physicians play a more active role in discharging their patient. The expected length of stay for the patient is monitored by the Physician Manager and the planning for discharge may begin at the time of admission or before hospitalization.

In 1990/91 when the first round of *interventions* was being implemented, discharge planning had less emphasis. In a way this could be expected. Averting inappropriate

admissions in the Emergency Room means fewer discharge challenges. The heightened awareness of the expected length of stay for a patient facilitates discharge planning early in the patient's stay.

Some discharge planning function appears to have been subsumed by the Bed Utilization Committee. The person who was the discharge planning coordinator is now the Bed Utilization Manager and chair of the Bed Utilization Committee.

Discharge planning is an *intervention* because it starts when the patient is admitted and, in some cases, before admission if the person came through the Emergency Department. The differences are who is promoting the discharge and the timing of discharge assessment. The function of the discharge planner was to measure, monitor, and report (*measurement myth*). Often the position is staffed by a nurse who, by profession, may not be effective in changing physician discharge behavior. Many informants stated that only physician to physician communication is credible for admission and discharge decisions. The nature of discharge planning changed because physicians are more involved and are being monitored by a Physician Manager. The timing of the patient's discharge is now subject to the review of the Physician Manager for the area. A health professional made this statement about the role of the Physician Manager in discharge planning after discussing admission policies:

Similarly the surgery **physician manager ensures** that the surgeons have their patients admitted and the slates run smoothly and that **they are discharged on time** and he also has the power to, again as a checks system, to see that inappropriate admissions aren't put into designated surgical beds that may not turnover quickly and tie up that beds or numbers of beds for a long period of time.²³⁶

The informant went on to discuss the history of the Emergency Room and the changes that have occurred in its utilization by patients (*utilization issues, interventions*).

The hospital apparently uses patient care teams in discharge planning as well. Patient care teams are comprised of individuals with varied professional expertise as required by the patients under their care. Physician(s) are part of the patient care team. The hospital or physician has limited control over discharging patients when the patient's discharge is dependent on post-hospital services. This affects length of stay. A management informant recalled that waiting for a government agency to act increased the length of stay for an unknown number of patients. The hospital purchased services from a competitor in the private sector. The informant was discussing the pre-admission clinic, and then stated:

A much more concerted effort by the patient care team in discharge planning - we focus on discharge planning that gets patients out much earlier and brought together the resources, and where we have run into problems - that's the famous (name) that appeared in the newspaper ... That's essentially where we had difficulty with particular weekends or long weekends or Bill 22 days where the patients would sit in hospital for several days, if not a week, waiting for Home Care. The thought is that it would **be cheaper for us to buy the service rather than waiting for Home Care to show up** and that worked and also it worked in getting much faster response from Home Care.²³⁷

The informant went on to discuss comparison reports. Government encourages increased efficiency of hospital services, and then contributes to increased length of stay.

Intervention Summary

The *interventions* are the appointments of the Physician Managers for surgery and medicine, admission policies, criteria to assess admissions including the clinical practice guidelines, the aggregating of long stay patients, the Bed Utilization Committee, the Pre-Admission Clinic, Short Stay Unit, After Surgery Admissions, and discharge planning. The effectiveness of *interventions* depends on the relationship between *interventions* and their targets (Figure 11). The intended target or objective of the *intervention* is the utilization measure, admissions for example. The actual target is a person, group or population. Three *interventions* appear to target admissions.

<i>Interventions</i>	Intended target(s)	Actual target(s)
Physician managers	admission , discharge and bed control; length of stay	admitting. attending physicians
Admitting policies	medical and surgical admissions	admitting physicians
Criteria including clinical practice guidelines	medical and surgical admission criteria. length of stay	physician practice patterns
Grouping panelled patients	quality of care; access to acute care beds	non-acute care patients
Bed utilization committee	hospital bed control including discharge planning and monitoring length of stay	patient diagnostic groups. patient care teams. hospital departments and services
Pre-Admission clinic	length of stay	physicians. acute care patients
Short-stay unit	length of stay	physicians, acute care patients
After surgery admissions	length of stay	physicians, acute care patients
Discharge planning	length of stay	physician, facility and external organizations

Figure 11. Utilization *interventions* with intended and actual targets

Seven *interventions* appear to target length of stay. This may include discharge planning early in the patient's stay in hospital. As an *intervention*, grouping paneled patients targeted quality of care issues and is thought to have increased access of acute care patients to acute care beds.

Transition Summary

The analysis suggests that *utilization issues* of the *acute care hospital belief* were the conditions associated with the start of organizational *transition*. This initial occurrence of organizational *transition* was sustained by the hospital's poor performance in 1992, and was sustained by the financial climate in 1992/93 and 1993/94. Through organizational *transition* in the first cycle, *utilization issues* led to a number of *interventions* which are the Physician Managers for surgery and medicine, change in admitting policies, the use of admission criteria to support decision making, and the aggregating all long stay patients. In the next cycle, poor performance through organizational *transition* validated the implementations of the clinical practice guidelines, the pre-admission clinic, the short stay unit, after surgery admissions, and perhaps, discharge planning. All of these services affect length of stay. In the current cycle in 1994, financial limitation through organizational *transition* sustains all *interventions*.

The nature of the beginning of organizational *transition* in 1990/91 was a mix of one-time events and contextual factors. The one-time events are the executive replacements, the nurse strike, and the segregation of non-acute and acute care patients in preparation for the nurses strike. The contextual factors are power shifts, organizational

transformation, and changes to local culture. The contextual factors sustain the direction of organizational *transition* in subsequent cycles.

CHAPTER 7

INNOVATIVE HEALTH CARE FACILITY

Introduction

The third and last theme of the case description is described in this chapter (Figure 6). As an organization, the hospital is undergoing passage from one identity to another. As has been described, the hospital before 1990/91 approached utilization problems by adding resources and increasing capacity. The hospital's budget served as a boundary and defined patient care services. The hospital as an entity, physicians, and nursing occupied parallel organizational structures within the institution. Panelled patients were considered bed blockers and not legitimate patients of an acute care hospital. In a sense, *utilization issues* such as an overcrowded Emergency Room with its equally overcrowded Observation Unit were accepted because other hospitals also had the same problem. Before 1990/91, the hospital was aware that it had *utilization issues*, but seemed unwilling, for whatever reason, to address the cause(s) of inappropriate utilization of hospital resources.

Antecedent	Core Theme	Consequence
<i>Acute care hospital belief</i>	<i>Transition</i>	<i>Innovative health care facility</i>

Figure 6. The thematic case description

In 1990/91, the hospital began its organizational *transition* that centered around four events unique to that year in addition to the start of three changes to the hospital's internal environment. These are the power shifts, organizational transformation, and local cultural changes. Utilization *interventions* were implemented to address *utilization issues*, and hospital utilization by patients began to be controlled. In contrast to its previous identity, the hospital has learned that *utilization issues* can be solved and results in improved quality of care and reduced costs. To some extent, panelled patients are legitimized as residents of the hospital.

The beginnings of power shifts and organizational transformation have coalesced into marked differences in individual and group independence (*autonomy*). As individuals, physician managers lost some independence (*autonomy*) as they became part of the hospital's management structure. Individual physicians with hospital privileges lost some independence (*autonomy*) over their admission decisions due to veto power of physician managers. As a group, the medical staff, including physicians with hospital privileges, also lost some independence as more connections were laid down between the medical staff organization and the hospital as an entity. As a group, nursing presence in the management structure was equalized relative to other hospital divisions. This reduced the independence of nursing departments within the nursing division and of the nursing division within the hospital. Individual nurses are thought to have also lost some independence by being integrated into patient care teams. The hospital is deemed to have gained in independence (*autonomy*) by adopting a corporate image to its employees, the government, and the public. The above describe changes in *autonomy* that is a

characteristic of the *innovative health care facility* (Figure 12).

Antecedent	Core theme	Consequence
	<i>Innovative health care facility</i>	
<i>Cost consciousness</i>	Autonomy	<i>Utilization decision making</i>
Track record	Measurement myth attained	Historical and timely reports
External forces		Alternative services
		Education
		Sanction

Figure 12. The *innovative health care facility* theme

Instead of relying on monitoring, measuring, and reporting utilization concerns to groups and individuals who do not have the authority and responsibility to take action, the hospital has matched the right decision makers with the right information at the right time. The really important decisions for hospital utilization are to admit and to discharge. Physicians make these decisions; no one else does. At some expense, the hospital purchased an automated clinical practice guideline system that provides information to support patient care decision making when the patient is in hospital. The guidelines include admission criteria that are used to review an admission before it takes place. To improve hospital utilization of potential patients and patients in hospital, the hospital now provides timely admission criteria, diagnosis, treatment and care options to the patient's physician. A patient's expected length of stay is part of the patient's chart. The hospital purchased the system at its own expense to provide information to its employees and to physicians who are not employees. The idea of matching the right decision makers with the right information at the right time is called the *measurement myth attained*, and is a

characteristic of the *innovative health care facility*.

By implementing *interventions*, the hospital started to control utilization of its resources by patients. The hospital learned that utilization could be controlled and would result in improved quality of care at reduced costs. In short, a track record of utilization successes was established. This gave the hospital confidence that it could solve *utilization issues*.

From 1990/91 to 1993/94, the hospital faced increased political and financial pressures as provincial health reform and cost restraint were implemented beginning in 1992/93 and 1993/94. An adult acute care patient service, which was primarily an outpatient service with a few beds, was removed from the hospital and consolidated in another city hospital as part of health reform. The hospital's funding was reduced by government in 1992/93 and 1993/94. The combination of the track record of utilization successes and the external pressures on the hospital are labeled *cost consciousness* for this analysis. When the external pressures were applied to the hospital, it was well positioned to provide patient care and services in new ways because the *interventions* were in place.

To maintain control of and to further improve utilization by the hospital and by physician managers, utilization decisions by the hospital and physician managers must be reinforced or modified. This is accomplished by providing feedback to physicians, patient care teams, and hospital management on their relative utilization performance. The methods are using historical and timely reports, providing alternative services, education, and sanction to care providers and the hospital. This is called *utilization decision making* and is the consequence of the *innovative health care facility*.

Due to increased political and financial pressures and a track record of cost savings produced by past decisions that improved utilization, there are changes in individual and group *autonomy* and the matching of the right decision maker with the right information at the right time, that leads to the practice of modifying future decisions by reports, education and sanction. This characterizes the *innovative health care facility* theme (Figure 12). Political and financial forces and establishing a track record of utilization successes that improve quality of care and financial performance are *cost consciousness*. Changes in the relationships among and between individuals and groups (*autonomy*) and the linking of appropriate decision makers to information (*measurement myth attained*) are among the characteristics of the *innovative health care facility*. The practice of *utilization decision making* for future patients is promoted by timely information to decision makers, the presence of alternative services, education, and sanction. It may be constrained by perceived patient expectations.

As described in the methods chapter, informants are designated as management or health professional. All informants were and are management personnel by function. The designation of health professional is used to separate the perspective of a nurse or physician in a management position from a manager who is not a health professional.

Innovative Health Care Facility

To be innovative, the hospital must be open to new ways of doing things. The hospital has a track record of successfully doing things in new ways that improve quality of care and contain and/or decrease costs. An example is appointing a physician as the Physician Manager for medicine with the authority and responsibility for the Emergency

Room and its Observation. This resulted in addressing the overcrowding problems with its perceived compromise to quality of care and reduced costs associated with this service. This reinforced doing things in new ways. The third theme of the case description is embodied in this statement taken from the latest annual report where the hospital refers to itself as:

(the hospital) is an **innovative health care facility** committed to excellence and a team approach in the provision of services in a caring, supportive and responsive manner.²³⁸

The statement occupies the entire first page and testifies to its importance to the hospital. The presence of term "team" in this statement is of particular relevance since it symbolizes changes in *autonomy*. The changes to individual and group *autonomy* are characteristics of the hospital's new identity. Both innovation and excellence are common terms of nineties. However, innovation appears to apply to the hospital. Innovation is a change from established custom; a new thing or method.²³⁹ The theme, *innovative health care facility*, is all about what happens when established custom no longer holds. The reference to excellence is likely a result of the hospital's total quality management effort.

The hospital's idea of itself as innovative is not a recent occurrence. As early as 1991/92, the hospital used "innovative" to describe accomplishments in the opening paragraph in the annual report:

This year medical staff and employees demonstrated a commitment to be proactive, and through **innovative** programs and services achieved health reform goals and improved the quality of care provided to patients. As well, significant savings have been achieved.²⁴⁰

This paragraph also embodies the *innovative health care facility*. The phrase "significant savings have been achieved" is a demonstration of the hospital's ability to respond to the external pressures of health reform, budget reduction, and the making of a track record

(*cost consciousness*). The phrase “innovative programs and services” demonstrates the hospital’s ability to modify decisions regarding utilization (*utilization decision making*). The patient and the patient’s physician cannot use services and programs that are not offered by the hospital. By offering alternatives or replacements to inpatient services, the hospital increases the options available to physicians. The hospital indirectly affects decision making by providing alternative services. The phrase “improved the quality of care” comes from its new identity, the *innovative health care facility*, due to the *interventions* implemented during organizational *transition*.

Autonomy of the Innovative Health Care Facility

A generic hospital is characterized by autonomous individuals and groups that each vary from low to high *autonomy*. For example, an individual with high *autonomy* is a physician and an example of an highly autonomous group is physicians. The *autonomy* of individual and collective nurses is also high. Where there are distinct organizations within an institution such as the parallel physician, nursing, and hospital organizations, the organizations have a high degree of *autonomy* from one another. These were the characteristics of a *triumvirate organization* of the *acute care hospital belief* from 1985/86 to 1990/91.

The erosion of the *autonomy* of physicians, nurses and the registration department is captured by the theme, *autonomy*. There may have been changes to the *autonomy* of other groups and individuals, but key informant information is not available on the roles of other groups, departments, or individuals.

The hospital as a entity gained in *autonomy* and is expressed as “the corporate

hospital". The latest annual report has a more "corporate" image.²⁴¹ The traditional messages from the board chair, senior manager and medical director are replaced by a single message which is not attributed to an individual. Presumably, the message is from the corporate hospital. After the medical director left to pursue opportunities outside of the province, the position was replaced by a medical vice presidency of the hospital. The traditional message from the president of the medical staff remains. The president of the medical staff is elected by the medical staff and is not part of hospital management. The position receives an honorarium from the hospital.

Team was a commonly used term by the informants. Teams are exemplified by coordination of effort(s); its members have varied and complementary functions. Teams also have a common purpose although the members may carry out specific activities to achieve that purpose. To work effectively within a team requires giving up some degree of individual and/or group independence (*autonomy*).

The development and promotion of teams were and are intentional actions by management. The hospital has implemented total quality management that promotes the formation of teams as work groups and to problem solve. The function of team, or "team-building" as the informant below uses, is to produce solidarity from the fragmentation or departmentalization since team building cuts across established organizational groups. For the hospital of this case study, teams and the formation of team was a way to address the distinct organizations and the rigid departmentalization of the hospital before 1990/91. The evidence suggests that solidarity was made possible by decreasing the *autonomy* of physicians and nurses by team building. Support for *autonomy* as an intentional action by

management comes from the statement below in an annual report where senior management made this opening statement:

Since assuming the position of (position name and time), much time spent on **team building** and the many challenges which have been presented in relation to ongoing and unique issues.²⁴²

Senior management's statement went on to discuss the major issues and achievement of the hospital. Some of the issues being referred to are an accreditation survey and the union strikes. Teams also represent a solidarity against common threat. The threat is not surviving as a hospital and not being successful at controlling utilization of the hospital as informants will discuss later.

In the next year, the hospital shared its philosophy with the public in the annual report. The statement below supports *autonomy* as an intentional action by management. This passage is truncated to preserve anonymity. Effective working relationships, participative decision making, and effective communication promote *autonomy*. The references to individuals are not contrary, but acknowledge those with higher degrees of *autonomy*. A progressive environment is consistent with the hospital's new identity, the *innovative health care facility*. The phrases below are taken from a page devoted to this message from the management team:

... in building effective working relationships based on mutual respect, trust, and co-operation; in fostering a caring, receptive, and progressive environment; in promoting a participative process of decision making; in effective two-way communication; in encouraging the advancement of individual knowledge and skill; individuals must be given the authority and resources to fulfill their responsibilities and be held accountable for their actions; commitment, initiative, and superior performance are to be encouraged and recognized; in managing with integrity; planning and ongoing evaluation are essential to individual and organizational effectiveness;²⁴³

The reference to individual authority and responsibility may be interpreted as a decrease in *autonomy* for physician managers by giving them hospital authority and responsibility.

Individual and organizational effectiveness may come from matching the right decision makers, as individuals, groups and/or the hospital, with the right information at the right time.

Autonomy is held dear by physicians. Individual physicians gave up some independence to continue practicing at the hospital because Physician Managers with hospital authority and responsibility were standing guard over ninety percent of the hospital beds. No longer does their judgment go unquestioned about admissions, the time of discharge or the length of stay beyond the patient's need. When their judgment is challenged, it is best heard from another physician.

A health professional associates changes to individual and group *autonomy* with admission policies (*intervention*), and describes the result for physicians and nurses. The informant was discussing admission policies and then described the changes to the behavior of individual surgeons that must occur for admission policies to work:

Admission policies vary with procedures and are based on understanding, mutually held values, and consensus - very much part of the **team concept**. The **surgeons must be team players** when it comes to admission policies.

The informant went on to discuss the openness of the new senior manager, and then discussed nursing and teams. For nursing, their departmental organizations and division are integrated into the corporate hospital that speaks with one voice. Both physicians and nurses had to become part of the team.

... the switch to a team philosophy effectively addressed the previous more formal hierarchy of the hospital, nursing was restructured and as a result nursing is integrated into the team. Previously, a departmental structure dominated the hospital.

The same informant also associated the nurses strike with changes in the individual *autonomy* of nurses. With financial restraint and staff reductions, the informant states that

nurses joined the team after a change in attitude. The change in attitude is a recognition that the independence enjoyed by nurses would need to be modified in the *innovative health care facility*. A result is decreased *autonomy* by becoming a member of the team.

The informant states that the nurses strike was a key event, and went on to state:

... that one can flog one's own cause sometimes to its detriment, that some of the results of the strike are different from the desired outcomes by the nurses' union. The attitudes of some nurses changed from "its not my job" to an awareness that one might not be able to secure future employment with that attitude and changed their attitude accordingly to become part of a team.²⁴⁴

Later in the interview, the same informant discussed a change to the admitting privileges of a Physician Manager that decreases his or her *autonomy*:

At present, the hospital's By Laws are being changed so a **Physician Manager cannot be an admitting physician** which addresses the conflict of interest that arises when a Physician Manager who has admitting privileges and is in charge of a group of beds. The conflict arises when colleagues have admitting privileges to the same pool of beds.²⁴⁵

The informant went on to discuss competition.

There is additional support for decreased physician *autonomy* by increasing their presence in the management structure of the hospital. After the *interventions* began, the medical director accepted a position out of province and the hospital was without a medical director for almost eighteen months. The position was eliminated and a new position, Vice President Medical, was created and filled in 1993, with explicit responsibility for utilization management. Also, the offices for Medical Administration were physically moved into the Corporate office.

While identifying changes to improve hospital utilization (*interventions*), a management informant also discussed how narrow attitudes in organizations are outdated, and that people have to work together today (1994). The creation of teams by integrating hospital personnel across departments was used by the hospital to alter existing working

arrangements. If the changes in working arrangements which started in 1990/91 (organizational transformation) were to be successful, then changes in *autonomy* must occur.

Interviewer: The changes - what do you think the changes are?

Informant: Well, I think some of the changes are in the working arrangements in organizations - they're changing a lot - they're moving from sort of parochial systems to people who, I think, are a lot more global in their approaches **and they're learning that there has to be a lot of teamwork.** I noticed that people while they might be reluctantly hanging on to, I'm talking about hospitals, for example **the parochial approach to departmentalization that's really not going to work any longer.** I think we're learning to work much more in concert with each another, they see things more in systems' terms. Those are some of the organizational changes that I see...²⁴⁶

The informant went on to discuss wellness and prevention. Later in the interview, the informant associates the nurses strike with a reassessment of the role of nursing. During the nurse's strike, management including nursing management, had an opportunity to see for themselves how things were being done on patient care areas before the strike by highly autonomous nursing personnel.

Interviewer: Since you brought that up - when you were talking about leadership and team work and so forth, do you think that the nursing strike was in any way instrumental in promoting or adopting some of the changes?

Informant: Well, you know, I think something backfired, I think nursing probably achieved some of the opposite of what it was intending to do, in terms of its ability to influence and have power and because what it did is to send up a lot people to the units and to the bedside who then had the ability to make their own assessments and to come back, and while they can't pretend to be nurses, or certainly, **it had some influence in making some changes and seeing things differently** - I think that really - I think that to some degree that really did them in. **There was a lot of talk about different ways to do things,** there was a lot of recognition that perhaps that staffing configurations could change, **there was just - the whole role** - it became, you know, important to- what really happened was that people said **let's look at the role of nursing here.** let's see if we really need -- there was shortly after that, came the issues around the role of LPNs versus RNs versus degree nurses, and **I mean that it seemed just to come to a head after the strike and all facilities are now taking a good hard look,** there was - I think that all facilities are still doing it and all facilities are taking it as a kind of, **almost a catalyst** and are making some kind of changes in nursing, and I don't think they're finished.²⁴⁷

The informant went on to discuss the role of nursing in the health care system and the supply of physicians and nurses in the province. The informant suggests that changes to

nursing *autonomy* will continue. In the case study hospital, nursing *autonomy* may continue to decrease. The role of nursing deals with a high degree of *autonomy* over the management and operation of nursing units and, perhaps, an allegiance to nursing first and an employing authority next. The above may be interpreted as the nurse's strike lead to decreased nursing *autonomy* in this hospital, certainly for the nursing division and departments, and likely for an individual nurse as part of a team. The profound effect of the nurses strike may be unique to this hospital. Two informants worked at another city hospital when the strike occurred; neither noticed similar changes centering around the nurses strike at the those hospitals as changes to *autonomy* or local culture.

To summarize *autonomy*, the start of organizational transformation, power shifts, and local culture converged and developed into substantive changes in *autonomy* of the *innovative health care facility*. Physicians and nurses lost some *autonomy* while the corporate hospital gained. The nurses strike is associated with decreases in *autonomy* for physicians and nurses, and increases to the corporate hospital. The above also demonstrate the role of organizational *transition* in effecting changes to *autonomy* as references to organizational transformation, power shifts, and the nurse's strike. The *triumvirate organization* is being replaced.

Measurement myth Attained of the Innovative Health Care Facility

A characteristic of the *acute care hospital belief* is the reliance on monitoring, measuring and reporting, the *measurement myth*. The informants and documents do not support an association between the acts of monitoring, measuring and reporting with those who make the decision to admit and to discharge before 1990/91. The difference between

the *measurement myth* and the *measurement myth attained* is that the latter matches the right decision maker with the right information at the right time. The right decision maker makes the decisions to admit and to discharge a patient. The right decision makers are physicians for this analysis. A widely held assumption is that information supports decision making in that the decision is dependent on information to support or not support a range of alternatives. The right information is that which the decision maker needs, if any, to support decision making. Decisions to admit or to discharge are individual in nature, that is, made on a patient by patient basis. The right time is when patients are in hospital or before hospitalization; only then can decisions effect the patient's utilization of hospital resources. This is the strength of prospective and concurrent review. Prospective review of a patient-to-be takes place before admission to hospital. This may be done in the Emergency Room, its Observation Unit, or in a physician's office. Concurrent review takes place while the patient is in hospital.

The information must be readily available and credible. According to informants, the information is best delivered by an equally credible messenger, another physician. When the patient is in hospital, decision makers have an opportunity to take action. The actions may be not to order tests or arrange for discharge with appropriate services to be provided. The associations of those who actually make admission and discharge decisions with the information they need at the time they need it, is the *measurement myth attained*. Generally, the activities concern the current patient.

The information requirements to support the utilization *interventions* evolved from implicit criteria to automated clinical practice guidelines that include explicit admission

criteria and treatment options for some, but not all diagnoses. Implicit criteria are still used when a clinical practice guideline is not available. The hospital reallocated staff to support the automated clinical practice guidelines which are located on patient areas. Individual physicians are aware of the expected length of stay for their patient(s) because it is placed on the patient's chart, and monitored by the Physician Manager. Should the patient's condition warrant a change in the expected length of stay, a replacement value is negotiated between the Physician Manager and the patient's physician. The activities for discharge planning can start at admission while working towards the expected date of discharge. Physicians and the hospital use the expected length of stay from the automated clinical practice guidelines as a benchmark in the management of hospital resources for a patient.

A proprietary automated clinical practice guidelines system was introduced at the hospital as a pilot on medicine in 1991, and formally introduced the next year. Physicians were involved in the selection. The preceding paragraph to one below concerned the remodeling of part of the hospital to provide a homelike atmosphere for panelled patients. An annual report describes the system in its own paragraph as:

Our hospital, working collaboratively with medical staff, became the first Canadian Hospital to implement the (clinical practice guidelines) computerized Quality Practice Guidelines. This software package is a support tool based on **diagnostic-specific clinical practice guidelines for medical decision making**. This care management system provides the technology for state-of-the art information on diagnosis and therapeutic care. **The favourable outcomes and acceptance by the physicians has resulted in the pilot project being expanded into Surgery.**²⁴⁸

The next paragraph concerned the installation of a patient wandering system for the non-acute care patients at the hospital.

A management informant comments on why clinical practice guidelines are

important. Physicians are the inferred decision makers in the following statement. The informant states that the ideal is the ability to make timely decisions. It is the timing of the information that impacts on utilization. The hospital considers this important enough to reallocate resources to support the guidelines on patient care areas. Previously, the kinds of information the hospital uses and their respective sources were being discussed by the informant.

Interviewer: That really speaks to the timeliness

Informant: **Its the timeliness and its the ability to make decisions while the patient is in hospital to make decisions that affect their treatment and their care and the hospital utilization as well so the combination of using all these things have an impact.** so I wouldn't say that any one system would meet our needs. The fact that we've used a number of them has probably been a factor and the other things, I think that there has also been a recognition of the fact that there needs to be more support in terms of the information processing. I felt that I've got some really good support at the facility for some of the things we've done in that area -- We've been able to get **health record techs up there to support that system,** the (clinical practice guidelines). Those were initiatives that we went ahead and did they were supported and they were never discouraged when we had an opportunity to be involved and we did that and, you know, its proving to be positive.²⁴⁹

The informant went on to state that the automated clinical practice guidelines are a good investment and have, in a sense, paid for their implementation.

Another management informant finds concurrent information more valuable than historical reports. The information coming from the concurrent system is perceived to be valuable by physicians in this informant's opinion. "APO" is adverse patient occurrence and is a requirement of the College of Physicians and Surgeons. The hospital conducts the audits for APO at the same time as information for the clinical practice guidelines and about patient care are gathered. The hospital has merged data collection for professional accountability and for accountability of hospital resources by physicians. The APO data collection supports professional accountability of physicians through the College of

Physicians and Surgeons. Data collection for the clinical practice guidelines supports the necessity of care and promotes hospital accountability for the resources provided to a patient on a physician's order. The informant was discussing total quality management and its relationship to quality assurance and then recalls:

Informant: I don't know whether it involves length of stay but we do have a **concurrent, an adverse variation of the current system, that is fully operational and has proven to be much more valuable than looking at cases two or three years later** and we've tied that in with the (system name), the clinical practice guidelines, the same staff that are working on the clinical practice guidelines - they are doing the APOs at the same time, and interesting enough we just got a bunch of audits, traditional audits in health records and we used those staff to do the APOs and we've gotten very, very good results from that **and the clinical chiefs really appreciate it** and there isn't any problem developing with the physicians and they're going to pick it up before the patient is discharged ... - I suppose that where we catch the doctors having problems - we catch it sooner and the patients get into less trouble and **we have shorter length of stay** - I think that stretching it a bit but that system's in place.²⁵⁰

The informant went on to discuss the nurse's strike.

A health professional informant discussed the usefulness of the clinical practice guidelines (*intervention*). The guidelines provide objective, available, current information to physicians, Physician Managers, and bed utilization managers on expected length of stay and treatment options for a patients with a given diagnosis. The reference made by the informant to bed utilization managers, i.e. plural, may indicate that the hospital has more than the one bed utilization manager who is chair of the Bed Utilization Committee. The informant may also have misspoke. Other key informants did not indicate that the hospital has more than one. The bed utilization managers could be the Bed Utilization Committee. The clinical chiefs of service at the hospital are perceived to value the clinical content of the guidelines by the informant. In a way, the guidelines validate clinical practice of physicians while ensuring that appropriate, timely care is provided to the patient. The informant was discussing the patient and physician relationship, and the

clinical practice guidelines:

Interviewer: It also helps that the Canadian Medical Association is also backing the development and implementation of clinical practice guidelines.

Informant: So certainly, the physician manager is a big help. I think that the (clinical practice guidelines) program that we've implemented has been a big help in that it has been a very, very useful tool that it has **provided our physician managers and bed utilization managers with up-to-date objective information on length of stay** - so its a tool that they can actually use in taking to the physicians to not only give them a number and say that the length of stay is so and so, but also there's **a lot of clinical material**, clinical abstract material, that can be provided to physicians which **outlines treatment options**, valid treatment options for the 1990s and in the strictest sense this is all information that physicians should have,

The informant continued to discuss the vast amount of information available to physicians in clinical practice. The clinical practice guidelines act as a gathering mechanism for the most current information and increase its availability physicians. The informant infers that the guideline information is reviewed for applicability to patients (relevance) and for its practical nature by the medical staff who then set a standard for the hospital practice.

... but sometimes it is very difficult for a physician who is practicing independently and who is doing a lot of reading, as all physicians should be doing, and is trying to **assess the latest in knowledge and technology**. Its sometimes very difficult to know when does this stuff becomes the standard, whereas the medical staff - we, perhaps, have a tool which allows us collectively to determine whether this becomes a **standard** and I think the clinical practice guidelines help to facilitate that.²⁵¹

The nature of the "real time" information that the guidelines provide to physicians in caring for their patients was also discussed. The informant explains that the patients expected length of stay is part of the patients chart for all care providers to see. This would promote scheduling of diagnostic procedures and treatment(s) during the patient's stay. Accordingly, discharge planning can proceed early in the patient's stay provided there is the will and ability to do so. The clinical practice guidelines associate decision makers with information on today's patient. This promotes appropriate patient care as provided by the physician(s) and the hospital. In turn, the allocation and expenditure of

hospital resources would tend to be more optimal with clinical practice guidelines than without.

Interviewer: Do you enter a provisional diagnosis - how do you use it?

Informant: The clinical practice guidelines, the (name)? Well, the way it is used is there is a **primary diagnosis**, not all primary diagnoses are covered by the software, probably is around 70% and at the present time, the program can be used in many ways, ... So really the form that has been taken is that we actually have abstractors up on the wards who, based on the information that is on the actual admission history and on the order sheet indicates what the **primary diagnosis** is, generate an estimation of what would be **the expected length of stay for the patient**, and then this is actually placed on a sheet on the **patients' chart** and then the physicians are asked to sort of interact with that, and if the expected length of stay is going to exceed what the software generates, they're asked to expand upon the reasons.... - so the **targets can be adjusted appropriately**. And at the same time, the **physician managers are monitoring** all of this in their daily rounds.²⁵²

The informant went on to discuss using clinical practice guidelines on medicine and their relationship to patients with complex medical complaints. The guidelines, it would appear, serve as a care safety net for both patient and physician. The patient is assured of appropriate care in a timely manner that is based on the best current clinical practice available. The physician is assured that the care provided to a patient is the best available approach given the current level of knowledge. The hospital is assured that both the patient and the physician receive needed resources. The clinical practice guidelines also decrease the independence of physicians, but in a manner that may not be perceived by all physicians as negative due to its advantages. The guidelines promote the monitoring activity of Physician Managers and bed utilization managers which also reduces the relative independence of physicians practicing at the hospital. The informant's statements confirm the reallocation of hospital staff to support the clinical practice guidelines system, and that the expected length of stay can be changed to reflect the patient's condition. The Physician Manager must agree with the change to the expected length of stay from the system.

A health professional informant discussed care maps that represent the next refinement to improve the utilization of the hospital by patients (*interventions*). Care maps are part of the hospital's information requirements that support utilization management on a hospital scale. The care maps include information from the clinical practice guidelines. According to the informant, care maps include explicit admission criteria, the identity of diagnostic and treatment procedures and their ideal sequence and relative timing during a patient's stay. The care maps also support the appropriateness of care. Care maps also provide timely information to all care providers. The hospital is getting ready to address overall utilization of hospital resources by developing care maps. This is the utilization of radiology, pharmacy, and physiotherapy services for example for a patient with a given diagnostic group. As well, the development of care maps include social indicators and this makes the approach holistic in nature. The informant states that the care maps are developed by the medical staff, but also infers that others are also involved in the development so the finished product reflects a variety of perspectives. Since the care maps are not developed by independent individuals, the development is consistent with a team effort. This would reduce professional *autonomy* of a variety of individuals and groups. For example, the *autonomy* of individual nurses, pharmacists, physiotherapists, radiologists etc., participating in the development is reduced. The groups whose *autonomy* is reduced would be the corresponding departments of nursing, pharmacy, physiotherapy, radiology. The development of care maps underscores the interdependence and complexity of care provided to a patient. The informant was discussing admission criteria and the sources of admission criteria, and stated:

Informant: We're just now getting into, I guess, the development of **medical care maps** ... and part of every medical care map that we develop includes **criteria for admission** and that just one

part of it. So that for kidney infection, for example, you admit those that meet certain criteria and the others you treated as outpatients. These guidelines or care maps are **developed by the medical staff** ... You need hospital, clinical people and management people to facilitate the development of these things and bring in the opinions from our medical staff at large ... These things go far beyond just criteria for admission and length of stay - they're just small parts of **utilization management** - it goes into the choice of antibiotics, choice of investigations etc., which can be, at times, much more difficult to try to influence.

The informant provides a description of a care map which includes admission criteria.

Interviewer: What is a care map?

Informant: A **care map** is ... another good term would be a **standard or a practice guidelines**. Basically it outlines what should be the **criteria for admitting the patient** and **it outlines what should be happening in course of a hospitalization on a day-by-day basis pretty much**. At the time of admission these are the criteria for admission, these are the **investigations** that should be done, these are the **appropriate treatment choices**, and on days 2, 3, and 4 these are the things that should be occurring from the investigation, **the consultation**, the treatment, **overall management, discharge planning** point of view, **these are the things that should be occurring**.

The key informant went on to discuss the limitations of care maps when it comes to complex medical patients, presumably with known co-morbidities. By inference, patients with surgical diagnoses are less complex and tend to be more amenable to care mapping.

Again, its difficult to do on medicine where people often have complex medical backgrounds, the surgery services really lend themselves to this development of these things. For someone who comes in for a hernia, for example, these are the things that must occur in the pre-admission clinic, this is pre-op workup that you have to do depending on the patient's age, we've run through a list of **high risk social indicators** so that if any one of them is triggered we get a social work or home care consult up front before the person even hits the hospital door. Then when they come in the day of surgery, the night before surgery, any preparatory pre-op medication that they have to take they are provided with it ... **In essence, it's basically a map of what should occur to the typical or average patient at the various time intervals or various times during their hospitalizations.**

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The informant then discussed the relationship of utilization review to utilization management at the hospital.

A management informant was speaking about using several sources for comparison reports which provide feedback to decision makers on their performance at a hospital level (*utilization decision making*). The medical informatics system being referred to by the informant is the automated clinical practice guidelines system. The phrase

“national rating” refers to comparison reports from the Hospital Medical Records Institute (HMRI). The informant then identifies the “ideal” situation that is consistent with the previous key informant, that is, when the patient is in hospital.

... and we're participating in the national rating ... -with information you always have to keep searching for something better because usually something's deficient in any one system, and so, for example, the medical staff is interested in promoting the use of the **medical informatics system**, the medical evaluation system, the hospital (**clinical practice guidelines**) that's even being more **proactive** because its done **concurrent and is being done when the patient is in the hospital and really is the ideal.**²⁵⁴

The information that the informant is referring to comes from HMRI, the automated system, and the provincial abstracting system. The reason for the use of multiple sources for performance comparison is that the informant perceives there is not a reporting system which is perfect. The use of different systems balances out the picture being created.

Matching the right decision maker with the right information at the right time is the *measurement myth attained*. The decisions that underlie hospital utilization by patients are to admit and to discharge. Physicians make these decisions, and, in the context of this case study, they are the right decision makers. The right information is timely, credible, and available. The right time is before hospitalization, at admission, and during the hospital stay. In practice, the *measurement myth attained* may vary from the low technology approach of the Physician Manager's judgment on a potential admission to the high technology of automated clinical practice guidelines with admission criteria and expected length of stay.

If physicians were using length of stay by diagnostic group from a historical report of the hospital, it would reflect cumulative decisions including no decision(s) by all care providers including physicians. Length of stay may reflect the traditional teachings of

medical schools and inappropriate days spent waiting for diagnostic procedures and therapies due to scheduling problems. It may also reflect the unavailability of post-hospital services, and the patient's request to remain in hospital. The clinical practice guidelines provide an objective measure of what the length of stay should be, not what it is by actual practice. Length of stay from actual practice is derived from a myriad of sources which are not necessarily measures of the patient's need for hospital services.

So far, descriptions of *autonomy* and matching the right decision maker with the right information at the right time (*measurement myth attained*) have characterized the new way of managing utilization by the hospital (*innovative health care facility*). Two subthemes provide additional characterization, and are *cost consciousness* and *utilization decision making*.

Cost Consciousness as a Condition of the Innovative Health Care Facility

The hospital in 1992/93 and 1993/94 faced growing, real financial pressures and being *budget conscious* is not longer sufficient to deal with the pressures. This is the perspective where the budget establishes quality of care and is a boundary to patient services and care. From this perspective, improvements to quality of care and services were synonymous with budget increases. In the past few years, the hospital has been confronted with provincial health reform and changes to its income, i.e., global funding, from the provincial government. Limited increases to its global funding in one year are followed by successive decreases in the global budget. Trying to solving *utilization issues* by increasing physical capacity and resources, i.e., old *problem solving* behaviors, are being replaced by new behaviors that are sensitive to cost while being understandably

concerned with quality of care. A track record is being built based on earlier utilization successes by using new behaviors. The track record is proof that the hospital can manage utilization to improve quality of care and reduce costs. This describes *cost consciousness* which was labeled by a management informant. Before the informant made the statement below, the preoccupation of 1994 health care managers with financial issues was being discussed. The informant also associates financial preoccupation with an equal concern for quality of care:

... but I think that that talk goes on all the time - **its sort of the *consciousness* today**. And in some ways, there is concern expressed amongst health care givers that, that concern because it dominates so greatly, that there is somewhat of an insensitivity, to some needs of patients, like at the bedside. So those are some of the concerns that you hear expressed from time to time...²⁵⁵

There is a concern about quality of care that the informant associates to a preoccupation with costs, and labels it *consciousness (cost consciousness)*.

Track Record of *Cost Consciousness*

The extent to which the old *problem solving* behaviors or methods are being replaced by behaviors learned during organizational *transition* can be assessed. The following statements demonstrate that the old methods of *problem solving* were costly in monetary and quality of care terms. By practicing what the hospital learned, which is that problems can be solved in different ways, costs are reduced and quality of care is improved or maintained. The hospital learned that utilization can be managed.

A management informant relates the tangible (savings) and intangible (improved quality of care) results of solving the overcrowding problem in the Emergency Room and its Observation Unit (*utilization issue*). When the hospital tried to solve the *utilization issue*, additional staff, stretchers, and treatment spaces were added. This made the issue

larger and increased costs. These characterize *problem-solving* behavior before 1991. The hospital solved the problem by giving the Physician Manager (*intervention*) for medicine, hospital authority and responsibility for the Emergency Room and its Observation Unit. The issue was solved by addressing its cause, the lack of control of hospital utilization by physicians and their patients. The appointment of the new senior manager is associated with the ability to solve *utilization issues*. The informant's statement was made while discussing whether the appointment of the new senior manager was a critical success factor in effecting changes at the hospital.

Interviewer: Okay - I'm trying to get a handle on to what extent that he was a critical success factor

Informant: And useful - just resolving the public embarrassment of trying to treat patients in the hallway in emergency -- that had **very significant financial savings for the hospital** because all the extra nurses we had to hire, I can recall that we had four or five extra nurses hired above their budget simply to look after overflow patients after the Observation Unit was full, so we'd have patients in the hallway and there's a couple of hundred thousand dollars a year and these changes were **direct savings of several thousand dollars a year because we solved the problem in emergency.**²⁵⁶

The informant went on to discuss how the conditions in Emergency Room and its Observation Unit came to be. There were quality of care concerns and monetary costs associated with *problem solving*. The quality of care concerns involve treating acute care trauma and providing patient care to acute and non-acute care inpatients. It also includes caring for persons who are being observed, the scheduling of outpatient procedures, and the coordination of diagnostic procedures for all patients. The Emergency Room and its Observation Unit were trying to function as a trauma unit, outpatient clinics, and an inpatient ward for diverse patient populations, acute and non-acute care patients. Solving a *utilization issue* saved money and improved care. It also gave the hospital a track record in managing utilization.

Another example of accomplishment comes from an annual report in a paragraph entitled "Utilization" which was preceded by a paragraph on commercial development. A track record of decreased length of stay due to the use of clinical practice guidelines (*intervention*) has been established according to the document. The care maps provide standards for quality of care and utilization of hospital resources. They are being developed to maintain the reduction in length of stay and refine the application of the clinical practice guidelines to the hospital. The scope of utilization is being broadened beyond bed utilization. When the hospital learns that bed utilization can be and is being controlled, then there is the confidence to tackle hospital utilization by patients.

Application of the clinical practice guidelines of the (trade name) Program have resulted in reduction in length of stay for patients in Medicine and Surgery. As an adjunct to these guidelines medical care maps are being developed for most frequently occurring diagnosis. These tools will improve resource management and provide standards for measurement of quality of care and utilization.²⁵⁷

The following paragraph deals with the Pre-admission clinic. This track record deals with decreased length of stay due to the clinical practice guidelines, and is an example of the *measurement myth attained*. The hospital is not specific about the patients whose length of stay is presumably reduced.

A health professional informant indicates other track records. Surgery is rarely canceled and surgical length of stay decreased for inpatient procedures. Many inpatient procedures are now entirely outpatient procedures and cannot affect hospital length of stay. The clinical practice guidelines and the associated care maps aid discharge planning and the planning of diagnostic and therapeutic services. After discussing the results of the hospital's utilization *interventions*, the informant states:

A result is that cancellations of surgeries is virtually zero... The Pre-admission Clinic and ASA have decreased the length of stay for surgical procedures based on HMRI reports. Surgeon

cooperation and education were also responsible to some degree for decreased length of stay. Care mapping is another strategy which is in place for hernia repair and TUR (examples) - the care maps are procedure specific and are predictive for post-surgical services such as home care or physiotherapy. Care maps are being developed for additional surgical procedures.²⁵⁸

The incentives for the changes at the hospital were discussed next. Health Medical Records Institute (HMRI) are national comparison reports which are purchased by hospitals. The cooperation and education of physicians is addressed later.

External Forces of *Cost Consciousness*

Decreased global funding to the hospital heightens its sensitivity to financial issues. A management informant relates how *cost consciousness* affects decisions and how it is becoming part of the local culture, embedded in the fabric of the institution. The health reform initiative being referred to is the loss of a patient care service during consolidation of that service in city hospitals. The preceding discussion was about the changes that have occurred at the hospital during the past years.

Interviewer: Can you think of any others?

Informant: Well, **we had subsequent numerous changes in staffing, of course.** There was some of the recent things, well not that recent - some of the health reform initiatives certainly had impact on things at the hospital and they were major. There's been - I think really - **I don't think that things have ever been so tight financially - I know in terms of finding the dollar and stretching the dollar, that has been another major change** over the last several years. **Its just been that tight.** I think we've always been, truthfully, always been running things very well. However, I think that the looking around for the dollar and making it stretch has been a major - **its becoming kind of an inherent thing - you're thinking of it constantly, its part of the mindset. You're thinking of ways to make this work and stretching the dollar - and say how are we going to make this work with the people and resources.**

The informant went on to label *cost consciousness*. The informant is concerned about quality of care under financial duress, but then decides that quality of care is likely not threatened. Doing things in new ways is unsettling according to the informant. There are references to health reform and the effects of budget reductions in the second paragraph of

the text. To assess how the informant perceived quality of care, the following occurred:

Interviewer: Do you think that there is any truth to that?

Informant: Well, in times of change, we sometimes do go overboard, I think that sometimes there are some elements of talk where that probably would be true. I can't give very concrete examples, I'm talking about what I hear from the people I work with, and I think that its like everything else when you initiate change and make some mistakes, and I think that because **the emphasis is changing so much a financial one and that (is) because we perhaps move too fast in some areas and we are not moving fast enough in others;** for some reason there's probably is talk that we haven't thought it out well and there will be something detrimental to patients happening like services cut out or delays in service or repriorization that makes it tougher and perhaps longer waiting lists in some areas ... **but I don't really feel that there has been any major problems in terms of patient care** - I think some of things are simply because we're in *transition*, trying out new things.....²⁵⁹

After a comment by the interviewer that the informant's statements were like a description of another culture, the informant went on to discuss local culture at the hospital. Doing things in new ways is unsettling, and adds to a perceived feeling of uncertainty according to the informant. To explain or reconcile the traditional dichotomy of quality of care being directly related to the amount of money spent, and to account for the perceived uncertainty when doing new things, the informant uses the concept of (organizational) *transition*. The informant's association of quality of care with financial issues was not unique to this case study as will be demonstrated. The external pressures of health reform and financial constraint manifest as concerns for quality of care while reducing costs.

In an annual report, senior management relates the nature of external pressures on the hospital in the following paragraphs, labeled "economic challenges" between paragraphs on charities and appreciation. The reference to "no deficit" is being budget conscious in that positions were reduced and the budget itself is a boundary. The Commission, i.e., government, is being budget conscious by redirecting the money saved to a physical repair. The writer associates cost containment and review activities with

quality of care concerns. Here the writer is careful to point out that quality of care will be maintained, if not improved lest anyone associate decreased funding with decreased quality of care.

The 1990-91 fiscal year was entered into with a **mandate to incur no deficit**. The success of fiscal management efforts and the result of two strikes has led to a surplus. Cost savings related to the two strikes are one-time-only savings which cannot be re-assigned. The Commission has given approval for much of these monies to be used for (repair to physical structure).

The 1991-92 fiscal year is being entered into with **increased economic challenges**. As a result of government announcements related to **limited increases in health care funding**, the Hospital has entered into a number of **cost containment and review activities**. The aim of these activities is to **maintain or improve the provision of care and services** while ensuring that there will be no deficit in the 1991-92 fiscal year. **The Hospital is confident that it can meet the challenges of the 1991-92 fiscal year.**²⁶⁰

The confidence comes from having a track record of utilization successes that improved quality of care and maintained costs despite limited increases in funding. The paragraphs contain echoes of the *acute care hospital belief* where quality of care is thought to be directly related to spending. Also note that costs are discussed first and quality of care discussed second.

In a later annual report, political and growing financial issues are the first issues documented in the report. Decreased costs, presumably producing the mentioned savings, to maintain or provide more services are consistent with the notion of increased efficiency. The efficiencies that produced the reductions in management staff were made possible by expanding the scope of surviving management. These are not efficiencies directly related to service or patient care production. Length of stay as measure of the efficiency of patient care production may not be sensitive to other means of producing efficiencies.

This year the **challenges of Health Reform and decreased financial resources** have been addressed through the implementation of **specific budget reduction actions**. **Significant savings** have been **achieved** while efforts have been made **to maintain or improve the volume and the quality of patient care**.

The Board of Trustees and Administration have demonstrated fiscal responsibility in **achieving a**

balanced budget in the Hospital's (number) years of operation. In 1992/93 the financial target for reduction received was approximately (amount). This was achieved primarily through the implementation of **cost reduction strategies which focused on reduction to non-patient areas**, which reflects the Hospital's priority of maintaining patient care services to the public. A major portion of the reductions related to the integration of management functions resulting in a **reduction of management positions. This amalgamation of responsibilities maintained the quality and volume of services at the Hospital.**²⁶¹

The report continued with information about long stay patients. Costs are also discussed first and quality of care discussed second. The writer associates budget reductions and the maintenance or improvement in quality of care. This is contrary to the *acute care hospital belief* where the budget determines and limits quality of care as a direct relationship. It is not contrary to the *innovative health care facility* where improving quality of care is possible with reduced costs.

In the following year, financial issues dominate the opening section of the annual report. Quality of care is mentioned first and costs are second. The writer of the document uses the term "*innovative*" (my italics) to describe how physicians and staff met the challenge of reduced funding. The interpretation of innovative in this context is managing utilization rather than not managing utilization. The maintaining the standard of care at its highest level is a by-product of managing utilization. Before 1991, the standard of care was established by the budget. The confidence expressed in the statement comes from past utilization successes which improved utilization including quality of care and reduced costs.

To say that last year was a challenging one would be understating the obvious. Many difficult decisions had to be made as we endeavored to **maintain quality patient care with financial restraints** placed upon the facility.

A plan to address the **directive from (Government Department of Health)** for a 20% reduction in Administration, a 10% reduction in management and a 20% reduction in Social Work for savings of (amount) per annum was implemented. As well, a strategic plan was developed and implemented by departments, divisions and the Bed Utilization Committee to achieve (amount) additional savings. **Physicians and staff met these challenges and achieved a balanced budget by providing services in different and innovative ways to reduce cost while continuing to**

provide patient care of the highest standards.²⁶²

The next paragraph concerns accreditation. There is a suggestion here that quality of care was threatened by cost containment, although the challenge was met by the hospital.

Higher relative levels of funding were associated with quality of care which was perceived to be compromised in the era of the *acute care hospital belief*. Funding and the hospital's budget were directly related to quality of care. In the last three statements from informants, external forces applied political and financial pressures to the hospital. There are concerns about quality of care in an environment of cost containment. However, *utilization issues* and *problem solving* of the *acute care hospital belief* argue that "more generous funding" was associated with a perception of compromised quality of care.

To summarize, the hospital solved *utilization issues* in the Emergency Room and its Observation Unit and by aggregating panelled patients. A track record of utilization successes was established. The hospital learned that it was possible to solve *utilization issues*, and improve utilization. In turn, this led to an improvement in quality of care and reduced costs. When the external forces, health reform and limited funding, were applied in 1992/93 and 1993/94, the hospital had an advantage, a track record, and was better positioned to deal with them. In the *innovative health care facility*, cost containment does not and should not necessarily lead to less than optimal quality of care. This is contrary to the *acute care hospital belief* where budget increases lead to improved quality of care.

Utilization Decision Making as a Consequence of the Innovative Health Care Facility

The practice of modifying future utilization decisions about patients by using historical and timely comparison reports, and by providing alternative types of care, education, and sanction defines *utilization decision making*. Its purpose is to reinforce or to modify future decision making behavior of physicians and the hospital by providing feedback on performance to individuals, groups of service providers, and to the hospital itself. This may include comparisons with hospitals of a similar size. The practice of *utilization decision making* is promoted or constrained by report timing. The educational value and credibility of reports to physicians and the hospital are also important and may be perceived differently due to dissimilar perspectives and needs. *Utilization decision making* is also modified by the presence or absence of alternative services provided by the hospital, and by other health care facilities or government agencies.

Historical and Timely Reports for Utilization Decision Making

Reports are historical or timely. Timely reports reflect patient activity within the last month or quarter and are like progress reports. Historical reports contain "older" information that may not be relevant to current hospital practice. According to a management informant, the hospital prefers to use data and reports coming from the clinical practice guidelines system and historical reports from the Health Medical Records Institute (HMRI). For example, some HMRI reports contain length of stay categorized by a diagnostic grouping methodology. The informant was discussing that the economic climate in the province contributes to why the hospital is doing things differently.

Interviewer: You mentioned reports, reports from Manitoba Health or HMRI?

Informant: **We use a combination** and we're using information more and more all the time and I would say that there is **larger emphasis on using the (clinical practice guidelines) data** which, of course is American, and using the **(reports) from the Hospital Medical Records Institute** and because, of course, it provides comparable comparisons across the country which is very useful. However, sometimes you need to use some of your local data, you need to use the provincial database and we use that and there is some value in doing a cross-check sometimes using both databases. But I do see that eventually we are **more likely to use the national data** to try to make improvements and **participation in national ratings**. The problem for Manitoba however is that because we have the database that we have, which is a great asset to the province, but it is also somewhat of a hindrance²⁶³

The informant did not elaborate on the hindrance comment and went on to discuss clinical practice guidelines as an example of more timely information. The Manitoba database being referred to contains actual length of stay among other data. It reflects the status quo of hospital practice by physicians that may vary due to constraints or the lack of constraints placed upon their practice by hospital management at the time of the report. The hospital prefers expected length of stay based on best practice, i.e., the clinical practice guidelines that are validated for use in the hospital by consensus of the medical staff.

The above management informant also discussed the role of the Bed Utilization Committee in managing hospital utilization by patients and about the information it uses. Historical reports, generally from HMRI, are used and shared with clinical committees. RIW stands for Resource Intensity Weights. RIW reports, available from HMRI, estimate the cost of a diagnostic group based on length of stay. CIHI stands for Canadian Institute of Health Information which includes HMRI. The nursing utilization manager reference is assumed to be the Bed Utilization Manager. The Bed Utilization Committee uses reports from various sources to compare the hospital's performance. It also provides the reports or relevant portions to clinical committees. These actions should reinforce past utilization

efforts and promote continuing utilization *interventions*. It should also point out areas where performance could be improved by physicians and the hospital.

Interviewer: When you have meetings, what kind of data specifically do you look at?

Informant: Well, for example, this month we're looking at the executive summary of the CIHI reports, **we're looking at how we've done over the last six month period and then we always make comparisons to previous months, years, or quarters** - we do that kind of thing - so we plans to evaluate certain portions of it, for example, the medical for one month, the surgery for the next month, or general practice - there's a whole variety of things that are being looked at, sometimes we make a choice and what I try to do is to get the material to the nursing utilization manager who will work with the VP of medicine and then they decide what to and will add other things ...

The informant states that some factors which affect utilization are the hospital's responsibility, while others belong to the medical staff. Providing or not providing alternative service delivery is an example of a hospital factor. Another example is provided by the informant which is not being able to transfer someone, presumably, to another hospital or health care facility. The reference being made to a utilization committee is the Bed Utilization Committee, not the committee before 1991. The reason why the hospital prefers to match the expected length of stay from the clinical practice guidelines is because that length of stay is objective and supported by data from clinical research including best practice. An expected length of stay from the clinical practice guidelines has a greater chance of being comprised of all appropriate days of care. The admission is assumed to be appropriate. There may be another reason why the hospital prefers to use the expected length of stay. The hospital is aware that not all days in an actual length of stay from a comparison report are appropriate days of care. The admissions cannot be assumed to be appropriate given the hospital's own experience in these matters. The use of expected length of stay is perceived by the informant to provide an edge in competition, hence the reference to being ahead of the game. This is another

reference to the hospital intending to be successful and to survive.

recently we've been using some of the **(automated clinical practice guidelines) data** because there is portions of it that speak to **issues of utilization that are facility problems** - like they couldn't transfer somebody out and issues like that, that are geared to medical issues - while its geared to medical staff, **its very useful utilization information for the utilization committee members** and so we've been using that as well, and we're comparing, for example, that data which has a US base because, you know, for years they have had much more favorable utilization criteria in terms of length of stay and so on, than we do in Canada - so what we've been doing, for example, is **matching the (automated clinical practice guidelines) length of stay to the national database - so we're making all the comparisons and seeing how we do**

The informant went to explain that many sources for reports featuring length of stay are used.

- the real goal, in many cases, is for us to try to match the (clinical practice guidelines) data, which right now may be somewhat idealistic but nonetheless we're starting more and more to match it - so the progress is there and, again, without it we wouldn't be creating the goal - its significant to do that. **we want to be ahead of the game.**²⁶⁴

The informant went on to explain that "ahead of the game" meant that the hospital wants to do a good job, be competitive, and stay in business. This is another reference to survival of the hospital. The informant points out that the responsibility for some utilization concerns belong to the hospital, while others belong to physicians.

Performance comparisons are made internationally using data from the United States (clinical practice guidelines), nationally using data from HMRI, and locally, other city hospitals using the provincial abstracting system.

A health professional informant who also sits on the Bed Utilization Committee discussed its function and why it is perceived to be effective. The reference to the power of the Committee comes from all four Physician Managers and almost ninety percent of the beds are represented. There is a match between the right decision makers, right information and at a time appropriate for reinforcement or modification of behavior to occur. After discussing the other committees the informant sits on:

Interviewer: How do the admission policies work in the bed utilization committee?

Informant: Its a busy committee that meets probably at least once or twice a month and actually seems to deal with real admission issues - it's a committee that actually does something - that has power and enacts a number of important changes ²⁶⁵

The informant then discussed the differences between past and current admission policies.

Another management informant commented on the challenge ahead for hospitals to address overall hospital resource utilization by a patient. The reference to deficiencies by the informant concerns this challenge. Hospital resource utilization consists of the use of drugs, therapies, diagnostic procedures, etc. by a patient. Two other informants also commented on the vast amount of information available. The informant was discussing some effects of the nurses strike on people's personal health, and then:

Interviewer: do you have a definition of utilization review and/or utilization management that you hold to?

Informant: Well, ... while we've done specific studies on lab and radiology and some of that comes into with the clinical practice guidelines - what's appropriate or inappropriate and pharmaceuticals haven't done some studies on pharmaceuticals and have developed protocols on which drugs to be used and saved a lot of money and overall -... there's so much information available ... - I guess there are some deficiencies there which we have to address and tie in with all the external reports, be they provincial or national, that's an area that we have not - or needs addressing - that's a good question. ²⁶⁶

The informant then discussed the difference between utilization management in the United States and Canada. In this statement, the informant acknowledged that the overall picture of hospital utilization needs to be addressed as an information plan. At present (1994), the hospital is focused on bed utilization and is beginning to address the use of all hospital services by a patient. Some of this is due to the replacement of bed-based services with outpatient services and procedures.

The clinical practice guidelines provide timely, credible information for most diagnoses. The health professional informant stated that medical patients tend to be

complex and their utilization of resources are less straightforward than less complex surgical patients. The informant was discussing clinical practice guidelines and how they are used in the hospital and then:

Interviewer: And this is being used on medicine?

Informant: Its being used on **medicine as well as surgery. For those diagnoses for which we actually have the software.** It probably lends itself more easily to elective surgery because these are people who are planned admissions and you can anticipate their problems up front and you can predict a lot more accurately what the length of stay will be. These people who are usually in for just a problem with one part of their body, one organ or one system. It facilitates or lends itself to this type of discharge planning whereas **most people who come into medicine come in through emergency and very rarely do you see just an isolated, simple diagnosis, you always get a mixed bag, people tend to be old and have multiple medical problems - they're already on multiple medications, once you start.**

A result of using the expected length of stay from the clinical practice guidelines as the ideal number of days is stated by the informant. The impact being described is a trend toward an increased length of stay as the short stays of the "not-so-sick" are replaced by "sicker" patients with longer stays. The informant states that length of stay has decreased, but did not specify patient groups or diagnostic groups.

The interesting thing in all of this is, of course, is that clinical practices have evolved over time so that in some areas we even find that our average length of stay may be going up, and that's by virtue of the fact the people who in the past, as recently as five to ten years ago, used to be admitted are being treated and turned around right in the emergency department, so a lot of people who have pneumonia who aren't too sick, with congestive heart failure who aren't too sick, with asthma who aren't too sick, they're being seen, they're being stabilized in emergency and they're being sent home. **Whereas in the past, these people might have been admitted for two, three, four days and therefore would contribute to your average and, in fact, pull your average length of stay down.** People with these conditions today are being admitted, but they're sick people so they're the ones that are probably going to be staying a significant length of time, the averages that we may find over time probably include some of those relatively well individuals who just don't contribute to the average anymore. But bearing that in mind, **our average lengths of stay have come down.**²⁶⁷

The health professional informant went on to discuss the Emergency Room. By practicing *utilization decision making*, the hospital may be selecting a "sicker population" of acute and non-acute care patients.

Alternative Services as *Utilization Decision Making*

The extent to which *utilization decision making* is used to control utilization at the hospital is apparent by the presence of utilization *interventions*, the Pre-Admission Clinic, Short Stay Surgical Unit, and After Surgery Admissions. The hospital controls utilization by providing alternative outpatient services to replace or partially replace inpatient services. The availability of these services affects current and future decisions by physicians. If the hospital does not provide these services, the physicians practicing at the hospital cannot use them. These services are for acute care patients and were discussed as *interventions*. Non-acute care patients, generally, do not use these services. The availability affects one of the two patient populations of the hospital.

Technology also impacts service delivery and length of stay. The patient population served by the hospital has not changed according to the health professional informant. After discussing changes to the hospital's bylaws, the informant comments on the role of technology in providing alternative patient services.

The use of **technology also affects length of stay** in a major way.... the hospital is seeing the same kind of patients as it did some years ago, but in many cases, **the substitution of non-invasive surgical technology for traditional approaches has contributed to the decrease in length of stay**. Examples given were laproscopic approaches for cholecystectomy, hernia repair, and gynecological procedures. The hospital wants to become a center of excellence for (service) and has funded equipment acquisition from its reserve. The hospital is also working toward becoming a center of excellence for (another service).²⁶⁸

The informant then stated that underutilization of services by patients was not a concern at the hospital. The possibility of reducing costs by not providing services that are needed by patients was not supported by this informant. The comment on funding equipment purchases from reserves could be called *problem solving*. Presumably, the equipment is to provide what once was an inpatient procedure on an outpatient basis, and may not be an

increase in capacity by adding additional resources. It may strengthen the reallocation of resources or make it possible to reallocate resources. The hospital made the decision to provide alternative services for future *utilization decision making* by physicians.

Education and Sanction as *Utilization Decision Making*

Education of physicians takes place by sharing information from various sources including the clinical practice guidelines. For the most part, education of physicians by peers is relied upon rather than other options to influence decision making on utilization of hospital resources. The perceived value of using timely information in educating physicians to possibly modify their practice patterns is related by a management informant. The informant refers to the cost of the automated clinical practice guideline system at the beginning of the statement and to a perceived decrease in length of stay. The informant perceives that physicians were not aware of the impact of some of their decisions, and by educating them, they are aware of the overall impact of their individual decisions. The informant was discussing the timeliness of information to modify practice patterns while the patient is in hospital, the clinical practice guidelines.

And it's a dollar well spent because there's been such an **obvious decrease in day's stay** but its paying for itself. Now, again, you might have to reassess and look down the road and what your going to use the data against, but there all being done and they all have an impact for the fact that new trends are occurring. I think that **one of the key things is that physicians are being educated here too**. There's been more and more, for example, one of other initiatives is that we do have Physician Managers in the facility. I'll be honest, **I don't know if some of these fellows really thought a lot about the issues that are confronting them today but they're having to look at concrete data**. And so, **I think some of them (the physicians) are quite new to them (looking at concrete data) but they're quite willing to do that and (it) promotes the idea among their colleagues that support it.**²⁶⁹

The informant continued to discuss the influence of technology on length of stay.

The sanction of taking away admitting and hospital privileges is an option available

to each Physician Manager should this be warranted. Presumably, this is a response to the inappropriate utilization of hospital resources. A health professional informant was perceived to be somewhat reluctant to state that admitting privileges had been removed as a sanction for inappropriate utilization of hospital resources by physicians. On the other hand, the informant did not state that no one had lost privileges. After discussing quality of care, the informant discussed the use of sanctions at the hospital.

In closing, the discussion turned to the sanctions that could be imposed on physicians who do not abide by the admission and discharge policies and generate patient stays in excess of usual practice. **The strategy of first choice was education although disciplinary action (no admitting privileges) would be an option should educational efforts fail.**²⁷⁰

The interview ended. The clinical practice guidelines, the expected length of stay pasted on the patient's chart, the monitoring of admissions and discharges by a peer (Physician Manager) are examples of educational activities.

The clinical practice guidelines are used to educate patients and physicians. Patients also influence *utilization decision making* of physicians. The guidelines also may be used by physicians to address patients concerns about what is perceived to be a short length of stay. The informant also pointed out that physicians provide continuity of care between the hospital stay and subsequent patient care in another location. After discussing physician cooperation in implementing the admission policies and the resulting decreases in length of stay, a health professional commented on how patients may limit change to length of stay.

Interviewer: So when they see it start to work and the length of stay actually come down to five days and certainly the patient isn't no worse off for it, it works.

Informant: I guess the other thing is, of course, **physicians**, still in most cases, **remain the prime contacts with the patients and the family**. Most of the patients who are admitted to this hospital have a prior relationship with the physician and will have a continuing relationships with that same physician once they leave the hospital. And the physicians often are the focal point of the patients questions, concerns about their length of stay. You know, it was not the hospital sent me

home too early, it was you, the doctor, that sent me home too early. And I think that physicians feel a lot of pressure, in some cases undue pressure to not release the patient too early.

The informant went on to discuss the role of the physician manager and the clinical practice guidelines in providing decision support when dealing with a patient who wishes to stay longer than the expected length of stay.

and I think what the program, the physician manger program, augmented by the **clinical practice guidelines** that we have - really what it does is **provide the physician with information**, with validated choices, so **the physician can feel comfortable saying to the patient, this is the appropriate timing of discharge** - so they have the feeling that there is something backing them up, that the physician manger and the clinical practice guidelines are, in fact, **backing them up when they make these choices.**²⁷¹

The informant went on to discuss clinical practice guidelines.

Patient expectations as a factor in *utilization decision making* was echoed by another health professional. The informant discussed out-of-town patients staying at a nearby hotel before their day surgery rather than becoming inpatients as a strategy to decrease length of stay. The informant then stated:

Hospital based efficiency measures are limited by patient expectations. The expectations may affect admission and length of stay. Patients may request to be admitted rather than opt for same day surgery; the patient may request to stay in hospital longer than would be dictated by his or her condition. Often, patient's expectations are colored by the experiences of family, neighbors and/or friends in that X stayed in hospital for Y days - why not me?²⁷²

The informant went on to discuss hospital bylaw changes.

To summarize, *utilization decision making* is providing information and services to reinforce or modify utilization decisions by physicians and the hospital. Historical and timely reports, providing services that replace or partially replace an inpatient stay, providing education, and the possibility of sanction characterizes *utilization decision making*. It is the new way of problem-solving. Hospital controls must be in place to ensure that future decisions are conscious of bed and hospital utilization. The Bed

Utilization Committee appears to be central to the hospital's effort to reinforce and modify utilization decisions. This is due to the presence of all four Physician Managers, who represents about ninety percent of the beds, the Director of Emergency, and the Vice-President, Medical. The Committee is the organizational body of the hospital which sustains and gives legitimacy to the new members of hospital management who are physicians.

Innovative Health Care Facility Summary

The hospital's emerging new identity is borne out of changes in *autonomy* and by providing clinically relevant and timely information to care providers including physicians at the time when the patient is in hospital. There are decreases to the *autonomy* of individual physicians and nurses and departments and divisions while the hospital gains in *autonomy*. Team-building appears to be a strategy used by management to effect the changes in *autonomy*. The hospital's corporate image is interpreted as an increase in *autonomy* since the hospital presents itself to the public as an entity that speaks with one voice. The distinction among the board, board chair, senior management, and medical director is blurred as is the distinction among the parallel organizational structures of physicians, departments, and the hospital as an organizational entity.

The results of implementing utilization *interventions* gave the hospital a track record of utilization successes that improved quality of care and reduced costs. The hospital's ability to cope with reduced funding and health reform was enhanced because of the *interventions*. Quality of care is no longer perceived to be directly related to the number of resources expended (budget), and can be improved or maintained while

reducing costs. The right decision makers were identified and provided with clinically relevant information at the time it is needed by the physician, the patient, and the hospital. To ensure that future decision-making is sensitive to utilization, the hospital provides outpatient services that replace some portion of inpatient services. An organization is established with representation of decision makers with hospital authority and responsibility, and is the Bed Utilization Committee. The method of choice to influence current and future decision making appears to be education of physicians, clinical committees, and hospital committees. Sanction is an option available to Physician Managers. The case study hospital does not refer to itself as a hospital, but as a health care facility. The above summarizes the *innovative health care facility*.

Case Description Summary

While holding the *acute care hospital belief*, organizational *transition* leads to the *innovative health care facility*. *Transition* captures change by identifying what changed (*acute care hospital belief*) with what consequences (the *innovative health care facility*), and the relationships among all elements. By its nature, organizational *transition* cannot be a result; it is an intermediary state. For other hospitals in their own organizational *transition*, the changes may not be as fundamental and the outcome is a variant on the conditions before organizational *transition*. However, the analysis suggests that the changes were and are fundamental. For this case study, the fundamental changes are organizational transformation, power shifts, and local cultural change. The case description suggests that the hospital is changing its identity to an *innovative health care facility*. These are the forces which sustain on-going organizational *transition* and development of an *innovative health care facility*. The result is an *innovative health care facility*.

CHAPTER 8

STRUCTURE, PROCESS, AND OUTCOME VARIABLES

Structure Variables

The results for the remaining structural variables are presented in this chapter. They are the regulatory environment, human resources, rated bed capacity, and patient and service occupancies. As the results of the statistical analysis are presented, findings from the qualitative analyses are associated, usually as an intervention.

The structural variables which were unavailable from the hospital are data for the geographic distribution of patients by area code, the number of salaried physicians, and occupancy as percent beds staffed and in operation.

Financial Variables

As was said earlier, the hospital's income from government and patients is decreasing. Expenses increased for medical remuneration and employment benefits as percent total annual expenses. Medical and surgical supplies and interest payments expenses decreased. The hospital claims that bed efficiencies saved money; this cannot be verified or linked to specific utilization actions based on the information supplied by the informants or across the examined documents.

In 1986, the city government increased property taxes. The increase was not funded by the provincial department of health; hospitals had to absorb the increase within

their existing budget. The hospital recorded a deficit that year due to the property taxes. In December 1986, government stated that deficits would not be funded.

Despite decreased funding and a greater reliance on government for its income, the hospital reportedly had surpluses and a balanced budget from 1991/92 to 1993/94. The reduction of funding from 1991/92 to 1993/94 is consistent with the informants' statements regarding financial pressures to the hospital. The increase in employee benefits is consistent with the reduction in management layers after 1991.

Regulatory Environment

The actions by government to administer health insurance including funding of hospitals and the setting of standards are considered the regulatory environment.

The provincial department of health identified a trigger number (beds) for panelled patients based on historical numbers of panelled patients in the hospital. The trigger number is not associated with designated beds, but refers to the number of beds that may be occupied by panelled patients. For the case study hospital, the trigger number is about one-quarter of the rated bed complement.

Before 1991, the larger share of the provincial budget may have contributed to the *utilization issues* and the practice of *problem solving* by increasing capacity because of the budget focus. In 1992/93, financial restraint by government led to decreased funding to the hospital. A service was withdrawn from the hospital and consolidated in another city hospital in 1993 as part of health reform. Also, in 1993, two new personal care homes were opened by the provincial department of health and chronic care patients began to be panelled for appropriate placement.

Human Resources

Comparing before and after time periods, there is no difference in total employees, which do not include casual employees, or in equivalent full time personnel (Table 17).

There were forty-nine fewer full time employees after 1991.

Table 17.--Human resources			
	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Total employees ¹	973 ± 11	993 ± 28	2.09; n.s.
Equivalent full time positions	819 ± 10	796 ± 23	4.27144; n.s.
Full-time employees ¹	540 ± 8	491 ± 24**	18.88; p < 0.0048
Part-time employees ¹	433 ± 13	501 ± 12***	50.267; p < 0.000395
Number of casuals	198 ± 6	167 ± 5***	52.352; p < 0.000354
Volunteers	201 ± 38	184 ± 26	0.483; n.s.
Medical staff	182 ± 9	187 ± 8	0.654; n.s.

(1) not including casuals;

* p < .05.; ** p < .01.; *** p < .001.;

The mean number of part-time employees, not counting casual employees, increased from 433 to 501 (16%) after 1991. There were 16% fewer casual workers after 1991. The numbers of volunteers and medical staff are not different, although there tended to be fewer volunteers and more medical staff members.

The total number of management and professional or technical employees did not change (Table 18). The total number of nursing employees decreased by fifty-six and the numbers of support clerical and aide employees increased by ten and sixty-five, respectively.

The hospital employs 9% fewer full time employees after 1991 (Table 18). The

decrease in full-time employees reflects the decreased full-time nursing employees. There was no significant change in management, professional or technical, support clerical and support aide full-time employees.

The hospital has 16% more part-time employees (Table 18). The increase in part-time employees reflects increases in professional or technical staff, support clerical, and support aides with no significant change in part-time management and nursing employees.

Table 18.--Employees by employment category

	Total Employees		Full-time Employees		Part-time Employees	
	Before ¹	After ²	Before ¹	After ²	Before ¹	After ²
Hospital totals	973 ± 11	993 ± 28	540 ± 8	491 ± 24**	433 ± 13	501 ± 12***
Management	78 ± 4	74 ± 14	70 ± 3	64 ± 13	8 ± 3	10 ± 2
Prof/technical	127 ± 10	143 ± 10	95 ± 9	94 ± 5	32 ± 4	49 ± 8**
Nursing	397 ± 3	341 ± 25***	164 ± 3	116 ± 4***	233 ± 4	224 ± 22
Support clerical	141 ± 5	151 ± 3*	68 ± 3	65 ± 5	73 ± 6	86 ± 5*
Support aide	217 ± 11	282 ± 21*	135 ± 7	150 ± 12	83 ± 4	131 ± 9***

(1) Before 1985/86 - 1989/90; n = 5

(2) After 1991/92 - 1993/94; n = 3

* p < .05.; ** p < .01.; *** p < .001.;

The reduction in management layers according to documents and key informants is not supported by a significant decrease in management personnel after 1991/92. The reduction in management layers may have been associated with nursing. There was a significant decrease of forty eight nursing full time employees. Head nurses may not be classified as management in the above table but were included in the reduction of management layers. To staff the new long term care unit according to personal care home standards, total support aide employees increased by thirty percent. Most of the support

aide employees were part time. This should result in more appropriate care at less cost for the residents of the long term care unit. The staffing is according to government standards. The funding for these beds may have been changed to personal care home funding so the hospital may not have retained the savings associated with the change in staffing of the long term care unit. The savings, however, would have been available to the health care system as the difference between acute and personal care home bed funding.

The turnover rate reflects positions for which there were external competitions. Internal reallocation of staff is not reflected in this number. For example, if a position were eliminated in one department, and the person filled a vacant position in another department, it would not be included in the turnover rate. Total, full-time, and part-time employee turnover rates are significantly less after 1991 (Table 19).

Table 19.--Employee turnover rates by category			
	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Total employee turnover rate	11.5 ± 1.3	7.1 ± 1.6**	18.72; p < 0.0049
Full-time turnover	9.5 ± 1.2	6.2 ± 1.4*	13.3182; p < 0.01071
Part-time turnover	13.8 ± 2.1	8.0 ± 2.0**	15.2531; p < 0.00793

* p < .05.; ** p < .01.; *** p < .001.;

The grievance rate for unionized employees as percent full and part-time employees was unchanged (Table 20). The hospital did not report the number of union members. Sick time as percent total paid hours was unchanged.

Before 1991, the informants and documents suggest that staff morale was an issue

for the hospital due to off-service patients and panelled patients. The employee turnover rate is less after 1991/92 as a hospital total, for full and part time employees. It may also be less for another reason after 1991/92. With decreased funding and reduction in management layers, the informants and documents suggested different reasons for low staff morale, change (organizational *transition*) and concern over keeping employment.

Table 20.--Employee grievance rate and sick time			
	1985/86 - 1989/90 n = 4	1991/92 - 1993/94 n = 3	F; P value
Grievance rate	1.4 ± 0.3	1.7 ± 0.4	1.7; n.s.
Sick time % total paid hours	3.1 ± 0.2	3.3 ± 0.2	3.5; n.s.

To the extent that sick time is a measure of the relative employee satisfaction, sick time as a percent of total hospital paid hours is not different.

Rated Bed Capacity

The rated bed capacity as reported by the hospital did not change significantly from fiscal 1985 to 1993 (Table 21). In 1991, the distribution of beds within the rated complement was changed. This is the reorganization of beds that was discussed by the informants. The number of medicine, intensive care unit, psychiatry, and psychogeriatrics beds did not change. The number of surgery and gynecology beds decreased and is associated with the emphasis on outpatient surgical services to replace bed-based services according to the informants. Geriatric medicine beds decreased almost by half and a new long term care unit with 74 beds formed. This change in bed distribution is also consistent

with the statements of the informants and represents the aggregation of panelled patients.

Table 21.--Rated bed capacity and distribution of beds by service			
	1985/86 - 1989/90	1991/92 - 1993/94	F; P value
	n = 5	n = 3	
Rated bed capacity	325 ± 0.8	327 ± 6	0.474; n.s.
Short term beds	215 ± 0.8	189 ± 6 ^{***}	108.4; p < 0.0000
Medicine	70 ± 0	73 ± 6	1.429; n.s.
Surgery	100 ± 1	80 ± 0 ^{***}	4457.9; p < 0.000
Intensive care unit	5.5 ± 1	6 ± 0	0.7143; n.s.
Gynecology	20 ± 0	10 ± 0	...
Psychiatry	20	20	...
Long term beds	110 ± 0	138 ± 6 ^{***}	81.3; p < 0.00028
Geriatric medicine	100	53 ± 6 ^{***}	280; p < 0.00001
Psychogeriatrics	10	10	...
Long term care	...	74	...
Trigger number (beds)	75	75, 75, 66	...

^{*} p < .05.; ^{**} p < .01.; ^{***} p < .001.;

Overall, short term beds decreased due to the removal of 20 surgical and 10 gynecology beds. Long term beds increased by an average of 28 beds. The trigger number in beds is the number of beds for panelled patients. In 1993/94, the trigger number was adjusted to 66 by the provincial department of health.

Bed and Patient Service Occupancy

Total hospital occupancy by service of the bed decreased by 4% after 1991 (Table 22). Bed service occupancy reflects the number of patients occupying beds on that service. The patient's service may match or not match the bed service. Bed service occupancy decreased on medicine, surgery, psychiatry, geriatric medicine, and gynecology after 1991. The bed service occupancy for psychogeriatrics tended to increase, and that

on the intensive care unit tended to decrease; neither were significant.

Table 22.--Hospital occupancy and bed and patient service occupancy

	1985/86 - 1989/90	1991/92 - 1993/94	F; P value
Hospital occupancy	93.9 ± 1.0	89.7 ± 3.2*	8.067; p < 0.03
Medicine - bed service ¹	99.1 ± 0.5	95.1 ± 0.9**	80.74; p < 0.000
patient service ²	135.7 ± 5.1 [†]	121.6 ± 20.5	1.838; n.s.
Long term care - bed service ¹	...	92.0 ± 9.3	...
patient service ²	...	80.6 ± 6.9	...
Surgery - bed service ¹	88.2 ± 0.9	79.8 ± 0.9***	155.9; p < 0.000
patient service ²	86.7 ± 1.6	81.0 ± 6.2	3.23; n.s.
Psychiatry - bed service ¹	94.9 ± 1.2	91.3 ± 1.2**	16.55; p < 0.007
patient service ²	96.6 ± 1.6	91.7 ± 1.2**	19.6; p < 0.007
Geriatric medicine - bed service ¹	96.9 ± 1.6	93.5 ± 2.2*	6.64; p < 0.042
patient service ²	86.2 ± 4.2 [†]	84 ± 6.5	0.301; n.s.
Gynecology - bed service ¹	82.2 ± 2.7	71.8 ± 3.5**	22.47; p < 0.003
patient service ²	29.2 ± 4.8 [†]	23.8 ± 5.1	2.051; n.s.
Psychogeriatrics - bed service ¹	84.8 ± 6.4	93.6 ± 4.7	4.253; n.s.
patient service ²	151 ± 18 [†]	129 ± 25	1.827; n.s.
Intensive care unit - bed service ¹	76.7 ± 5.9	72.3 ± 5.0	1.169; n.s.
patient service ²	66.5 ± 12.1	69.9 ± 9.7	0.162; n.s.

(1) n = 5; n = 3;

(2) n = 4; n = 3; 1985 not available;

* p < .05.; ** p < .01.; *** p < .001.; different from before time period;

† p < .05.; †† p < .01.; ††† p < .001.; different from bed service in the same time period

There was no difference after 1991 when the patient service occupancies were compared on medicine, surgery, geriatric medicine, gynecology, psychogeriatrics and intensive care unit. Patient service occupancy decreased significantly on psychiatry by 5% after 1991. Patient service occupancy is based on the service of the patient in the bed. The patient's service may not match the bed service. When this occurs the patient is said to be off-service.

From fiscal 1985 to 1989, patient service occupancy for medicine and psychogeriatrics exceeded bed occupancy; after 1991 there was no difference (Table 22). This indicates that medical and psychogeriatric patients were off-service on other services. There were no differences between bed and patient occupancies for surgery, psychiatry, and intensive care unit in either time period. Gynecology and geriatric medicine patient service occupancies were significantly less than the respective bed service occupancy from fiscal 1985 to 1989. After 1991, there was no difference for geriatric medicine; but gynecology occupancy by patient service remained significantly lower than bed occupancy. Fifty percent of the gynecology beds were occupied by patients who were inappropriate for the service.

Process Variables

The results of analyses of the process variables are presented. These include admission and registration rates, average length of stay, patient and census day rates, hospital and service separation rates, and surgery rates and statistics. Geriatric and psychogeriatric day hospital admission rates and panelled patient placement rates, statistics for emergency services, and diagnostic and therapeutic services are also included.

Average length of stay by major diagnostic category was not available from the hospital for the years under study. Neither was cost per day nor the number of appropriate admissions determined by an evaluation protocol available.

Admission and Registration Rates

As was mentioned earlier, the admission rates decreased roughly 15% as a hospital total (Table 23). The admission rates increased for medicine by 35%, psychiatry by 30%, and geriatric medicine by 35%. Surgery and gynecology admission rates decreased 31% and 61%, respectively. There was no change in admission rates for psychogeriatrics and the intensive care unit. Short term admission rate decreased by 12% and the long term admission rate did not change.

Table 23.--Admission rates per year per 10,000 population			
	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Hospital admission rate	64.8 ± 2.26	55.1 ± 2.0 ^{***}	37.819; p < 0.0008
Medicine	13.4 ± 1.0	18.1 ± 0.5 ^{***}	50.62; p < 0.0004
Surgery	38.9 ± 1.9	26.7 ± 2.7 ^{***}	56.71; p < 0.0002
Psychiatry	2.0 ± 0.2	2.6 ± 0.4 [*]	10.943; p < 0.0162
Geriatric medicine	1.7 ± 0.3	2.3 ± 0.2 [*]	7.79; p < 0.0316
Gynecology	5.1 ± 1.1	2.0 ± 1.0 [*]	21.60; p < 0.0035
Psychogeriatrics	0.7 ± 0.3	0.5 ± 0.1	1.236; n.s.
Intensive care unit	3.0 ± 0.4	2.8 ± 0.1	0.8395; n.s.
Short term admission rate	59.0 ± 2.0	52.0 ± 2.0 ^{**}	17.503; p < 0.0057
Long term admission rate	2.7 ± 0.3	2.8 ± 0.3	0.038; n.s.

^{*}p < .05.; ^{**}p < .01.; ^{***}p < .001.;

The presence of Physician Managers for geriatric medicine and psychiatry before 1991 are associated with a increase in admission rates after 1991. Also after 1991, the introduction of a Physician Manager for medicine with admission policies and criteria is also associated with an increase in admission rates. For surgery after 1991, the admission rate declined and may be associated with the Physician Manager and admission policy of

replacing inpatient services with outpatient services. The reorganization of beds in 1991 may have increased the availability of beds in all areas of the hospital.

Table 24.--Registration rates per year per 10,000 population			
	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Total registration rate	437 ± 19	453 ± 8	1.7980; n.s.
Emergency registration rate	273 ± 2.	256 ± 13*	9.6715; p<0.02085
Day surgery registration rate	33 ± 7	45.6 ± 0.5*	10.19113; p<0.018
Outpatient registration rate	67 ± 14	97.4 ± 8.4*	10.95773; p<0.016
Preadmit ratio out/inpatient	0.9 ± 0.1	2.4 ± 0.2***	173.47; p < 0.0000

* p < .05.; ** p < .01.; *** p < .001.;

Hospital services are also used by outpatients. Total registration rate, which reflects all inpatient and outpatient requests for hospital services, was not different upon comparison (Table 24). The hospital is providing the same volume of hospital services after 1991 as it did before 1991.

Emergency registration rates decreased by 17/10,000 after 1991. Day Surgery and outpatient registration rates increased significantly by 12.6/10,000, and 30.4/10,000, respectively. Outpatient registration rates would include data for day surgery. The ratio of outpatient to inpatient preadmission registrations increased over two and one-half times after 1991.

The Physician Manager for medicine, admission policies, and the use of criteria may be associated with the decrease in emergency registration rates. The Physician Manager for surgery, admission policies, and the use of criteria may be associated with the increase in outpatient and day surgery registration rates. The Physician Managers for

geriatric medicine and psychiatry may be associated with some part of the increase in outpatient registrations.

Average Length of Stay

As a hospital total, average length of stay increased from 14.8 to 17.7 days for the two study time periods (Table 25). The mean length of stay of patients on medicine tended to be lower by 2.5 days, but was not significant. The mean length of stay for surgical services remained the same after 1991.

Table 25.--Hospital and service length of stay			
	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Hospital length of stay	14.8 ± 1.3	17.7 ± 1.1*	9.623; p < 0.021
Medicine	16.2 ± 0.9	13.7 ± 2.1	5.95; n.s.
Longterm care	...	103.3 ± 38.6	...
Surgery	6.5 ± 0.5	6.3 ± 0.6	0.109; n.s.
Psychiatry	29.6 ± 3.3	23.0 ± 4*	6.423; p < 0.0442
Geriatric medicine	78.9 ± 5.3	49.0 ± 10.1**	31.576; p < 0.001
Gynecology	4.0 ± 0	4.0 ± 0	0.5625; n.s.
Psychogeriatrics	58.3 ± 15.0	60.3 ± 14.4	0.034; n.s.
Intensive care unit	3.1 ± 0.4	3.0 ± 0	0.079; n.s.
Short term length of stay	10 ± 0.5	9 ± 1	1.907; n.s.
Long term length of stay	80 ± 19	65 ± 10	1.430; n.s.

*p < .05.; ** p < .01.; *** p < .001.;

The length of stay on psychiatry and geriatric medicine were significantly lower by 6.6 and 29.9 days respectively after 1991. There was no difference in average length of stay for gynecology, psychogeriatrics, or the intensive care unit. Short and long term length of stay decreased by 1 day and 15 days respectively, and are not significant.

In 1991, the hospital created a long term care unit and began to report length of stay for the area. The extent to which the long term care average length of stay of 103 days explains the increase in hospital length of stay is unknown. However, hospital average length of stay has been steadily increasing over the years in question.

The Physician Manager for medicine, who has responsibility to monitor the expected length of stay and to ensure that there is a discharge plan, may be associated with the decrease of 2.5 days. The Physician Manager for surgery, who also had the same responsibilities, may be associated with no change in length of stay for inpatient surgeries. The Physician Managers for geriatric medicine and psychiatry may be associated with decreased in length of stay. Many informants stated that the length of stay decreased without a specific reference to patient groups or diagnostic category. It could be that the length of stay for certain diagnostic categories is decreasing, but that decrease is not apparent in the data presented here.

Patient and Census Day Rates

Hospital total patient days per year per 1,000 population decreased 7.1 days or 7.3% when the two study time periods were compared (Table 26). The patient day rate for short term services decreased by 13 days/1,000 population or 20%. The patient day rate for long term services increased by 6 days/1,000 population, or about 18%. The Physician Managers for short term services which include medicine, surgery, and psychiatry may be associated with a decreased patient day rate. The Physician Manager of a long term service, geriatric medicine, may be associated with an increased patient day rate.

Table 26.--Hospital, short, and long term patient day rates per year per 1,000 population			
	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Hospital patient days	97.7 ± 1.8	90.6 ± 5.2*	8.322; p < 0.0278
Short term patient days	64 ± 1	51 ± 4***	51.84; p < 0.00036
Long term patients days	34 ± 1	40 ± 5*	9.4812; p < 0.0217

*p < .05.; ** p < .01.; *** p < .001.;

Patient day rates by service were not available, and service census days are used to estimate patient day rates for hospital services. The change in hospital census days is consistent with the amount and direction of change demonstrated by hospital patient day rate. Hospital census days per 1,000 population per year also decreased by 7 days/1,000 for the two study time periods (Table 27). The census day rates for surgery decreased by 9.5 days/10,000, or 34%, and that for geriatric medicine decreased by 11.7 days/10,000, or 38%, after 1991. The census day rate for psychiatry was 5% lower after 1991. The

census day rates for gynecology decreased by 2.6 days/10,000, or 50%. The census day rates for medicine, psychogeriatrics, and intensive care unit were not different.

Census days are numerically greater than patient days because census days reflect patients who use hospital services and are not discharged in that fiscal year. These may be short term patients who were still in hospital at the end of the year and long term patients who were carried over from the year before.

Table 27.--Hospital and service census day rates per year per 1,000 population

	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Hospital census days	100.3 ± 1.6	93.1 ± 5.2 [*]	8.987; p < 0.0240
Medicine	22.6 ± 0.3	22.5 ± 1.5	0.026; n.s.
Longterm care	...	17.6 ± 7.2	...
Surgery	27.8 ± 0.9	18.3 ± 4.1 ^{***}	27.40; p < 0.0019
Psychiatry	6.2 ± 0.1	5.9 ± 0.09 [*]	10.19; p < 0.01878
Geriatric medicine	31.2 ± 0.7	19.5 ± 5.1 ^{***}	28.53; p < 0.00176
Gynecology	5.2 ± 0.4	2.6 ± 1.1 ^{***}	26.50; p < 0.00212
Psychogeriatrics	2.7 ± 0.3	3.0 ± 0.1	2.699; n.s.
Intensive care unit	1.3 ± 0.1	1.2 ± 0.03	1.378; n.s.

^{*} p < .05.; ^{**} p < .01.; ^{***} p < .001.;

The Physician Managers for medicine and surgery may be associated with the no change in census days on medicine and a decrease in census days on surgery respectively. The Pre-admission Clinic, After Surgery Admissions, and the Short Stay Unit are also associated with decreased surgery census days. The Physician Managers for geriatric medicine and psychiatry may also be associated with a decrease in census days.

Hospital and Service Separation Rates

There was a significant decrease of 15% in the hospital separation rate and is consistent with the admission rate (Table 28). The separation rates for medicine, psychogeriatrics, and intensive care unit are not different. The rates for surgery and gynecology were 29% and 59% less after 1991. The rates for psychiatry and geriatric medicine increased by 29% and 38% respectively. The rates for the Observation Unit are 68% less after 1991. The hospital did not report short and long term separations after 1989/90.

Table 28.--Hospital and service separation rates per year per 10,000 population			
	1985/86 - 1989/90	1991/92 - 1993/94	F; P value
	n = 5	n = 3	
Hospital separations	64.7 ± 2.3	55.1 ± 1.8 ^{***}	36.97; p < 0.00089
Medicine	19.7 ± 3.7	21.5 ± 0.4	0.65778; n.s.
Surgery	33.6 ± 3.6	23.9 ± 2.3 ^{**}	16.873; p < 0.0063
Psychiatry	2.1 ± 0.2	2.7 ± 0.4 [*]	7.230; p < 0.03610
Geriatric medicine	2.6 ± 0.2	3.6 ± 0.5 ^{**}	15.838; p < 0.0073
Gynecology	5.1 ± 1.2	2.1 ± 0.2 ^{**}	18.896; p < 0.0048
Psychogeriatrics	0.7 ± 0.2	0.6 ± 0.1	0.310; n.s.
Intensive care unit	0.7 ± 0.1	0.65 ± 0.05	1.3863; n.s.
Observation	0.19 ± 0.04	0.06 ± 0.02 ^{**}	27.717; p < 0.0019

^{*}p < .05.; ^{**} p < .01.; ^{***} p < .001.;

The Physician Manager for medicine may be associated with no change in separation rate for medicine. The Physician Manager for surgery may be associated with a decrease in separation rate. The Physician Managers for geriatric medicine and psychiatry may be associated with increases in the separation rates.

Surgery Rates and Statistics

The inpatient surgery rate decreased after 1991 and the day surgery rate increased with the total surgery rate remaining unchanged (Table 29). Accordingly, inpatient visits to the operating room as percent annual visits decreased. Cancellation of surgical procedures due to bed shortages fluctuated prior to 1991 and appear to be decreasing. There was no difference in surgery cancellations before and after the *interventions*.

Table 29.--Surgery statistics and rates per year per 10,000 population			
	1985/86 - 1989/90	1991/92 - 1993/94	F; P value
	n = 5	n = 3	
Total surgery rate	64.7 ± 4.0	65.0 ± 8.5	0.00550; n.s.
Inpatient surgery rate	36.9 ± 2.7	20.4 ± 8.5 ^{***}	17.45520; p < 0.00583
Day surgery rate	27.8 ± 5.3	44.6 ± 0.01 ^{***}	27.827; p < 0.001874
Inpatient OR visits ¹	57.2 ± 6.0	30.6 ± 9.0 ^{***}	26.01197; p < 0.00222
Surgery cancellations ²	30.5 ± 28.4	3.0 ± 3.6	2.6533; n.s.

(1) % annual visits

(2) due to bed shortages

^{*}p < .05.; ^{**}p < .01.; ^{***}p < .001.;

The Physician Manager for surgery, admission policies, and criteria may be associated with the decrease to inpatient surgeries and the corresponding increase in outpatient surgeries while maintaining the same volume of surgery.

Geriatric and Psychogeriatric Day Hospitals and Home Care

After 1991 the admission rates of patients to Geriatric and Psychogeriatric Day Hospitals increased (Table 30). The services may avoid or replace an inpatient stay for persons of a certain age.

The hospital houses a Home Care office which is part of the provincial department of health. Referrals to Home Care by the hospital increased by 14 per 100 admissions after 1991 (Table 30). The number of patients who became panelled per 100 admissions also increased after 1991. The total number of patients panelled in a year increased by 37%. Including chronic care patients in the paneling procedure in 1993 may be reflected in the statistics. This may reflect a form of discharge planning for panelled patients.

Table 30.--Day hospital rates per year per 10,000 population and home care paneling
 1985/86 - 1989/90 1991/92 - 1993/94 F; P value
 n = 5 n = 3

	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Admission rate			
Geriatric day hospital ¹	1.1 ± 0.2	1.7 ± 0.1*	12.9750; p < 0.01134
Psychogeriatric day hospital ¹	0.6 ± 0.1	0.72 ± 0.05*	7.4124; p < 0.034525
Home care referrals ¹	23 ± 6	37 ± 2*	13.0677; p < 0.0153
Panelled patients ¹	1.2 ± 0.2	2.0 ± 0.4*	12.0523; p < 0.01328
Patients panelled/year	89 ± 10	122 ± 24*	7.86; p < 0.031

(1) per year per 100 admissions
 * p < .05.; ** p < .01.; *** p < .001.;

The Physician Manager for geriatric medicine may be associated with improved use of these outpatient services. There is an improvement in placing panelled patients in personal care homes and getting patients into the paneling procedure.

Emergency Services

Emergency Services were used less by patients after 1991 (Table 31). The emergency registration rate was 6% less after 1991. Both the percentage of emergency visits that were admitted to hospital, and the percentage of hospital admissions that came from the emergency department were not different after 1991. The percentage of patients that are held for observation and those transferred to other facilities remained unchanged. Emergency census day rate per 10,000 was also unchanged. The rate for observation days per 100,000 decreased significantly as did the occupancy rate.

	1985/86 - 1989/90	1991/92 - 1993/94	F; P value
	n = 5	n = 3	
Emergency registration rate	273 ± 2	256 ± 13*	9.6715; p<0.020851
% Emergency visits admitted	8.1 ± 1.3	6.8 ± 0.5	2.9474; n.s.
% Admission from emergency	34.5 ± 2.7	32.0 ± 2.9	0.6087; n.s.
% Visits held for observation	7.6 ± 1.1	7.8 ± 0.6	0.0646; n.s.
% Visits transferred to other facilities	0.7 ± 0.1	0.7 ± 0.2	0.71605; n.s.
Emergency census day rate	1.8 ± 1.8	0.02 ± 0.02	2.8014; n.s.
Observation day rate ¹	34 ± 3	25 ± 0.4**	32.2584; p<0.00235
Observation occupancy rate	87.2 ± 6.8	65.0 ± 0.00**	30.486; p<0.002669

(1) per year per 100,000 population
 * p < .05.; ** p < .01.; *** p < .001.;

The Physician Manager for medicine may be associated with the decreased emergency registration rate, the decreases in the Observation day rate and its occupancy rate, and no change in the census in emergency.

Diagnostic and Therapeutic Services

Clinical nutrition contacts per total registration increased after 1991 with no significant change in inpatient consults per 1,000 census days (Table 32). The numbers of observations are 5 and 3, respectively, for the two time periods in Table 32 unless otherwise noted. There was no significant change in ECG examinations per 100 registrations. Laboratory inpatient to outpatient workload ratio decreased significantly. Inpatient and outpatient workload statistics for clinical chemistry, hematology, anatomical pathology, and microbiology are not reported. No difference was found for nuclear medicine inpatient scans, as percent total scans or the inpatient to outpatient scan ratio.

Table 32.--Diagnostic and therapeutic services			
	1985/86 - 1989/90	1991/92 - 1993/94	F; P value
Clinical nutrition contacts ¹	52 ± 7	75 ± 4**	24.03; p < 0.0027
Clinical nutrition consults ²	7.9 ± 0.6	8.8 ± 0.3	4.630; n.s.
ECG exams/100 registrations ²	18.8 ± 3.0	19.5 ± 0.4	0.1603; n.s.
Laboratory workload ratio ³	1.8 ± 0.3	1.3 ± 0.06*	6.063; p < 0.0490
Nuclear medicine scans ⁴	38 ± 6	32 ± 5	2.0165; n.s.
Nuclear medicine scan ratio ³	0.6 ± 0.1	0.5 ± 0.1	3.607; n.s.
Occupational therapy workload ³	1.4; 1.2	1.9 ± 0.2	...
Pharmacy unit doses ¹	28.2 ± 1.6	26.8 ± 1.0	1.833146; n.s.
Physiotherapy workload ³	1.8 ± 0.03	1.5 ± 0.0**	8.80; p < 0.025
Radiology scans ⁴	29 ± 3	24 ± 2	5.13023; n.s.
Radiology exam ratio ³	0.4 ± 0.1	0.3 ± 0.03	4.7321; n.s.
Respiratory therapy workload ³	7.6 ± 1.6	5.0, 4.9	...
Speech pathology visit ³	1.3 ± 0.6	0.8 ± 0.1	1.653; n.s.
Staff health visits/employee	4.8 ± 0.1	8.7 ± 0.5***	225.20; p < 0.000
Ultrasound scans ⁴	28 ± 3	24 ± 5	1.1584; n.s.
Ultrasound scans ³	0.4 ± 0.1	0.3 ± 0.1	1.1107; n.s.

- (1) per total registrations
 (2) inpatient consults per 1000 census days
 (3) inpatient to outpatient ratio
 (4) inpatient % total scans
 * p < .05.; ** p < .01.; *** p < .001.;

Occupational therapy ratio of inpatient to outpatient workload appeared to be higher after 1991. The occupational therapy workload statistics were available starting in 1988/89, so there are two data points for the before period. There was no change in pharmacy unit doses per total registration. The inpatient to outpatient workload ratio for physiotherapy decreased significantly after 1991. There were no significant changes based on the calculated indicators for radiology, respiratory therapy, speech pathology and ultrasound. Staff health visits per employee increased 81% after 1991.

Outcome Variables

The number of discharges and deaths by major diagnostic category from the provincial abstracting system were not readily available for the years in questions from the hospital. Only the most current reports are retained and stored by the hospital. Quality of care, measured as the mortality rate per year per 10,000 population was not significantly different (Table 33). The hospital has a Palliative Care program that may have some effect on the mortality rate. The autopsy rate was unchanged.

Table 33.--Outcome variables			
	1985/86 - 1989/90 n = 5	1991/92 - 1993/94 n = 3	F; P value
Mortality rate	2.7 ± 0.3	3.2 ± 0.2	5.60; n.s.
Autopsy rate	15.1 ± 2.7	9.1 ± 3.6	6.61; n.s.

CHAPTER 9

DISCUSSION

The literature review suggested that physical, behavioral and cultural factors, organizational structure, and decision making have a relationship to appropriate hospitalization. Appropriate hospitalization occurs when patient care matches need and the delivery of care is efficient and effective. Utilization management programs are intentional actions taken by health care management to increase the efficiency and effectiveness of health care services' delivery.²⁷³ In practice, utilization management identifies inappropriate utilization by various methods and provides information to decision makers who then take action to reduce inappropriate utilization.

The case study hospital used a more direct and broad-based approach to improve utilization that is, perhaps, unique to this hospital. The utilization *interventions* are part of the hospital's utilization management program. The utilization management program includes the following components which are based on the case study's findings. The goal of the program is to control utilization. The methods to identify inappropriate utilization are the Physician Managers, admission policies, implicit and explicit admission criteria, the clinical practice guidelines, and the care maps. The methods of implementation are the *interventions*. The primary source of utilization information is the patient's chart. Secondary sources are reports from the clinical practice guideline system, Health Medical

Records Institute (HMRI), and the provincial abstracting system in order of preference according to the informants. An evaluation component could not be identified due to lack of key informant information. Thematically, the utilization management program is characterized by the *interventions*, the *measurement myth attained*, and *utilization decision making*. The hospital's utilization management program provides control for current and future patients. Collectively, this outlines an interpretation of the hospital's utilization management program.

The purpose of this case study was to determine if, how, and why hospital utilization changed and the role of utilization management in facilitating the change(s). As was mentioned previously, utilization did change. Because of the broad approach, the utilization management program was more effective for the case study hospital than targeting specific diagnostic groups. The reason for this is the presence of acute and non-acute patient populations in the hospital. The *interventions* included an action for non-acute care patients. The most important *intervention* was the appointment of Physician Managers for surgery and medicine as members of hospital management with hospital authority for bed control. The responsibility of the Physician Manager for medicine included the Emergency Room with the authority to review and sanction admissions and patient days. A health professional informant stated that all admissions to the hospital as of 1994 are considered by the hospital to be appropriate due to the presence of Physician Managers.²⁷⁴ Whether the stated appropriateness of admissions today (1994) would be supported by an application of admission and patient day evaluation protocols is unknown since the hospital does not use this approach.

The key to understanding what occurred in this case study hospital is to recognize that a hospital cannot make the decisions to admit or to discharge patients. Physicians make these decisions. As long as there is no organizational connection between physicians as decision makers and hospitals as resource providers, utilization of the hospital by patients is uncontrolled from the perspective of the hospital. For inpatient services, utilization depends on who get admitted to the bed, and how long they stay there. The extent to which a hospital or a hospital's physician manager can control utilization may be determined by other factors such as the availability of alternative health care services and government policy, both environmental factors.

The literature finds that in the presence of utilization management or review, aggregate or total admission and patient day rates decrease while decreases in length of stay may not be statistically significant (Table 7). The case study finds that hospital admission rates decreased by 9.7 admissions per 10,000 population per year or 15 % and is consistent with the literature. Short term admission rates decreased by 7 admissions per 10,000 population per year (11.9%), and long term admission rates were not different when comparing before and after time periods. Short term includes medicine, surgery, intensive care unit, gynecology, and psychiatry, and long term includes geriatric medicine, psychogeriatrics, and long term care. Long term care beds were designated in 1991. Hospital patient day rates decreased 7.1 days (7.3%) and is within the range reported in the literature, 4.4 to 11% (Table 7). Short term patient day rates decreased by 13 days per 10,000 population per year (20%) and long term patient day rates increased by 6 days per 10,000 population per year (18%). The percent decrease in short term patient day rate

(20%) is greater than the percentages from the literature (Table 7). The hospital average length of stay increased by 2.9 days, and short and long term average length of stay decreased by 1 and 15 days, respectively. The effectiveness of hospital services was unchanged since there was no difference in hospital mortality rate before and after the *interventions*. There is a suggestion of reduced costs for the same volume of registered patients, but cannot be associated with specific utilization *interventions*.

In the literature, hospital or aggregate length of stay may not decrease after a utilization review or management program is implemented. For the case study hospital, the increase in hospital length of stay may be due to four factors. As the hospital continues to focus on replacement and partial replacement of acute care services for acute care patients, hospital utilization by non-acute care patients becomes greater. Their length of stay tends to increase the hospital average. Acute care patients tend to be appropriate for inpatient acute care services and may increase length of stay. As a health professional informant pointed out, the "not-so-sick" short stay patients are not admitted to hospital, but are provided with outpatient services and/or referred to other health care services. When they were admitted to hospital before 1990/91, their shorter length of stay tended to decrease hospital length of stay. The fourth is that many inpatient surgical procedures with short lengths-of-stay are now done as outpatient procedures, and cannot influence hospital length of stay.

The pattern of utilization for short and long term beds by acute and non-acute care patients appears to change before and after the *interventions*. Distinguishing the degree of change and its direction is complicated by a number of factors. First, the hospital changed

its bed map in 1991 which was possible because of the utilization *interventions*. Secondly, panelled patients were transferred to a long term care unit as a follow-up to their segregation from acute care patients just before the nurse's strike. Hospital statistics reflect the creation of the long term care unit and some utilization statistics for the unit are reported separately after 1991. Before 1991, the statistics for these panelled patients are distributed among the hospital's service statistics because they were mixed with acute care patients. The statistics for patients waiting to be panelled and chronic care patients were also distributed. After 1991, when the number of non-acute care patients exceeds the capacity of the long term care unit, their statistics are also distributed among short and long term services.

Acute care or short term statistics tended to decrease while non-acute care or long term statistics tended to increase. Acute care utilization of inpatient services appears to be decreasing as evidenced by decreased short term admission and patient day rates with a tendency toward a shorter length of stay. For example, surgery admission and census day rates, and occupancy decreased without a decrease in length of stay. Although the hospital is performing the same volume of surgery, there is a 47% decrease in inpatient services and a 45 % increase in day surgery rates (Table 29). There is no overt explanation for no change in surgical length of stay. However, the hospital may be selecting surgical inpatients whose conditions exclude them from participation in the Pre-Admission Clinic and After Surgery Admissions. They would tend to be more complex surgical patients who stay longer and offset the decrease in length of stay made possible by the Pre-Admission Clinic and After Surgery Admissions. They may also be precluded

from using the Short Stay Unit. For medicine, admission rates increased, census days remained the same, and occupancy decreased with a tendency toward a shorter length of stay of about two days. There are fewer off-service patients on medicine, presumably due to the Physician Manager (Table 22). The decreased utilization of medical services is due to decreased admissions because there was no change in separation rate. The decrease in length of stay for psychiatry of 6.6 days may be due to community based services established by mental health reform in 1993 since there has always been a Physician Manger and all of the beds are under the Mental Health Act.

Non-acute care hospital utilization appears to increase. The number of beds classified by the hospital as long term increased by twenty eight beds after the *interventions*. Long term is the hospital's designation for geriatric medicine, psychogeriatrics, and long term care. Long term admission rates did not change, the patient day rates increased, and length of stay tended to decrease but was not significant. The decrease in length of stay of thirty days for geriatric medicine could be due to the separate reporting of long term care statistics after 1991. Long term separation rates were not reported by the hospital. However, the separation rate for geriatric medicine increased (Table 28). The hospital also increased the use of the geriatric day program after the *interventions* (Table 30). The decreases may also have been influenced by environmental factors. For example, government opened two new personal care homes in 1993. Some panelled patients from the hospital were relocated to personal care homes. The hospital increased the use of Home Care services and paneling activity increased (Table 30).

However, the relocated patients were replaced by new panelled and waiting to be panelled patients because the long term admission rate did not decrease (Table 23).

Comparing the ratio of short term to long term days before and after the *interventions*, found a decrease of 1.9 to 1.3 ($p < 0.000382$). Before the *interventions*, for every ten short term days there were 5.3 long term days. After the *interventions*, for every ten short term days there were 7.7 long term days. Forty-four percent of the patient days are now generated by long term or non-acute care patients (Table 21). The ratio of short to long term admissions was not different before and after the *interventions*. The hospital is admitting the same ratio of short to long term patients, but the long term patients appear to generate an increasing portion of the hospital's patient days. Whether this is an artifact of statistical reporting or represents an actual increase cannot be determined. An assumption is that short term means acute and long term means non-acute. The case study hospital does not report the exact numbers of acute and non-acute care patients in its documents. The relative proportions of acute to non-acute care patients over time cannot be determined with certainty. According to the informants and documents, the number of panelled patients usually exceeded the trigger number. In addition, there are people who are waiting to be panelled and the chronic care patients. What is important is not so much the changes in acute care hospital utilization by long term or non-acute patients, but their commanding presence and influence on acute care utilization in the case study hospital.

Because non-acute care patients reside in an acute care hospital, acute care measures and acute care terminology are applied to them. In the true sense of the word,

panelled patients are not admitted and are not inpatients, they live at the hospital. There is no analogous term for length of stay for non-acute care patients. This questions the measurement validity of commonly used measures of efficiency and effectiveness to populations other than acute care inpatients. For example, the hospital considers geriatric medicine to be an acute care program for persons of a certain age, but classifies the service as long term. The distinction between short and long term and acute and non-acute classifications for persons over a certain age may not be useful. According to Last, acute means a health effect which can be brief and intense, and short term is a synonym.²⁷⁵ Acute care hospital services are characterized by services and procedures provided to patients of relatively short duration. The patient gets well and goes home because the disease or condition is cured as a result of treatment. The home being referred to is not a personal care home or other health care facility. This is not the usual outcome for non-acute care patients in an acute care hospital.

Utilization management is an acute care inpatient concept and qualitatively, as a concept, may not transferable to non-acute care patients. Quantitatively, it may not be valid for non-acute care patients. Although it is not usually stated as such, utilization management endeavors to increase the efficiency and effectiveness of acute care hospital services to acute care inpatients. Efficiency is conventionally measured by changes in admission and patient day rates and average length of stay by diagnostic group, which are acute care measures. Effectiveness is conventionally measured as age and gender adjusted mortality and morbidity rates per diagnostic group. These are common indicators of the effectiveness of inpatient acute care services' delivery. When these measures include

information about non-acute care patients and are interpreted as being acute care information, an inaccurate picture of efficiency and effectiveness results.

When a hospital provides inpatient health care services to populations other than the acute care inpatient population, it follows that an implementation of utilization management may have a limited effect. In a hospital with mixed populations like the case study hospital, the implementation of utilization management produces equally mixed results when measured by acute care hospital statistics such as occupancy, length of stay, and admission and discharge rates. When utilization management is applied to the acute care population of the hospital, acute care utilization presumably becomes more efficient and effective as an ideal. The application of acute care utilization management to non-acute care populations of panelled patients, patients waiting to be panelled, and chronic care patients may not produce efficiency and effectiveness in the acute care sense. As acute care utilization management in a hospital with mixed patient populations results in increased efficiency and effectiveness, the acute care component should become smaller. The non-acute care component may decrease, remain the same, or increase. In the case study hospital, the acute care population became smaller and the non-acute care population became larger within the same bed complement. This suggests that there is an interdependence between the two populations that centers around utilization. The interdependence is characterized by the numbers of acute and non-acute care patients and their relative distribution.

For the case study hospital, the results of acute care inpatient utilization management are constrained by the presence of non-acute care patients. The presence of

non-acute care patients serves as a limit to the effectiveness and efficiency of acute care utilization management. Physical factors such as the number and distribution of non-acute and acute care patients determine quality of care and impact costs. When non-acute care patients are mixed with acute care patients on the same ward, the quality of care cannot be optimal for either population even if the acute care inpatient service matches the patient's service. Acute care patients whose patient care service matches that of the bed may receive an appropriate level of care, but that care may not be practiced enough to be efficient or effective due to low numbers of service appropriate patients. This depends on the relative proportion of off-service acute care patients, service appropriate acute care patients, and non-acute patients on the ward. When there are few non-acute care patients, then changes in measures of efficiency and effectiveness due to utilization management may be apparent. Acute care patients whose patient care service does not match that of the bed (off-service) may not receive an appropriate level of care, and that care cannot be practiced enough to be efficient or effective. Non-acute care patients whose patient care service does not match that of the bed (off-service) may not receive an appropriate level of care and that care cannot be practiced enough to be efficient or effective. For this case study hospital, the numbers of off-service acute and non-acute patients would be an indicator of inappropriate utilization. As well, the hospital's size of over three hundred beds overestimates the use of acute care inpatient services; the acute care size is less than two hundred beds (Table 21).

When care delivered does not match the patient's need, that care is labeled inappropriate. By definition, non-acute care patients are inappropriate patients in an acute

care hospital. For the case study hospital, the *interventions* targeted both populations. To improve acute care utilization and to improve quality of care for non-acute care patients, the populations were separated and was an intentional action. To improve hospital utilization by one population and not the other simply would not improve hospital utilization, since their respective utilization of the hospital appears to be interdependent. The interdependence also comes from the fact that a bed occupied by an acute care patient cannot be occupied by a non-acute care patient. The trigger number established a level of interdependence. Before 1990/91, the case study evidence suggests that non-acute and acute care patients were mixed except for thirty-six beds in geriatric medicine that were reallocated from existing geriatric beds, and dedicated to their care. Thirty six panelled patients were about one-third of the estimated non-acute care patients in the hospital at that time. Due to the *acute care hospital belief*, non-acute care patients were not counted, or at least the counts were not reported. The hospital's statistics before 1990/91 reflect the population mix. Even if age and gender adjusted morbidity and mortality data were available for the case study it would not yield the relative proportions of the populations, describe their interdependence, or reflect their physical distribution. This is because these are also acute care concepts which may not be transferable to non-acute care. The hospital, short and long term, and services totals for admission, census day rates, average length of stay reflect the physical distributions of non-acute and acute care patients. As the acute care population or portion of the hospital used by acute care patients becomes smaller, the non-acute portion becomes larger.

The literature review found that the production of inappropriate utilization may be associated with admission and/or patient days. Inappropriate admissions can be premature, admissions that are more suitable for diagnostic or outpatients procedures, for a lower level of care, or when day surgery could be substituted. Inappropriate patient days result when the reason for admission has not been achieved (i.e., scheduling problems), inattention to discharge, diagnostic or outpatients procedures are performed, and no institutional care or a lower level of care was required. Little information is available from the case study to assess the production of inappropriate utilization. Determination of the reasons associated with inappropriate admissions and days are done using evaluation protocols (Figure 2). Assuming that non-acute admissions represent inappropriate admissions for a lower level of care, five percent inappropriate admissions can be estimated (Table 23). Inappropriate patients days are estimated to be forty four percent based on annual figures (Table 26).

Physicians, the hospital, the environment, and patients share responsibility in the management of appropriate acute care hospital utilization according to the literature. Before the *interventions*, individual physicians with no hospital authority or responsibility had total control over admitting and discharge decisions to sixty percent of the beds (Table 34). Through the Physician Managers for geriatric medicine and psychiatry, the hospital had indirect control of forty percent of the beds before the *interventions*.

Before 1990/91, government, as an environmental factor, had indirect responsibility for twenty-six percent of the beds which were occupied by non-acute care patients and mental health patients through the trigger number and legislation. The trigger

number beds cannot be separately allocated to the hospital or physicians as direct responsibility for utilization control. In practice, the trigger number beds are distributed between the hospital and physicians for responsibility. After the *interventions*, the hospital has indirect control of ninety eight percent of the beds through the physician managers. Physicians retain direct control of two percent of the beds which are the intensive care beds. The environmental contribution was twenty-five percent after the *interventions*.

Table 34.--Distribution of control for appropriate bed utilization before and after *interventions* by responsibility

Responsibility	Before <i>interventions</i>	After <i>interventions</i>
Physicians	60%	2%
Hospital	40%	98%
Environment	(26%)	(25%)

The government's designation of trigger numbers legitimized the use of acute care hospitals by inappropriate patient populations. Selection of an acute care inpatient population by acute care utilization management practices is limited by the trigger number. The trigger number may have legitimized the presence of panelled patients in acute care hospitals in government's eyes, but may not legitimize them to acute care hospitals because they are not acute care patients. In the case study hospital, non-acute care patients were legitimized as the hospital passed from its identity, the *acute care hospital belief* to the *innovative health care facility*.

Conclusion

The purpose of utilization management is to improve the efficiency and effectiveness of the delivery of health care services. The goal of the case study was to determine if, how, and why utilization changed and the role of the utilization management. The complexity of the case study makes a straightforward answer difficult and a concise conclusion a challenge. The presence of two patient populations with different patient care needs whose hospital utilization appears to be interdependent, also adds complexity. Two conclusions may be stated, one for the hospital and the other for the health care system.

The organizational *transition* that began in 1990/91 is the most important theme of the case study. The management of utilization could not have taken place without organizational *transition* for the case study hospital. In turn, the changes in statistics may not have occurred without utilization management. The *interventions* preceded the statistical changes in time. The contribution of sectorial changes to the hospital's statistics cannot be assessed as an overlay to the changes in statistics that appear to be a result of utilization management.

The changes in hospital statistics are consistent with those reported in the literature including no evident decrease in length of stay. The *interventions* were applied to acute and non-acute care patient populations. Conventional measures of the effects of utilization management, i.e., length of stay, admission and patient day rates, may become less responsive as inpatient services are replaced by non-bed based acute care services. The same measures may not adequately measure or reflect utilization changes by non-

acute care patients. Summary statistics may underestimate the effectiveness of utilization management when it is applied to acute and non-acute care populations. Appropriate utilization measures for the non-acute care population need to be developed. Future utilization *interventions* may need to be designed to ensure that the appropriate utilization of hospital resources continues and would target non-acute care patients and acute care patients using non-bed based services.

The *interventions* included changes to functional responsibilities and administrative policies; both are organizational change. In this case study, there is evidence of utilization management with effective decision making. The decision making is executed within organizational structures created by the hospital specifically for that purpose. The case study hospital improved utilization by legitimizing physicians within hospital management. This approach opposes the current trend of the de-medicalization of health care. However, as long as physicians retain the sole responsibility to admit, to discharge and to order resources to deliver health care services and are not hospital management, then improvements in hospital efficiency and effectiveness may not result. By making physicians part of hospital management, the hospital gained indirect control over that decision making. Due to the nature of the decisions, the hospital, as an organization, cannot have direct control, only the appearance. The case study supports physicians as decision makers when utilization management is effective. They must be part of hospital management and have hospital authority over beds. The hospital authority must apply to enough beds to ensure appropriate utilization. As individuals, the physician managers must be respected by peers for their clinical knowledge and judgment.

Other hospitals, who are experiencing similar organizational and cultural changes, may consider the case study hospital's *interventions*. Some *interventions* may be in place in hospitals. Due to the nature of the case study, there is no information to support the effectiveness of a "partial implementation". Some form of organizational transition may be essential for implementation of *interventions*.

As a case study in policy implementation, the hospital's response to government's policy of reduced spending on health care is described. The policy is reduced funding to hospitals by government, a use of treasure as a policy instrument.²⁷⁶ The hospital responded to government's policy by sustaining the utilization *interventions* put in place earlier. The utilization *interventions* were implemented to address quality of care issues, and later were used to contain costs. This parallels the Canadian implementation of the two components of utilization management, quality of care and cost containment. The implementation of the *interventions* also predated provincial health reform which began in May 1992. Health reform promoted the continued use of the *interventions* to control utilization. The trigger number policy of panelled patients in acute care hospital may impact quality of care for both acute and non-acute care patients. Hospitals should consider segregating acute and non-acute care patients for quality of care and cost implications. Unintended consequences of government's policy of trigger numbers are overestimating the size of the acute care system and its associated costs. This serves to promote the perception of a large, expensive acute care health system.

APPENDIX 1 TECHNICAL ANALYSIS OF CANADIAN LITERATURE

Table 9.--Determining the study groups

Reference/ Data source(s)	←→ Criteria for Selection	←→ Exclusion	Study groups
<u>Kasian et al 1992</u> patient chart (retrospective)	children admitted to pediatric wards on every fifth day and every other month for one year;	pediatric and neonatal ICU; normal newborns; psychiatric patients;	1,327 patient days
<u>Gloor et al 1993</u> patient chart (retrospective)	random 1 day per month in 1988	pediatric and neonatal ICU; normal newborns; psychiatric patients;	878 patient days 26 charts unavailable 858 patient days 475 medical 359 surgical 18 other
<u>Smith et al 1993</u> patient chart (retrospective)	all children admitted every 10th day in 1990; random sample of 30 patients every 20th day from midnight census;	age < 6 months; ICU patients; special care nursery; care by parent unit; psychiatric patients;	484 admissions 7 charts unavailable 466 admissions 570 patient days 23 charts unavailable 547 patient days
<u>Anderson et al 1993</u> patient charts (concurrent) (retrospective)	patients admitted via Emergency with medical diagnosis for one control and one intervention year all medical diagnosis	patients admitted to Critical Care and Telemetry Units; Palliative Care; paneled patients medical patients who had surgery within 3 days of admission;	1800 patient charts 2104 patient charts
Hospital abstracts	all medical separations		21,057 separations before 20,957 separations after
MedisGroups database	discharges with diagnosis of cerebrovascular disease; gastrointestinal with complications; gastrointestinal without complications medical back problems		1268 discharges before 1716 discharges after

APPENDIX 1 TECHNICAL ANALYSIS OF CANADIAN LITERATURE, continued

Table 10.--Measures and methods for the study groups

Reference/ Unit of analysis	Utilization review measure	Statistical method/measures	Confounding variables
<u>Kasian et al 1992</u> patient day	Pediatric Appropriateness Evaluation Protocol	Chi Square	
<u>Gloor et al 1993</u> patient day	Pediatric Appropriateness Evaluation Protocol	Chi Square	
<u>Smith et al 1993</u> admission and patient day	Pediatric Appropriateness Evaluation Protocol	Chi Square, logistic regression, Cohen's kappa scores	age, gender, admission status, place of residence;
<u>Anderson et al 1993</u> patient day	ISD-A	Bivariate analysis Multivariate analysis logistic regression	age, gender, admission route, age, gender, admission route,

APPENDIX 2 TECHNICAL ANALYSIS OF THE EVALUATION LITERATURE

Table 11.-- Determining the study groups

Reference/ Data source(s)	←→ Criteria for Selection	←→ Exclusion	Study groups
<p><u>Fieldstein et al 1988</u> 1984-85 quarterly insurance claims of private, public and union plans (data sources not further described)</p>	<p>75% of yearly claims available, population data available, at least 100 insured employees in each plan</p>	<p>not all retirees in the group covered; coverage more than dental and vision</p>	<p>88 groups with UR in 1984-85 134 groups no UR in 1984-85 222 groups total representing 126 quarterly observations;</p>
<p><u>Wickizer et al 1989</u> 1984-86 quarterly insurance claims of private plans with a few public and union plans (558 Groups); AHA, AMA, HMO annual surveys 1984 to 86; Area Resource file data;</p>	<p>75% of yearly claims available, population data available, at least 100 insured employees in each plan</p>	<p>not all retirees in the group covered; coverage more than dental and vision; other cost containment programs in effect;</p>	<p>223 groups total representing 1,848 quarterly observations; 766 quarterly observations with UR 1,082 quarterly observations no UR</p>
<p><u>Scheffler et al 1991</u> 1980-1989 Blue Cross Blue Shield Association database</p>	<p>all insurance plans selected</p>	<p>none documented</p>	<p>56 insurance plans</p>

APPENDIX 2 TECHNICAL ANALYSIS OF THE EVALUATION LITERATURE
continued

Table 12.--Measures and methods for the study groups

Reference/ Unit of analysis	Utilization review measure	Statistical method/measures	Confounding variables
<u>Fieldstein et al 1988</u> Insured group (cross-sectional)	preadmission certification admission on-site review concurrent review	multiple regression	age, sex, health care market area factors (occupancy rate, physician numbers, number of HMOs, benefit-plan features proxy measures of health status, coordination of benefits as a proxy for study group composition
<u>Wickizer et al 1989</u> Insured group (cross-sectional)	preadmission certification; concurrent review	multivariate analysis Goldfield-Quandt test Olsen's Procedure	age, sex, health care market area factors (occupancy rate, physician numbers, number of HMOs, benefit-plan features proxy measures of health status, coordination of benefits as a proxy for study group composition
<u>Scheffler et al 1991</u> Insurance plan (descriptive)	admissions, length of stay, patient days	multiple regression p values	plan characteristics, health care environment, sociodemographics of market area, regulatory environment, time and season of year

APPENDIX 3 STRUCTURE, PROCESS, AND OUTCOME VARIABLES

Using an accepted model for the definition of quality of care, a profile was constructed for fiscal years 1985 to 1993 by collecting yearly data for the listed variables for the hospital. The following list provided a starting point for data collection.

Socio-demographic	age and sex of patients
Structure	area code distribution of patients (geographic area) hospital type hospital ownership, governance regulatory environment percent global budget of total budget by fiscal year track record of deficit as yes or no presence of plans to address deficits as yes or no number of full-time equivalents, number of staff number of volunteers senior management and board changes presence or absence of chief medical officer number of salaried physicians CCHFA accreditation status hospital size in beds number and type of medical, surgical and specialty units percent occupancy as approved complement and in-operation percent occupancy of medical, surgical and specialty units
Process (efficiency)	number of hospital total, medical and surgical elective and non-elective admission excluding newborns and obstetrical admissions average length of stay for admissions average length of stay by major diagnostic categories total, medical, surgical, specialty patient days cost per patient day number of "appropriate" admissions number of total, inpatient and outpatient surgical procedures outpatient service volumes
Outcome (effectiveness)	number of discharges by major diagnostic category number of deaths age and sex adjusted morbidity and mortality

APPENDIX 4 CASE STUDY DESIGN - EMBEDDED UNITS OF ANALYSIS

This matrix was derived from the study objectives.

Objective	Unit of analysis	Data collection	Data	Analysis
1. Interventions	Definition(s), targets; components;	Elite, focused interviews; field dairy, documents	Transcripts, notes; reports;	Time based qualitative analysis
2. Pre-existing conditions	Conditions;	Elite, focused interviews; field dairy, documents;	Transcripts, notes, reports;	Time based qualitative analysis;
3. Who, why, and when? (implementation)	Participants; motives; circumstances;	Elite, focused interviews; field dairy, documents;	Transcripts, notes, reports;	Time based qualitative analysis;
4. Decision making	Decisions; decision makers organization(s); forms;	Elite, focused interviews; field dairy, documents;	Transcripts, notes, reports;	Time based qualitative analysis;
5. Information requirements	Variables l..n; sources;	Elite, focused interviews; field dairy, documents;	Transcripts, notes, reports;	Time based qualitative analysis;
6. Hospital policy changes	Policy before; policy after; documents;	Elite, focused interviews; field dairy, documents;	Transcripts, notes, reports;	Time based qualitative analysis;
7. Feedback	Decisions; decision makers' organization(s); documents;	Elite, focused interviews; field dairy, documents;	Transcripts, notes, reports;	Time based qualitative analysis;
8. Organizational change	Staff changes; new positions; reorganization;	Elite, focused interviews; field dairy, documents;	Transcripts, notes, reports;	Time based qualitative analysis;

APPENDIX 5 QUALITATIVE DATA COLLECTION FRAMEWORK

This is an example of the qualitative data collection matrix. The variables are in alphabetical order.

Document and variables 1985/86  1993/94

Annual report

- board
- cost containment
- external forces
- major events and themes
- medical director
- president of medical staff
- quality of care
- ranking
- senior management
- service changes
- utilization
- value statements
- other variables as identified

Department and medical staff reports

- cost containment
- emergency
- external forces
- feelings, morale
- gifting
- important issues
- information
- medicine
- nursing
- organizational change(s)
- panelled patients
- quality of care
- services change(s)
- surgery
- unions
- utilization
- other variables as identified

Interviews

- admission polices
- clinical practice guidelines
- cost containment
- culture
- discharge planning
- long stay patients
- outpatient services
- physician managers
- power shifts
- utilization
- other variables as identified

APPENDIX 6 INTERVIEW QUESTIONS

The following are actual questions asked during an interview with a management informant and a health professional informant. Due to the open, focused nature of elite interviewing, the informant determines subsequent questions asked by the interviewer after the initial question. In general, the informant was asked to free list the perceived changes in utilization of the hospital by patients. Often, the informants made statements on the themes of the interventions, the reasons leading to the interventions, key actors in implementing the interventions, the perception of quality of care before and after the interventions, the nurse's strike, changes in local culture, policy changes, and changes in importance of groups and/or individuals without being expressly asked. When and if additional information was required, a statement was probed for further information. While some questions appear to illicit yes or no responses, the informants rarely responded to them in this manner.

Questions of a health professional informant

I've done some reading - like the Departmental Annual Reports from 85 on and in it - those reports in some detail they talk about patients in the hallways in Emerg and that kind of thing recalling what it was like in those days can you tell me what the circumstances were that led to that kind of thing happening? Do you have any feeling for that?

One of things that I've learned in talking to people is that the admission polices for beds are really gentleman's agreements, physician to physician, just blew me away.

I'd like to go back to something that you mentioned earlier and that's the nurse's strike. What role, if any, did the nurse's strike play in the overall utilization pattern at the hospital?

Do you think the fact that they were talking to people with generally a management backgrounds who by virtue of their positions tend to ask questions like: why are you doing this?

You mentioned that there were some things that weren't learned.

Are you talking about explicit, written admission criteria?

I'd like to go back a little bit to how you remember the board being involved or not being involved in trying to make changes in utilization.

There appears to be in history, a number of things that occurred in almost a six month window, (Name) left to go to (organization), then (another Name) came aboard, then there was the nurse's strike - and just all sorts of things happened. To what extent was the fact that you had a new CEO, did that help things happen or did it - was there a facilitating role because it was a new person?

There's been a lot of discussion in the literature about institutions have culture - for this particular hospital do you think there was a change in culture, no change in culture or whatever in the 12 years that you were there?

APPENDIX 6 INTERVIEW QUESTIONS, continued

Questions of a management informant

In the years that you have been here there have been a number of changes that occurred in the utilization of this hospital by patients. Can you tell me what you think those changes are?

Do you think that any one of those perhaps was more effective than the others - in ranking terms?

How did the physicians respond to it?

You mentioned that this is real a job of orchestration of a host of things- who does that? who or what kind of organization needs to be in place to bring all of these things together or is that simplistic?

You mentioned that when most of these changes started to occur there wasn't a VP of medicine and I recall that someone who had been here for a number of years had left - during the time you were without a VP of medicine do you think that in any way enabled the change that took place?

If you would have recruited someone other than this particular individual, do you think the same thing would have happened?

How did it get that way? (Reference to the utilization problems at the hospital)

I'll ask if you think that was an incentive for particular physicians, perhaps, to admit to this hospital versus another?

Can you tell me about how the board supported the changes and what the role of the board during was in making those changes ?

I see - so round about when - could one say that when there was a change in CEO there was a concomitant change in the board?

Think that the culture today or even two years ago is different from what it was five years ago?

How do you see the relationship between TQM efforts here and quality assurance

What role did the nurse's strike have in effecting some of those changes - the events?

Did you notice that managers were more cohesive or less cohesive because of the nurses strike?

Do you have a definition of utilization review and/or utilization management that you hold to?

How would you judge quality of care since these changes have occurred?

APPENDIX 8 PROJECT SUMMARY AND INTERVIEW CONSENT AGREEMENT

Project Summary

The purpose of this study is to determine how and why hospital utilization by patients changed and the role of various initiatives in facilitating that change in a selected acute care hospital. The implementation of changes to hospital utilization involves decisions made by various levels of management to achieve a desired outcome. To understand the role of the various initiatives and their relationship to changes in hospital measure such as length-of-stay, a number of information gathering measures will be used. For example, interviews of key individuals of the organization and a trend analysis of hospital statistics are planned. A series of questions will be asked and you do not have to answer all the questions if you so wish. Your experience and insight into the events surrounding the implementation of changes in hospital utilization is important to the study and will help build the narration around the variation in hospital statistics.

I would like to tape your interview so that we can concentrate on the discussion of your experiences and it ensures that the interview is recalled accurately at a later date. If you wish, the interview can also take place with the conversation being taped. In that case, I would like to take notes. Should you consent to a taped interview, it may be completely or partially transcribed. You will receive a copy of your interview or of my notes. When you review the text, you have the right to amend it and your changes will be respected. In the future, I plan to share the results of your interview with you for validation and may also request clarification at that time.

You will be identified as a board member, management or health professional, as appropriate; you will not be identified by name. In conversation with other participants, your experiences may be shared, when appropriate, by category of your position.

Your participation in this study is voluntary and you can withdraw at any time without consequence. Financial remuneration for your participation in this study is not offered.

Date: _____ Initials: _____

Contact person: Constance Montgomery (phone number)

APPENDIX 8 PROJECT SUMMARY AND INTERVIEW CONSENT AGREEMENT
continued

Consent Agreement

I, _____ agree to be interviewed and have my interview taped or notes made during the interview with the investigator. I have read the project summary which lays out the purpose of the research and the options available to me as a participant. I understand that I do not have to answer all questions if I so wish and that I may withdraw from the study at any time without consequence. My interview will be transcribed with a copy returned to me or a copy of the notes. I agree to have the investigator check facts with other parties. I have been assured that I will not be identified by name but may be identified by my positions' category.

Participant:

signed _____

date _____

Witness:

signed _____

date _____

Investigator:

signed _____

date _____

NOTES

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2. Ibid.
3. Anderson G. Sheps S. Cardiff K. Evaluation of vi-care: a utilization management program of the greater Victoria hospital society. Health Policy Research Unit Discussion Paper Series (Vancouver, British Columbia: University of British Columbia 1993). at 32. Rates are in the range reported by Payne 1987 at 745-6.
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5. Nair C. Trends in hospital inpatient utilization, 1961-1988/89. Health Reports. 1991; 3: 189-97. at 189-90.
6. Anderson G. Sheps S. Cardiff K. Hospital-based utilization management: a cross-Canada survey. Can Med Assoc J. 1990; 143: 1025-30.
7. Catherine Davidson, Standards Analyst, Canadian Council on Health Facilities Accreditation. personal communication on November 10, 1994. Since 1991, utilization review has been an accreditation governance and management standard for acute care hospitals who voluntarily submit to accreditation; all teaching hospitals must be accredited. Prior to 1991, it was highly suggested. The College of Physicians and Surgeons establishes a standards committee in each hospital.
8. Pal L. *Public policy analysis: an introduction*. 2nd ed. (Scarborough Ontario: Nelson Canada 1992). at 172. Public policy-makers rely on others to implement policy and institutional health care interests (i.e. hospitals) play this role. Policy and program implementation "takes place in the real world, with its multitude of powers, authorities, and organizations, and therefore is inevitably a struggle." at 177.
9. Payne 1987. at 713.
10. Ibid. at 710.
11. Evans R. Health care reform: "the issue from hell" Policy Options. 1993; July/August: 35-41. at 35.
12. Manitoba. Quality health for Manitobans the action plan. Manitoba Health 1992. at 7.
13. Ibid.; E. Golembioski, personal communication August 1993. As a policy instrument, decreases in hospital global budgets are very direct approaches with little finesse. At the same time, it empowers management to find the most appropriate solutions for their respective institutions.
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15. Bailit and Sennett 1991.
16. Scheffler R. Sullivan S. Ko T. The impact of Blue Cross and Blue Shield plan utilization management programs, 1980-1988. Inquiry. 1991; 28: 263-75 at 263.
17. Feldstein P. Wickizer T. Wheeler J. Private cost containment: the effects of utilization review on health care use and expenditures. N Engl J Med. 1988; 318: 1310-14.; also

- Wickizer T. The effect of utilization review on hospital use and expenditures: a review of the literature and an update on recent findings. *Med Care Rev.* 1990; 47: 327-63.
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 20. Rogers W, Draper D, Kahn K, Keeler E, Rubenstein L, Kosecoff J, Brook R. Quality of care before and after implementation of the DRG-based prospective payment system: a summary of effects. *JAMA*. 1990; 264: 1989-94. The reimbursement is based on Diagnostic Related Groups (DRG) which in turn have an average length of stay. The timing of the discharge to match length of stay which is associated with the diagnostic group may create a problem.
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 22. Sheps et al 1991. at 37.
 23. Pal 1992. at 39-40. The goal of evaluation is to improve the performance of a program, the expression of articulated or unarticulated policy. Empirical policy evaluation is rational in nature and assumes a cause and effect relationship between policy objective(s) and policy outcomes, that empirical data are available, and the findings are reproducible. As well, it also assumes that policy-making is rational and will identify "the best technical solution to the problem" and that the basis for decision-making is information and that the decision-maker has unlimited access to perfect information. As it is based on an articulated ideal, rational evaluation deals with, what should be, rather than what is.
 24. Last J. *A dictionary of epidemiology*. (Toronto, Ontario: Oxford University Press 1988). at 41.
 25. Payne S, Campbell D, Penzias B, Socholitzky E. New methods for evaluating utilization management programs. *ORB*. 1992; October: 340-7. at 341. The definition for appropriateness is based on the definition for inappropriateness.
 26. Donabedian A. "The definition of quality and approaches to its assessment". Vol. 1. *Explorations in Quality Assessment and Monitoring*. (Ann Arbor, Michigan: Health Administration Press 1980). at 79-83.
 27. Linton A, Peachey D. Utilization management: a medical responsibility. *Can Med Assoc J*. 1989; 141: 283-6. at 284.
 28. Payne 1987. at 713. As Payne notes: "In practice utilization management focuses on the *quality* and *quantity* of the inputs into the hospital product (e.g., the number of laboratory tests provided or the length of stay) and not on the cost of inputs (such as wage rates or supply costs)" at 763. The context of UM is that of a program and contains goals and subordinate objectives, methods of identifying inappropriate utilization, implementation, defines the information to be used with subsequent data processing and analysis, the interventions, and evaluation parameters. Utilization review is one of the methods used within by a utilization management program to determine the efficiency of medical care. at 720-1.
 29. Scheffler et al 1991. at 263. This is the definition of the Institute of Medicine Committee on Utilization Management by third parties, 1989, and is also cited by Bailit and Sennett 1991. at 87.
 30. Ontario Hospital Association. Ontario Medical Association. Ontario Ministry of Health. Hospital Medical Records Institute. *Guide for hospital utilization review and*

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 37. Working Group on Health Services Utilization. *When less is better: using Canada's hospitals efficiently*. (Ottawa, Ontario: Canada 1994). at 77. On page 9, the definitions of utilization management and review are cited from the Payne 1987 paper, the definitions in this paper are from the Glossary of the Working Group's paper. Payne stated that utilization review was a component of a utilization management program and was likely one of many methods used by a utilization management program. The authors here treat utilization management and review as almost independent concepts and provide a definition that explicitly acknowledges that the changing of behavior is involved in utilization management.
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 39. CCHFA. 1992. at 3 citing Harrison F. et al. Quality of care and utilization management. Health Manag Forum. 1989; Summer. at 18.
 40. Payne 1987. at 723.
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53. Ibid.
54. Ibid. at 44.
55. Jencks S. Schieber G. Containing U.S. health care costs: what bullet to bite?. Health Care Financing Review. 1991; Ann Suppl: 1-12. at 6.
56. Field M. Gray B. Should we regulate "utilization management?". Health Affairs 1989; Winter: 103-12. at 105.
57. Hayes et al 1994. at 40.
58. Feldstein et al 1988. at 1310-14.
59. Pal 1992. at 41. The incremental model for policy has cognitive and organizational components that recognize the complexity of human organizations to work in the real world with "imperfect information". The incremental model assumes "that the majority of problems facing decision-makers are complex and interrelated, and that decision-makers operate in a climate of uncertainty and limited resources ... the policies and programs already in place in a given issue area" are the starting point.
60. McDonough C. and Vaz A. 1987. at 42.
61. Ontario Hospital Association. Ontario Medical Association. Ontario Ministry of Health. Hospital Medical Records Institute. *Guide for hospital utilization review and management in Ontario*. 1988. As cited in Skelton-Green J. Utilization review and management: a primer. Can J Nurs Admin 1992; May/June: 25-28. at 25.
62. Anderson and Lomas 1988. at 9.
63. Mackenzie T. Greenaway-Coates A. Djurdeldt M. *Outcomes monitoring project: executive summary*. Canadian Council on Health Facilities Accreditation. at 2, at 1.
64. Ontario. Public Hospitals Act 1980. April 90. Regulation 518/88 Section 4, subsection 6, at 72.

65. Linton and Peachy 1989. at 283-286.
66. Sutherland R. Utilization management must be shared. *Can Med Assoc J.* 1989; 141: 287.
67. Brinkworth S. Fyke K. Reducing efficiency: utilization management. *Hospital Trustee.* 1989; Nov/Dec: 12-4.
68. Jackman J 1992. at 11.
69. Anderson et al. 1990.
70. CCHFA 1992; Barer and Evans 1992. at 56.
71. CCHFA 1992. at 5.
72. Canadian Medical Association. *Quality of Care Program.* (Ottawa, Ontario: Canadian Medical Association 1990). at 98.
73. Manitoba Health. *Quality health for Manitobans the action plan.* (Winnipeg, Manitoba: Manitoba 1992). at 33. The text identifies Dr. Geoff Anderson of the University of British Columbia as taking the lead on this initiative. He would work with Winnipeg/Brandon Inter-Hospital Medical Staff Council and assess the appropriateness of hospital utilization. Global funding of hospital would be retained and hospitals were encouraged to "define their roles and the effectiveness of the services relating to the numbers and kinds of hospital beds". at 33.
74. Ibid. at 38.
75. Ibid. at 39, 41.
76. CCHFA 1992. Accreditation Standards 22, 24; CCHFA standards for the governing body to be "accountable for the effective and efficient management of resources" include: adopting "a policy for facility-wide utilization review activities. The policy endorses commitment to utilization review, the development of valid methods to assess whether services and programs within the facility are being utilized in the most effective manner, the education of governing body, management, medical staff and other staff in utilization review." In addition, the governing body will demonstrate that it receives the results from utilization review and provides their feedback" on the results of utilization review activities to , management, medical staff and other staff." It also specifies that "the governing body annually monitors and evaluates". Standards for management include developing and implementing facility wide utilization review activities, designates utilization review responsibilities within the facility, develops and implements policies and procedures for utilization review, receives reports on utilization review activity, assists the board in its monitoring and evaluation, communicates the board's feedback on utilization review efforts, establishes the "operational linkages between utilization review activities and quality assurance activities pertaining to patient care."
77. Sheps et al. 1991. at 35-7. Baxter markets The Value Improvement Process (VIP) which is used primarily in Ontario. The Health Management Resource Group in British Columbia markets the Resource Enhancement Program. One hospital in British Columbia developed the SWITCH System for its use. The authors also include the Hospital Medical Records Institute (HMRI) database as having the potential to collect and report information on utilization.
78. Canadian Hospital Association. *An Open Future: A Shared Vision.* (Ottawa, Ontario: Canadian Hospital Association 1993). at 95.
79. Brown B. Smith R. Utilization management: reduced costs - improve service. *Leadership.* 1993; 2: 7.
80. Working Group on Health Services Utilization. 1994. at 7.
81. The scope could be expanded to include all hospital services due to provincial implementations (excluding Manitoba) of the Guidelines for Management Information

- Systems (MIS). The system provides for the collection and reporting of timely departmental utilization indicators.
82. Pal 1992. at 41.
 83. Kasian G. Zinkiew K. Senthilselvan A. Inappropriate hospital bed days at a Canadian pediatric tertiary care centre. Annual RCPSC. 1992; 25: 275-8.
 84. Gloor J. Kissoon N. Joubert G. Appropriateness of hospitalization in a Canadian pediatric hospital. Pediatrics. 1993; 91: 70-4.
 85. Smith H. Sheps S. Matheson D. Assessing the utilization of in-patient facilities in a Canadian pediatric hospital. Pediatrics. 1993; 92: 587-93.
 86. Kemper K. Medically inappropriate hospital use in a pediatric population. N Engl J Med. 1988; 318: 1033-7.
 87. The rates were adjusted for age and gender using the Manitoba 1992 population as the standard. Observed and expected rates were not different suggesting that the differences reported here are not due to age and gender. This also suggests that the increase in rates is not due to age.
 88. Gloor et al. at 72. Older children tend to have longer stays and are more likely to be chosen when sampling one day per month for a year.
 89. Payne 1987. at 750.
 90. Kasian et al. 1992. at 276-7. The sampling procedure would yield a conservative number of inappropriate days.
 91. Smith et al 1993. at 589.
 92. Gloor et al 1993. at 72. They randomly sampled one inpatient day per month in 1988. Not all inpatient days had an equal chance of being selected for review. Inpatients with longer stays have a greater chance of being selected.
 93. Kasian et al 1992. at 276.
 94. Gloor et al. 1993. at 72.
 95. Payne 1987. at 747-50.
 96. Kasian et al. at 277.
 97. Anderson et al 1993. at 15.
 98. Ibid. at 18.
 99. Ibid. at 16-7.
 100. Ibid. at 33.
 101. Payne 1987. at 750-1.
 102. Anderson et al 1993. at 30-1, 67-8. The four most common medical diagnosis were used to study outcomes using MedisGroups. Rationale to support that an admitting diagnoses of cerebrovascular disease (DRG 14), gastrointestinal functional diagnosis with (DRG 182) and without complications (DRG 183), and medical back problems (DRG 243) would be sensitive indicators of adverse outcomes are not reported. See also Payne 1987 at 753-4.: Major Diagnostic Categories for principle diagnoses that tend to be associated with higher rates of inappropriate admissions are MDC 16, blood and blood-forming organs, MDC 17, myeloproliferative disorders, MDC 8, musculoskeletal and connective tissue, MDC 6 digestive system, MDC 10, endocrine, nutritional and metabolic, and MDC 3, ear nose and throat. MDCs that tend to be associated with higher rates of inappropriate days are MDC 3, ear nose and throat, MDC 8, musculoskeletal and connective tissue, and MDC 10, endocrine, nutritional and metabolic.
 103. Anderson et al 1993. at 54.
 104. Turner W. Utilization management project. St. Mary's Hospital, Sechelt, British Columbia, November 1991. (Unpublished). as cited by Anderson et al 1993. at 1.

105. Fieldstein et al 1988. at 1310-4.; Wickizer T et al 1989. at 632-47.; and Scheffler et al 1991. at 263-75. The three studies are the ones usually cited as evidence that utilization review or management does work in the real world.
106. Wickizer et al 1989. at 636.; Payne 1987. at 740. Wickizer contends that concurrent review is designed to change length of stay and Payne contends that the relationships among determinants are not obvious.
107. Fieldstein et al 1988.; Wickizer et al 1989.
108. Scheffler et al 1991. at 270.
109. Ibid. at 272. "It is unknown ... whether this program selectively reduced medically unnecessary hospitalizations."
110. Bailit and Sennet 1991. 87-93.
111. Rogers W. Draper D. Kahn K. Keeler E. Rubinstein L. Kosecoff J. Brook R. Quality of care before and after implementation of the DRG-based prospective payment system: a summary of effects. *JAMA*. 1990; 264: 1989-94. This paper is the last in a series evaluating quality of care and was done by the RAND corporation.
112. Coulam R. Gaumer G. Medicare's prospective payment system: a critical appraisal. *Health Care Fin Rev*. 1991; Ann Suppl: 45-77.; at 72.
113. Kasian et al 1992.; Gloor et al 1993.; Smith et al 1993.; Anderson et al 1993. For a given stay in hospital at constant technology, if the inappropriate days due to premature admission and delayed discharge were eliminated, length of stay would decrease. Eliminating days waiting for diagnosis and treatment would also tend to decrease length of stay. However, the days may not be realized if bookended by appropriate days. Replacing inappropriate days with outpatient services eliminates the length of stay. As inappropriate admissions are replaced with appropriate admissions, the probability of successive appropriate days increases, and the length of stay approaches its true value. Length of stay is calculated as total patient days divided by separations for a time period.
114. Payne 1987. at 745-6. Appropriateness was determined using adult versions of AEP.
115. AEP and ISD-A are reliable and valid review instruments, see Anderson et al 1993. The variability in Table 9 is likely not a result of different review instruments.
116. Sui A. Sonnenberg F. Manning W. Goldberg G. Bloomfield E. Newhouse J. Brook R. Inappropriate use of hospitals in a randomized trial of health insurance plans. *N Engl J Med*. 1986; 315: 1259-66. The unit of analysis was the patient, not a group, and conclusions are not subject to the ecologic fallacy. Selection bias and geographic variation in medical record abstraction were dismissed as influences on the rates.
117. Overall, the rates are quite similar. The rates for pediatric and adult inappropriate medical admissions and days were age and gender adjusted using the 1992 Manitoba population as the standard population. The observed and expected rates were not different by chi square.
118. Keeler E. Rubinstein L. Kahn K. Draper D. Harrison E. McGinty M. Rogers W. Brook R. Hospital characteristics and quality of care. *JAMA*. 1992; 268: 1709-14. The dependent variable is hospital quality of care.
119. Fieldstein A. *Clinical Epidemiology*. (Philadelphia: Saunders 1985). at 447-8. He points out that adjustment for confounding variables is limited to those identified and the adjustment cannot be generalized to include information that is not in the multivariate analysis. This can be underspecification of the variables and/or mis-specification.
120. Burns L. Wholey D. The effects of patient, hospital, and physician characteristics on length of stay and mortality. *Med Care*. 1991; 29: 251-71. at 259.
121. Sui et al 1986. at 1260.
122. Donabedian A. 1980. at 81.

123. Welch C. Grover P. An overview of quality assurance. *Med Care*. 1991; 29: AS8-28. at AS24.
124. Sui et al 1986. at 1261. Inappropriate admissions and patient day rates were adjusted for age, gender, race, education, family size, chronic ailments, and health status. The hypothesis was to determine if inappropriate rates exhibited geographic variation and to determine if cost-sharing by patients reduced inappropriate rates. The answers are yes and yes, but cost-sharing decreased appropriate rates. They do not report adjusting rates for the effects of structure.
125. Payne 1987. at 747-9. The occupancy and bed size clues come from studies using SMI for review and SMI is not a reliable instrument. However, Payne suggests that this needs revisiting.
126. Jencks and Schieber 1991. at 9.
127. Anderson et al 1990. at 1028.
128. Anderson et al 1993. at 8-10. The goal of the program was "to enhance the quality of patient care; appropriate, effective and efficient utilization of hospital facilities and services; identification and adoption of appropriate alternatives". The program has a formal organizational structure, terms of reference, and physicians sitting on its committees. Circumstances in a hospital that may lead to an utilization management program include a history of high occupancy rates, cancellation of surgery, patients in hallways, an overflowing emergency department with inpatient days and concern about quality of care. This was Anderson's description of the situation in hospital C and D in his 1993 study.
129. Kasian et al. 1992. at 277.
130. Smith et al 1993. at 591-2.
131. Kasian et al 1992. at 278. They sampled the fifth day in a month and every other month for a year. There were 159 inappropriate medical days and $159(10) = 1,590$ projected inappropriate medical patient days in a year. The cost would be $1,590(\$497 \text{ per day}) = \$790,230$; $\$158,046$ per pediatric physician. Similarly, if the level of inappropriateness applied to other services, the yearly "cost" to the hospital was calculated as $\$1,068,550$, not $\$1,080,000$ as reported in the paper.
132. Gloor et al 1993. at 73.
133. Anderson et al 1993. at 13.
134. Anderson et al 1993. at 27-8, 66-9. The survey was mailed to 312 physicians with a 71% response rate. Responders were not different from non-responders. Support for the program was associated with knowledge level about concurrent review and contact with the nurse reviewer.
135. Payne S. Ash. A. Restuccia J. The role of feedback in reducing medically unnecessary hospital care. *Med Care*. 1991; 29: AS91-105.
136. Knox EG. *Epidemiology in health care planning*. (Toronto, Ontario: Oxford University Press 1979). at 36. There are different types of accountability. Managerial accountability is based on resource allocation and derives its legitimacy from the transfer of responsibility from elected officials. For example the minister of health transfers responsibility to the bureaucracy who in turn transfer it to the board of trustees of an institution. Professional and technical accountability is based on efficiency, effectiveness, the setting and monitoring of standards, and the matching of need and resources. Government entrusts professional and technical accountability through legislation to professional associations, for example a provincial College of Physicians and Surgeons.

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138. Coulam and Gaumer 1991. at 64.
139. Kasian et al 1992. at 277-8.; Gloor et al 1993. at 73.; and Klemper K. Medically inappropriate hospital use in a pediatric population. N Engl J Med. 1988; 19: 855-71. A study by Klemper from the US found rates of 21.4% inappropriate days, Kasian et al found 16.2%, and Gloor et al found 24%
140. Evans et al 1989. at 574.
141. Barer and Evans 1992. at 51.
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