

IMPACT OF MANAGED CARE ON HEALTH CARE DELIVERY
PRACTICES AS PERCEIVED BY HEALTH CARE
ADMINISTRATORS AND PRACTITIONERS

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COLLEGE OF NURSING

BY
MARI F. TIETZE, MSN

DENTON, TEXAS

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TEXAS WOMAN'S UNIVERSITY
DENTON, TEXAS

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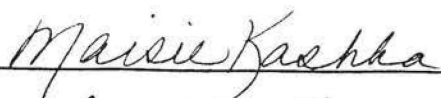
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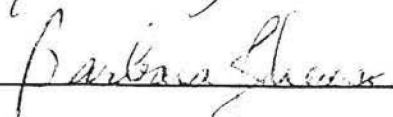
I am submitting herewith a dissertation written by Mari F. Tietze entitled "Impact of Managed Care on Health Care Delivery Practices as Perceived by Health Care Administrators and Practitioners." I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in nursing.

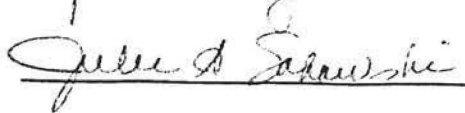


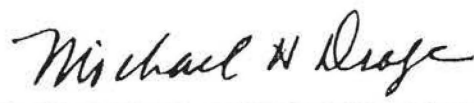
Rebecca Krepper, PhD, Major Professor

We have read this dissertation and
recommend its acceptance:









Dean of Graduate Studies and Research

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DEDICATION

This work is dedicated to my RN, BSN sister. Living with her and indirectly observing her own experiences as an ICU nurse in a local hospital motivated me to seek answers, answers to the questions about our health care delivery system and its impact on health care professionals and, ultimately, the patients. This experience provided first-hand observation of the weariness of nurses, the fears of patients, the frustrations of physicians, and the operational challenges of hospital administrators. And, conversely, as she watched me read, write, and ponder research questions, she would say, "I hope you are figuring out how to improve this whole health care situation because we are all getting weary." And, indeed, the research shows you are *all* getting weary.

To my sister and to all of her direct patient care nurse colleagues, I dedicate my research. May it make just a little bit of difference, and may you get rest soon.

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I most gratefully acknowledge the support of my two sons, Shane and Brandon. They watched me read, write, and ponder research questions during the majority of their young lives, so that I could fulfill myself. And they fulfilled themselves, by themselves. Thank you both for your patience with this process. I am where I am today only because you allowed me to be.

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ABSTRACT

IMPACT OF MANAGED CARE ON HEALTH CARE DELIVERY PRACTICES AS PERCEIVED BY HEALTH CARE ADMINISTRATORS AND PRACTITIONERS

MARI F. TIETZE, MSN

TEXAS WOMAN'S UNIVERSITY
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Managed care has had a significant impact on many components of the U.S. health care delivery system such as cost effectiveness, access to care, and quality of care. These changes have affected how administrators and practitioners perceive the impact of managed care on health care delivery practices. The problem of this study was to explore whether health care administrators and practitioners perceive the impact of managed care on health care delivery practices differently and to explore which organizational variables explain the difference.

A descriptive, cross-sectional survey design was used for the target population of administrator and practitioner health care professionals from high, moderate, and low managed care penetration markets. Two investigator-developed instruments, the Managed Care Perceptions Inventory (MCPI) and the MCPI-D, and an intact centralization of decision-making assessment subscale were used for data collection.

A study recruitment letter and the three instruments were mailed to their randomly selected places of employment followed by two reminder letters.

Health care professional role (administrator versus practitioner), managed care market penetration, profit status, and centralization of decision making were the key study variables. Only health care professional role yielded a difference in managed care perception in that administrators had a statistically significant more positive perception of the impact of managed care on health care delivery; however, none of the other three variables contributed to the difference. When distinction between administrator versus practitioner was not used as a grouping factor, managed care market penetration, not-for-profit status, and years in current employment position were statistically significantly associated with a more positive perception of managed care.

To impact positive change in perceptions, organization administrators must become and remain aware of their own managed care environment by regularly monitoring the perceptions of administrators and practitioners and incorporating associated management interventions. Similarly, practitioners must monitor their own perceptions and seek to manage any negative perceptions. They should express all needs or concerns to their organization's administrators and work collaboratively to remain involved and well informed about issues of importance. Recommendations for further research also are provided.

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CHAPTER I

INTRODUCTION

The structure of the health care market has been changing rapidly since 1990 (Coddington, Keen, Moore, & Clarke, 1990; Folland, Goodman, & Stano, 1993; Jacobs, 1997; Sultz & Young, 1997; Zelman, 1996). The primary source of this change is the evolution of managed care as a health care delivery strategy (Comprehensive Market Intelligence, 1997; Conlon, 1997; Gemignani, 1998; Health Trends, 1998; Shinkman, 1997; Zelman, 1996). The impact of this evolution is evidenced by dramatic changes in how health care professionals deliver direct patient care in the acute care setting (Ackley, 1999; Bruser & Whittacker, 1998; Keepnews & Stanley, 1996), in how patients and those who deliver patient care perceive the quality of that care (Gerteis, Levitan, Daley, & Delbanco, 1993; Hellinger, 1999), and in how hospital administrators govern day-to-day operations (Gardner, 1998; Gerson & Vernarec, 1997; McDaniel, 1997).

When defining managed care, a distinction should be made between managed care techniques and the organizations and health care professionals who perform them. Managed care techniques primarily include various forms of financial incentives for providers, broad-based programs for promotion of wellness, and all aspects of

utilization management which span the entire continuum of care. Health care organizations that use managed care techniques are collectively called Managed Care Organizations (MCOs). Of all MCOs, health maintenance organizations (HMOs) have the greatest potential to fully use these managed care techniques because enrollees are required to use the HMO network of health care professionals who, through contractual agreements, are tightly aligned with the HMO and its managed care techniques. Preferred provider organizations (PPOs), traditional indemnity plans, Medicare, Medicaid, employers, and insurers make use of some managed care techniques but are a less pure form of managed care because non-network options are readily available (Fox, 1997; Kongstvedt, 1996, 1997).

Rising health care cost has been one of the primary reasons behind the rampant growth of managed care. In 1997 Lelyveld reported that approximately three-fourths of those who received health insurance through their employers were covered by some type of managed care plan which represents a 51% increase since 1995. In 1990, hospital expenditures were \$252 billion, with an annual percentage increase of 9.5% (Gardner, 1998; Gerson & Vernarec, 1997; McDaniel, 1997; U.S. Department of Commerce, 1990). Health care costs are expected to rise as a share of gross domestic product (GDP), from 13.6% in 1998 to an estimated 16.6% in 2007, or \$2.1 trillion (Health Care Financing Administration, 1998). Politicians and employers, who both have direct interests in the cost of health care, have led the effort to keep cost down and keep quality of care high (Chassin & Galvin, 1998; Smith, Freeland, Heffler, &

McKusick, 1998). As a result, virtually every strategic and tactical decision made in the 1990s has been heavily influenced by the demands of containing cost while maintaining quality (Conlon, 1997; Hesselgrave, 1997; Hogan & Thomopoulos, 1998).

Another contributor to the rapid evolution of managed care is the desire to control costs while improving medical outcomes by emphasizing preventive care, coordinating the delivery of services, and reducing the number of unnecessary procedures and tests. In well-run plans, enrollees benefit from lower costs and more efficient services, but that is not the case with all managed care organizations (Lelyveld, 1997). Concerns over variation in practice patterns, access to physicians, inadequate patient treatment, and the health care industry as a whole have been widely noted in the literature (Chassin & Galvin, 1998; Gerteis et al., 1993; Huntington, 1997; Kertesz, 1997b).

Rapid growth of managed care also has impacted the roles of health care professionals. Among the over 11 million workers in the health care field, health care personnel comprise more than 200 occupations and professions. Physicians and nurse practitioners are among the health care professionals most directly involved in patient care delivery (Sultz & Young, 1997). This is accomplished by physical assessment and diagnosis, from the pre-pathogenesis period, pathogenesis period, and convalescence. In addition, they focus health care delivery needs toward primary, secondary, and tertiary prevention (Leavell & Clark, 1965). These professionals find their roles changing in an effort to provide cost-effective, high-quality, and patient-centered

outpatient and long-term care in addition to acute care (Brzozowski & Schuster, 1997). Practitioners also face challenges related to environmental factors such as hospital mergers, the effect of for-profit medicine, and patient safety (Canavan, 1996; Dianis et al., 1997; Moore, 1997).

Chief executive officers (CEOs), chief nurse officers (CNOs), and managed care executives are among the health care professionals who are indirectly involved in patient care delivery (Sultz & Young, 1997). The CEO represents the hospital administrator who, in addition to overall management of the hospital, must focus on remaining competitive within the community and on development of vertical markets called integrated delivery systems (Hogan & Thomopoulos, 1998; Manning, 1998; McCue, 1982; Rode, 1997; Silberner, 1997). Similarly, the concerns of nursing executives over the impact of managed care have been evident in the literature. The acknowledgment that nursing practice must change to become more cost-conscious, to work with more ancillary personnel and to plan for discharge on an ongoing basis reflects the accommodation to the change (Bruser & Whittacker, 1998; Canavan, 1996, 1997; Flarey, 1997; Hicks, Stallmeyer, & Coleman, 1993; Huntington, 1997; Keepnews & Stanley, 1996).

Recent literature indicates that another impact of the changes has been a shift in the perceptions of practitioners and administrators regarding health care delivery practices in the current managed care environment (Brandi, 1998; Carleton, 1997; Donelan et al., 1997; Gardner, 1998; Hopkins, 1998; Rothschild, Berry, & Middleton,

1996). These studies have explored perceptions of how health care delivery practices are affected by managed care, but there have been no definitive studies that have reported comparisons among practitioners and administrators and their type of organization. As a result, the impact of managed care perceptions as a function of these factors is not known.

Statement of the Problem

This study was designed to explore practitioners' and administrators' perceptions of the impact of managed care on health care delivery practices and the relationship of these perceptions to the types of organizations where they deliver health care services. Although literature addresses the managed-care related perceptions of health care professionals such as CEOs, nurse executives, physicians, and nurse practitioners, no research was found that examines differences between perceptions of health care delivery practices among these groups (American Medical Association [AMA], 1998; Appleby, 1996; Brandi, 1998; Brzozowski & Schuster, 1997; Donelan et al., 1997; Gelinas & Manthey, 1997; Hopkins, 1998; Joyaux, 1998; Knox & Irving, 1998; Mark Clements Research, Inc., 1996; Richey, 1997; Shapiro, 1998).

The goal of this study was to explore whether:

1. Health care administrators and practitioners perceive the impact of managed care on health care delivery practices differently.

2. Specific organizational variables explain the difference in perceived impact of managed care on health care delivery practices between administrators and practitioners.

Rationale of the Study

The evolution of managed care has had a significant impact on many components of the U.S. health care delivery system including cost effectiveness, accountability, access to care, provider choices, and quality of care (Anders, 1998; Annas, 1998; Pear, 1998; Smith et al., 1998; Starfield, Cassady, Nanda, Forrest, & Berk, 1998). These changes have subsequently affected how practitioners and administrators perceive the impact of managed care on health delivery practices and services (Brandi, 1998; Donelan et al., 1997; Gardner, 1998; Hopkins, 1998; Joyaux, 1998; Mark Clements Research, Inc., 1996; O'Toole, 1998; Zuger, 1997). In addition, the advent of managed care has led to an increased need for collaboration among health care professionals for financial improvements as well as for general health care outcome improvements (R. Cohen, 1997; Forte, 1997; Goldsmith, Goran, & Nackel, 1995; Lassen, Fosbinder, Minton, & Robins, 1997; Succi, Lee, & Alexander, 1998; Tjosvold & MacPherson, 1996).

Although the literature acknowledges changes in practitioners' and administrators' perceptions of the impact of managed care on health delivery practices and services, there seems to be a lack of emphasis on the affect of these perception

changes on health care decision making. The assertion that perceptions affect decision making is addressed by decades of research in decision theory (Argyris & Schon, 1996; Hackman, 1990; Lee, 1971; Mintzberg, Quinn, & Ghoshal, 1995). For example, in a classic discussion on decision making, Lee (1971) defined a rational decision as a choice made from a set of possible choices that is perceived by the decision maker to be the best, or optimal, decision for him, given the relevant information available about the decision making situation. According to Lee, rational decision making is affected by perceptions of the decision maker and the more awareness of perceptions among the decision makers, the more rational the decision.

Assuming that rational decision making in health care involves similar awareness, then health care decision making would be affected by perceptions of health care professionals. This, too, occurs at a time when collaboration of health care delivery among health care professionals is increasingly important. Therefore, knowing the variation in perceptions of the impact of managed care on health care delivery among health care professionals such as administrators and practitioners, would be particularly advantageous because, not only is managed care an integral part of today's health care delivery system, but, by its very nature, managed care involves collaboration among team members.

Studies that examine differences in perception of the impact of managed care on health care delivery practices among health care administrators and practitioners have not been conducted. This study proposed to examine whether there is a

difference, what those differences are, and to what extent the differences are related to specific organizational variables.

Theoretical Framework

Harrison and Shirom's (1999) organizational systems model provided the theoretical framework guiding this study. Elements of Harrison's Open Systems model are presented and are discussed within the context of the managed care environment.

Harrison's Organizational Systems Model

Harrison and Shirom (1999) have written extensively about organizational systems and the process of organizational diagnosis. Organizational diagnosis is the process of using conceptual models and methods from the behavioral sciences to assess an organization's current state and find ways to solve specific problems or increase its effectiveness. Harrison has based his organizational diagnosis model on open systems theories such as Bertalanffy's (1968) general systems theory. A fundamental theme in much of the open systems work concerns the need for organizations to adapt to environmental conditions. According to Harrison and Shirom (1999), organizational success depends on adapting to external change, producing outputs that are valued by external stakeholders, and selecting supportive environmental niches in which to operate. The environment also impacts managerial decision making and the complex interplay of forces for system stability and change.

Harrison's Open Systems model identifies three levels of analysis: the organization, groups within the organization, and individuals within the organization. It provides a framework to examine important aspects of an organization, including the internal and external relationships among the system elements. Figure 1 represents the most recent diagram of Harrison's model (Harrison & Shirom, 1999). The seven main system components and some of their sub-components are: (a) inputs; (b) outputs with sub-components of *productivity and performance*, and *human outcomes*; (c) system processing (transformations) with sub-components of technology and *organizational behavior and processes*; (d) environment with sub-components of *close (task) environment* and *remote (general) environment*; (e) structure; (f) culture; and (g) system dynamics with sub-component of *feedback loop* (see Figure 1) (Harrison & Shirom, 1999).

Inputs are represented by resources such as raw materials, money, people (human resources), equipment, information, knowledge, and legal authorizations. Outputs include products, services, and ideas that are the outcomes of organizational action. Productivity and performance measures examine the quantity and occasionally the quality of outputs. Human outcomes constitute important byproducts of system functioning such as absenteeism, work effort, turnover, etc.

System Processing (transformations) represents the ways in which the organization transforms inputs into outputs. For example, transformations in human service organizations involve treating, training, and classifying clients.

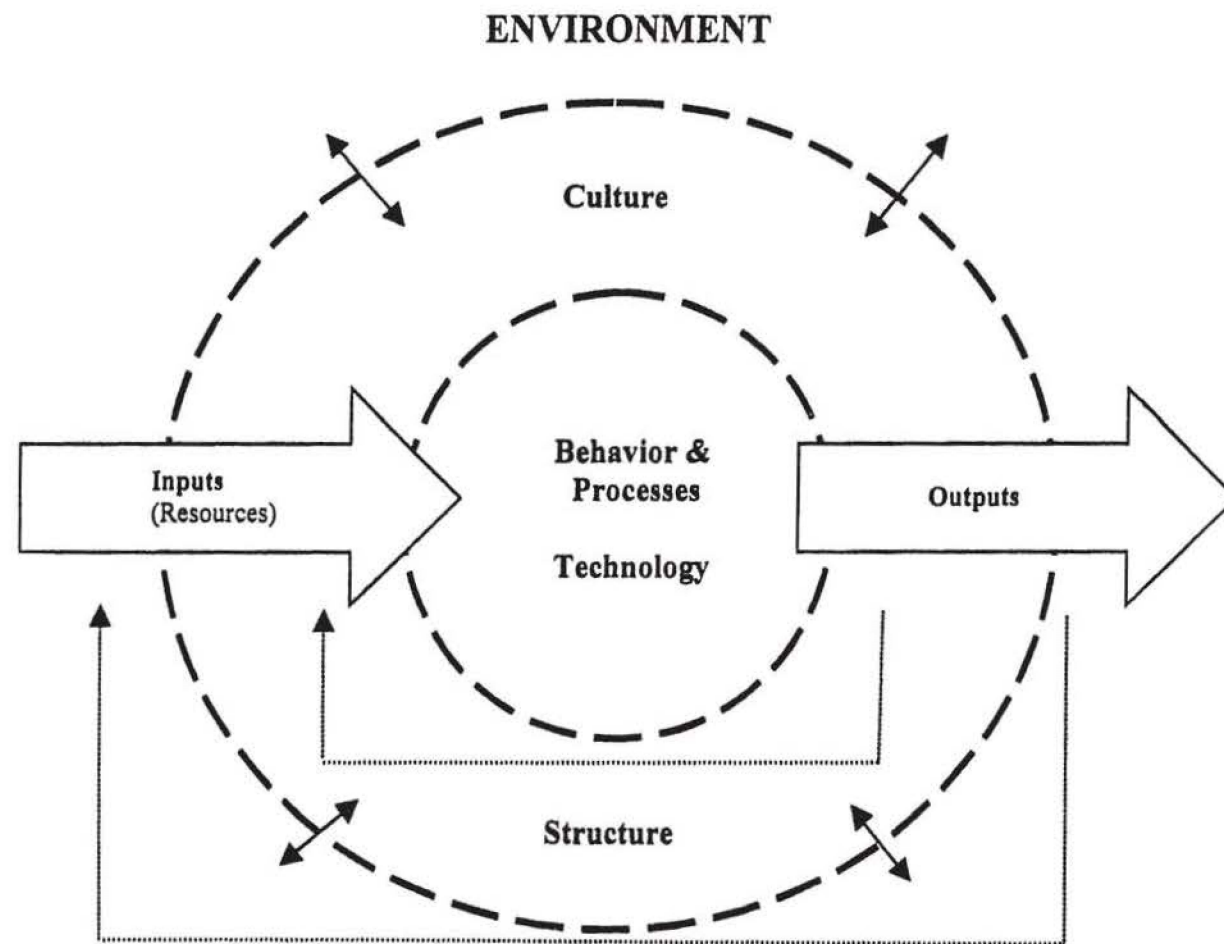


Figure 1. Open Systems Framework (Harrison and Shirom, 1999), pp. 44

Key: Broken line shows system boundaries; dotted line shows feedback loop

Two sub-components contribute to system processing: technology and behavior and processes. Technology refers to the tools, equipment, and techniques used to process inputs; for example, diagnostic procedures and medications. Organizational behavior and processes refer to the prevailing patterns of interaction between individuals and groups, which may contribute directly or indirectly to transforming inputs into outputs. Behavior and processes include activities that are particularly important for handling functional challenges such as cooperation, conflict, coordination, communication, decision making, problem solving, and information gathering. Behaviors and processes also include goal setting activities.

Environment includes the close (task) environment of all the external organizations and conditions directly related to the system's transformative processes and its technologies. These external elements encompass funding sources, suppliers, distributors, customers, regulators, strategic partners, markets for products and resources, and the state of knowledge concerning the organization's technologies, to name a few. The remote (general) environment includes elements having infrequent or long-term impacts on the organization and its *close* environment, such as the economy, the legal and political systems, the state of scientific and technical knowledge, social institutions such as family, population distribution and composition, and local or national cultures within which the organization operates.

Structure entails enduring relations between individuals, groups, and larger units, including role assignments (job descriptions, authority, responsibility, and

privileges), groupings of positions in divisions, departments, standard operating procedures, human resource management, rewards, planning, job design, and physical arrangements. Structure constrains and focuses behavior without determining it.

Culture is represented by shared norms, values, beliefs, and assumptions, as well as the behavior and artifact that express these orientations. Culture encompasses the way work is done. System dynamics contain the dynamic features, including feedback of information and demands from inside the organization and outside such as processes of growth, contraction, development, adjustment, innovation, learning, and changes in basic configurations of system components and sub-components.

Some of the key features of the open systems model are that: (a) external conditions influence the flow of inputs; (b) organizations use many of their products, services, and ideas as inputs to organizational maintenance or growth; (c) organizations are influenced by their members as well as their environments; and (d) that the seven system components are interrelated and influence one another (Harrison & Shirom, 1999).

Managed Care Open Systems Model

Harrison and Shirom's (1999) Open Systems Model applies to the current managed care environment in that it positions managed care buyers, sellers, and environmental characteristics within its existing framework. It also represents organizational processes such as transformations and organizational processes

associated with health care delivery in that managed care environment. Adaptation of Harrison's Open Systems Model is depicted in the Managed Care Open Systems Model (see Figure 2).

The first of Harrison and Shirom's (1999) model components that applies to the current managed care environment is the *environment*. Harrison defines the environment as external organizations and conditions that are directly related to the system's transformative processes and its technologies. The Managed Care Open Systems Model includes managed care stages I through IV as environmental components.

Managed care market is typically characterized by managed care penetration stages. The industry recognizes four primary stages of managed care market penetration expressed as a percentage of community members enrolled in an HMO. Characteristics associated with the four levels of HMO penetration distinguishes stage I with minimal HMO penetration from a stage IV which is primarily HMO (Coile, 1996; Comprehensive Market Intelligence, 1997).

Environmental variables such as managed care market penetration stage are pertinent to the Managed Care Open Systems Model because of its affect on the managed care environment. Studies have indicated that managed care penetration varies among states and among health care markets within states (Health Trends, 1998). Subsequently, studies have indicated that practitioners and administrators in an

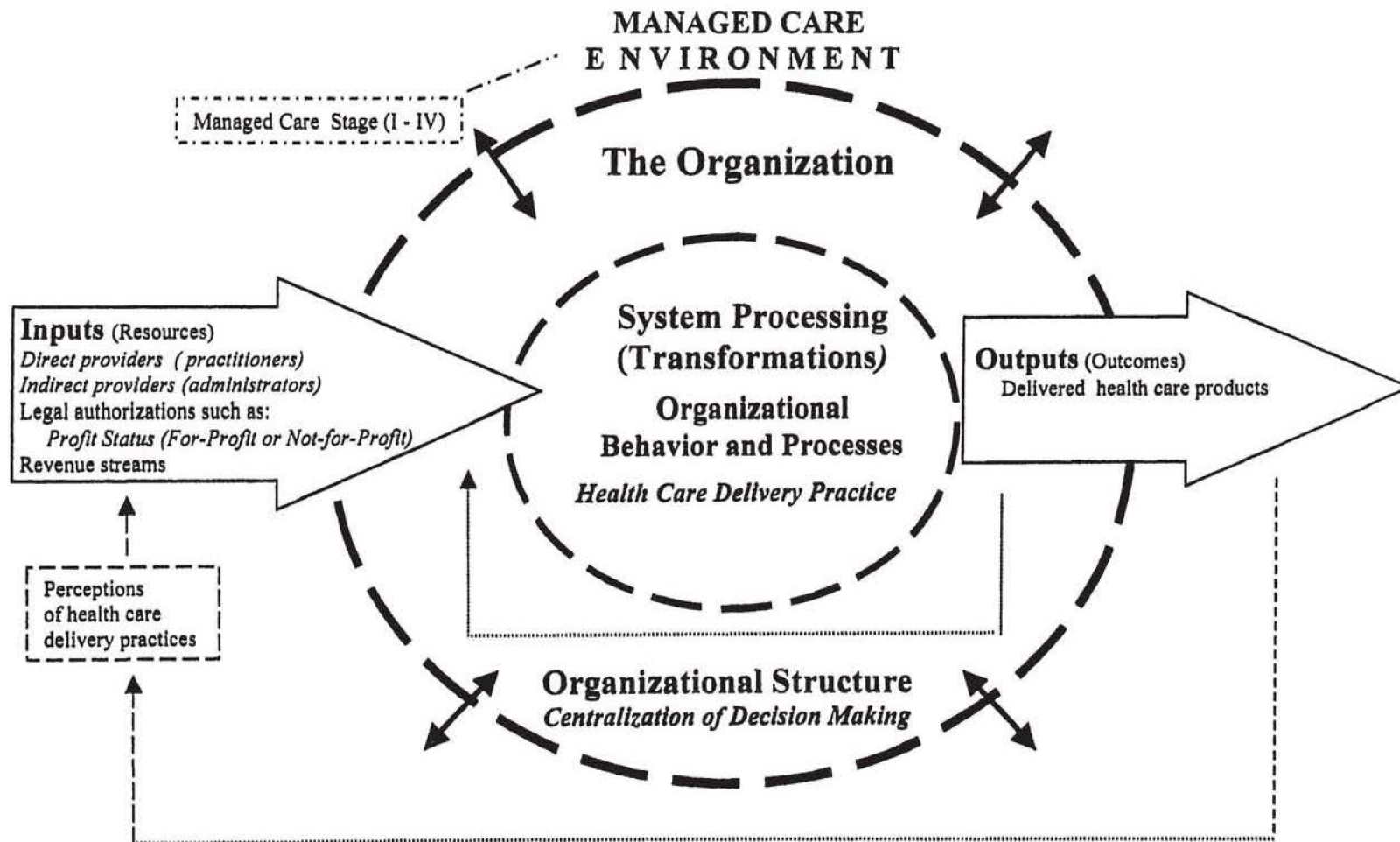


Figure 2. Managed Care Open Systems Model. Adapted from Harrison and Shirom, (1999, pp. 44), Open Systems Framework
 Key: Broken line shows system boundary; dotted line shows feedback loop

environment where managed care market penetration is high, such as California and Arizona, perceive managed care differently than low managed care penetration markets (AMA, 1998; Comprehensive Market Intelligence, 1997; Donelan et al., 1997; Halm, Causino, & Blumenthal, 1997; Zelman, 1996).

Harrison's (1999) *inputs* enter the organizational sphere of the Managed Care Open Systems Model as resources and legal authorizations. *Input* resources are categorized as direct and indirect providers, or sellers, of health care services. The direct providers of health care services are represented by practitioners such as physicians and nurse practitioners. The indirect providers of health care services are represented by administrators such as chief executive officers, nurse executives, and managed care executives (Jacobs, 1997).

Secondly, the profit status of an organization is an *input* legal authorization. This tax-related status classifies the organization for financial purposes and affects how finances and community business interactions are addressed (U.S. Treasury, 1997; Volunteer Trustees Foundation for Research and Education, 1996). Organizational variables such as profit status are pertinent to the model because of the unique financial status of the for-profit versus non-for-profit organization (Bellandi, 1998; Mellsner, 1998; U.S. Treasury, 1997; Volunteer Trustees Foundation for Research and Education, 1996; Woolhandler & Himmelstein, 1997). For example, differing objectives may arise from the commitment of for-profit organizations to their stockholders who are interested in the financial bottom line of the organization and

may subsequently affect quality of decision making (Bellandi, 1998; Nichols, 1998; Sherlock, 1998).

Health care delivery position, such as direct and indirect provider, was found to be pertinent in relationship to the Managed Care Open Systems Model. For example, literature indicates that direct providers such as physicians (Bauer, 1994; Donelan et al., 1997; Gardner, 1998; Joyaux, 1998; Moore, 1997; Physicians Who Care, 1997), and nurse practitioners (Richey, 1997; Shapiro, 1998) perceive health care delivery differently than indirect providers such as administrative executives (Brandi, 1998; Gardner, 1998; Hogan & Thomopoulos, 1998; McCue, 1998; Moore, 1998). According to Harrison and Shirom's (1999) Open Systems Model of Organizations, this difference may reflect a potential source of environmental conflict, affecting quality decision making within the organization.

Harrison's model depicts system processing (transformations) and includes *organizational behaviors and organizational processes* that result from inputs such as resources and legal authorizations and product *outputs* of the organization. In the Managed Care Open Systems Model, the two applicable system processes are: (a) health care delivery practice, and (b) decision making. Health care delivery practices include the specific patient care such as medical diagnosis, psychotherapy, and application of medications. Decision making is among the sub-components of behavior and processes that are particularly important for handling functional challenges of system processing.

As previously noted, structure in Harrison's model entails enduring relations between individuals, groups, and larger units. Structure constrains and focuses behavior without determining it. In the Managed Care Open Systems Model, structure is characterized as degree of centralization of decision making. Because the managed care environment involves the whole organization, decision making constitutes an organization-wide effort. Centralization of decision making is one method to characterize the extent of decision making authority. Centralization has to do with the locus of decision making authority, measured by level at which key management decisions are made within an organization (Moseley & Grimes, 1976). Organizational variables such as centralization of decision making have been identified as an important characteristic associated with behavior and processes within an organization (Harrison & Shirom, 1999; Mintzberg, 1979; Moseley & Grimes, 1976; Pugh, Hickson, Hinnings, & Turner, 1968).

Outputs of Harrison's (1999) model equate to the products, services, and ideas that are the outcomes of organizational actions. In the Managed Care Open Systems Model, outputs are the result of health care delivery practices and associated decision making. Thus, hospital-based acute care would be the behavior process and functional status for activities of daily living would be the output.

Harrison's (1999) model accounts for the dynamic feedback of information and demands from inside or outside the organization. Feedback loops lead from outputs to inputs and reflect organizational growth developments and adjustments. In the

Managed Care Open Systems Model, the feedback loop primarily consists of perceptions of all health care delivery practices. The perceptions then can be used to further refine inputs subsequent to behavior and processes.

Thus, in the schematic representation of the Managed Care Open Systems, the environment is a managed care environment and the other components such as inputs (for example, seller and profit status), behavior and processes (i.e., decision making) and outputs reflect the organization's effort to interact in the managed care environment. One key component that affects inputs and is, in turn, affected by the feedback loop is perceptions of health care delivery practices of the sellers; specifically, the direct and indirect providers within the organization.

Assumptions

The assumptions of the theoretical framework of this research study were:

1. The opens systems model expects organizations to be constantly changing in response to the environment.
2. An organization's success depends heavily on its ability to adapt to its environment.
3. Any level or unit within an organizational system can be viewed as a sub-system (Harrison & Shirom, 1999).

Research Questions

The following research questions were addressed in this study:

1. What are health care professionals' perceptions of the impact of managed care on health care delivery practices?
2. Is there a difference between administrators' and practitioners' perceptions of the impact of managed care on health care delivery practices?
3. Are differences between administrators' and practitioners' perceptions of the impact of managed care on health care delivery practices related to the specific organizational variables of managed care market stage, the organization's profit status, and the organization's centralization of decision making?
4. Are organizational variables of managed care market stage, profit status, and centralization of decision making predictive of health care professionals' perceptions of the impact of managed care on health care delivery practices?

Definitions

The following definitions were used for this study:

1. Administrators and practitioners--the theoretical definition of administrator and practitioner health care professionals includes "caregivers" such as physicians, nurses, and therapists who provide direct care to patients, as well as non-care-givers such as the administrative health care executives who manage patient care indirectly (Brzozowski & Schuster, 1997; Sultz & Young, 1997).

Operationally, administrator and practitioner health care professionals were participants who identify their professional background on the Managed Care Perceptions Inventory, Demographics Section, as (a) physician, (b) nurse practitioner, (c) nursing administration, (d) health care administration, or (e) managed care administration/director. Practitioners were comprised of those participants who identified themselves as physician or nurse practitioner. Administrators were comprised of those participants who identified themselves as nursing administrator, health care administrator, or managed care administration/director.

2. Centralization of decision making--centralization, as theoretically defined by Moseley and Grimes (1976), is the locus of decision making authority in an organization. The higher in the organization that decisions are made, the more centralized is the organization.

The operational definition of centralization of decision making was the sum score of the Moseley Decision Making Centralization Assessment instrument (Moseley & Grimes, 1976). An example question would be, "Who decides on the price for a hospital service: the department head, the administrator, the board, or an outside agency such as corporate headquarters, etc.?" Twenty-five such questions were asked.

3. Health care delivery practices--the theoretical definition of health care delivery practices includes a definition of what constitutes "health," as offered by the World Health Organization (WHO). The WHO defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease" (World

Health Organization, 1958, p. 3). Thus, health care delivery practices are those practices delivered with the objective of achieving a state of health. Sultz and Young (1997) specifically categorize the delivery of health care practices as those of primary prevention of disease occurrence, secondary prevention of early detection and prompt treatment, and tertiary prevention of rehabilitation and maximization of remaining function. The authors additionally noted that health care professionals, such as direct and indirect providers, are the core of the industry involved in the actual process and outcomes of the services delivered.

The operational definition of health care delivery practices was represented by statements on the Managed Care Perceptions Inventory. The statements address health care delivery practices in the domain of "nursing care delivery" and "medical health care delivery practices." Examples of items within the nursing care delivery domain are "average patient length of stay" and "in-patient intensity of illness." Thirty such questions were asked. Examples of items within the medical health care delivery practices domain were utilization of treatment services from in-patient acute care" and "utilization of treatment services from ambulatory care generalists." Eighteen such questions were asked.

4. Managed care market stages--the theoretical definition of managed care market stages is based on common industry definitions of managed care market stages which focus on degree of consolidation of health plans and degree of managed care penetration with the community (Kongstvedt, 1996). The four specific stages, based on

HMO member as a percentage of all members in a given market community, are:

Phase I = 10%; Phase II = 11% to 30%; Phase III = 31% to 50%; and Phase IV = 50% or more of the market (Stahl, 1996).

Operationally, managed care stages were defined as the participant's report of managed care penetration for their organization. The MCPI: Demographic Section item number 10 asks, "In terms of managed care penetration in your area, what would you say is the percentage of HMO market penetration? The study participants had the option to list their estimated percentage value or to select "Unknown." When "Unknown" was selected, the 1999 InterStudy county HMO penetration value represented the response (Interstudy Publications, 1999).

5. Perception of managed care--for this study, managed care was defined as a method of health care financing and delivery that aims to decrease cost by coordination and efficiencies of care (Grimaldi, 1996; Kongstvedt, 1996). Perception of managed care then, is how one views managed care as a result of delivering care within the system of managed care. Studies have indicated that perceptions of managed care influence the views of health care workers (Decker, Wheeler, Johnson, & Parsons, 2001; Proenca, 1999) and physicians (Lepore & Tooker, 2000; Warren, Weitz, & Kulis, 1999).

The operational definition of perception of managed care was based on participant rating of health care delivery practices that have been declared by content experts to have "changed as a result of the managed care." These perceptions of

managed care ratings were obtained using the Managed Care Perception Inventory (MCPI) sum value for each participant (48 items). The MCPI has a 5-point Likert scale ranging from 1 (significantly decreased) to 5 (significantly increased). An example item was "Actual worked nursing hours (total direct hours staffed) have . . . (significantly decreased), (decreased), (not changed), (increased), (significantly increased). Sub-components of managed care are represented as MCPI sub-scale sum values. The sub-scales are: Nursing Care Delivery (30 items) and Medical Health Care Delivery Practice (18 items).

6. Profit status--the theoretical definition was based upon the organizational and operational structure of a hospital as follows:

- For-profit--any hospital that is not organized exclusively for public benefit. All for-profit hospitals have owners who can benefit from the financial return of the hospital's operations or sales (Volunteer Trustees Foundation for Research and Education, 1996).
- Not-for-profit--a hospital organized and operated exclusively for the public benefit. A private, not-for-profit hospital is generally governed by a self-perpetuating community board and "owned" by the community it serves. Most not-for-profit hospitals are tax-exempt and eligible to receive tax deductible donation sales (Volunteer Trustees Foundation for Research and Education, 1996).

The operational definition of profit status was the participant's response to the MCPI, Demographics Section, item number 11. Given the Volunteer Trustees Foundation for Research and Education (1996) definition of profit status, the participant was asked, "How would you characterize your organization, not-for-profit or for-profit?" The item options were: (a) not-for-profit, (b) for-profit, or (c) other, please list.

Limitations

Limitations of this study were:

1. The only method of data collection was the use of a mailed survey.

Participants who completed and returned the survey may be characteristically different from those who do not (Burns & Grove, 1993).

2. The only method for gathering of data for measurement of abstract concepts was self-report. This may increase the effect of systematic error on the composite score (Waltz, Strickland, & Lenz, 1991).

3. Perception was assessed at one point in time instead of over time. Although unrelated to the study, events may have been of concern to individual respondents. This may have randomly influenced responses on measures (Burns & Groves, 1993).

4. Respondents may have preferred being seen in a favorable light rather than answer honestly (Burns & Groves, 1993). This may have caused scores to reflect a more positive perception of managed care than was true.

5. Results of the study are only generalizable to the current time, setting, and sample (Waltz et al., 1991).

Delimitations

Delimitations of the study were associated with the criteria for inclusion and the method of data collection. Criteria for inclusion were limited to health care professionals who could read and write English. Inclusion also was limited to those who are practicing in the United States, specifically the states of California, Texas, and Mississippi.

Summary

Rising health costs and the desire to control these costs while improving medical outcomes have contributed to the rapid evolution of managed care within the last decade. These changes have had a significant impact on how health care services are delivered, managed, and perceived by health care professionals who work in a number of different types of organizations. Although research indicates that these changes have affected the perception of practitioners and administrators of the impact of managed care on health care delivery practices, no studies have explored the differences in perceptions between these two groups or whether specific organizational variables explain the differences. The Harrison's Organizational Systems Model was used as the conceptual framework to guide the research study in answering the following research questions:

1. What are health care professionals' perceptions of the impact of managed care on health care delivery practices?
2. Is there a difference between administrators' and practitioners' perceptions of the impact of managed care on health care delivery practices?
3. Are differences between administrators' and practitioners' perceptions of the impact of managed care on health care delivery practices related to the specific organizational variables of managed care market stage, the organization's profit status, and the organization's centralization of decision making?
4. Are organizational variables of managed care market stage, profit status, and centralization of decision making predictive of health care professionals' perceptions of the impact of managed care on health care delivery practices?

CHAPTER II

LITERATURE REVIEW

The literature review will be presented using the Managed Care Open Systems Model presented in Chapter I. The review begins with the environment, the definition of managed care, its history, and its evolution. Next, inputs to the organization, such as resources (administrators and practitioners), legal authorizations (profit status), and revenue streams are reviewed. Structure and processes are jointly discussed and include health care delivery practices such as (a) nursing care delivery, and (b) medical health care delivery. This structure and process section also includes centralization of decision making findings. Outputs of the system, as reflected by report card and benchmark initiatives spawned by the managed care movement, are presented as they impact the perceptions of health care delivery professionals. Finally, gaps in the literature as it relates to documentation of perceptions of managed care are presented.

Managed Care Environment

In the Managed Care Open Systems model the environment of an organizational system is defined by elements such as funding sources, state of knowledge, the economy, legal systems, and population composition. As noted, a fundamental theme in much of the Open Systems work concerns the need for

organizations to adapt to their environmental conditions. Managed care can be considered an environmental element in such a system.

The definition of managed care is complex and involves several stakeholders. Managed care describes a health care delivery system in which a party other than the physician or the patient influences the type, nature, and extent of medical care delivered. Managed care is an affirmative process and does not include limiting access non-selectively. A true managed care system may limit benefits to its customers, but will actively manage those limitations by assessing their outcomes. One consistent characteristic about managed care is that a managed care system actively manages both the medical and financial aspects of a patient's care (Dacso & Dacso, 1999; Kongstvedt, 1997).

Specifically defining managed care is difficult because it is an evolving concept that embraces disparate organizations. The sharp distinctions that once existed among different types of plans have clouded as plans have adopted various features. The characteristics most common to managed care include: (a) arrangements with selected providers who furnish a package of services to enrollees; (b) explicit criteria for selection of providers; (c) quality assurance, utilization review, and outcome measures; (d) financial or program coverage incentives or penalties to enrollees who do not use selected providers; (e) provider-risk sharing arrangements; and (f) management by providers to assure that enrollees or members receive appropriate care from the most cost-efficient mix of providers (Dacso & Dacso, 1999).

The history and evolution of managed care followed some key chronological events. According to Fox (1997) the event highlights are:

- Early development of Health Maintenance Organization-type plan in 1910.
- Enactment of the HMO Act of 1973.
- Out-of-control rise in traditional health care premium cost in 1990s.
- Endorsement in 1992 by presidential candidate, Bill Clinton, of “managed competition” and universal health care coverage.

Whatever its role today, managed care had humble origins and struggled to survive in its early years. Sometimes cited as the first example of an HMO-type managed care organization, or prepaid group practice, as it was known until the early 1970s, is the Western Clinic in Tacoma, Washington (Fox, 1997). Then the HMO Act of 1973 provided start-up grants and loans for HMOs and required large employers to offer HMOs where available. Subsequently, the number of individuals in the HMOs and other types of managed care plans rose steadily in the 1980s and even faster in the 1990s (Zelman, 1996).

Managed Care Penetration

Today, managed care characteristics such as managed care penetration, reflect unique micro-economies in which particular goods and services are exchanged at a price, with the traders free to sell or not to sell what they have for what they want. Managed care markets also are a micro-economy driven by changing prices, costs, and

profits. In order to understand these micro-economies, managed care markets have been commonly defined by level of HMO penetration (Bourne & Malcom, 1997; Campbell, Weissman, & Blumenthal, 1997).

There are four phases of development in managed care based on their degree of market penetration (percentage of managed care enrollees per total enrollees in a given community): (a) Phase I = 10%; (b) Phase II = 11% to 30%; (c) Phase III = 31% to 50%; and (d) Phase IV = 50% or more of the market (Stahl, 1996). The effect of managed care market penetration on health care delivery practices has been explored in several managed care studies.

Managed care market penetration does appear to warrant monitoring in managed care studies, and in some cases is related to available time for self and job security. For example a 1996 study sponsored by the American Academy of Neurology (Ringel, Vickery, & Rogstad, 1996), intended to determine the attitudes of U.S.-based, board-certified neurologists (American Academy of Neurology) toward the changing U.S. health care system. A 40-item, 6-point Likert, agree/disagree-type survey was mailed to 520 neurologists in early 1995. The entire group of 430 respondents yielded an 83% response rate. Four areas were assessed: (a) provision of neurologic care; (b) neurology workforce; (c) academic research, industry sponsorship, and pharmaceutical issues; and (d) health care delivery system issues. Associations between these attitudes and six demographic and practice variables, including degree of managed care patients in their practice. Of the respondents, only 21%, ($n = 79$),

reported having at least 50% of patient contracts as managed care. Although the degree of managed care penetration experienced by the respondents was determined, it was not statistically evaluated as a factor in the overall attitudes towards managed care ratings. Rather, the investigators used the variable to determine if there was a managed care penetration difference between the responders, the non-responders, and those members of the AAN who were not asked to participate. There was no statistically significant difference (Ringel et al., 1996).

In a study of similar finding which occurred in 1995, U.S. neurologists were surveyed about the ethical dimensions of managed care by administration. Participants responded to a written instrument containing paradigmatic cases portraying conflicts of physicians, patients, and managed care organizations. After each case, degree of agreement with a series of statements was determined. The sample included 550 names drawn at random from the American Academy of Neurology member database ($N = 9,323$). Survey response rate was 75.3%. Of the respondents, 18.3% ($n = 75$) reported having at least 50% of patient contracts as managed care. Again, the investigators used the variable to determine if there was a managed care penetration difference between the responders, the non-responders, and those members of the AAN who were not asked to participate. There was no statistically significant difference (Bernat, Ringel, Vickrey, & Keran, 1997).

According to Bernat et al. (1997), results indicated that neurologists:

1. Were willing to follow clinical practice guidelines if they were created by the medical societies.
2. Experienced frequent conflicts of interest or conflicts of obligation in the care of their MCO patients.
3. Feared legal ramifications of their clinical decisions on MCO patients.
4. Were unwilling to employ deception or gaming to achieve what they perceived to be good patient care.
5. Believed that their professional prerogatives and autonomy were under attack by MCOs.
6. Felt that the good of their patients should not be sacrificed for the good of society.

In contrast to the studies with no significant effect related to managed care penetration, a large 1995 study investigated the experiences and perspectives related to managed care among academic institutions. Using a telephone survey, data were collected from a nation-wide sample of 506 medical students, 494 residents, 728 faculty members, 186 department chairs, 143 directors, and 105 deans of U.S. medical schools. Overall rate of response was 80.1%. Respondents rated their attitudes toward managed care on a 0 to 10 scale, with 0 defined as "as negative as possible" and 10 as "as positive as possible." The expressed attitudes toward managed care were negative, ranging from a low mean score of 3.9 (SD 1.7) for residents to a high of 5.0 (SD 1.3)

for deans. Conclusions of the study were that negative views of managed care are widespread among medical students, residents, faculty members, and medical school deans (Simon et al., 1999).

Exposure to managed care was evaluated for its impact on views of managed care among respondents. Measurement of exposure to managed care was accomplished via physicians' reports of the proportion of their patients who were enrolled in managed care and by the competitiveness of the managed care market in each respondent's geographic area. The index of managed care market competitiveness used was the University HealthSystem Consortium, which classified the competitiveness of U.S. health care markets on the basis of the: (a) number of HMOs with more than 100,000 enrollees; (b) percentage of all enrollees in the three largest HMOs; (c) hospital occupancy rates; (d) average number of hospital days per 1,000 population; (e) percentage of specialists who were paid on a capitated basis; (f) percentage of Medicare and Medicaid beneficiaries enrolled in HMOs; and (g) average premium for a commercial HMO in 1995 (Bourne & Malcom, 1997; Campbell et al., 1997).

Results indicated that there was an interaction effect in several of the models indicating that department chairs who were specialists were the most likely of the sub-groups to favor fee-for-service medicine over managed care. In addition, respondents who cared for higher proportions of patients enrolled in managed care plans were more likely to report that they had decreased time available for research and diminished level of job security. For example, faculty members who reported that

75% of their patients were enrolled in managed care plans, were 1.6 times more likely to report their job security had decreased "a lot" (rather than "a little" or "not at all") as a result of managed care than faculty members who reported that 25% of their patients were enrolled in managed care plans (Simon et al., 1999).

Managed Care Impact

As noted, managed care represents a wide array of approaches to organizing the financing and delivery of care. It also is commonly designed to trim health care costs while maintaining quality. Nevertheless, concern about managed care exists and the debate of the positive and negative aspects continues (Anders, 1998; Chassin & Galvin, 1998; Goldberg, 1997; Halm et al., 1997; Reiman, 1997; Schear, 1998). Despite this debate, there is widespread agreement that some form of managed care is likely to be a permanent component of the U.S. health care delivery system (Coddington et al, 1990; Health Trends, 1998; Hoechst Marion Roussel, 1997; Schear, 1998; Zelman, 1996).

HMOs are most representative of the principles of managed care. Literature on the positive aspects of managed care indicated that for years, the HMO industry has focused far too much public attention solely on managed care's cost savings. HMOs have, in fact, added tremendous value through acceptance of a far greater sense of accountability and responsibility than was ever shared under the indemnity, fee-for-service system (Goldberg, 1997; Shearlock, 1998; Vernarec, 1997).

Nevertheless, some studies have demonstrated the negative aspect of managed care. Opponents of the cost-saving nature of HMOs, for example, point to an analysis of several hundreds of thousands of insurance claims where average lengths of hospital stays decreased for coronary artery bypass grafting and Cesarean section but the readmission rate within 30 and 90 days rose progressively (Carleton, 1997).

A study by Miller and Luft (1997) analyzed evidence on managed care HMO plan performance from 37 peer-reviewed studies published between 1993 and 1997. The studies yielded no evidence that HMOs are associated with lower quality of care than traditional care or that HMOs improve the overall quality of care. This was noted to be in part because of slow clinical practice change, lack of risk-adjusted capitation rates, and inadequate quality measurement and reporting (Miller & Luft, 1997).

Organizational Inputs

In the Managed Care Open Systems model, the inputs of a system are represented by the resources going into the system that come from its environment, and that contribute to the creation of its outputs. These resources can be in the form of raw materials, money, people (human resources), equipment, information, knowledge, and legal authorizations. For the purposes of this review, perceptions of health care delivery practices also were considered as organizational inputs. The research discussed addresses how perceptions affect these providers, which according to the study model affects decision making.

Direct and Indirect Providers

In the Managed Care Open Systems model, human resources are one form of organizational inputs. These human resources are represented by direct and indirect providers of health care (Brzozowski & Schuster, 1997; Gardner, 1998). Direct providers, or practitioners, are represented by physicians and nurse practitioners because they are the primary human resources delivering health care services directly to patients (Bauer, 1994; Jacobs, 1997; Sultz & Young, 1997). Indirect providers, or administrators, of health care are represented by chief executive officers (CEOs), chief nurse officers (CNOs) and managed care executives because they are the primary human resources delivering health care services indirectly to patients (Appleby, 1996; Donelan et al., 1997; Flarey, 1997; Gardner, 1998; Kertesz, 1997a; Moore, 1998).

Direct Providers

Practitioner providers such as physicians and nurse practitioners represent two of the health care professionals that address the delivery of health care to patients on a direct care basis (Sultz & Young, 1997). Thus, studies reflecting their perceptions and positions related to managed care are applicable.

Physicians' perceptions about managed care are well represented in the literature and the sample sizes for recent studies are significant: 1,004 (AMA, 1998); 2,003 (Donelan et al., 1997); 1,286 (Hopkins, 1998); nearly 30,000 (Joyaux, 1998); and 382, (Mark Clements Research, Inc., 1996). The general consensus is that

employers and managed care organizations have been calling the shots, leaving patients and physicians to make sense of the newly evolving order (Joyaux, 1998; Schear, 1998).

A survey of 1,004 physicians conducted in early 1997 for the AMA is representative of other study findings (Donelan et al., 1997; Hopkins, 1998; Joyaux, 1998; Mark Clements Research Inc., 1996). Specifically, the study indicated that at least three out of five respondents said the increase in managed care has had a negative impact on physicians' clinical independence (86%), the amount of paperwork required (79%), the amount of time spent justifying clinical decisions (76%), and the patient-physician relationship (64%).

Several studies have found that physicians perceived that managed care impacted their practice and the physician-patient relationship. For example, in 1997 investigators conducted a telephone survey of a national sample of 506 medical students, 494 residents, 728 faculty members, 186 department chairs, 143 directors, and 105 deans of U.S. medical schools to determine their experiences in and perspectives on managed care. Overall rate of response was 80.1%. Respondents rated their perceptions toward managed care on a 0 to 10 scale, with 0 defined as "as negative as possible" and 10 as "as positive as possible." The expressed attitudes toward managed care were negative, ranging from a low mean score of 3.9 (SD 1.7) for residents to a high of 5.0 (SD 1.3) for deans. When asked about specific aspects of care, fee-for-service medicine was rated better than managed care in terms of access

(by 80.2% of the respondents), minimizing ethical conflicts (74.8%), and the quality of the doctor-patient relationship (70.6%). With respect to continuity of care, only 52.0% of respondents preferred fee-for-service medicine. Of most significance is the finding that overall, 46.6% of faculty members, 26.7% of residency-training directors, and 42.7% of department chairs reported that the message they delivered to students about managed care was negative. Conclusions of the study were that negative views of managed care are widespread among medical students, residents, faculty members, and medical school deans (Simon et al., 1999).

Another study specifically compared physicians' satisfaction with HMO and fee-for-service practices in 1986 with that of 1993 and examined factors that contributed to satisfaction in an HMO-dominated environment. Cross-sectional surveys were mailed to 1,196 Dane County, Wisconsin physicians in active practice in 1993. Overall satisfaction with HMO versus fee-for-service was measured using a 10-item Likert scale ranging from 1 (very dissatisfied) to 7 (very satisfied). Coefficient alphas for each were greater than 0.85, and means for each practice type ranged from 5.1 to 5.9 (SD 0.7 to 1.1). Perceived clinical freedom with HMO versus fee-for-service was measured with six items on a 4-point Likert scale ranging from 1 (rarely have freedom) to 4 (almost always have freedom). Significantly more physicians were supportive of the development of HMOs in 1993 than in 1986, and more than two-thirds of physicians in 1993 were satisfied in their current work situation. Primary care physicians were significantly more satisfied than sub-specialists across most

dimensions of satisfaction. Perceived clinical freedom and satisfaction with income continued to be major predictors of satisfaction in 1993 as in 1986 (Schulz, Scheckler, Moberg, & Johnson, 1997).

While physicians' satisfaction with HMO practice remained stable, their satisfaction with fee-for-service practice was significantly lower in 1993 than in 1986. In additional analysis, three sequential blocks of variables were entered in planned order to examine the effect of the additional variables at each step. Model 1 included independent variables measuring demographics, specialty type, and characteristics of practice. It explained 34% of the variance in 1993 (R values not provided). Model 2 added perceived clinical freedom, averaged across practice types. It explained 44% of the variance. The final model added single items measuring satisfaction with HMO income and total income and it explained 56% of the variance. Note that limitations of the study included the fact that dissatisfied physicians may fail to respond to such a survey, yielding response bias and the fact that the setting was such that there was only one HMO--their own, which is not usually the norm, but nevertheless these markets do exist. Thus, analyses suggest that primary care physicians are more satisfied than sub-specialists with their HMO practice because of their greater satisfaction with HMO-generated income and the expended clinical freedom they have in HMO practice. An across-the-board decline in satisfaction with fee-for-service practice may be attributable to diminishing clinical freedom resulting from fee-for-service carriers' increasing micro-management of patient care (Schulz et al., 1997).

One key conclusion relating to the clinical freedom finding is that it continues to be a very important aspect of physician work satisfaction. Investigators suggested that involving physicians in important decisions that will affect them would tend to increase both their commitment to the goals of the organization and their satisfaction with their work environment (Schulz et al., 1997).

Another 1997 study concluded that physician perceptions of managed care vary by physician type and by extent of experience with managed care and these perceptions warrant further study. The study explored physician perceptions about the effects of gate-keeping compared to traditional fee-for-service care on administrative work, quality of care, appropriateness of resource use, and cost. Investigators indicated that nearly all managed care plans rely on a physician "gatekeeper" to control use of specialty, hospital, and other expensive services. Physicians rated the effects of gate-keeping on 21 aspects of care, including administrative work, physician-patient interactions, decision making, appropriateness of resource use, cost, and quality of care. Participants in this cross-sectional survey of all physicians who served as both primary care gatekeepers and traditional Blue Cross/Blue Shield providers for the employees of Massachusetts General Hospital, Boston. Of the 330 physicians surveyed, 202 (61%) responded. Results indicated that gate-keeping (compared to traditional care) had a positive effect on control of costs, frequency, appropriateness of preventive services, and knowledge of a patient's overall care. They also indicated that gate-keeping increased paperwork and telephone calls and negatively affected the

overall quality of care, access to specialists, ability to order expensive tests and procedures, freedom in clinical decisions, time spent with patients, physician-patient relationships, and appropriated use of hospitalizations and laboratory tests. Overall, 32% of physicians rated gate-keeping as better than traditional care, 40% the same, 21% rated gate-keeping as worse, and 7% were of mixed opinion. Thus, overall, 72% of physicians indicated that gate-keeping was better than or comparable to traditional care fee-for-service care. Finally, positive ratings of gate-keeping were associated with fewer years in clinical practice, generalist training, and experience with gate-keeping and health maintenance organization (Halm et al., 1997).

Nurse practitioners have been identified as key to the success of several managed care-oriented operations. They are commonly employed as ancillary providers of direct primary care and can make diagnoses and carry out many treatments (Bauer, 1994; Kongstvedt, 1997; Richey, 1997; Shapiro, 1998; Sultz & Young, 1997). Properly trained and certified nurse practitioners have ample training to manage their own primary care practices. Bauer (1994) indicated that they are probably the most cost-effective resource for meeting our nation's shortage of primary care physicians.

Several studies have explored the role and influence of nurse practitioners in today's managed health care environment. One study found that elderly patients who receive discharge planning and home follow-up by master's prepared advanced practice registered nurses have fewer hospital re-admissions, resulting in improved health outcomes and substantial cost savings. The study design was randomized clinical trials

with follow-up at 2, 6, 12, and 24 weeks after index hospital discharge in two urban, academically-affiliated hospitals in Philadelphia, Pennsylvania. Eligible patients were 65 years or older, hospitalized between August 1992 and March 1996, and had one of several medical and surgical reasons for admission. Intervention group patients received a comprehensive discharge planning and home follow-up protocol designed specifically for elders at risk for poor outcomes after discharge and implemented by advanced practice nurses. A total of 363 patients (186 in the control group and 177 in the intervention group) were enrolled in the study, 70% of intervention and 74% of control subjects completed the trial. Mean age of sample was 75 years, 50% were men and 45% were black. By week 24 after the index hospital discharge, control group patients were more likely than intervention group patients to be readmitted at least once (37.1% versus 20.3%). Fewer intervention group patients had multiple re-admissions (6.2% versus 14.5%) and the intervention group had fewer hospital days per patient (1.53 versus 4.09). Time to first readmission was increased in the intervention group. At 24 weeks after discharge, total Medicare reimbursements for health services were approximately \$1.2 million in the control group and \$0.6 million in the intervention group. Thus, the intervention by advanced practice registered nurses demonstrated great potential in promoting positive outcomes for hospitalized elders at high risk for re-hospitalization while reducing costs (Naylor et al., 1999).

Nurse practitioners represent another direct care provider affected by managed care. A 1997 study identified the arrangements that managed care organizations have

with nurse practitioners and the factors influencing these arrangements. The study used a descriptive survey design, using structured telephone interviews with MCO executives in New York and Connecticut between the time of November 1996 through February 1997. Specific research questions explored inclusion of NPs in provider panel listings, credentialing policies, evaluation of care provided by NPs, and factors influencing the policies regarding NPs. Related finding of the study indicated that:

1. Fifteen (44%) of the MCOs listed NPs as primary care providers and 14 (41%) listed them in specialty practice, predominantly women's health and pediatrics.
2. Thirteen (87%) of the MCOs that listed NPs used the same credentialing applications for both physicians and NPs.
3. Nine (60%) of the 15 MCOs listing NPs said they did not monitor the extent to which primary care physicians used NPs in their practice. Twenty-two (65%) of all MCOs said they evaluated NPs. Most of the plans evaluated NPs using the same methods as with physicians: on-site reviews and audits, chart reviews, claims histories, outcome standards, patient surveys, utilization and quality data and profiles such as patient complaints, referrals to specialists, emergency room use, as well as size of patient panels and prescription patterns.
4. Nine (27%) of the MCOs reported that there had been recent changes in their policies regarding NPs. New policies generally were to list NPs as primary care providers and revise credentialing procedures so that they were the same for NPs as physicians. Fourteen (41%) of the MCOs said they anticipated future changes in their

NP policies, allowing more utilization of NPs (Mason, Cohen, O'Donnell, Baxter, & Chase, 1997).

A somewhat smaller study explored how clinical nurse specialists (CNSs) and NPs perceived that managed care influenced their practice. A sample of 57 nurses was involved in the completion of the final Delphi round. Panelist agreement was highest for: (a) exploring new approaches to providing quality care more cost-effectively, (b) expanding nurse practitioners' role in primary care, and (c) more effectively partnering with clients in helping them assume greater self-responsibility for their health. Greatest threats by the panelists were perceived to be: (a) hassles involved in seeking authorization for care and responding to payment denials, (b) tenuous job market, and (c) encroachment on nursing practice by others (Harrison, 1999).

Indirect Providers

Indirect providers of the Managed Care Open Systems model are administrative providers such as CEOs, CNOs, and managed care administrators/directors. Several studies have explored the importance of CEO perceptions and how those relate to other variables such as behavior, functional background, and performance. For example, a 1994 study by Sutcliffe investigated the influence of managerial and organizational factors on the extent to which top executives accurately perceive environmental instability and environmental munificence (availability of resources). Data from 65 organizations were used in the analysis with an average of five top executives

participating from each organization. Environmental instability reflects unpredictable change or variability in an organization's environment. An instability measure was determined for each industry using three indexes of industry sales, capital expenditures, and net assets, regressed over the given time period. Environmental munificence is the availability of resources and extent to which an environment supports sustained stability or growth. A munificence measure was determined for each industry using three indexes of industry sales, capital expenditures and net assets, regressed over the given time period and divided by the dependent variable. Results indicated that regressing the environmental stability congruence measure on the set of independent variables yielded a significant R of .15 ($p = .01$). Two variables were the most powerful predictors of the extent to which a top management team is accurate in noticing environmental instability. These variables were: (a) organizational scanning, defined as acquisition of information and subsequent communication of relevant information among organizational members (.24, $p < .01$), and (b) centralization of decision making authority (-.37, $p < .10$). Regressing the environmental munificence congruence measure on the set of independent variables yielded a significant R of .14 ($p = .02$). In addition, three variables, functional work history diversity (-.24, $p < .05$), team tenure (.28, $p < .05$), and organizational scanning (.22, $p < .10$), are the most powerful predictors of the extent to which a top management team is accurate in noticing environmental munificence. Thus, environmental scanning and centralization characteristics affected perceptions of instability, while work history diversity, team

tenure, and environmental scanning affected perceptions of munificence (Sutcliffe, 1994).

A 1995 study found a relationship between CEO perceptions of organizational effectiveness with their functional backgrounds. It also sought to explore if the kinds of changes executives perceive in the organization's environment related to their functional backgrounds. This was considered an important question because these actions in turn affect the nature and performance of their organizations. Through an interview process, 63 top executives from diverse organizations were asked to report changes in their organization's environment and changes in their organization's effectiveness occurring over an 18-month period. Results indicated that no statistically significant relationship was found between the functional background of the executive and the perceptions of changes in the organization's environment.

On the other hand, a statistically significant relationship was found between functional background of the executive and the perceptions of changes in organization's effectiveness. Specifically, experience in either, sales and marketing or research and development, leads an executive to perceived changes in organizational effectiveness. In addition, executives heading non-parented and small organizations perceive more change in organizational effectiveness than those heading organizations with the added defenses of parents and larger size. Investigators concluded that studies using executives as informants for environmental effectiveness issues must take extra precautions to control or correct for the biases introduced by selective perception.

Conversely, the finding of negligible or small effects of selective perception for areas associated with the organization's environmental changes suggests that data in this domain are unbiased by the functional background variation of their executive informants (Waller, Huber, & Glick, 1995).

Van Eynde and Tucker (1996) explored the general personality patterns of CEOs as it related to their achievements. The personality traits of health care organization CEOs and general industry CEOs were compared using the Kostick Perception and Preference Inventory (PAPI). The PAPI is a forced-choice inventory consisting of 90 pairs of statements. It results in a hierarchical measure of an individual's self-perception of 20 traits consisting of 10 internal needs and 10 behavioral roles. A role is what a person does and a need is why he or she does it. A person's relative concern with the various roles provides a good indication of his or her style of behavior. Data from 32 hospital CEOs and 30 general industry CEOs indicated statistically significant difference between the groups was found on only two traits: need for rules and supervision, and interest in working with details. The need for rules and supervision was significantly lower for hospital CEOs (1.60) than for general industry CEOs (2.41) and than the average range (2.0 to 3.0). Investigators suggested that executives with a low need for rules and supervision typically tend to be self-starters and operate well in loosely defined situations, yet they also tend to establish rules that are in conflict with others' rules. This may explain in part why health care executives are often at odds with their highly regulated industry. The role

of working with details was significantly lower for hospital CEOs (0.90) than for the general industry CEOs (1.66) and than for the average range (2.0 to 3.0). A low score in this area is typical of persons who are able to focus on the broad picture and to distinguish important details from those that are not (Van Eynde & Tucker, 1996). In summary, CEOs were found to have perceptions that were affected by internal, as well as external, variables and that these variables in turn affect their behavior (Van Eynde & Tucker, 1996).

The Chief Nurse Officer (CNO) of today's health care organization has had to deal with the rapid growth of managed care and its contribution to the changes that significantly affect how patients receive, and how nurses and others provide that care (Gelinas & Manthey, 1997; Keepnews & Stanley, 1996). CNOs also experience the impact of managed care via the organizational redesign of hospitals (Gelinas & Manthey, 1997; Knox & Irving, 1998), health care organization mergers (Dianis et al., 1997) and general human resource management (Ackley, 1999; Brandi, 1998; Canavan, 1997; Flarey, 1997; Rothschild et al., 1996).

The study by Brandi (1998) depicted the diminution of the nursing and female identities which may be occurring along with the expansion and blending of the nurse executive role with other health care executives. This was a dimensional analysis study of 17 nurse executives in a heavily managed care environment of Southern California who were interviewed about their role as nurse executives. Finances, politics, and personal values were the issues addressed related to managed care decision making.

Associated *identities* that emerged among the nurse executives demonstrated a range of organizational influence and distance from nursing foundations. The study raised questions about how the nurse executive will be able to retain his or her personal and professional identity while advancing the discipline of nursing.

Several studies have specifically examined the role of the CNO in health care administration. For example, one study investigated how physician and nurse administrator interactions affect their capacity to improve the quality of care and the organizational effectiveness of the hospital. Thirteen physicians and 13 nursing administrators from a major regional hospital in Greater Vancouver, British Columbia, volunteered to participate. Interviewing focused on critical incidents where concrete experiences and their own perspectives are discussed. A 7-point scale was used to indicate the extent to which they: (a) expressed their own views fully, (b) considered the other's views open-mindedly, (c) tried to understand the other's concerns, (d) worked together for mutual agreement on this issue, (e) tried to put together the best of the various ideas expressed, and (f) felt accepted as a person. This rating of their constructive controversy behavior formed the self-interact scale with a Cronbach's alpha of 0.79. Then the interviewees rated the other person's interaction on the same items, yielding the other interact scale and Cronbach's alpha of 0.82. Interviewees were also asked to rate on a 7-point Likert scale the extent to which their goals and the others' goals were either cooperative, competitive, and independent. They also rated on a 7-point scale, the extent that they expected they and others would work

effectively. The results largely supported the hypothesized dynamics of cooperative and competitive situations. Incidents in which goals were cooperative were ones in which physicians and nurse administrators discussed issues openly, had a positive effect, strengthened their relationship, made progress on the task, promoted the organization's effectiveness, and fostered quality care. For example, a high cooperative rating was positively correlated with a high other-interact rating ($r = .65, p < .01$). Conversely, competitive goals were negatively related to productive interaction, openness, and constructive outcomes. For example, a high competitive rating was negatively correlated with a high other-interact rating ($r = -.53, p < .01$). Regarding goal interdependence, the most frequent reason for cooperative goals were shared purpose, connected roles, common task, and need to coordinate (chi-square 106.43, $p < .01$). The most frequent reason for competition was incompatible tasks and different perspectives (Tjosvold & MacPherson, 1996).

The role of the CNO in fostering collaboration among physicians and nurses is critical in today's managed care environment (Forte, 1997). The classic example of this impact was noted a decade ago when the APACHE II study made mention of a serious but unanticipated finding. The study indicated that in comparing the outcomes in 5,030 patients from 13 hospitals, important differences between predicted and observed death rates occurred and that these differences were related to the interaction and communication between physicians and nurses (Knaus, Wagner, Zimmerman, & Draper, 1986). In other words, the presence of inter-group conflict between physicians

and nurses, versus the ability to create collaboration, significantly influenced patient mortality. The findings of these studies emphasized the changing of the nursing administrator, or CNO, role in today's managed care environment and the significance of increased collaboration among CNOs and health care professionals.

Managed care executives have the responsibility of financial and operational management of the organization's managed care agreements. The roles and titles of the key managers in any health plan will vary depending on the type of plan, its legal organization, its line of business, its complexity, whether it is free-standing or a satellite of another operation, and the local needs and talent. There is little consistency in this area from plan to plan. How each key role is defined, or even whether it will be present at all, is strictly up to the management of each health plan. Nevertheless, certain key roles are common among organizations that are provider health plan organizations, such as executive director/chief executive officer, medical director, financial director, marketing director, and/or operations director. Chief financial officers may also take on the role of managed care contractor, or specialist for a given organization (Kongstvedt, 1997).

Steeped in hospital business traditions, these managed care executives sometimes fall victim to those traditions when planning their managed care strategies. They may fail to sufficiently evaluate their hospital's market position or set appropriate priorities for their various business strategies. They may not recruit individuals with managed care expertise, develop effective marketing plans, or

construct realistic physician networks. Today's hospital executives must plan their managed care strategies carefully and execute them intelligently to ensure success (Scheur, 1997).

Legal Authorizations (Profit Status)

Another component of input resources in the Managed Care Open Systems model is legal authorizations of the organization. According to Harrison and Shirom (1999), legal authorizations are obtained from the environment of an organization. One example of an organizational legal authorization resource is that health care organization and HMOs have the option of being for-profit organizations or not-for-profit organizations.

To be tax-exempt as an organization described in the 501(c)(3) of the U.S. Treasury Code (1997), an organization must be organized and operated exclusively for one or more of the purposes set forth in 501(c)(3) and none of the earnings of the organization may inure to any private shareholder or individual. The organizations described in 501(c)(3) are commonly referred to under the general heading of "charitable organizations." Organizations described in 501(c)(3) are eligible to receive tax-deductible contributions in accordance with the statute.

A common assumption about economic analysis is that organizations maximize profits. For example, economic theory provides models that explain how businesses allocate resources so as to gain profits. Thus, the motivations of a non-profit

organization differ from those of the for-profit organization (Folland et al., 1993, Mellsner, 1998; U.S. Treasury, 1997; Volunteer Trustees Foundation for Research and Education, 1996). The profit status of a given organization impacts how the organization manages its profits. Health care organizations and HMOs who are for-profit are able to sell stock in their companies to raise capital for expansion and other purposes profits, while not-for-profits are expected to distribute their profits back to the community (Folland et al., 1993; Mellsner, 1998).

The characteristics and public image of the for-profit and not-for-profit organizations differ. A national 1997 survey questioned a random sample of 1,000 consumers representative of the country's top Metropolitan Statistical Areas (MSAs). Respondents were heads of household, 21 years old or older, responsible for making health care decisions. Research aimed to ascertain customer perception and attitudes regarding the value people place on community ownership of health care and the importance of health improvement activities (VHA Inc., 1997). According to the results, consumers had a preference for community-owned (not-for-profit) hospitals and health care systems over investor-owned (for-profit) by more than 4 to 1. Consumers identify community-owned hospitals as most likely to: (a) treat anyone regardless of the person's ability to pay (83% to 5%), (b) improve community health (72% to 11%), (c) provide personalized service (62% to 18%), and (d) contain costs better (60% to 22%) (VHA Inc., 1997).

Several studies have found that profit status has an influence on dollars spent on care delivery and quality of care, capitation of physicians, and trust between physicians and hospitals. For example, Mellsner (1998) indicated that two types of HMOs exist: for-profit and not-for-profit. Both want to be in the black financially, but for-profit HMOs are able to sell stock in their company to raise capital for expansion and other purposes. In turn, a portion of the profits goes to the HMO's stockholders. This financial arrangement creates an obligation to a third party, who is not the payer or the health care service, the patient, or the doctor. As a result, the for-profit HMOs are generally nimble, quick, and flexible when it comes to management of the organization and managed care of the patient. For-profit HMOs have been proliferating since the early 1980s and accounted for 75% of all HMOs and 62% of enrollments in 1997, up from 18% and 12%, respectively. At the core of the for-profit/not-for-profit comparison is the medical loss ratio (MLR). MLR is the percentage of each premium dollar that is actually spent on health care. It is commonly used by investors and analysts to track a health plan's profitability and its success at controlling costs. Investors regard lower MLRs as desirable. For-profits say their generally low 1997 MLRs indicate that they spend money on patients more efficiently (68% to 87.2%). Not-for-profits argue that their higher MLRs (75.0 to 91.5%) are proof that they are committed to patient care because decisions are being made in the patient's favor. National Committee for Quality Assurance (NCQA) 1996 data indicated that not-for-profit HMOs have higher customer satisfaction and do better in the area of

prevention. Similarly, according to a Kaiser Family Foundation study, not-for-profit members are less likely to dis-enroll (of the 10 HMOs with lowest dis-enrollment rate, 9 were not-for-profit) (Mellsner, 1998).

Findlay (1996) found that there is growing evidence that the way plans pay providers depends on their fiscal structure. Evaluation of contracts more than 100 managed care companies forged with physicians, for example, found that for-profits tend to shift more risk to providers. Sixty-eight percent of the for-profit Independent Practice Association (IPA) model HMOs, for example, capitate all or most of their primary care providers, compared to 23% of non-profit IPAs. An even larger gap in specialist compensation existed as 27% of for-profits surveyed capitate specialists and none of the non-profits (Findlay, 1996).

A study examining whether CEO and physician power over hospital decisions fostered CEO-physician trust was conducted by Succi et al. (1998). In 1993, phone surveys were administered to CEOs and physicians resulting in 747 completed pairs of surveys from CEOs and physicians in the same hospital. An 11-item, 7-point scale questionnaire was used to elicit CEO-physician perceptions of trust (Cronbach's alpha .91). These items included the dimensions of trust: open and honest communication, willingness to cooperate, agreement on mutual goals, teamwork, and willingness to coordinate tasks. In addition there were 75 questions representing three dimensions of CEO-physician relationships: (a) CEO power over hospital decisions, (b) physician power over hospital decisions, and (c) CEO-physician relationships. Variables related

to hospital characteristics and market-level characteristics that might affect manager-physician trust were incorporated into the analyses as control variables. The hospital characteristic variables were performance, size, and ownership. The market-level variables to control for market uncertainty, thought to exacerbate inter-group conflicts and distrust, were hospital market competition (number of community hospitals in the county) and physician supply (active physicians per thousand county population).

Among the control variables, hospital ownership was the only statistically significant variable related to CEO-physician trust. CEOs operating in government-owned hospitals indicated lower CEO-physician trust than those operating in private, not-for-profit hospitals (beta for the model was 0.13, $p < 0.05$). Physician leaders operating in investor-owned, for-profit hospitals indicated higher CEO-physician trust than those operating in private not-for-profit hospitals (beta for the model was 0.33, $p < 0.05$) (Succi et al., 1998).

Finally, in a previously described study by Ringel et al. (1996), it was noted that 90% of responding physicians perceived that, "In most cases, for-profit organizations emphasize maximizing profits more than improving quality of medical care" (p. 284). Thus, these independently practicing physicians reflected lack of trust in for-profit organizations similarly noted in the Succi et al. (1998) study.

Revenue Streams

Revenue streams are another vital source of input for health care organizations in a managed care environment. The advent of managed care has led to the shifting of revenue streams from fee for each health care service rendered by the provider, to fee for each member for whom the provider will take on *overall* responsibility for health care (Coddington et al., 1990; Kongsvedt, 1997; Sultz & Young, 1997; Zelman, 1996). This section addresses the impact of changing revenue streams on providers and provider organizations.

According to Gold (1999), the influence of purchasers, both public and private, dominates health care policy today. In their drive to contain costs, purchasers have viewed managed care as the major alternative to increased cost sharing, a view that has led them to encourage the growth of an increasingly complex set of managed care products. Group purchaser such as employers are shifting to manage care products in order to gain control over rapid growth in premiums. As of 1995, HMO, PPO, and POS arrangements have increased steadily since 1988, while conventional indemnity arrangements have declined from 71% to 27% in the same time period (Jensen, Morrissey, Gaffney, & Liston, 1997).

Physician practice is shifting away from its historical roots in self-employment toward group and salaried arrangements that are better positioned to meet the current demands on providers stemming from both the shift to managed care and the growth of medical technology. Few physicians are unaffected by the shift in health insurance

products. According to one recent national survey, half the physicians are members of five or more separate plans, and a quarter have contracts with 10 or more plans (Collins, Schoen, & Sandman, 1997). Managed care constitutes a growing share of practice revenue. The American Medical Association estimates that managed care accounts for 39% of spending on physician services (Emmons & Wozniak 1997). In addition, capitated revenue is becoming more important for physicians, even though the entities in which physicians practice are more likely to receive capitation payments than are individual physicians. Thirty-six percent of physician practices in 1996 received some revenue from capitation, which accounted for 25% of the revenue (up from 19% in 1995) (Simon & Emmons, 1997).

Although managed care is becoming more important to hospitals, the impact on their revenue has been limited until recently. On August 5, 1997, President Clinton signed into law the first balanced budget in nearly 30 years. The budget package cuts Medicare reimbursement to physicians and hospitals by \$115 billion over 5 years (through 2003). The Medicare and Medicaid programs are both moving toward more use of managed care plans. The new law established a new system under Medicare + Choice, which allows beneficiaries to choose a managed care plan instead of fee-for-service plan (Richey, 1997).

A specific example of how changing revenue streams affect clinical practice is provided in an study by Vaitkus (1999). The author points out that the federal government is implementing changes in reimbursement for angioplasty and coronary

stenting and that these changes include reductions in physician reimbursement and a redesignation of intracoronary stents to a different diagnosis-related group than other methods of intracoronary intervention. The aim of the study was to examine the financial impact on physicians and hospital of proposed federal reimbursement policies for percutaneous coronary revascularization procedures.

Investigators modeled the financial effects of three different stenting strategies: strategy I is the most conservative, with stents reserved for addressing lab complications; strategy II stents are used for suboptimal results after attempts at conventional percutaneous transluminal coronary angioplasty (PTCA); strategy III is the most aggressive, with initial stenting of all accessible lesions. Economic data on PTCA and stent cost from a 1996 data set were used and assumptions were made about PTCA and stent success rates and re-stenosis rates based on published data. Results indicated that for the current situation (1997 reimbursement rates), the economic impact of the three strategies indicated that physician profits are approximately equal (\$93,000 to \$96,000). For the hospital, profits ranged from \$337,000 for strategy I to \$161,000 for strategy III. For the proposed situation (1998 reimbursement rates), the economic impact of the three strategies indicated that physician profits were again approximately equal but lower (\$34,000 to \$37,000). For the hospital, profits ranged from \$327,000 for strategy I to \$337,541 for strategy III. When physician and hospital are reimbursed in combination, the profits ranged from \$361,000 for strategy I to \$395,000 for strategy III.

For hospitals, the present situation strongly favors the more conservative strategies, but after the proposed changes, the more aggressive stenting strategies will be more profitable, thus realigning physician and hospital incentives. In this case, changing revenue streams are beneficial only to health care delivery organizations that combine physician and hospital revenue streams achieve the greatest financial stability.

The effects of these changes for hospitals are dramatic. Currently, the hospitals' economic self-interest lies in constraining stent usage. In the future, hospitals' profits will increase with increased use of stents. The greatest overall stability, therefore, of revenues and profits occurs in a combined organization of physicians and hospitals (e.g., a Physician-Hospital Organization). The combined revenue stream of hospital charges and physician professional fees is subjected to less variation than either considered alone, realigning the economic incentives of physicians and hospitals (Vaitkus, 1999).

Processes and Structure

In the Managed Care Open Systems model, the processes of an organizational system are represented by transformations: the way in which the organization transforms inputs into outputs. Processes are the prevailing systems of interaction between individuals and groups, which may contribute directly or indirectly to transforming health care delivery practice inputs into outputs. Examples of *organizational behavior and organizational processes* are cooperation, coordination,

communication supervision, leadership, information gathering, decision making, and goal setting. Health care delivery practices such as nursing care delivery and medical health care delivery practices constitute organizational processes leading to outputs.

Similarly, in the Managed Care Open Systems model, the structure of an organizational system is represented by enduring relationships between individuals, groups and larger units--including role assignments; divisional grouping of positions; standard operating procedures; and administrative arrangements for these processes. Structure constrains and focuses behavior without determining it. Centralization of decision making is one aspect of organizational structure that constrains and focuses organizational behavior. For the purposes of this review organizational processes and structure were examined together.

Health Care Delivery Practices

Health care delivery practices represent behaviors and processes that yield the organization's outputs, namely, the delivered health care products. This study was interested in the perceptions of health care professionals toward health care delivery practices, specifically, the impact of managed care on health care delivery practices. Thus, health care delivery practices have been collectively represented by the major components in the delivery of care: nursing care and medical care (Benda & Rozovsky, 1998; Gerteis et al., 1993; Kongstvedt, 1997; Leavell & Clark, 1965; Lowe & Baker, 1997). Subsequently, the perceptions of direct providers (physicians and

nurse practitioners) and indirect providers (CEOs, CNOs, and managed care executives) were studied in the context of the following description of health care delivery practices.

Nursing Care Delivery

Balancing quality health care with pressures of managed care and restructuring requires monitoring and measuring outcomes. The "nursing report card" organizes data in an informative manner, allowing the nursing care contribution to patient outcomes to be assessed and reported to all in an ongoing fashion. The ongoing measurement of quality of care monitored such items as staffing statistics, staffing costs, patient outcomes, and quality indicators. For example, for staffing statistics, reported indicators were actual worked hours percentage of nursing by license type, educational preparation, nursing satisfaction percentage, admission, discharge and transfer activity, and risk management indicators. Although the majority of these indicators were based on actual statistics, the perception was that these indicators were reflective of care quality (Lowe & Baker, 1997).

In an effort to identify key nurse-identified variables associated with care quality, researchers examined the results of the perceptions of 7,355 nurses who responded to the 1996 Patient Care Survey. Forty-three variables were measured in the initial survey and those that represented high quality ratings were further analyzed. Comparing the responses from a subset of 2,032 RNs, researchers formulated a model

using logistical regression, which allows the prediction of an outcome given certain conditions. The model consisted of 10 factors that were considered to be predictive of the quality of a facility's patient care, as perceived by RNs. The 10 variables were categorized into structure, process, and outcomes variables:

- Structure: reduction in RNs, loss of RN executive position.
- Process: time to provide basic nursing care, ability to uphold professional standards.
- Outcomes: patient and family complaints, pressure ulcers/skin breakdown, injury to patients, medication errors, complications secondary to admitting diagnosis, likelihood of RN employees to remain in nursing (Rothschild et al., 1997).

Medical Health Care Delivery Practices

Medical health care delivery practices also must be considered in the effort of balancing quality health care with pressures of managed care. This effort commonly includes monitoring and measuring of outcomes associated with medical health care delivery by managed care organizations and physicians (Chassin & Galvin, 1998; Diogo, 1998; Snow, 1997).

One such study is conducted annually by U.S. News and World Report, which evaluates the U.S. health plans and then lists them by state, based their success rating. The major success characteristics the study evaluated were: prevention of illness,

access to care, member satisfaction, physician credentials, and organization accreditation status (Comarow, 1998). Similarly, a study reported by Mehr (1998) surveyed more than 21,000 individuals to determine if managed care customers were actually satisfied with their health plan.

Some medical health care delivery studies are more specific, such as the one reported by Chen, Radford, Wang, Marciniak, and Krumholz (1999). Their study examined whether Medicare patients with acute myocardial infarction (AMI) admitted to one of HCIA-Mercer's "100 top hospitals" received better care or had better outcomes than patients treated in other hospitals. Similarly, the NCQA releases annual results of Quality Compass, a database of comparative information on U.S. managed care plans. The Quality Compass includes data on patient satisfaction, preventive care, treatment of chronic illness, and access to care and service (Kertesz, 1997b). Thus, the use of both nursing care delivery and medical health care delivery practices commonly constitute evaluative characteristics of the impact of managed care.

Structure of Organizations

According to the Managed Care Open Systems Model, a given organizational structure is the foundation for processes among its members. The managed care environment introduces another dimension to process and structure and both ambulatory and acute care settings are included in this observation.

Medical Group Practices

In a 1998 study, Kralewski and colleagues examined the organization of medical group practices in a managed care setting by surveying 155 medical clinics in the upper midwest. The study defined group practice system as two or more clinics staffed by full-time physicians with at least one site staffed by three or more physicians. The study focused on three structural attributes, namely, administrative control, patient care system standardization and integration, and physician productivity. The overall finding indicated that: (a) internal systems to control resource use develop differently among independent and system medical groups, (b) the structure of the clinics is affected differently by involvement with financial risk sharing payment programs, and (c) the degree of financial risk-sharing for patient care seems unaffected by internal resource control and systems improvement programs.

Regression analysis was conducted on the 18 dependent variables across 155 group practices. Five of the dependent variables are statistically related to at least one of the financial risk-sharing explanatory variables and 11 are statistically influenced by the control variables. Thus, the proportion of revenue generated from alternate risk-sharing contracts does not appear to have a major influence on the structure of these medical group practices.

Associated findings were that more revenue from full capitation payment systems appears to: (a) increase the centralization of decision making ($p = .01$); (b) be weakly related to increased control over referrals to specialists within the clinic

($p = .10$), and (c) be weakly related to less physician payment based on productivity ($p = .10$). On the other hand, fee-for-service payment with holdback provisions has a negative effect on physician profiling ($p = .04$), but a positive effect on the centralization of decision making ($p = .09$).

The most important finding from this analysis is that most of the structural characteristics of these medical group practices appear to be unrelated to the degree to which the practice is at risk for provision of cost-effective health services. In terms of the five control variables, the most influential were clinic size, membership in a group practice system, and rural versus urban location. Larger clinics have more administrative capacity and tend to have more control systems such as practice guidelines and physician profiling. Clinics that are part of group practice systems tend to have more controls on referrals to specialists outside their clinics and more centralization of decision-making structures. Rural clinics tend to schedule significantly more patient care hours per physician, use more nurse practitioners and physician assistants, treat patients on the telephone more often, have less physician profiling, and base more of their physician payment on productivity (Kralewski et al., 1998).

Centralization of Decision Making

Centralization concerns the location of decision-making authority and the higher up the organization that decisions are made, the more centralized the organization. Generally speaking, the higher the complexity of a given organization, the lower the

centralization (Pugh et al., 1968). According to Moseley and Grimes (1976), there is an approach suggested by a group of industrial researchers known as the contingency theorists. Led by Lawrence and Lorsch (1969), Woodward (1965), and Chandler (1962), these theorists suggest that each organization or industry has "a best way" of accomplishing management and it can be discovered only through research of that organization or industry. The research conducted by these contingency theorists has suggested that there are two important impacts on organizational effectiveness: (a) organizational structure variables, and (b) the coordinative and integrative mechanisms employed within the organization. Regarding organizational structure variables, the primary variables of structure are specialization, standardization, formalization, centralization, traditionalism, and configuration.

Moseley and Grimes (1976) then conducted an analysis of 32 hospitals for effectiveness, organizational structure, integrative mechanisms, and coordinative aspects of organizational functioning. The sample was drawn from 42 short-term general hospitals that were members of the Greater Houston Hospital Council. Of the 32 hospitals that participated in the Delphi study, most were concentrated in the 100-200 bed range. Hospitals were categorized into high, medium, and low performance on patient care and administrative performance. All of the high performing hospitals demonstrated significant greater standardization of their personnel activities than did the other hospitals. The higher performance hospitals also tended to have considerable specialization of tasks and roles. The high performance hospitals

exhibited an advanced degree of formalization; for example, they had more written reports, procedure and policies, guidelines for performance appraisals, etc. High performance hospitals had larger percentages of professional staff and greater numbers of specialized staff. Finally, more effective hospitals were found to make greater use of specific coordinating committees of multidisciplinary membership suggesting that delegating decision making and planning functions to inter-departmental groups enhances effectiveness.

Several other studies have found that centralization of decision making within an organization impacts overall management of innovation, management of information, and perceptions in the environment. For example, a study by Sciulli (1998) examined the impact of organizational structure on the success of various types of innovations in the banking industry. In the study, a group of retail banking executives determined and categorized innovations, as to whether they were incremental, product, process, or radical innovations. These were defined as:

1. Incremental: minor product and/or process modification, e.g., outsourcing.
2. Product: major product modifications, e.g., investment and mutual fund services.
3. Process: major process modifications, e.g., optical imaging.
4. Radical: major product and process modifications, e.g., PC banking.

The structure of an organization is made up of characteristics that determine the management processes used to orchestrate and control its decision-making activities.

Centralization is one major characteristic that determines organizational structure.

Centralization refers to the hierarchical level of authority (locus of control) an extent that individuals may participate in the decision making within an organization. Other major organizational structure characteristics are formalization, complexity, size, and integration. Data collection was by a mailed survey to 1,100 bank senior executives. A total of 229 banks participated, a response rate of 21%. Respondents were asked to indicate what position their organization has relative to various innovative banking products. Results indicated that decentralized organizations tended to be adopters of product, process, and innovations. Logically speaking, the investigators pointed out that in decentralized organizations, channels of communication are less restricted, stimulating a steady flow of ideas (Sciulli, 1998).

In a similar study, five government department district offices in New Zealand were investigated to determine factors influencing the managerial use of accounting control systems (ACSS) (Miah & Mia 1996). Data for the study were collected via a mailed questionnaire from 95 managers who were the "front-line" officers (lowest managerial level) and who interpreted and enforced the majority of government rules and policies. A total of 59 usable questionnaires was returned resulting in a response rate of 62%. The questionnaire contained three sets of items assessing the extent of decentralization, managerial uses of ACS, and district office performance.

Decentralization of decision making at the district office level was assessed via a five-item, 5-point Likert scale ranging from 1 (almost no delegation) to 5 (complete

delegation). An example of an item is, "To what extent has your office got authority and responsibility for making decisions on financial matters?" A Cronbach's alpha of 0.79 was obtained. The district office ratings of these items were averaged to arrive at a single index for decentralization. Use of ACS was assessed using a six-item, 5-point Likert scale ranging from 1 (never used) to 5 (always used). A Cronbach's alpha of 0.75 was obtained.

The district office ratings of these items were averaged to arrive at a single index for ACS use. District office performance was assessed via a single item, 9-point Likert scale ranging from 1 (not at all satisfactory) to 9 (outstanding) for recent overall performance of the office in view of the set goals. Results indicated that the first regression equation yielded a positive and significant relationship ($\beta = 0.49$, $p < 0.001$) between decentralization and use of ASC, thereby supporting the hypothesis that an increased level of decentralization of decision making among district offices leads to a greater use of ACS in those offices. The model explained 24% of the variance in the use of ACS in district offices. The second regression equation yielded a positive and significant relationship ($\beta = 0.65$, $p < 0.001$) between the use of ACS and performance, providing support for the hypothesis that the greater the use of ACS in district offices the better is the performance. The model explained 42% of the variance in performance. The third regression equation was not significant between decentralization and performance, thus the hypothesis that an increased decentralization of decision making in district office level is associated with improved performance in

those offices was not supported. It is noted that among other limitations such as the fact that the study was specific to governmental district offices, is the limitation that the performance measure was estimated by participants rather than an actual calculation of performance. Thus, the association between decentralization and performance may indeed be present yet not represented in participant estimates (Miah & Mia, 1996).

Outputs

The Managed Care Open Systems model includes outputs and the outputs of an organizational system are represented by products, services, and ideas that are the outcomes of organizational action. An organization transfers its main outputs back to the environment and uses others internally. Two main components of outputs are productivity and performance, and human behavioral outcomes. In the Managed Care Open Systems Model, organizational outputs from a managed care environment are transfer back into the organization through its inputs, namely, resources such as providers, legal authorizations, and revenue streams. This occurs through the perceptions of health care delivery practices of administrators and practitioners.

Studies have reported outcomes of both patient and provider satisfaction with managed care systems (Burdi & Baker, 1999; Kassirer, 1998; Mehr, 1998; Schulz et al., 1997). The study by Kassirer (1998) was representative, reporting that geographic

areas with high penetration of managed care tended to have more dissatisfied physicians.

Other studies have debated the benefits of health care obtained in managed care versus traditional fee-for-services health care organizations (Hellinger, 1999; Miller & Luft, 1997; Nichols, 1998; Sherlock, 1998; Starfield et al., 1998; Ware, Bayliss, & Rogers, 1996). The study by Ware et al. is representative of studies in which specific outcomes of health care delivery are compared between managed care and fee-for-service systems and there appears to be no conclusive finding on the differences.

Still others debate the benefits of whether outcomes reporting in the form of report cards of managed care organization performance truly meets the intent of their existence, namely to help patients choose the plans that best suit their needs, and reward plans that provide high quality health care (Chen et al., 1999; Comarow, 1998; Wicks & Meyer, 1999). The report by Wicks and Meyer was representative in that it questioned whether report cards of managed care organization quality performance actually measured the right thing and whether the comparative information appropriately accounted for case severity or population differences.

Of interest to the present research study were the studies that explore the relationship between managed care perception of health care professionals and the delivery of care. Although studies such as these were not evident in the literature, studies of how health care professionals interact with each other in a managed care

environment were found (Lassen et al., 1997; Naylor et al., 1999). As noted previously, Lassen and colleagues found the collaborative practice of nurses and physicians can be improved in a cost-effective method as demonstrated by a new approach to diagnose and treat neonatal sepsis. Similarly, Naylor et al. (1999) found that elderly patients who received a collaborative team structure of discharge planning and home follow-up by advanced practice registered nurses had fewer re-admissions, resulting in improved health outcomes and substantial cost savings.

Finally, a recent study by Kaiser Family Foundation (1999) explored the perceptions of physicians and nurses toward managed care as it related to patient care delivery. The survey was designed and analyzed by researchers at the Kaiser Family Foundation and the Harvard School of Public Health. It was administered by mail to a national random sample of 1,053 physicians and 768 nurses between February 11 and June 5, 1999. The physician sample was drawn from the American Medical Association's Masterfile and included physicians who indicated they cared for patients 20 or more hours per week. The sample was proportionately stratified to represent primary care physicians (general and family practitioners, general internists, and pediatricians) and specialists (medical specialists and surgeons). The sample of registered nurses was drawn from Medical Marketing Services, Inc. and included nurses who had cared for patients within the year prior to the survey. The survey data were weighted by age, gender, and region to be representative of national samples of patient care physicians and registered nurses and accounted in part for non-responses.

The survey collected quantitative information about physicians' and nurses' experiences with and attitudes toward health plans, particularly as it related to patient care delivery. The survey also collected verbatim responses in order to assess their judgements about the consequences of health plan denials for their patients.

Results indicated that both doctors perceive the growing influence of managed care as having primarily negative effects on health care delivery. Physicians cited increases in paper work and nurses cited decreasing quality of care as the prime issues. Both also gave more positive marks to health plans for preventive care and for practice guidelines and disease management protocols they find helpful. In terms of attitudes of physicians and nurses, most health care providers perceived the growing influence of managed care as having primarily negative effects on health care. For example, negative influences were represented by: (a) 95% of physicians and 92% of nurses who reported that managed care has increased the amount of administrative paperwork for providers and patients; (b) 86% of physicians and 82% of nurses who reported that managed care had decreased their patients' ability to see medical specialists; (c) 83% of physicians and 85% of nurses who reported that managed care has decreased the amount of time they spend with patients; and (d) 72% of physicians and 78% of nurses who reported that managed care decreased the quality of care for people who are sick. The limited positive influences were represented by: (a) 68% of physicians and 51% of nurses who reported that managed care had increased the use of practice guidelines and disease management protocols in patient care; and (b) 45% of

physicians and 42% of nurses who reported that managed care had increased the likelihood that patients would receive preventative services.

Of most significance is the finding that most physicians (79%) and nurses (70%) reported that their perceptions of managed care were influenced primarily by their own experiences as health care providers. Additionally noted as influences, nurses were more likely than physicians to report they were influenced a great deal by their personal experience as patients (38% vs. 23%) or by reports from friends and family members (47% vs. 39%).

Physicians' perceptions and experiences with managed care varied substantially by specialty designation and practice setting. Specialists (71%) were more likely to report that managed care had a negative impact on patients than primary care physicians (58%). Physicians who contracted with multiple health plans (74%) also were more likely than physicians who worked predominately with a single health plan (52%) to report negative effects of managed care on patients (Kaiser Family Foundation, 1999). Although this appears to be a good representation of the perceptions of health care providers toward the impact of managed care on health care delivery practices, the comparison between administrators and practitioners is not provided.

Summary

This literature review was presented using the Managed Care Open Systems Model. Subsequently, the review addressed the current health care environment and characteristics of managed care. Inputs to today's health care organizations, such as the activities of administrators and practitioners, effect of profit status, and impact of changing revenue streams were reviewed. Structure and processes were discussed in terms of nursing care delivery and medical health care delivery practices in the era of managed care. Outputs of the system as reflected by managed care-oriented report card and benchmark initiatives were presented in light of how they impact the perceptions of health care delivery professionals.

A growing body of literature on managed care perceptions by health care professionals has been produced since the proliferation of managed care in 1980s. The impact of those perceptions on both direct and indirect providers of health care delivery practices has been less evident. The association of these perceptions to variables such as managed care market stage, profit status of the organization, and centralization of the organization has been inconsistent. More importantly, the association between these organizational variables and the direct versus indirect providers of health care delivery has not been studied. According to Harrison's Open Systems Framework model, the organization's environment and the inputs contribute to its outputs. Thus, inputs such as direct and indirect providers of health care delivery and how these inputs contribute to the organizational behavior and processes should be

of concern. Descriptive research used in this study is vital to providing the foundation for understanding the interaction of these variables in a managed care environment.

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

The intent of the study was to survey the perceptions of health care professionals in a variety of settings and locations. A mailed survey was selected as the most appropriate method of data collection because: it is an expedient method of gathering information from individuals in varying geographic locations, it gives the subjects time to think about their answers, it provides privacy in answering, it provides questions written in a closed-ended style, and the research sample has a moderate to high investment in the topic (Fink, 1995; Henderson, Morris, & Fitz-Gibbon, 1990; Mangione, 1995).

Setting

Settings for this study included for-profit and not-for-profit health care organizations such as hospitals and physician practices where participants were employed. These settings were considered to be organizations that are providers of health care, in contrast to payers of health care such as insurance companies (Sultz & Young, 1997). The states of California, Texas, and Mississippi were selected for inclusion in the study because of their varying degrees of managed care penetration.

The statewide HMO enrollments per population are California, with 44%; Texas, with 15%; and Mississippi, with 2% (Interstudy Publications, 1999).

Population and Sample

The population consisted of health care administrators and practitioners employed in hospitals or physician practices. Administrators were represented by chief executive officers (CEOs), chief nurse officers (CNOs), and managed care executives. Practitioners were represented by physicians and nurse practitioners. Place of employment and profit status were ascertained by items on the study self-report demographic survey.

To achieve uniform geographic distribution of the sample, each group of health care professionals was selected using a stratified random sampling methodology with state and county as a geographic strata (Pedhazur & Schmelkin, 1991). Sampling within each stratum was randomized using a list of random numbers. The sample was obtained from directory listings of the American College of Healthcare Executives, American Nurses' Association, the American Organization of Nurse Executives, the American Hospital Association, the American Academy of Nurse Practitioners, and American Medical Association memberships living in California, Texas, and Mississippi.

The sample size was governed by level of desired statistical power (Nunnally & Bernstein, 1994). A priori power analysis was used to determine the required sample

size for both the analysis of variance (J. Cohen, 1988) and the multiple regression statistical tests (Cohen & Cohen, 1983). The minimum sample size requirement for the analysis of variance statistical test was 195 for five groups (39 minimum each) of alpha .05, medium effect size of .25, and power of .80. The minimum sample size requirement for the multiple regression statistical test was 66 for six independent variables and similar parameters. The six variables were role (administrator or practitioner), managed care market penetration score, profit status (not-for-profit or for-profit), and centralization of decision making score. Thus, the minimum sample size requirement for this study was 195 participants.

In a review of the literature, the rate of return for mailed survey studies ranged from 40% to 80% in organizations where respondents were members of the surveying organization. Because respondents for this study were not associated with the surveying organization, a lower rate of return of 30% was expected for this study. Therefore, 650 surveys needed to be mailed to achieve a minimum sample size of 195.

Protection of Human Subjects

The guidelines of the Human Subjects Review (HSR) Committee at Texas Woman's University were followed to ensure the protection of study participants. Approval was obtained from the HSR Committee prior to data collection (see Appendix A).

A cover letter and three assessment instruments were sent to potential participants. The introductory cover letter (see Appendix B) requested participation and explained the purpose of the study, confidentiality, potential risks, rights of the subjects, and benefits of participation. The letter stated that completion and return of the survey instruments was construed as the subjects' willingness to participate in the study. Confidentiality of the participants' responses were ensured throughout the data collection procedures. The three assessment instruments had a number that served as a cross-reference to the participant and only the researcher had access to this number. Returned instruments were kept in a locked file cabinet and destroyed by shredding one year after completion of the study.

Potential risks to participants were:

1. Loss of privacy related to sharing of information via the instruments.
2. Loss of anonymity related to identification of subjects and their responses by the researcher.
3. Potential for feelings of harassment related to pressure to participate in the study.
4. Potential for anxiety related to items on the instruments.
5. Loss of time related to the estimated 45 minutes for completion of the instruments.

The rights of the subjects who participated in the study were protected by the following:

1. Results of the study were reported as group data that in no way reflect the identity of individual participants.

2. Research materials were kept confidential and accessible only to the researcher for research purposes until completion of the study, when materials were destroyed.

3. Participants were informed in the cover letter that participation was strictly voluntary and they could avoid participation without any retribution. Completion and return of the instruments was construed as their willingness to participate.

4. Participants were informed in the cover letter that they were free to discuss their feelings about the instruments with the researcher. Telephone numbers of the researcher and the dissertation chairperson were provided for further assistance.

5. Participants were informed in the cover letter of the estimated instrument completion time of 45 minutes.

Benefits of participation in the study were:

1. Summaries of study findings about managed care perceptions of health care professionals were sent to participants who returned completed instruments and indicated that they would like to receive the summary. These summaries were useful as background information for participants.

2. The opportunity to reflect on one's own perceptions of managed care and the impact on health care delivery.

Instrumentation

Three instruments were used for this study: the Managed Care Perception Inventory, the MCPI (see Appendix C); Demographic Section (MCPI-D) (see Appendix D); and the Moseley and Grimes: Decision Making Centralization Assessment (DMCA) (see Appendix E). The MCPI is a 48-item, self-report instrument developed by the researcher that contains statements about the impact of managed care on health care delivery practices. The MCPI contains a 14-item, demographic data collection section to collect the demographic variables pertinent to the questions to be answered by the study. The third instrument is a portion of an instrument developed by Moseley and Grimes (1976) to measure characteristics of organizational structure that are associated with hospital effectiveness.

Managed Care Perception Inventory

The MCPI was used in this study to collect data related to the impact of managed care on health care delivery practices as perceived by administrator and practitioner health care professionals. The MCPI was developed by the researcher and contains 48 item statements that describe health care delivery practices. These statements represent two subscales: (a) Nursing Care Delivery including 30 items, and (b) Medical Health Care Practices including 18 items.

Items indicate a direction of change in health care delivery practices related to the advent of managed care as indicated in the literature. Appendix F includes the

sources for each item and the "implied managed care related perception" noted in the literature source. Nineteen of the items were randomly selected and reverse-scored to avoid response bias.

For each item, the 5-point scale was transformed as follows:

- Significantly decreased had a value of 5
- Decreased had a value of 4
- Not changed had a value of 3
- Increased had a value of 2
- Significantly increased had a value of 1
- NA, which represented "not applicable," had a value of zero and was used if the item content fell outside the participant's realm of expertise.

Item values for each subscale was summed to represent the subscale score for each participant. A cumulative score was obtained by summing the two subscale scores. The MCPI used rank order data, which when summed, was treated as interval data (Kerlinger, 1986; Nunnally & Bernstein, 1994).

Items for the MCPI were initially developed from a thorough review of the literature available on stakeholders' perceptions of managed care and an exploratory study which interviewed health care professionals. Lynn's (1986) procedure for content validity was employed using 12 content experts. The procedure resulted in an overall content validity index (CVI) of .722, which is considered acceptable for a beginning instrument development effort. However, since only those items with at least 86%

proportion of a CVI were included in the pilot study, the initial 79 survey items were reduced to 57 items.

Based on a pilot study described later in this chapter, the initial and retest Cronbach's alpha coefficients for the instrument were 0.9234 and 0.8102, respectively (see Table 1). The Pearson's correlation coefficient between the initial and retest final instruments was 0.742 ($p = .001$) (see Table 2). Because of changes made and described in the pilot study section, psychometric testing was repeated with the full study.

Table 1

Initial and Retest Cronbach's Alpha Scores of 48-item MCPI Subscales and Sum

	Initial ($n = 21$)	Retest ($n = 16$)
Subscale scores:		
Nursing care delivery	.9536	.8601
Medical health care practice	.5385	.0265
Sum score	.9234	.8102

Table 2

Correlation for Research Study between Initial and Retest MCPI Sum and Subscales

		Initial			Retest		
	MCPI	Sum	Nursing care delivery	Medical health care practice	Sum	Nursing care delivery	Medical health care practice
<u>Initial</u>	Sum	1.0	.747***	.661*	.742**	.632**	.233
	Nursing care delivery		1.0	-.004	.645**	.695**	-.147
	Medical health care practice			1.0	.388	.166	.517*
<u>Retest</u>	Sum				1.0	.912**	.168
	Nursing care delivery					1.0	-.252
	Medical health care practice						1.0

n = 16.

* = correlation significant at 0.01 level (2-tailed).

** = correlation significant at 0.05 level (2-tailed).

= missing and zero value replacement.

Managed Care Perception Inventory: Demographic Section

The 14 items on the MCPI-D represented basic demographic variables such as age and gender, as well as descriptive statistic variables such as title, role in the organization, and organization type and size. During a review of the literature and interviews with health care professionals, 4 of the 14 items were identified to be related to managed care perceptions. The items are: years in current position, years in health care administration/practice, knowledge of managed care concepts, and role in managed care decision making (Hibbard, Jewett, Legnini, & Tusler, 1997; Hogan & Thomopoulos, 1998; Kongstvedt, 1997; McCaughrin, 1991; Ryan, 1997; Scheur, 1997). Other variables were included because they are part of the study research questions. These items were: professional background, managed care penetration, and profit status of the organization where the participant is employed.

The two items of the MCPI-D which involved rating values, namely, the "knowledge of managed care concepts" item, and the "managed care decision making involvement" item, were found to have moderate test-retest Pearson's correlation scores of .545 ($p = .029$) and of .609 ($p = .012$), respectively. Cronbach's alpha for these four items was .6647 for the same sample of 21. Psychometric testing was repeated with the full study.

Moseley and Grimes: Decision Making Centralization Assessment

The Moseley and Grimes: Decision Making Centralization Assessment used in this study represents one of 16 measures of organizational structure included in Moseley's (1974) dissertation. The centralization instrument contains 25 item statements that are scored from 1 to 7, with 1 being "supervisory level" and 7 being "outside agency." An example item is, "Who decides on the price for hospital services: the department head, the administrator, the board or and outside agency such as corporate headquarters, the mother house, county government, etc." (Moseley, 1974, pp. 128)? The Cronbach's alpha for this instrument was .8653 for a sample size of 21 health care professionals who participated in the pilot study for this research study. Psychometric testing was repeated with the full study.

Pilot Study

A pilot study was conducted using the full study methodology to assess the data collection procedure and to test the psychometrics of the instruments. The 57-item MCPI containing four subscales, the 14-item MCPI-Demographic Section (MCPI-D), and the 25-item DMCA were mailed to a sample of 30 health care professionals who were known by the investigator. Twenty-one (70% rate of return) usable surveys were returned from 3 physicians, 3 nurse practitioners, 2 health care administration, 8 nursing administration, and 5 managed care administrators. Cronbach's alpha for the MCPI was .9195 and for the DMCA was .8653.

A test-retest was conducted on all four subscales of the MCPI and two items of the MCPI-D (knowledge of managed care concepts and managed care decision making involvement). In an effort to measure long-term perceptions of managed care, a 15-week period retest period was used. Sixteen of the 21 retest surveys were returned (76.2% rate of return) yielding a retest Pearson correlation of $r = .646$ ($p = .007$). The Cronbach's alpha coefficient was .8270. The two retested MCPI-D items yielded Pearson's correlation coefficients of .545 ($p = .029$) and of .609 ($p = .012$), respectively.

However, Cronbach's alpha scores for the "What Patients Experience" and the "Informational Decision Making" subscales of the MCPI were low and in most cases negative (see Table 3). These subscale correlations also were low and negative, yielding retest Pearson's correlation scores of .074 ($p = .784$) and -.458 ($p = .075$), respectively (see Table 4). As a result, these two subscales were removed from the final MCPI instrument used in the study.

Table 3

Initial and Retest Cronbach's Alpha Scores of 57-item MCPI Subscales and Sum

	Initial ($\underline{n} = 21$)	Retest ($\underline{n} = 16$)
Subscale scores:		
Nursing care delivery	.9536	.8601
Medical health care practice	.5385	.0265
What patients experience	.4077	-.4445
Informational decision making	-.3533	-.0419
Sum score	.9195	.8270

Changes to one of two remaining subscales, "Medical Health Care Delivery Practices," were made based on written comments from participants that item terminology was confusing. They suggested that "examples" be included in the item statements. Clarification of the wording and examples were incorporated in the MCPI instrument used in this study. The initial and retest Cronbach's alpha scores were .5498 and .0265, respectively, for this subscale. The Pearson's correlation score was only small to moderate at .517 ($p < .01$) (see Table 4).

Table 4

Correlation for Pilot Study between Initial and Retest MCPI Sum and Subscales#

		Initial				Retest				
MCPI	Sum	Nursing care delivery	Medical health care practice	What patients experience	Informa- tional decision making	Sum	Nursing care delivery	Medical health care practice	What patients experience	Informa- tional decision making
<u>Initial</u>										
Sum	1.0	.754***	.599*	.527*	.020	.646**	.637**	-.194	-.129	-.153
Nursing care delivery		1.0	-.004	.342	-.016	.558*	.695**	-.147	-.193	-.124
Medical health care practice			1.0	.092	-.114	.343	.166	.517*	-.091	-.059
What patients experience				1.0	1.143	.256	.213	.042	.074	.101
Informa- tional decision making					1.0	.017	.131	-.188	.254	-.458
<u>Retest</u>										
Sum						1.0	.868**	.157	.306	.194

Table 4 (continued)

MCPI	Sum	Initial				Sum	Retest			
		Nursing care delivery	Medical health care practice	What patients experience	Informa- tional decision making		Nursing care delivery	Medical health care practice	What patients experience	Informa- tional decision making
Nursing care delivery							1.0	-.252	.129	-.152
Medical health care practice								1.0	-.211	-.152
What patients experience									1.0	.433
Informa- tional decision making										1.0

$n = 16$.

* = correlation significant at .05 level (2-tailed).

** = correlation significant at .05 level (2-tailed).

= missing and zero values replacement.

The last change to the MCPI was based on written feedback from four participants that the scale was difficult to accurately quantify because the items had multidimensional qualifiers. For example, each item had either an "increased" or "decreased" qualifier to it, as well as a scale of "strongly agree" to "strongly disagree." To simplify the items, the qualifiers were removed from each item and the scales were changed to "significantly decreased" to "significantly increased." In the version used in the final study, items did not have qualifiers, subsequently the scale was a unidimensional qualifier. These item changes did not affect the item and summation scoring. Cronbach's alpha testing was repeated on the MCPI during this study.

Data Collection

Potential participants were identified from the addresses provided in the previously defined professional association database listing. Each person was sent an introductory letter, three study instruments, and a pre-addressed, stamped envelope to return the completed materials. In an effort to maximize rate of return of instruments, this study used Creswell's (1994) suggested 6-week, three-step process as follows:

1. Initial mailing.
2. Second mailing of the complete instrument after 2 weeks to those individuals who have not returned the instrument.
3. Third mailing of a postcard reminder after 2 more weeks, to those individuals who have not returned the instrument.

Returned instruments were assigned a number that served as a cross-reference to the participant, and only the researcher had access to this number. Returned instruments were kept in a locked file cabinet and destroyed by shredding 1 year after completion of the study.

Treatment of Data

Two types of statistics were employed in the analysis of the research data, descriptive and inferential. Prior to all analyses, tests for normality of the sample were conducted. To organize and summarize the demographic data and the scores on the study instruments, descriptive statistics were reported in the form of frequency distributions and as measures of central tendencies and variability. Nominal level data such as gender, health care role, and profit status were reported as frequency distributions, percentages, and modes.

Descriptive statistics, analysis of variance (ANOVA), two-way ANOVA, and multiple regression were used to analyze instrument results. The research questions were addressed as follows:

1. "What are health care professionals' perceptions of the impact of managed care on health care delivery practices?" was analyzed using descriptive statistics for health care professionals and their MCPI sum score.
2. "Is there a difference between health care administrators' and health care practitioners' perceptions of the impact of managed care on health care delivery

practices?” was analyzed using ANOVA for comparisons of health care professional groups and their MCPI sum scores.

3. “Are differences between administrators’ and practitioners’ perceptions of the impact of managed care on health care delivery practices related to organizational variables of managed care market stage, profit status, and centralization of decision making? ” was analyzed using two-way ANOVA on health care role and organizational variables.

4. “Are organizational variables of managed care market stage, profit status, and centralization of decision making predictive of health care professionals’ perceptions of the impact of managed care on health care delivery practices?” used multiple regression with health care roles and organizational variables as the predictor variables and sum scores on the MCPI as the criterion variable.

Additional psychometric analysis was conducted on the MCPI and the Moseley Centralization Assessment instruments. Internal consistency reliability was examined using Cronbach’s alpha. An alpha coefficient indicates the reliability of the responses to each item in relation to other items (Waltz et al., 1991). An alpha coefficient of 0.70 or higher is acceptable for newly developed instruments (Nunnally & Bernstein, 1994). Test-retest and content validity testing of the MCPI also was conducted with the full study.

Summary

Potential participants were identified from health care professional association database listings. Participants were sent an introductory letter, the MCPI, the MCPI-D, and the DMCA along with a pre-addressed, stamped envelope to return the completed materials. A 6-week, three-step data collection process was used for initial mailing and reminders.

A descriptive, cross-sectional survey design using both descriptive and inferential statistics was used to identify and describe practitioners' and administrators' perceptions of the impact of managed care on health care delivery practices. Demographic and organizational variables were explored for relationship to the perception of the impact of managed care. Psychometric testing such as internal consistency testing and content validity testing was conducted on study instruments.

CHAPTER IV

ANALYSIS OF DATA

The purpose of this descriptive, cross-sectional study was to determine the managed care perceptions of two groups of health care professionals (administrators and practitioners) in a variety of settings, managed care environments, and organizational characteristics. Descriptive statistics including frequency distribution, measure of central tendencies and variability were used to describe the characteristics of the participants and their organizations. The study also was designed to determine if there were differences in managed care perceptions among administrators and practitioners and to determine the relationship to organizational variables such as profit status and decision making centralization, and the environmental variable of managed care market stage. Analysis of variance and multiple regression were used to determine the statistical significance of these relationships. A description of the sample, findings related to the research questions, and a summary of the findings are presented in this chapter.

Description of Sample

Data collection occurred between July and September of 2000. Databases of health care professionals were obtained in electronic format from the American

Medical Association, the American Academy of Nurse Practitioners, the American Hospital Association, the Healthcare Financial Management Association, and the American Organization of Nurse Executives.

Using a stratified random sampling methodology with state and zip code as geographic strata, 654 surveys were mailed to two evenly distributed health care professional groups of administrators and practitioners in California, Texas, and Mississippi. Participants in these states were chosen because they represented high, medium, and low HMO penetration rates, respectively. The administrator group was composed of health care administrators (chief executive officers and nursing administrators) and managed care administrators/directors. The practitioner group was composed of physicians and nurse practitioners.

Table 5 lists the total eligible population of health care professionals and associated proportion represented in this study. The final sample size of usable questionnaires was 146, with 98 (67.1%) from administrators and 48 (32.9%) from practitioners. In the administrator group the majority of the sample were nursing administrators ($\underline{n} = 58$), compared to the health care administrators ($\underline{n} = 25$), and managed care administrators/directors ($\underline{n} = 15$). A greater number of nurse practitioners completed the questionnaire ($\underline{n} = 32$) compared to physicians ($\underline{n} = 16$) in the practitioner group. Overall, nurses (nurse practitioners and nursing administrators) comprised 62% of study participants.

Table 5

Study Group Source, Usable Questionnaires, and Rate of Return

Study Group	Database Source	Population	Questionnaires Mailed (N and %)	Usable Questionnaires (N and %)	Rate of Return
Chief Executive Officers	AHA Heads of Hospitals	23,267	139 (21.3%)	25 (17.1%)	17.9%
Nursing Administrators	American Organization of Nurse Executives	8,000+	138 (21.1%)	58 (39.7%)	42.0%
Managed Care Executives/ Directors	Healthcare Financial Management Association	2,200	123 (18.8%)	15 (10.3%)	12.2%
Physicians	American Medical Association	710,422	127 (19.6%)	16 (11.0%)	12.6%
Nurse Practitioners	American Medical Association	112,201	127 (19.4%)	32 (21.9%)	25.2%
Totals			654 (100.0%)	146 (100.0%)	22.3%

Data were collected for demographic, organizational, and environmental variables by self-report items of the MCPI-Demographic section (see Appendix D). The 146 study participants were primarily female (69.2%) with an average age of 47.8 years ($SD = 8.8$). They have been in a health care administrative and/or practice role for a mean of 22.3 years ($SD = 9.5$), have been in their current role for 6.5 years ($SD = 6.5$), and are currently employed in a hospital and/or multi-hospital acute care organization (69.9%). The participants reported “moderate knowledge” of managed care issues such as market stage, payment models, and clinical outcomes monitoring (mean score of 9.4, $SD = 2.0$, on a scale of 3 to 12, with 12 being “a great deal of knowledge”).

Table 6 provides a description of the three key study variables (managed care market stage, profit status, and centralization of decision making) of facilities where the administrators and practitioners worked.

Table 6

Key Study Variables among Administrators and Practitioners

Key Variables	Administrators	Practitioners	Total Sample
Managed care market stage distribution by group:			
Stage I	24%	19%	22%
Stage II	28%	29%	28%
Stage III	24%	10%	20%
Stage IV	24%	42%	30%
Profit status distribution by group:			
Not-for-profit	64%	50%	60%
For-profit	36%	50%	40%
Centralization of decision making mean sum score:			
Scale of 1 to 7	3.24	3.64	3.37

Managed care market stage was the only environmental variable in this study. The four stages defined by Stahl (1996) were used as the operational definition. Managed care market Stage IV (50% or more HMO penetration) was reported by 30.3% of all participants. California participants represented over half of the Stage IV group with 61.0% of the Stage IV participants. Texas participants, who represented the majority of Stage II participants (42.3%), reported HMO market penetration level between 11% and 30%, while the Mississippi participants represented the majority of Stage I participants (60.0%), with zero to 10% HMO market penetration.

Responses to the organizational variable questions indicated that participants were primarily from not-for-profit organizations (59.6%). The majority (54.6%) were involved in the contractual managed care decision making and, of these, 42.3% had primary decision-making responsibility. Centralization of decision making was scored on a scale of 1 to 7, with 7 being highly centralized decision making at the level of “outside agency.” The mean score (3.4, $SD = .623$) indicated that decision making occurred at the department head/administration level.

Within Group Analysis

Within group homogeneity analysis of demographic, organizational, and environmental variables for both the administrator group and the practitioner group was conducted because the groups were composed of different types of healthcare professionals. In this study, ANCOVA indicated covariation of variables with the MCPI sum score. As a result, one-way analysis of variance (ANOVA) was used for all group comparisons because, in addition to analysis of between group statistical significance, ANOVA also computes analysis of covariation of other variables via the ANCOVA statistical test.

Within group differences were found for both the administrator and practitioner groups but the differences did not contribute to differences in MCPI sum scores in either group. Table 7 indicates that, within the administrator groups, a statistically significant difference existed in years in health care practice, sum of years in health

care administration and practice, and age, but that these differences did not contribute to differences in MCPI sum scores.

Table 8 indicates that, within the practitioner group, a statistically significant difference existed in years in current position, gender, managed care knowledge, and managed care decision-making involvement. Chi-square analysis also revealed a statistically significant difference in gender (18.667, $p = .000$). However, these differences did not contribute to differences in MCPI sum scores.

Table 7

Mean Values of Statistically Significant Variables within the Administrator Group and Covariation with MCPI

Sum Scores

Variable	Health Care Administrators	Nursing Administrators	Managed Care Administrators/Directors	ANOVA Significance	MCPI ANCOVA Significance
Years in health care practice	4.8*	10.5	3.6*	.010	.138
Sum of years in health care administration and practice	21.3	25.4*	16.7*	.006	.140
Age	48.2	49.2*	42.2*	.021	.255
DMCA sum score	87.6*	78.7	79.1	.015	.233

* = Statistically significant difference at $p < .05$.

Table 8

Mean Values of Statistically Significant Variables within the Practitioner Group and Covariation with MCPI Sum Scores

Variable	Physicians	Nurse Practitioners	ANOVA Significance	MCPI ANCOVA Significance
Years in current position	13.8*	6.07*	.004	.404
Managed care knowledge	9.73*	8.12*	.016	.080
Managed care decision-making involvement	2.93*	1.61*	.000	.123

* = Statistically significant at $p < .05$.

Between Group Analysis

Analysis between the administrator and practitioner groups was conducted by examining eight demographic variables for between group comparison and covariance effect on MCPI sum scores. Table 9 lists the mean values of these variables, the statistically significant differences between groups and their covariation with MCPI sum scores.

Table 9

Means Values for Demographic Variables, between Group Differences, and Covariation with MCPI Sum Scores

Variable	Total Group	Administrators	Practitioners	ANOVA Significance	MCPI ANCOVA Significance
Years in current position	6.53	5.49	8.65	.006*#	.002**
Years in health care administration	11.14	15.08	2.74	.000*#	.037*
Years in health care practice	11.19	8.00	18.02	.000*	.008**
Sum of years in health care administration and practice	22.33	23.07	20.76	.176	.015*
Age	47.83	47.95	47.59	.819	.015**
Managed care knowledge	9.45	9.81	8.66	.001*	.020**

* = Statistically significant at $p > .05$; # = Failed Levene's test of equality of error variance.

** = Statistically significant at $p > .05$ and passed Levene's test of equality of error variance.

Responses to employment location indicated that the majority of administrators (81.1%) were employed in an acute care hospital while the majority of practitioners (58.4%) were employed in physician clinics. Administrators were primarily female (75.7%) while practitioners tended to report more evenly distributed gender (43.8% females and 56.2% males).

The findings related to age and gender indicated that the mean age of participants was 48.0 years for both administrators and practitioners and that there were more females administrators than practitioners. Administrators reported fewer years employed in their current position (5.5, $SD = 4.5$) than practitioners (8.7, $SD = 9.0$). Administrators reported a mean of 15.1 years ($SD = 9.2$) in an administration role and only 2.7 years ($SD = 5.0$) in a practice role. Practitioners reported a mean of 8.0 ($SD = 8.2$) years in an administration role and 18.0 years ($SD = 9.3$) in a practice role. These differences in roles were equalized when the mean sum of years in administrative role plus practice role was computed. (23.1, $SD = 9.5$ and 20.8, $SD = 9.5$, for administrators and practitioners, respectively). For the managed care knowledge demographic variables, participants estimated their knowledge of managed care concepts on a 1 to 4 rating scale with 1 being “no knowledge” and 4 being “a great deal of knowledge.” Managed care market stage, managed care payment models, and clinical outcomes monitoring were described and rated by self-report. A cumulative score was obtained, represented by a range of 4 to 12, as potential scores. Results of the managed care knowledge cumulative score among participants indicated

that administrators had a higher mean score (9.8, SD = 1.87) than practitioners (8.7, SD = 2.15).

As indicated in Table 9, only years in health care practice and managed care knowledge showed a statistically significant difference between administrators and practitioners for years in current position and years in health care administration. Chi-square analysis also revealed a statistically significant difference for employment location (68.359, $p = .000$) and gender (5.605, $p = .018$). However, these variables failed Levene's test of equality of error variance,¹ rendering the differences untrustworthy.

The demographic variables were examined in relation to the MCPI sum scores. Results indicated that, when controlling for the differences of these variables between the administrator and practitioner groups, all between group comparisons of the MCPI sum scores were statistically significant.

Three organizational variables were examined for between-group comparison and covariance effect on MCPI sum scores. Table 10 lists variables that had statistically significant differences between groups and their covariation with MCPI sum scores.

¹Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

The majority of administrators (64.3%) indicated that their organization was a not-for-profit organization, compared to only half of the practitioners (50%). Managed care administrators had a higher mean contractual managed care decision-making involvement score (2.6, SD = 1.13) than practitioners (2.01, SD = 1.23). The mean DMCA sum score, which represents the amount of centralized decision-making within a given organization as perceived by the participant, was lower for administrators (81.04, SD = 13.00) than for practitioners (91.08, SD = 18.30). A statistically significant difference was found between managed care decision-making involvement and DMCA sum scores between administrators and practitioners. Results indicated that, when controlling for the MCPI score differences of these variables between the administrator and practitioner groups, the statistically significant difference between the managed care decision-making involvement and DMCA sum score remained.

Table 10

Mean Values for Organization Variables between Group Differences and Covariation with MCPISum Scores

Variable	Total Group	Administrators	Practitioners	ANOVA Significance	MCPI ANCOVA Significance
Managed care decision-making involvement	2.43	2.61	2.02	.005*	.017**
DMCA sum score	84.34	81.04	91.08	.000*	.008**

* = Statistically significant at $p > .05$.

** = Statistically significant at $p > .05$ and passed Levene's test of equality of error variance.

The one environmental variable that was examined for between group comparison was managed care market stage. For this variable, the administrator distribution was fairly consistent among the four stages of managed care penetration with distribution percentages ranging between 23.5% and 27.6%. The practitioner distribution was highest in Stage IV with a distribution percentage of 41.7%.

There was no statistically significant difference between administrators and practitioners on managed care market stage. An ANCOVA was computed to test its effect on the MCPI sum scores. Results indicated that, when controlling for the differences in managed care market stage between the administrator and practitioner groups, the between group comparison of the MCPI sum scores was statistically significant (see Table 11).

Table 11

Mean Values for Environmental Variables between Group Differences and Covariation with MCPISum Scores

Variable	Total Group	Administrators	Practitioners	ANOVA Significance	MCPI ANCOVA Significance
Managed care market stage:					
1 = Stage 1	2.58	2.50	2.75	.213	.016**
2 = Stage II					
3 = Stage III					
4 = Stage IV					

** = Statistically significant at $p > .05$ and passed Levene's test of equality of error variance.

Homogeneity of Variance, Normality and Independence

All variables used for comparison included computation of Levene's test of equality of error variance. Although some variables failed the test, all key study variables (managed care market penetration, profit status or centralization of decision making) successfully met the assumption of homogeneity of variance.

The Kolmogorov-Smirnov test of normality was conducted on all study variables. Failure of normality at $p < .100$ was only noted for one key study variable, practitioner centralization of decision making sum scores ($p = .179$). Subsequent notations will be made of such during other statistical tests for this study.

Independence of the sample, another important assumption (Kerlinger, 1986), is met in this study because each participant's observations are a one-time observation and not influenced by other observations.

Findings

Instrumentation

The Managed Care Perceptions Inventory (MCPI), developed by this investigator, is a list of items which describes health care delivery practices (see Appendix C). Participants were asked to rate how these practices have changed as a result of managed care implementation in their work environment. These items reflect activities which are identified in the literature to affect health care delivery practices in a positive manner (see Appendix F). The items are scored on a Likert scale of 1 to 5,

with 1 being “significantly decreased” as a result of managed care, and 5 being “significantly increased” as a result of managed care. Thus, the higher the score, the more managed care has increased the positive aspects of health care delivery practices. Conversely, the lower the score, the more managed care has decreased the positive aspects of health care delivery practices. The Cronbach’s alpha coefficient for the 48-item MCPI was .8981. This alpha coefficient compared favorably with the pilot test for this study (pilot test = .9234, $n = 21$). The Demographic Section of the MCPI, which was the second study instrument, contained the self-report items for the demographic, organizational, and environmental variables. Four managed care items were used in expanded analysis. They were: knowledge of managed care (a) market stage, (b) payment models, (c) clinical outcomes monitoring, and (d) involvement in contractual managed care decision making. The Cronbach’s alpha coefficient for the four managed care related items was .740. This alpha coefficient compared favorably to the pilot test for this study (pilot test = .665, $n = 20$).

The MCPI includes a nursing care delivery subscale and a medical care delivery subscale. The 30-item nursing subscale included health care delivery practice items associated with nursing care delivery practices and had a Cronbach’s alpha coefficient of .8130. The nursing care delivery subscale MCPI sum score overall group mean was 2.60 ($SD = .30$).

The second subscale of the MCPI, an 18-item medical health care delivery subscale which included health care delivery items associated with medical care

delivery practices, had a Cronbach's alpha coefficient of .9269. The medical care delivery MCPI sum score overall group mean was 2.77 (SD = .57).

Analysis of relationships between the MCPI subscales and the study groups was conducted. Spearman's rho, one-tailed correlations between the MCPI sum scores, the nursing care delivery subscale sum scores, and the medical care delivery subscale scores, indicated a strong positive, statistically significant relationship between MCPI sum scores and the nursing and medical subscales ($r = .748$, $p = .000$; and $r = .814$, $p = .000$, respectively). The two subscales had a slightly positive, statistically significant relationship to each other ($r = .275$, $p = .000$).

The third instrument, the Decision Making Centralization Assessment (DMCA), reflected the centralization of decision making perceived by participants at their work environment. The Cronbach's alpha coefficient for the 25-item DMCA was .9034 which compared favorably with the pilot test for this study (pilot test = .8653, $n = 21$). The mean time for completion of all three instruments was 26.4 minutes (SD = 16.5), with a range from 8 to 85 minutes.

Research Questions

This section is organized by research question. Each research question is presented with a brief description of how the question was operationalized and analyzed and the related findings.

Research Question One

What are health care professionals' perceptions of the impact of managed care on health care delivery practices?

The participants' MCPI sum scores represented the perceptions of the impact of managed care on health care delivery practices. The MCPI is scored on a scale from 1 to 5 with 1 being extent to which managed care "significantly decreased" the positive aspects of health care delivery practices and 5 being extent to which managed care "significantly increased" the positive aspect of health care delivery practices. A score of 3 represents "no change" in the positive aspects of health care delivery practices.

The overall mean score of the MCPI for both administrators and practitioners was 2.67 (SD = .33). Individually, items which indicated the largest decrease in the positive aspects of health care delivery practice was item 20 "in-patient intensity of illness," with a mean score of 1.91 (SD = .61). On the other hand, the item which indicated the greatest increase in the positive aspect of health care delivery practice was item 48 "average hourly rate for RNs," with a mean score of 3.63 (SD = .73).

The mean and standard deviation of the five highest and lowest individual items are listed in Table 12. Some of the more pronounced ratings indicated that severity of illness, availability of nurses to care for patients, and opportunity for nurses to deliver quality of care were negatively impacted by implementation of managed care. Conversely, RN wages rates, access to ambulatory care generalists (primary care

practitioners), and access to emergency department “urgicare centers,” were positively impacted by implementation of managed care.

Table 12

Five Highest and Lowest Mean Scoring MCPI Items

Item Number	Description	Mean	<u>SD</u>
12	Average hourly rate for RNs	3.63	.73
33	Ability to utilize treatment services from ambulatory care generalists	3.18	.93
36	Ability to utilize treatment services from emergency services (urgi-center-based)	3.15	.83
10	Incidents of accidental exposure to sharps (e.g., needle sticks)	3.07	.73
6	BSN (Bachelor’s prepared nurses) percentages of total nursing staff	3.06	.70
20	In-patient intensity of illness	1.91	.61
28	Availability of time for staff nurses to provide basic nursing care	2.16	.59
26	Patient’s perceptions that there are not enough RNs available to provide direct care	2.16	.77
19	Average in-patient length of stay (based on division of nursing or level of care)	2.20	.70
15	RN vacancy rate	2.20	.67

In addition to the mean scores, the MCPI frequency percentage distribution for each MCPI item (e.g., “significantly decreased,” “decreased,” “not changed,” etc.) also was examined. Appendix G lists each of the MCPI items as they appeared in the survey, along with their item option frequency distribution. Each item’s highest frequency percent distribution is underlined. This listing indicates that while some mean item scores were in the neutral or “no change” range of item options their frequency percent distribution of scores was not. Similarly, while some mean item scores were in the “decreased” or “increased” range their frequency percent distribution was not.

Research Question Two

Is there a difference between administrators’ and practitioners’ perceptions of the impact of managed care on health care delivery practices?

An ANOVA between administrators’ and practitioners’ MCPI sum scores resulted in a statistically significant difference ($F_{1, 144} = 6.870$, $p = .010$), suggesting that the mean MCPI sum score of administrators (130.36, SD = 15.74) was statistically significantly higher than that of the practitioners (123.22, SD = 14.89). The Levene test for equality of variance was .077, $p = .781$, indicating that the variance between the groups was equal.

Post-priori power analysis was conducted on the group mean MCPI score differences. According to Cohen (1998), a sample of two 48-participant groups with a

mean difference of 7.15 yields a power of .61 at alpha .05. This power, although not optimal, was considered acceptable for the purposes of this study.

ANCOVA was conducted on this research question in an effort to control for the potential covariance of the study variables. Results indicated that ANCOVA between administrators and practitioners was statistically significant with each variable as the covariate in the analysis. Probabilities ranged from $p = .002$ to $p = .037$. Levene's test for equality of variance ranged from $p = .697$ to $p = .981$, indicating that the variance between the groups was equal. Since the Kolmogorov-Smirnov test of normality failed ($p = .179$) for the practitioner DMCA sum score, interpretation of that statistically significant ANCOVA should be guarded.

Research Question Three

Are differences between administrators' and practitioners' perceptions of the impact of managed care on health care delivery practices related to the specific organizational variables of managed care market stage, the organization's profit status, and the organization's centralization of decision making?

Two-way ANOVA was used to analyze the findings of this research question. The participants' MCPI sum scores represented the perceptions of the impact of managed care on health care delivery practices. The managed care market stage organizational variables were represented by the self-report findings of the MCPI-Demographic Section. The percentage of HMO penetration in the participants'

work environment (MCPI-D item number 9) was transformed into one of the four managed care market stages defined by Stahl (1996) before it was examined. The profit status organizational variable was represented by the self-report findings of the MCPI-Demographic Section profit status of the participant's organization (MCPI-D item number 10). The level of decision-making centralization was represented by the participant's sum score on the DMCA which was then transformed into low, moderate, or high centralization of decision-making levels as indicated by the distribution of participant scores.

There was a statistically significant difference between administrators and practitioners for perception of the impact of managed care on health care delivery practices ($F_{1, 145} = 7.889, p = .006$). However, there was no related difference in managed care market stage ($F_{3, 143} = 1.394, p = .247$). Subsequently, there was no interaction effect between administrator and practitioner group by managed care market stage ($F_{3, 143} = 1.427, p = .238$). See Table 13 for the managed care market stage ANOVA summary.

No related difference was found between groups based on profit status ($F_{1, 145} = 2.764, p = .099$) and no statistically significant difference was found between groups on centralization of decision making level ($F_{1, 145} = .013, p = .987$). ANCOVA was then conducted to control for the potential covariance of the study variables. Results indicated that the difference between administrators and practitioners were statistically significant with each variable as the covariate in the

analysis. However, no related interactions occurred between managed care market stage, profit status nor centralization of decision making. Interaction probabilities ranged from $p = .214$ to $p = .980$.

Table 13

ANOVA Summary of Administrator versus Practitioner by Managed Care Market

Stage on MCPI Sum Score

Source of Variance	Sum of Squares	df	Mean Square	F	Significance
Administrator or practitioner	1834	1	1834	7.889	.006
Managed care market stage	972	3	324	1.394	.247
Interaction	995	3	332	1.427	.238
Error	32090	138	233		
Total	36086	145			

Note. Dependent variable: MCPI sum score.

Research Question Four

Are organizational variables of managed care market stage, profit status, and centralization of decision making predictive of health care professionals' perceptions of the impact of managed care on health care delivery practices?

Hierarchical multiple regression was used to address this question in an effort to further examine the relationships among variables and to take advantage of the interval data level of the managed care penetration percentages and the DMCA scores. The sequence of hierarchical regression was administrator versus practitioner role, followed by managed care HMO penetration percent, by profit status, and then by DMCA sum score. Sum score on the MCPI was entered as the dependent variable representing perception of the impact of managed care on health care delivery practices.

As noted in Research Question Two, there was a statistically significant difference between administrators and practitioners for perception of the impact of managed care on health care delivery practices. This was reflected in this multiple regression analysis where health care professional role was statistically significant at $p = .018$ (see Table 14). The $-.204$ beta value for health care professional role indicates that the high dependent variable value of MCPI sum score is associated with the low predictor value of administrator (administrator was coded as 1 and practitioner was coded as 2). Other variable results indicated that there was no statistically significant relationship between these variables.

Hierarchical multiple regression analysis indicated a low R value of $.289$ on this cluster of predictor variables. The statistical significance test F value for the model was also significant.

Table 14

Hierarchical Multiple Regression of MCPI Sum Scores with Health Care Professional Roles, Managed Care Market Penetration, Profit Status, and Centralization of Decision Making

Variable	<u>B</u>	SE <u>B</u>	<u>Beta</u>	<u>t</u>	<u>p</u>
Health care professional role	-6.840	2.860	-.204	-2.392	.018
Managed care penetration	.06233	.047	-.109	-1.322	.188
Profit status	-4.532	2.676	-.141	-1.693	.093
DMCA sum score	.07902	.087	.078	.090	.365
(Constant)	139.089	7.568		18.379	.000

$\underline{R} = .289$, $\underline{R}^2 = .083$, Adj. $\underline{R} = .057$, $\underline{SE} = 15.316$, $\underline{F}_{4,142} = 3.207$, $\underline{p} = .015$.

Post-priori power analysis was conducted on the $\underline{R}$ value of the multiple regression analysis. According to Cohen (1983), a sample of two 48-participant groups with six independent variables yields a power of .88 at alpha .05. This power indicated that although the $\underline{R}$ value was low, there was significant power in the findings.

Additional Findings

Additional findings of this study are presented in this section as they relate to other MCPI subscales and to other MCPI sum score comparisons. Specifically, other MCPI sum score analysis examines the relationships between the study variables and the MCPI sum scores without regard to the administrator versus practitioner group.

Other Group Comparisons

Research questions for this study focused on the difference between administrators and practitioners. To further explore the relationship between perceptions of the impact of managed care on health care delivery practices, analysis was conducted without regard to administrator versus practitioner group.

Individual ANOVA was conducted on each of the nominal study variables against the MCPI sum scores as the dependent variable. Only profit status yielded a statistically significant difference on the MCPI sum scores ($F_{1, 144} = 4.273$, $p = .041$), indicating that the mean sum MCPI score of health care professionals in not-for-profit organizations (130.21, $SD = 15.88$) was significantly higher than that of the for-profit professionals (124.77, $SD = 15.17$). The Levene test for equality of error variance was .041, $p = .840$, indicating that the variances among the groups were equal.

Spearman's rho, one-tailed correlation, was conducted between the MCPI sum score and all study variables. Number of years in current practice yielded a statistically significant, slightly positive correlation to MCPI sum scores ($r = .179$, $p = .031$). Years in current practice also yielded a statistically significant, slightly positive correlation to MCPI nursing and medical health care delivery subscale sum scores ($r = .150$, $p = .035$ and $r = .181$, $p = .014$, respectively). Managed care market penetration and profit status yielded slightly negative, statistically significant correlations to MCPI sum scores ($r = -.147$, $p = .038$ and $r = -.190$, $p = .011$, respectively). The same set of correlations was conducted for the nursing and medical care delivery MCPI subscales. Managed care market penetration and profit status yielded very slightly negative, statistically significant correlations to MCPI nursing care delivery subscales scores ($r = -.197$, $p = .009$ and $r = -.206$, $p = .006$, respectively).

Hierarchical multiple regression analysis of key study variables (managed care market penetration, profit status, and centralization of decision making) against the MCPI sum scores yielded no statistically significant relationship. Stepwise multiple regression analysis yielded a statistically significant relationship with profit status ($p = .041$). The associated $-.170$ beta value for profit status indicates that the high dependent variable value of MCPI sum score is associated with a low predictor value of not-for-profit status. Not-for-profit organizational status was coded as 1 and for-profit status was coded as 2 (see Table 15).

Table 15

Stepwise Multiple Regression of MCPI Sum Scores with Managed Care Market Penetration, Profit Status, and Centralization of Decision Making

Variable	<u>B</u>	SE <u>B</u>	<u>Beta</u>	<u>t</u>	<u>p</u>
Profit status	-5.439	3.913	-1.70	-2.067	.041
(Constant)	135.647	3.913		34.662	.000

$\underline{R} = .170$, $\underline{R}^2 = .029$, Adj. $\underline{R} = .022$, $\underline{SE} = 15.600$, $\underline{F}_{4,144} = 4.273$, $\underline{p} = .041$.
Excluded variables: managed care market penetration and DMCA sum score

Summary of Findings

The sample consisted of 146 responses from health care administrators and practitioners from three states with high, moderate, and low managed care HMO penetration, namely California, Mississippi, and Texas, respectively. These health care professionals were employed in both ambulatory and acute health care settings. Comparative analysis revealed that the sample was representative of the population being studied.

Administrators, comprised of health care executives, nursing administrators, and managed care administrators/directors, reported a higher MCPI sum score, which indicates a more positive perception of the impact of managed care on health care delivery practices than did practitioners, comprised of physicians and nurse

practitioners. Managed care market stage, organization profit status and organization centralization of decision making was found to be related to this perception.

The MCPI subscales of nursing care delivery and medical health care delivery practices provided an additional perspective of the perception of the impact of managed care on health care delivery practices. However, examination of the subscales indicated no statistically significant differences beyond that of health care professional role, which also existed for the overall MCPI.

Perception of the impact of managed care on health care delivery practices was also examined using hierarchical multiple regression. Using a profile of variables, only the variable of health care professional role, administrator versus practitioner, yielded a statistically significance difference. Other group comparisons where health care profession role was not a factor yielded additional findings related to profit status and managed care market penetration.

CHAPTER V

SUMMARY OF THE STUDY

Managed care has had a significant impact on many components of the U.S. health care delivery system such as cost effectiveness, access to care, and quality of care (Anders, 1998; Pear, 1998; Starfield et al., 1998). These changes have affected how administrators and practitioners perceive the impact of managed care on health care delivery practices (Brandi, 1998; Gardner, 1998). This is at a time of increased need for collaboration among health care professionals (Cohen, 1997; Succi et al., 1998). Therefore, the problem of this study was to explore whether health care administrators and practitioners perceive the impact of managed care on health care delivery differently and to explore which organizational variables explain the difference. The Managed Care Open Systems Model, which was used to design this study, was based on Harrison and Shirom's (1999) work on organizational structure and processes. This chapter includes a summary of the study, discussion of the findings as well as conclusions and implications for administrators and practitioners. Recommendations for future research conclude this chapter.

Summary

A descriptive, cross-sectional survey design was used to address the research questions. The target population was from California, Texas, and Mississippi. The accessible population in these three states consisted of members from the AHA (1,346 heads of hospitals/CEOs), the AONE (511 nursing administrators), HFMA along with the Mississippi Hospital Association (166 managed care administrators/directors), and the AMA (86,392 physicians and 1,982 nurse practitioners).

Although literature addresses the managed-care related perceptions of health care professionals such as CEOs, nurse executives, physicians, and nurse practitioners, no research was found that examined differences between perceptions of health care delivery practices among these groups (American Medical Association [AMA], 1998; Appleby, 1996; Brandi, 1998; Brzozowski & Schuster, 1997; Donelan et al., 1997; Gelinas & Manthey, 1997; Hopkins, 1998; Joyaux, 1998; Knox & Irving, 1998; Mark Clements Research, Inc., 1996; Richey, 1997; Shapiro, 1998). The goal of this study was to explore whether:

1. Health care administrators and practitioners perceive the impact of managed care on health care delivery practices differently.
2. Specific organizational variables explain the difference in perceived impact of managed care on health care delivery practices between administrators and practitioners.

There were 654 randomly selected participants, yielding 146 usable questionnaires (response rate of 22.3%). This was less than the desired return number of 195 participants, but adequate power was maintained for each of the analyses (between 61%-88%). The 146 usable questionnaires were from 98 administrators and 48 practitioners. The administrator group included 25 heads of hospitals, 58 nursing administrators, and 15 managed care administrators/directors. The practitioner group included 16 physicians and 32 nurse practitioners.

The Texas Woman's University (TWU) Human Subjects Review Committee guidelines were followed to assure protection of the study participants. Two investigator developed instruments, the MCPI and the MCPI-D, and an intact centralization of decision making assessment subscale (Moseley, 1974) were used for data collection. Test-retest reliability of the MCPI yielded a Pearson's correlation coefficient of $r = .742$, $p = .001$. The test-retest reliability of the MCPI-D "knowledge of managed concepts" and "managed care decision-making involvement" yielded Pearson's correlation coefficients of $r = .545$, $p = .029$ and $r = .609$, $p = .012$, respectively. Content validity of the MCPI was determined with a content validity index (CVI) of .722 (Lynn, 1986).

Data collection occurred between July and September 2000. In an effort to maximize rate of return of instruments, a follow-up mailing of the introductory letter, three study instruments, and a pre-addressed, stamped envelope was conducted 4 weeks

later to individuals who had not returned the instruments. A reminder postcard was then sent 5 weeks later to individuals who had not returned the instruments.

Discussion of Findings

The total sample ($N = 146$) was representative of the larger population when considering administrator and practitioner demographics, health care organization characteristics, and level of managed care penetration. The administrator sample was determined to be representative of the population based on comparison to the American College of Healthcare Executives' (ACHE) 2001 membership (22,764 members as of January 1, 2001) for age, gender, employment location, and years in current position. The only difference was that ACHE reported fewer females (36.6%) than did this study (69.2%) because nursing administrators were more represented in this study than in ACHE. When adjusting for the nursing administrators, the gender proportion is compatible.

The practitioner sample was determined to be representative of the population based on comparison to the AMA, Physician Characteristics and Distribution in the U.S., 2000-2001 edition (Bell, 2000) for age, gender, and employment location. Again, the only difference was that the AMA reported fewer females (23.0%) than did this study because nurse practitioners were represented in this study. When adjusting for the nurse practitioners, the gender proportion is compatible.

The organizations were representative of the population based on comparison to the American Hospital Association (2001) statistics for the not-for-profit (80.1%) versus for-profit (19.9%) acute care organizations. Sample distribution of managed care penetration level for California, Texas, and Mississippi approximated those described in the Interstudy report (Interstudy, 1999).

Research Question One

What are health care professionals' perceptions of the impact of managed care on health care delivery practices?

Health care professionals were defined as the collective group of administrators and practitioners in this study as they self-reported their primary role via the MCPI-Demographic section. Impact of managed care on health care delivery practices was defined as sum score of the MCPI. The mean score for health care administrators and practitioners on the MCPI was 2.67 ($SD = .33$) on a 5-point Likert scale indicating on average that this sample perceived the impact of managed care between "slightly negative" to "no change". Although there are studies about the pros and cons of managed care impact (Anders, 1998; Chassin & Galvin, 1998; Goldberg, 1997; Halm et al., 1997; Relman, 1997; Schear, 1998), few studies included representation from both administrators and practitioners. One study that had findings similar to the current study indicated that respondents were slightly more likely to perceive managed care as a threat than an opportunity (Proenca, 1999).

Individual items of the MCPI were assessed for how they positively and negatively impacted the subjects' perceptions of managed care on health care delivery practices. The five items that had the highest mean score (positively impacted) and representative associated references are listed in Table 16.

Table 16

Five Highest Mean Score MCPI Items

MCPI Item	Mean Score (<u>SD</u>)	Associated References
1. "Average hourly rate for RNs"	3.63 (.33)	Buerhaus & Staiger, 1996; Charles, Piper, Mailey, Davis, & Baigis, 2000; Mezibov, 1998
2. "Ability to utilize treatment services from ambulatory care generalist"	3.18 (.93)	Lowe, 1977; St. Peter, Reed, Kemper, & Blumenthal, 1999
3. "Ability to utilize treatment services from emergency services (urgi-center-based)"	3.15 (.83)	Augustine & Dietrich, 1998; Lowe, 1977
4. "Incidents of accidental exposure to sharps" (e.g., needle sticks)	3.07 (.73)	Holodnick & Barkauskas, 2000; Lowe, 1977; Matson, 2000; Rosenstock, 2000
5. "BSN (Bachelor prepared nurses) percentages of total nursing staff"	3.06 (.70)	Charles et al., 2000; Lowe, 1977; Moses, 1998

Lowe (1977) suggested that these five items were important quality indicators to measure the impact of changes to inpatient care as a result of managed care implementation. Participants in the current study perceived these items as only being moderately impacted (mean = 3.06 to 3.64, SD = .70 and .33, respectively) by managed care implementation.

The item with the highest mean score, “average hourly rate for RNs” (mean = 3.63, SD = .33), indicates that this issue is perceived as being more impacted by managed care implementation than the other health care delivery practice items. This finding was indirectly supported by a 1998 federal study of RN employment indicating that the demand for skilled RNs in hospitals is expected to increase by 36% by the year 2020 (Charles et al., 2000; Mezibov, 1998). In addition, there is a reported 2% increase in the number of nurses working in community/public health settings, 1.1% increase in employment in nursing homes, and a 0.5% increase in number of nurses employed in ambulatory care (Moses, 1998). Both increased skill level need and expansion of the employment settings represent an increase in demand which translates to increase in wage rate according to economic theory (Jacobs, 1997).

In 1992, when the Clinton administration proposed managed care as a method of keeping health care costs down and maximizing usage, economic pressures occurred for hospitals, subsequently decreasing nursing employment volume (Buerhaus & Staiger, 1996). Buerhaus and Staiger found that RNs in states with high HMO enrollment experienced less wage growth and slower employment than RNs in low

HMO enrollment states. Thus, although volume of RNs working in health care settings is down, the perception that increased skill level need and expansion of employment opportunities such as exists in the non-acute care settings, may contribute to the perception that managed care has a positive impact on RN wages. Although the perception of participants in this study indicated that RN wages are positively impacted by managed care implementation, these perceptions may indeed be confounded by activities associated with the nursing supply shortage itself.

The second highest positively scored item, “ability to utilize treatment services from ambulatory care generalist,” suggests that access to primary care physicians such as a family practitioner or internal medicine physician has expanded as managed care has expanded. This finding is supported by a 1996-1997 study of 12,000 physician interviews (St. Peter et al., 1999) that found that 30% of PCPs reported that their scope of care (e.g., the complexity and severity of patients’ conditions for which PCPs provide care without referral to specialists) had increased within the last 2 years. Thus, PCPs view their scope of care as having expanded as managed care has expanded and this is compatible with the findings of the current study.

The positive impact of managed care implementation on the “ability to utilize treatment services from emergency services (urgi-center-based)” found in this study is consistent with findings in a 1998 study by Augustine and Dietrich. The Augustine and Dietrich study indicated that the focus for providers of health care has now changed from scheduled care to unscheduled care such as urgent and emergency services. These

investigators concluded that the emergency department is in an excellent position to enhance the transition of the health care system to managed care. These findings are compatible with the findings of the current study that indicated a positive influence of urgent-center treatment as a result of managed care implementation.

Although “incidents of accidental exposure to sharps (e.g., needle sticks),” yielded a mean score of 3.07, or “no change,” the response was more positive than such items as “RN percentage of total nursing staff” and “total number of falls per admission.” Thus, this item was a relatively positively scored MCPI item, suggesting that as managed care implementation progresses, there is a perception the incidence of accidental exposure to sharps is more positively impacted than the lesser scored items.

“Incidents of accidental exposure to sharps” (e.g., needle sticks) was a positively scored MCPI item, suggesting that as managed care implementation progresses, the incidence of accidental exposure to sharps is positively impacted. This finding was both supported and refuted by the literature on accidental needle exposure. On the supportive side, the JCAHO recently announced to health care organizations that monitoring of accidental exposure to needles will be a part of its accreditation of integrated delivery systems, hospitals, and managed care organizations (Editor, U.S. Newswire, 2001; JCAHO, 2001). The trend has been for regulatory organizations such as the JCAHO, Occupational Safety and Health Administration (OSHA), and government agencies such as the Center for Disease Control and Prevention (CDC), to focus on this issue (Matson, 2000; Rosenstock, 2000). In a more specific study on

needle sticks, Holodnick and Barkauskas (2000) noted a 21.4% decrease in accidental needle exposure among operating room nurses between 1997 and 1998. The opposing view is that, increased managed care implementation is associated with an increased frequency of accidental exposure to needles by health care workers (Freudeheim & Villarosa, 2001). This view is reflected in sources addressing the reasons for the nursing shortage and some of the associated stressors experienced by nurses (Freudeheim & Villarosa, 2001; Szabo, 2001).

“BSN (Bachelor prepared nurses) percentages of total nursing staff” was the fifth highest positively scored MCPI item. This suggested that use of BSN prepared RNs has been positively impacted (increased) by managed care implementation. Except for Lowe’s (1977) study, no research was found on this item. Research addressing the managed care driven need for more skilled RNs in the acute care setting Charles et al. (2000) and the broader setting such as ambulatory care facilities (Moses, 1998) does not specifically address the BSN RN percentage of total nursing staff. However, the advantages of using BSN RNs to deliver care in a highly penetrated managed care market would appear to be advantages.

Individual items of the MCPI were also assessed for how they negatively represented the impact of managed care on health care delivery practices. The five items that had the lowest mean score (negatively impacted) and representative associated references are listed in Table 17.

Table 17

Five Lowest Mean Score MCPI Items

MCPI Item	Mean Score (<u>SD</u>)	Associated References
1. "Intensity of illness"	1.91 (.61)	Lowe, 1977
2. "Availability of time for staff nurses to provide basic nursing care"	2.16 (.59)	Lowe, 1977; St. Peter et al., 1999
3. "Patient perception that there are not enough RNs available to provide direct care"	2.16 (.77)	Augustine & Dietrich, 1998; Lowe, 1977; Rothschild, 1996
4. "Average inpatient length of stay"	2.20 (.70)	Lowe, 1977; Rothschild, 1996
5. "RN vacancy rate"	2.20 (.67)	Freudenheim & Villarosa, 2001; Heinrich, 2001; Lovern, 2001; Lowe, 1977; Tri-Council, 2001

Of the five lowest mean scores (negative impact) of managed care on health care delivery practices, "intensity of illness" was the lowest. "Availability of time for staff nurses to provide basic nursing care" and "patient perception that there are not enough RNs available to provide direct care" were the second and third. "Average inpatient length of stay" was the fourth lowest mean. These findings were supported by the Rothschild et al. (1996) study of 7,355 nurses which indicated that 76.7% of

the nurses indicated that they had experienced “more” or “much more” of a change in patient acuity within the past year; 7.5% of nurses have experienced “less” or “much less” time to provide basic nursing care in the past year; 60.2% of respondents note a reduction in number of RNs providing direct patient care; 65.9% of represented nurses reported “less” to “much less” length of stay within the past year.

“RN vacancy rate” was the fifth lowest mean score. The impact of RN vacancy rates is actually more evident in 2001 than it was in 1997 as the shortage of nurses and of other health care workers has become more evident (Freudenheim & Villarosa, 2001; Heinrich, 2001; Lovern, 2001; Tri-Council, 2001). Recent RN vacancy rates are reported between 8% in New York to 20% in California (Freudenheim & Villarosa, 2001). Thus, the current study score which indicated that the negative impact of managed care to positively change the RN vacancy rate is supported by several recent reports.

The MCPI frequency percentage distribution for each MCPI item (e.g., “significantly decreased,” “decreased,” “not changed,” etc.) yielded information about the relationship between the MCPI mean scores and the associated frequency percent distribution of those item options. Appendix G lists each of the MCPI items as they appeared in the survey, along with their item option frequency distribution with each item’s highest frequency distribution underlined. For example, “average hourly rate for RNs (excluding agency)” had an average mean score of 3.63. As previously noted, this mean, which represented a score just above “no change,” suggested that participants

perceived that the “average hourly rate for RNs (excluding agency) was between “not changed” and “increased” as a result of managed care implementation in their environment. However, the highest frequency distribution percent was for “increased” (56.2%), which suggested that most participants perceived an “increase” in “average hourly rate for RNs (excluding agency).”

“Ability to utilize treatment services from ambulatory care generalists (primary care practitioners) in an example where the mean score and the item frequency distribution vary. For this item, the mean score was 3.18, indicating a “no change” response as a result of managed care implementation; however, the highest frequency distribution was for “increased” (38.4%), which suggested that the most participants perceived an “increase” in “ability to utilize treatment services from ambulatory care generalists (primary care practitioners).”

Although the five highest mean scores of the MCPI demonstrated variance with the highest frequency percent distribution of option, this did not hold true for the five lowest mean scores. For the five lowest mean scores, the frequency percent distribution matched for each item. This finding suggested that positive statements about the impact of managed care on health care delivery practices are more difficult to gauge than the negative statements.

Research Question Two

Is there a difference between health care administrators' and health care practitioners' perceptions of the impact of managed care on health care delivery practices?

The findings revealed that a statistically significant difference existed ($F = 1, 144 = 6.870, p = .010$), which suggested that administrators (mean = 130.36, $SD = 15.74$) had a more positive perception of managed care than practitioners (mean = 123.22, $SD = 14.89$). While no studies compared administrators to practitioners in terms of perceptions of managed care, most practitioner-oriented studies indicated that experience with managed care was associated with a negative perception of managed care's impact on health care delivery practices (Bernat et al., 1997; Deckard, 1995; Joyaux, 1998; Kaiser Family Foundation, 1999; Levine & Lieberman, 1998; Warren et al., 1999). The findings of the current study are reflective of these studies in that the current study practitioners reported a negative perception of managed care, relative to administrators.

In a study by Moore (2000), the turnover rate for CEOs has declined from a high of 18.4% in 1988 to 10.6% in 1999. One of the causes cited for the higher 1988 rate was high managed care penetration. Because the prevalence of managed care has steadily increased since 1988 and the turnover rate has declined, it can be surmised that this one variable (managed care penetration) has less of an impact on CEO

turnover rates. The more positive perception of managed care among administrators than practitioners in this study may be reflective of this trend.

Research Question Three

Are differences between health care administrators' and health care practitioners' perceptions of the impact of managed care on health care delivery practices related to the specific organizational variables of managed care stages, profit status, and centralization of decision making?

The findings revealed that administrators reported a significantly higher (more positive) perspective of managed care than did practitioners; however, the difference was not related to stage of managed care penetration, profit status of the organization or centralization of decision making of the organization. These three concepts were identified by literature as potential variables which might be related to perceptions of managed care.

Managed Care Penetration Stages

The finding that this variable was not related to a difference in perception between administrators and practitioners was contrary to prior research. A number of studies have found significant relationships between high managed care market penetration stage and increased job demands (Cohen, Mason, Arsenie, Sargese, & Needham, 1998; Rothschild et al., 1996; St. Peter et al., 1999), decreased decision making autonomy (Burdi & Baker, 1999; Joyaux, 1998; Lepore & Tooker, 2000),

changing relationships with patients (Donelan et al., 1997; Kaiser Family Foundation; 1999), strained relationship between health care providers (Burns et al., 2000; Gardner, 1998), increased ethical dilemmas (Bernat et al., 1997; Brandi, 1998; David, 1999; Kassirer, 1998; Olson, 1998), and income of health care providers (Hadley & Mitchell, 1999; Warren et al., 1999). Where direct providers of health care are concerned, one would have expected managed care penetration stage to have effected a more negative perception of managed care. Two studies identified positive aspects of managed care for direct care providers such as physicians and nurse practitioners. Chesanow (1999) and Harrison (1999) found the implementation of managed care associated with increased job satisfaction, cost-effectiveness of care delivery and higher potential for a “partnership” approach to the provider-patient relationship.

Other findings regarding managed care implementation have been cited as potentially related to perception of managed care. For example, a study by Warren et al. (1999) indicated that physician managed care payment type, as opposed to volume of participation in managed care, was a statistically significant factor affecting a negative perception of managed care. Similarly, Lepore and Tooker (2000) found that physician satisfaction with managed care was greatly influenced by their type of involvement with HMOs, in that satisfaction was found to be highest among physicians who were health plan employees and lowest among those who had contracts with multiple plans (32% of plan employees reported satisfaction with MCOs, 19% with exclusive contracts, and 5% with multiple contracts reported satisfaction). Analysis of

the relationship between managed care perception as it related to payment type and involvement type of managed care contracts to which the providers belong may be significantly discerning of the factors affecting managed care perception.

Profit Status

The current study findings regarding profit status revealed that although administrators reported a statistically significant more positive perspective of managed care than did practitioners; the difference was not related to profit status of their organization. There may be several reasons for this finding. First, there appears to be a trend which questions the real benefit of having a not-for-profit health care organization in a community (Bellandi, 1998; Melnick, Keeler, & Zwanziger, 1999; Needleman, Lamphere, & Chollet, 1999; Reinhardt, 2000; Sanchez, 1998; Young & Desai, 1999). Secondly, research has shown mixed results (Himmelstein, Woolhandler, Hellander, & Wolfe, 1999; Kuttner, 1998; Mellsner, 1998; Nichols, 1998; Schreiber, 1999; Sherlock, 1998) on whether the quality of care delivery by not-for-profit health care organizations is superior to that of a for-profit organization (Findlay, 1996; VHA Inc., 1997; Volunteer Trustees Foundation for Research and Education, 1996). The definition distinguishing between these two types of organizational structures, as well as the benefit of one over the other, may be blurring. In addition, it has been reported that for-profit organizations tend to shift more risk to providers than do not-for-profit organizations (Mathematica Policy Research, 1999; Ringel et al., 1996) and this

organizational structure characteristic may very well transcend the managed care perception, regardless of whether one is an administrator or practitioner in that organization.

Centralization of Decision Making

Organizational centralization of decision making has most commonly been studied as it relates to the performance of the organization (Flower, 1999; Menon, Jaworski, & Kohli, 1997; Moseley & Grimes, 1974; Pugh et al., 1968; Sutcliffe, 1994), suggesting that the less centralized the organization, the better performing the organization. However, no studies were found comparing administrators and practitioners on centralization of decision making. This could be because centralization of decision making was expected to be a universally agreed upon measure, regardless of how organizational employee responded to the question. In the current study, a distinction was made between practitioner and administrator responses, and practitioners reported statistically significantly higher centralization of decision making than did administrators (91.08, SD = 18.30 and 81.04, SD = 13.00, respectively). Because the majority of practitioners were employed in ambulatory clinics and the majority of administrators were employed in acute care organizations, the difference in employment location may have contributed to the centralization of decision-making findings more than the perception of managed care. This finding is consistent with a study by Kralewski et al. (1998). In the Kralewski study of 155 physician clinics, an

increase in the number of full-risk or partial risk capitation contracts the clinic had with managed care organizations was associated with an increase in the centralization of decision making in the clinic. Kralewski et al. postulated that less diversified revenue streams appeared to increase the need for more centralized control, likely because there is more risk associated with a dominant purchaser of services. Thus, although centralization of decision making did not appear to be related to a difference in the perception of managed care between administrator and practitioners, it did appear related to place of employment and, specifically, number of risk capitation contracts of a given organization.

Research Question Four

Is there are a relationship between health care professionals' perceptions of the impact of managed care on health care delivery practices related to the specific organizational variables of managed care market stage, profit status and centralization of decision making?

Only 5.7% of the variance in the difference in perception was explained by the role of administrator versus practitioner, followed by management care penetration percentage, by profit status, and then by centralization of decision making. The variable which captured the largest portion of the variance was role, administration versus practitioner. Administrators were associated with a higher positive perception of managed care than practitioners. The variables associated with the relationship between

administrator versus practitioner perception of the impact of managed care on health care delivery have been discussed in Research Question Two.

Other Findings

Additional analysis which examined the MCPI score in relationship to variables other than role also was conducted. Three variables found to have a statistically significant relationship with perception of managed care were an organization's profit status, managed care market penetration, and health care professionals' years in their current position.

Profit status was found to have a slightly negative correlation with MCPI sum score ($r = -.190$, $p = .001$) indicating that for profit organizations had slightly more negative perception of the impact of managed care on health care delivery practices than did not-for-profit organizations. This finding was supported by research by Ringel et al. (1996) and Mathematica Policy Research (1999) who found that for-profit organizations primarily focus on maximizing profits and, therefore, tend to have negative perceptions of managed care.

Correlation between managed care market penetration and MCPI sum scores yielded a slightly negative relationship ($r = -.147$, $p = .038$) indicating that health care professionals in higher managed care penetration markets tend to have a more negative perception of the impact of managed care on health care delivery. There is a preponderance of health care literature which states that managed care tends to be

negatively perceived by health care providers as well as by consumers (Aston, 1998; Burdi & Baker, 1999; Conway, Hu, & Daugherty, 1999; David, 1999; Hadley & Mitchell, 1999; Kaiser Family Foundation, 1999; Krieger, 1999; Schroeter, 1999; Simon et al., 1999; Warren et al., 1999).

Years in current position, regardless of role, was found have a statistically significant (more positive) relationship with perception of the impact of managed care on health care delivery ($r = .179$, $p = .031$). A study by Sutcliffe (1994) found that job tenure of the top executives of 89 firms was positively related ($R = .31$, $p < .05$) to the munificence (skill of the executive to assess availability of resources and extent to which an environment supports sustained growth). This would support the notion that in a high managed care environment where munificence skills are important, executives with job tenure and subsequent munificence would have a more positive perception of managed care than would their less tenured colleagues. On the other hand, a study by Decker et al. (2001), found that the longer an employee had been with the company, the more negative the response to job satisfaction, job-related stress, quality of individual performance, and department morale. Thus, where top executives with job tenure may relate positively to the challenges of the implementation of managed care, hospital employees with job tenure may have a less positive reaction.

Conclusions

The following conclusions and implications are based on the findings of this study:

1. Health care professionals reported a positive relationship between the implementation of managed care and:

- RN wage rate
- Ambulatory care access
- Urgi-care access
- Employee accidental exposure to sharps
- Proportion of BSN prepared RNs in the workforce

Conversely, health care professionals reported a negative relationship between the implementation of managed care and:

- Patient intensity of illness
- Time spent in basic patient care
- RNs available to provide direct care to patients
- Average in-patient length of stay
- RN vacancy rate

Most of these findings are consistent with reported literature.

2. Perception of the impact of managed care on health care delivery practices is significantly higher (more positive) for health care administrators than for practitioners and is not related to managed care market penetration, profit status, or centralization of decision making.

3. Without regard to administrator or practitioner group, health care professionals from not-for-profit organizations have a slightly, but significantly, higher (more positive) perception of the impact of managed care on health care delivery practices. This finding is consistent with reported literature.

4. Centralization of decision making has no relationship to health care professional role (i.e., administrator or practitioner), managed care market penetration, or profit status. This was inconsistent with organizational structure and process theory (Argyris & Schon, 1996; Chandler, 1962; Harrison & Shirom, 1999; Lawrence & Lorsch, 1969; Pugh et al., 1968; Woodard, 1965).

5. Without regard to administrator or practitioner group, health care professionals from high managed care market penetration had a slightly, but significantly, lower (more negative) perception of the impact of managed care on health care delivery practices. This finding is consistent with reported literature.

6. Without regard to administrator or practitioner group, the longer that health care professionals are in their current positions, the higher (more positive) their perception of the impact of managed care on health care delivery practices. This finding is consistent with the literature on health care executives and inconsistent with literature on hospital employees.

7. The MCPI was determined to be a valid and reliable measure of perceptions of managed care and its impact on health care delivery practices.

Implications

This study examined the impact of managed care implementation on the perceptions of health care professionals and the factors affecting those perceptions. In this study, practitioners were found to have a more negative perception of managed care than administrators, and, according to the Managed Care Open Systems Model used to design this study, negative perceptions can impact the outputs (outcomes) of the organization delivered via health care products and services. However, a study by Proenca (1999) suggested that perceptions can be improved through strategic interventions focused on factors contributing to negative perceptions.

Implications for Administrators

To impact positive change in perceptions, organizational administrators must become and remain aware of their own managed care environment by regularly monitoring the perceptions of administrators and practitioners. This study suggests that the MCPI may be a useful tool for gathering this type of information.

Then organizational administrators should formulate and implement interventions focused on identified factors contributing to negative perceptions. In this study, several such factors were identified by healthcare professionals. Among those factors are the perceptions that patient intensity of illness has increased even as the average in-patient length of stay has decreased and that there is less time and fewer RNs available to provide direct care to patients. Others factors identified in this study

that affected perceptions are market penetration, profit status, and years in current position. The impact of managed care was perceived to be: more negative, the higher the managed care market penetration; more positive in not-for-profit organizations than for-profits; and more positive, the more years the health care professionals had been in their current position.

Administrators should examine how these factors affect perception of managed care in their organizations and implement strategic interventions. Research by Warren et al. (1999) suggested that appropriate interventions to change negative perceptions would include keeping practitioners involved and informed of issues about which they express concerns. Administrators at all levels should be considered part of the intervention strategy. They should be aware of issues identified by practitioners and work collaboratively to address their needs.

Implications for Practitioners

Practitioners must monitor their own perceptions and seek to manage any negative perceptions. They should express all needs or concerns to their organization's administrators and work collaboratively to remain involved and well informed about issues of importance.

Recommendations for Further Research

Lawrence and Lorsch (1969) proposed that each organization has "a best way" of management which can only be discovered through research. Findings from this

descriptive study added to research regarding the perception of the impact of managed care on health care delivery practices as perceived by administrators and practitioners. Variables included in this study were role and demographic characteristics of health care professionals, specific health care organization characteristics (profit status and centralization of decision making), and the external managed care market penetration. However, there are several questions that remain regarding the health care professional's perception of managed care. The following are recommendations for further research.

Additional research is needed with a larger, more defined sample. Although within group homogeneity was tested among administrator and practitioner groups, the distribution pattern bias may limit generalizability of the conclusion. Between groups, the administrators were more strongly represented than the practitioners and within groups, the nursing administrators and the nurse practitioners were more strongly represented than their counterparts. Attempts to minimize these biases should be undertaken in future studies.

Recommendations for future sampling efforts relate also to the physician group. For example, prior research has indicated a distinction between the perceptions of primary care physicians (PCPs) and specialists (Burdi & Baker, 1999; Ringel et al., 1996; St. Peter et al., 1999; Warren et al., 1999). Because of the small sample size of physicians in this study, analysis between these two types of physicians was not

possible. Therefore, further analysis related to PCP versus specialist perceptions should be undertaken.

Sampling challenges occurred in the low managed care group used in the study. In this study Mississippi was identified as the state with the lowest managed care market penetration rate (3.2%). In several cases Mississippi potential participants were unable to participate in the study because in their area they “have no managed care.” Thus, it is suggested that a less extreme managed care market penetration rate be used for targeting the low managed care group.

Further attempts to refine measurement of the extent of managed care in a given environment should be undertaken. This study used HMO penetration rates because it is a common indicator of the stage of managed care in a given market. However, further research could benefit from examining more specific indicators such as managed care contract payment type (Warren et al., 1999), involvement type (Lepore & Tooker, 2000) and number of hospital-sponsored physician alliances (Burns, Bazzoli, Dynan, & Wholey, 2000) found in other research.

The finding in this study that centralization of decision making has no relationship to health care professional role (i.e., administrator or practitioner), managed care market penetration, or profit status was unexpected because, by its very nature, managed care requires coordinated and integrative activities. Research (Benda, 1998) suggests that the teamwork necessary to deliver care in this environment would require high levels of decentralization of decision making. In addition, as pointed out

by Sutcliffe (1994), the munificence required by top executives, which is so critical in a managed care environment, depends highly on decentralization of decision making. Thus, further attempts to improve assessment of the centralization of decision making used in this study should be undertaken.

Sixty-two percent of study participants, either nursing administrators or nurse practitioners, came from a nursing background. Although not within the scope of this study, analysis of the perception of this nursing group compared to the non-nursing group is recommended. One study indicated that nurses perceive certain global aspects of managed care as negatively impacting health care delivery and that most of these perceptions are shared by health care delivery professionals such as physicians (Kaiser Family Foundation, 1999). However, other aspects of managed care's impact such as health care team member communication (Cadogan, Franzi, Osterweil, & Hill, 1999), corporate ethical guidelines (David, 1999), and relationship with other health care team members (Olson, 1998), have only been studied from a nursing perspective. More targeted studies have indicated that nurse practitioners (Harrison, 1999) and nurse executives (Brandi, 1998) have unique perceptions about managed care's impact on health care delivery. Thus, in an effort to bring optimum cohesiveness to the health care team, it is recommended that further study be conducted on the perception of nursing versus non-nursing health care professionals.

Finally, additional psychometric testing is needed for the Managed Care Perception Inventory. While acceptable levels of reliability and validity were obtained,

further refinement is possible which might shorten the tool and ensure applicability to a wider population of health care professionals.

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APPENDIX A

Permission to Conduct Study

EXEMPT REVIEW
Application to the Human Subjects Review Committee

This form must be completed if the research committee (for student research) or the department coordinator (for faculty research) decides that the proposed research is exempt from Full Review or Expedited Review by the HSRC. A proposal may be eligible for Exempt Review if any of the following conditions is met:

- 1) only minimal risk to subjects, as described in the **Human Subjects in Research: Institutional Review Board Policies and Procedures**, pp. 11-12;
and/or
- 1) the project will be completed at another institution or in collaboration with investigators at another institution, and that institution's IRB has provided written approval for the proposal as described. **To be eligible for this exemption a signed copy of the institution's current IRB approval form must be attached to this application. If applicable, attach a memo indicating the student's role in the approved study;**
and/or
- 2) the project involves an analysis of a data set generated from a currently approved project.

For Exempt Review by the TWU Human Subjects Review Committee, submit three copies of this form, any relevant Informed Consent Forms, surveys, questionnaires, and (if applicable) the collaborating institution's signed IRB approval form. Approval is required prior to the initiation of the research project. The investigator will be notified if the Human Subjects Review Committee requires additional information.

To complete this form electronically, type information into the blanks provided. If your typing fills the blank, text will wrap automatically. Print out, secure appropriate signatures, and submit three copies (along with accompanying documents) to the Office of Research, MJG 913. Paper-clip each of the copies—no staples, please.

Principal Investigator(s) Mari Tietze SS# 438-92-8333
SS# _____

Faculty Advisor (if applicable) Rebecca Krepper Dept. Nursing

Title of Study Impact of Managed Care on Health Care Delivery Practices as Perceived by Health Care Administrators and Practitioners

Justification for Exempt Review status The study is survey research that does not involve risk of criminal or civil liability or sensitive aspects of behavior, does not involve minors, and will be conducted using procedures to prevent identification of individuals.

Estimated beginning date of the study June 1, 2000

Estimated duration of the study 12 months

Research being conducted for (place an X in the appropriate blank):

SIGNATURE REQUIREMENTS

1. For students

The research protocol and the HSRC application have been read and approved by the members of the student's research committee:

Names of Committee Members	Signatures	Date
Rebecca Krepper	<i>Rebecca Krepper</i>	4/30/00
Maisie Kashka	<i>Maisie Kashka</i>	4/1/00
Barbara Lease	<i>Barbara Lease</i>	4/7/00
Julieann Sakowski	<i>Julieann Sakowski</i>	4-20-00

2. For faculty

The research protocol and the HSRC application have been read and approved by the academic administrator:

Name of Academic Administrator	Signature	Date

Approved by HSRC Chair

*Gayle Hunt*Date *May 19, 2000*

438-92-8333

TEXAS WOMAN'S
UNIVERSITY
DENTON/DALLAS/HOUSTON

THE GRADUATE SCHOOL
P.O. Box 425649
Denton, TX 76204-5649
Phone: 940/898-3400
Fax: 940/898-3412

June 23, 2000

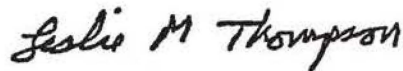
Ms. Mari F. Tietze
5337 N. MacArthur #2117
Irving, Tx 75038

Dear Ms. Tietze:

I have received and approved the prospectus entitled "**Impact of Managed Care on Health Care Delivery Practices as Percieved by Health Care Administrators and Practitioners**" for your *Dissertation* research project.

Best wishes to you in the research and writing of your project.

Sincerely yours,



Leslie M. Thompson
Associate Vice President for Research and
Dean of the Graduate School

LMT/sgm

cc Dr. Rebecca Krepper, Nursing
Dr. Carolyn Gunning, Nursing

APPENDIX B

Cover Letter

DATE

Dear Health Care Professional:

In today's rapidly changing health care environment of managed care, there are few studies directed at how managed care is affecting health care professionals such as physicians, nurses, and health care executives. Thus, I am requesting your participation in this doctoral dissertation study whose purpose is to explore how managed care is impacting health care professionals and their delivery of health care to patients.

The study involves completion of two instruments: (1) the Managed Care Perceptions Inventory (MCPI) and demographic section which assesses perceptions of the impact of managed care on health care delivery practices, and (2) the Decision Making Centralization Assessment (DMCA) which assesses decision making in your organization. The instrument completion process is estimated to require approximately 30 to 45 minutes of your time.

Results of the study will be reported as group data that in no way reflects the identity of individual participants. Research materials will be kept confidential and accessible only to the researcher and will be destroyed one year after completion of the study.

Benefits of participating in the study are that: (1) a summary of results will be made available to those participants who desire one and it will provide participant with updated information on the impact of managed care on health care professionals; and (2) it provides participants the opportunity to reflect on one's own perceptions of managed care and the impact on health care delivery.

At any time during the study you may call the investigator (Mari Tietze at 972-830-0359) or the Texas Woman's University chairperson (Dr. Rebecca Krepper 713-794-2106) if you have questions. Please be aware that your participation in this study is strictly voluntary and your completion and return of the instrument is an indication of your voluntary agreement to participate.

Thank you for considering participation in this study.

Sincerely,

Mari Tietze, RN, MSN
Texas Woman's University
Doctoral Candidate

APPENDIX C

Managed Care Perceptions Inventory (MCPI)

Managed Care Perceptions Inventory

PLEASE ENTER TIME YOU ARE STARTING INSTRUMENT COMPLETION: _____

Construct: The construct to be measured by this questionnaire is the perceived change in health care delivery practices as a function of managed care. The questionnaire aims to capture the perceptions of health care administrators (e.g., chief executive officers, chief financial officers, chief nurse executives, and managed care executives) and practitioners (e.g., physicians and nurse practitioners).

Instructions:

- a) Consider the extent to which you perceive the following health care delivery practices have changed as a result of managed care implementation within your work environment.
- b) Circle the response that best describes your perception of the change.
- c) Note that "N/A— not applicable" is an option if the item content falls outside of your realm of expertise, but please try your best to represent your perception.
- d) Feel free to comment in the spaces provided.

Nursing Care Delivery

Please circle the response that best represents your perception of the following nursing care delivery statements as a result of managed care implementation in your environment.

1. Actual worked nursing hours (total direct hours staffed) have . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

 Comment: _____

2. RN percentage of total nursing staff has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

 Comment: _____

3. LPN or LVN percentage of total nursing staff has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

 Comment: _____

4. Unlicensed worker percentage of total nursing staff has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

 Comment: _____

5. MSN (Master's prepared nurses) percentage of total nursing staff has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

 Comment: _____

6. BSN (Bachelor's prepared nurses) percentage of total nursing staff has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

 Comment: _____

7. AD (2-year Associate degree prepared nurses) percentage of total nursing staff has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
8. Daily total number of admissions and discharges has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
9. Daily total number of transfers in and out of a given area/unit has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
10. Incidents of accidental exposure to sharps (e.g., needle sticks) have . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
11. Total nursing salary cost per patient day, or unit of service (overtime and agency costs included) has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
12. Average hourly rate for RNs (excluding agency) has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
13. Average hourly rate for LPNs or LVNs (excluding agency) has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
14. Percentage of outside nursing agency fees as a percent of total nursing paid hours has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
15. RN vacancy rate has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-
16. Unlicensed worker vacancy rate has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
-

17. RN turnover rate has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
18. Unlicensed worker turnover rate has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
19. Average in-patient length of stay (based on division of nursing or level of care) has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
20. In-patient intensity of illness has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
21. Unplanned readmission within 30 days of discharge has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
22. Patient satisfaction with nursing care has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
23. Total number of falls per admission has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
24. Medication error rate has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
25. Completeness of medical records documentation has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
26. Patients' perceptions that there are not enough RNs available to provide direct care has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____

27. Elimination of nursing executive positions has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
28. Availability of time for staff nurses to provide basic nursing care has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
29. Opportunity for staff nurses to deliver quality of care that meets their professional standards has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
30. Patient and family complaints have . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____

Medical Health Care Delivery Practices

*Please circle the response that best represents your perception of the following medical care delivery practice statements as a result of **managed care** implementation in your environment.*

31. Ability to utilize treatment services from inpatient - acute care facilities (e.g., hospitals) has . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
32. Ability to utilize treatment services from inpatient - sub-acute care facilities (e.g., nursing homes) has . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
33. Ability to utilize treatment services from ambulatory care – generalists (primary care practitioners) has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
34. Ability to utilize treatment services from ambulatory care – specialists has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____
35. Ability to utilize treatment services from emergency service (hospital-based) has . . .
 Significantly Decreased Decreased Not Changed Increased Significantly Increased N/A
 Comment: _____

36. Ability to utilize treatment services from emergency service (urgi-center-based) has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
37. Ability to utilize inpatient and outpatient ancillary therapies such as occupational and physical, speech, and respiratory therapies has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
38. Ability to utilize psychiatric/behavioral health care has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
39. Ability to utilize surgical reconstruction has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
40. Ability to utilize/order prostheses has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
41. Ability to utilize work therapy (e.g., work hardening, endurance enhancing, etc.) has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
42. Ability to utilize home care for disability limitation purposes such as intravenous therapy has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
43. Ability to utilize home care for rehabilitative purposes such as activities of daily living training has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____
44. Ability to utilize convalescent care (e.g., temporary stay in a skilled nursing facility after a major procedure or illness) has . . .
 Significantly Decreased Not Changed Increased Significantly N/A
 Decreased Increased
 Comment: _____

45. Ability to utilize selective placement (e.g., adult day care and personal services for activities of daily living) has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

Comment: _____

46. Ability to utilize sheltered colony (e.g., institutional and non-institutional assisted living with board and general care) has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

Comment: _____

47. Ability to utilize general supportive services such as delivered meals, equipment, transportation, housekeeping, and structural home changes has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

Comment: _____

48. Ability to utilize community-based treatment services such as senior citizen and health education programs has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased	N/A
----------------------------	-----------	-------------	-----------	----------------------------	-----

Comment: _____

Your feedback is valuable. Please list any other comments you care to offer.

APPENDIX D

Managed Care Perceptions Inventory: Demographics Section (MCPI-D)

Managed Care Perceptions Inventory: Demographics Section

Question	Response
1. What is your title in the organization?	
2. What is your role in the organization?	
3. What is your <i>primary</i> professional background (i.e., how you currently spend more than 50% of your time)?	Circle one: • Physician • Nurse Practitioner • Nursing Administration • Health Care Administration • Managed Care Administrator/Director responsible for managed care contracting/management • Other (please list):
4. Please indicate what you consider your <i>primary</i> place of employment. Please further describe your organization as applicable.	Circle one type of organization: • Corporate office of a multi-hospital system • Acute care facility (hospital) • Ambulatory care facility (hospital-based clinic) • Physician practice clinic—primary care physician(PCP) • Physician practice clinic—specialty care • Physician practice clinic—both PCP and Specialty • Other (please list): Licensed beds: _____ Average daily census: _____ Average daily office/clinic visits: _____ Average daily surgeries/procedures: _____ Other comments:
5. How many years have you been in your current position?	_____ years

Question	Response
6. How many years have you been in health care administration and/or health care practice?	Health care administration _____ years Health care practice _____ years
7. What is your age?	_____ years
8. What is your gender?	Circle one: • Male • Female
9. In terms of managed care penetration in your area, what would you say is the approximate percent of HMO market penetration?	List percent or mark/check unknown: _____ % _____ Unknown
10. How would you characterize your organization, <i>primarily</i> not-for profit or <i>primarily</i> for-profit?	Circle one: • Not-for-Profit Defined as an organization that is organized and operated exclusively for the public benefit. A not-for-profit organization is generally governed by a self-perpetuating community board and "owned" by the community it serves. It also has a tax-exempt status known as a 501(c)(3) U.S. Treasury Code specifying that none of the earnings of the organization may inure to any private shareholder or individual. • For-Profit Defined as an organization that is not organized and operated exclusively for public benefit. A for-profit organization has owners, who can benefit from the financial returns of operations and sales. • Other (please list): _____

Question	Response
11. Knowledge of managed care concepts must be assessed for study purposes. Please circle the value that is most representative of your knowledge level for these managed care concepts. Use the rating values below. 1 = No knowledge 2 = A little knowledge 3 = Moderate knowledge 4 = A great deal of knowledge	Managed care market stage such as HMO penetration, stages of consolidation, etc. (circle one) 1 2 3 4 Managed care payment models such as capitation, discounted fee-for-service, risk pools, etc. (circle one) 1 2 3 4 Clinical outcomes monitoring such as patient satisfaction, patient functional status, disease management, etc. (circle one) 1 2 3 4
12. Role in contractual managed care decision making must be assessed for study purposes. Please circle the statement that is most representative of your level of involvement in contractual managed care decision making.	Circle one: • Not involved at all • Asked to provide input for implementation <i>after</i> contract has been signed • Asked to provide input for general decision making <i>during</i> contract discussions • Responsible for providing primary input and ultimate decision making.
13. As a participant you are entitled to a summary of study results. Please indicate your desire to receive a summary.	Circle one: • Yes, please send me a summary of results • No, I am not interested in a summary of results

APPENDIX E

Moseley and Grimes Decision Making Centralization Assessment

Moseley and Grimes Decision Making Centralization Assessment

We are interested in determining at what level various kinds of decisions are made in your organization. Please indicate if the following decisions ultimately would be made by the supervisor, department head, administrator, the board of directors, or an agency outside of the organization (government, mother house, corporate headquarters, etc.).

Indicate your ONE selection by an "X" within the appropriate box (please avoid placing your "X" on the line between boxes and mark ONLY ONE box).

NOTE: For these purposes a "supervisor" is someone who spends more than 50% of work time managing other staff and the overall department work effort, in addition to their own duties.

Decision to Be Made	Super- visor	Dept. Head	Dept. Head/ Admin.	Admin.	Admin/ Board	Board	Outside Agency
1. Total number of supervisors your hospital or clinic can employ							
2. Hiring of supervisory staff from outside the organization (external recruitment)							
3. Promotion of supervisory staff; salaries of supervisory staff							
4. To dismiss a supervisor							
5. To institute forms of treatment or services not previously provided at the hospital or clinic (for example, to add maternity patients to patient type treated)							
6. Price for hospital or clinic services							
7. What type, or what brand, of equipment is to be purchased							
8. What shall be costed (what costing system, if any, should be applied)							
9. What laboratory tests will be provided by the hospital or clinic							
10. Overtime to be worked by non-supervisory personnel							
11. Salaries/wages of non-supervisory personnel							
12. Selection of non-supervisory workers							

Decision to Be Made	Super- visor	Dept. Head	Dept. Head/ Admin.	Admin.	Admin/ Board	Board	Outside Agency
13. Promotion of non-supervisory workers							
14. Approval of sick leave or absence							
15. Which suppliers of materials to be used							
16. Buying procedures (what procedure is to be followed when buying materials, etc.)							
17. Training methods to be used (how training shall be done)							
18. To determine staff benefits (pensions, etc.)							
19. To spend unbudgeted or unallocated money on capital items costing \$1,000 (using money not previously ear-marked for a particular purpose for what would be classified as a capital expenditure)							
20. To spend unbudgeted or unallocated money not previously ear-marked for what would be classified as a current expenditure							
21. To alter responsibilities/area of work of line (non-staff) departments							
22. To create a new department (staff or line)							
23. To create a new job (staff or line, of any status, probably signified by a new job title)							
24. Methods or techniques to complete a task							
25. Assignment of jobs to non-supervisory personnel; size of non-supervisory staff							

PLEASE ENTER TIME YOU ARE ENDING INSTRUMENT COMPLETION: _____

APPENDIX F

Sources for Preliminary Instrument

Construct: Health Care Delivery Practices

Concept: Nursing Care (Acute care setting) ¹					
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care-related Perception
Staffing statistics	Actual worked hours per patient [Nursing Hours]	Total direct hours actually staffed (note: does not include benefit, orientation or education hours)	1	Lowe (1997). <i>Nursing Management</i> , November	Decreased total direct hours actually staffed, may impact patient care and availability of nursing staff.
Staffing statistics	Percentage of nursing by licensure type [Skill Mix]	- RN percentage of total staff; - LPN percentage of total staff; - Unlicensed worker percentage of total staff	2 3 4	Lowe (1997). <i>Nursing Management</i> , November	Decreased mix of licensed to unlicensed workers staffed, may impact patient care and availability of nursing staff.
Staffing statistics	Education preparation of staff	- Percentage of staff as clinical leaders (career ladder program); - Percentage distribution of educational preparation (e.g., MSN, BSN, AD, etc.)	5 6 7 8	Lowe (1997). <i>Nursing Management</i> , November	Decreased educational level of nursing staff, may impact patient care and availability of nursing staff.
Staffing statistics	Nurse satisfaction percentage [Nurse Satisfaction]	Based upon an annual survey and reported by division of nursing	9	Lowe (1997). <i>Nursing Management</i> , November	Decreased nurse satisfaction, may impact patient care and availability of nursing staff.
Staffing statistics	Activity ratios (measure demand for RNs by area)	Total admissions, discharges, transfers in and out of an area, then divide by the midnight census (the higher the percentage, the higher the demand for RN's in staffing)	10 11	Lowe (1997). <i>Nursing Management</i> , November	Increased demand for RNs to assess, plan and coordinate patient care, may impact patient care and availability of nursing staff.
Staffing statistics	Risk-management indicators	- Blood/body fluid exposure; - Sharps exposures	12	Lowe (1997). <i>Nursing Management</i> , November	Increased risk management events, may impact patient care and availability of nursing staff.
Staffing costs	Salary cost/patient (unit of service)	Total salary cost per department divided by patient units (overtime and agency costs are included; reflects daily costs for staffing per	13	Lowe (1997). <i>Nursing Management</i> , November	Decreased salary cost per patient, reflects an impact in the cost of providing patient care.

¹ Bracketed terms represent the American Nurses Association (ANA) 1996 report card quality indicators

Concept: Nursing Care (Acute care setting) ¹					
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care-related Perception
		unit of service)			
Staffing costs	Benefits as a percentage of salaries ²	<i>Total benefits costs per total salary costs</i> (note: reflects tenure of staff and/or use of part-time/per diem staff)	14	Lowe (1997). <i>Nursing Management</i> , November	Decreased benefits cost, reflect an impact in the cost of providing patient care.
			15		
Staffing costs	Average hourly rate	Total productive salary costs divided by total productive hours (excluding agency)	16	Lowe (1997). <i>Nursing Management</i> , November	Decreased average hourly rate, reflects an impact in the cost of providing patient care.
			17		
			18		
Staffing costs	Agency statistics	- Total agency fees as a percent of total nursing paid hours - Average agency hourly rate (agency fees divided by agency hours)	19	Lowe (1997). <i>Nursing Management</i> , November	Decreased average hourly rate, reflects an impact in the cost of providing patient care.
			20		
Staffing costs	Employee statistics	- Absenteeism rate (call off) hours -- paid for unscheduled sick or benefit time - Vacancy rate (licensed staff) -- ratio of vacant positions to total positions - Turnover rate (licensed staff) -- ratio of terminated FTE's to total FTE's	21	Lowe (1997). <i>Nursing Management</i> , November	Increased absenteeism, vacancy rates, and turnover rates, reflects an impact in the cost of providing patient care..
			22		
			23		
			24		
			25		
			26		
Patient outcomes	Average length of stay	Total patient days divided by patient admissions and accounting for outpatient admissions (calculated based on division of nursing or level of patient care)	27	Lowe (1997). <i>Nursing Management</i> , November	Decreased average length of stay, reflects the impact on how nursing care affects patients and their conditions.
Patient outcomes	Case mix index	- Reflects Medicare acuity measures - Reflects chart documentation of patient conditions - Reflects complete documentation of care provided	28	Lowe (1997). <i>Nursing Management</i> , November	Increased case mix index, reflects the impact on how nursing care affects patients and their conditions.

² Italics indicate paraphrasing of primary source

Concept: Nursing Care (Acute care setting) ¹					
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care-related Perception
Patient outcomes	Unplanned readmission	Unplanned readmission with 30 days of discharge	29	Lowe (1997). <i>Nursing Management</i> , November	Increased unplanned re-admissions , reflects the impact on how nursing care affects patients and their conditions.
Patient outcomes	Patient satisfaction [Patient satisfaction w/ nursing care] ³	- Measure response reported quarterly by division of nursing - Satisfaction measure is "nursing care"	30	Lowe (1997). <i>Nursing Management</i> , November	Decreased patient satisfaction with nursing care , reflects the impact on how nursing care affects patients and their conditions.
Patient outcomes	Mortality rates	Measures rate of unexpected deaths as a percent of admissions	31	Lowe (1997). <i>Nursing Management</i> , November	Increased mortality rates , reflects the impact on how nursing care affects patients and their conditions.
Quality indicators	Patient falls [Patient Falls]	- Total number of falls - Number of falls resulting in injury - Number of falls without injury	32 33	Lowe (1997). <i>Nursing Management</i> , November Shindul-Rothschild (1997). <i>American Journal of Nursing</i> 1996 Patient Care Survey, p. 40	Increased patient fall rates , reflects the impact on how the nature, amount, and quality of nursing care affects patients and their conditions.
Quality indicators	Skin ulcer prevalence [Skin Integrity]	Percentage of pressure ulcers (by classification) divided by total patients per division of nursing	34	Lowe (1997). <i>Nursing Management</i> , November Shindul-Rothschild (1997). <i>American Journal of Nursing</i>	Increased pressure ulcer rates , reflects the impact on how the nature, amount, and quality of nursing care affects patients and their conditions.

³ ANA 1996 report care quality indicators also include patient satisfaction with pain management, patient education and overall care.

Concept: Nursing Care (Acute care setting) ¹					
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care-related Perception
				1996 Patient Care Survey, p. 40	
Quality indicators	Infection-control indicators [Nosocomial Infection]	• Ventilator-related pneumonia • CVC (<i>central venous catheter</i>) line infections • Surgical site infection (inpatient, outpatient) • Nosocomial infections by nursing division	35 36	Lowe (1997). <i>Nursing Management</i> , November Shindul-Rothschild (1997). <i>American Journal of Nursing</i> 1996 Patient Care Survey, p. 40	Increased infection rates, reflects the impact on how the nature, amount, and quality of nursing care affects patients and their conditions.
Quality indicators	Medication errors	• Total drugs dispensed • Overall error rate • Classification of errors (I, II, III)	37	Lowe (1997). <i>Nursing Management</i> , November Shindul-Rothschild (1997). <i>American Journal of Nursing</i> Patient Care Survey, p. 40.	Increased medication error rates, reflects the impact on how the nature, amount, and quality of nursing care affects patients and their conditions.
Quality indicators	Documentation compliance percent	• Audit of completeness of records based on regulatory guidelines	38	Lowe (1997). <i>Nursing Management</i> , November	Decreased completeness of medical records, reflects the impact on how the nature, amount, and quality of nursing care affects patients and their conditions.
Quality of Patient Care Structure	Reduction in RN's	• Perception that fewer RN's were available to provide direct patient care	39	Shindul-Rothschild (1997). <i>American Journal of Nursing</i> 1996 Patient Care Survey, p. 37	Having fewer RNs available to provide direct patient care, reflects how RNs perceive the quality of patient care at their facility.
Quality of Patient	Loss of RN executive	• Report of a loss at the nursing	40	Shindul-Rothschild	Loss of the nursing executive

Concept: Nursing Care (Acute care setting) ¹					
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care-related Perception
Care Structure	without replacement	executive position in the last year that has not been filled		(1997). <i>American Journal of Nursing</i> 1996 Patient Care Survey, p. 38	position without replacement, reflects how RNs perceive the quality of patient care at their facility.
Quality of Patient Care Process	Time to provide basic nursing care	Perception that they have less time to provide basic nursing care	41	Shindul-Rothschild (1997). <i>American Journal of Nursing</i> 1996 Patient Care Survey, p. 38	Having less time to provide basic nursing care, reflects how RNs perceive the quality of patient care at their facility.
Quality of Patient Care Process	Ability to uphold professional standards	Perception that quality of care did not meet their professional standards	42	Shindul-Rothschild (1997). <i>American Journal of Nursing</i> 1996 Patient Care Survey, p. 38	Providing quality of care that did not meet their professional standards, reflects how RNs perceive the quality of patient care at their facility.
Quality of Patient Care Outcomes	Patient and family complaints	Perception that patient and family complaints had risen in the previous year	43	Shindul-Rothschild (1997). <i>American Journal of Nursing</i> 1996 Patient Care Survey, p. 39	Having an increase in patient and family complaints, reflects how RNs perceive the quality of patient care at their facility.

Concept: Medical Care					
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care Perception
Signs and Symptoms	Diagnosis	- Ability to employ case findings measures such as individual and mass screening surveys - Ability to employ selective examinations	44 45	Leavell (1965). <i>Preventive Medicine for the Doctor in his Community: An Epidemiological Approach</i> , 3rd ed., p 20-21.	

Concept: Medical Care					
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care Perception
				Lelyveld, J. (1997), Consumers and managed care, <i>The New York Times</i>, p. 1. Rauber, C. (1998), <i>Modern Healthcare</i>, October, p. 36. Halm, (1997). Is gatekeeping better than traditional care?, <i>Journal of the American Medical Association</i>, p. 1681.	Ability for physicians to appropriately diagnose patient conditions has been challenged by the increased amount of paperwork and cost limits. Managed care companies continue to face pressure in the marketplace to offer greater access to physicians and fewer restrictions on consumer choice. Of the 330 physicians surveyed, 202 (61%) responded. Physician ratings on the effects of gate-keeping on 21 aspects of care. They felt that gate-keeping increased paperwork and telephone calls and negatively affected the overall quality of care, access to specialists, ability to order expensive tests and procedures, freedom in clinical decisions, time spend with patients, physician-patient relationships, and appropriated use of hospitalizations and laboratory tests ($p < .001$).
Illness	Treatment	• Ability to cure the disease processes • Ability to employ treatment services from: • inpatient - acute care • inpatient - subacute care • ambulatory care – generalist • ambulatory care – specialist	46 47 48 49 50 51 52 53	Leavell (1965). <i>Preventive Medicine for the Doctor in his Community: An Epidemiological Approach</i>, 3rd ed., p 20-21; Lawthers (1997).	

Concept: Medical Care					
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care Perception
		• home and community setting • emergency service (hospital-based) • emergency service (urgicenter-based) • Ability to employ adequate treatment to arrest the disease process • Ability to prevent the spread of communicable diseases	54 55	CONQUEST: In Search of a Few Good Performance Measures, p. 142. In Seltzer and Nash, Eds., <i>Models for Measuring Quality in Managed Care: Analysis and Impact</i>. Matisoff-Li, A. (1999). HMOs face profit losses and tight finances, <i>Health Week</i>, 4(9), p. 9-10. Rauber, C. (1998), <i>Modern Healthcare</i>, October, p. 36.	There is a sense by consumers that HMOs are tying to limit services and consolidate the number of procedures allowed.
Disability and Defect	Disability Limitation	• Ability to employ adequate treatment to prevent further complications and sequelae • Ability to employ convalescent care • Ability to employ psychiatric care • Ability to employ home care for disability limitation purposes, such as intravenous therapy • Ability to employ surgical reconstruction • Ability to employ prostheses	56 57 58 59 60 61	Leavell (1965). <i>Preventive Medicine for the Doctor in his Community: An Epidemiological Approach</i>, 3rd ed., p 20-21, 272-273. Matisoff-Li, A. (1999). HMOs face profit losses and tight finances, <i>Health Week</i>, 4(9), p. 9-10.	There is a sense by consumers that HMOs are tying to limit services and consolidate the number of procedure allowed.

Concept: Medical Care						
Attribute Category	Attribute	Empirical Indicator	Item #	Source	Implied Managed Care Perception	
				Rauber, C. (1998), <u>Modern Healthcare</u> , October, p. 36.		
Chronic State	Rehabilitation	Ability to employ hospital and community facilities to retrain and educate for maximum use of remaining capacities	62	Leavell (1965). <i>Preventive Medicine for the Doctor in his Community: An Epidemiological Approach</i> , 3rd ed., p 20-21, 272-273.	There is a sense by consumers that HMOs are trying to limit services and consolidate the number of procedure allowed.	
		Ability to employ as full employment capacity as possible	63			
		Ability to employ selective placement, e.g., adult day care, personal services for activities of daily living	65			
		Ability to employ work therapy in hospitals	64			
		Ability to employ sheltered colony, e.g., institutional and non-institutional skilled nursing care, assisted living with board and care	66			
		Ability to employ inpatient and outpatient occupational and physical, speech, and respiratory therapies	67			
		Ability to employ home care for rehabilitative purposes such as activities of daily living training	68			
		Ability to employ delivered meals, equipment, transportation, housekeeping, structural changes, hemodialysis, etc.	69			

Concept: Health Care Delivery from the Patient's Perspective					
Attribute Category	Attribute	Empirical Indicator	Item#	Source	
Patient Satisfaction with Health Plan	Overall Quality	• Access to care • Doctor availability • Extent of coverage • Information, customer service, paperwork • Percent who would recommend the plan if cost were not a concern • How quickly member can contact a customer service representative	74	The Center for the Study of Services (1995). <i>Consumers CHECKBOOK</i>, p. 22, - 23. Annas, G. (1998), Patients' rights in managed care -- Exit, voice, and choice, <i>The New England Journal of Medicine</i> Drawbaugh, K, (1998), Backlash against HMOs challenges U.S. health care, <i>Reuters [Online]</i>. Available: http://pointcastnetwork.com	The backlash against managed care, however, provides an opportunity to develop meaningful options for patients. In this regard, the questions of dispute resolution, grievance mechanisms, and appeals procedures have recently taken on urgency in the courtroom, as well as in proposals for legislative reform at the state and federal levels. Half the 1,200 Americans surveyed earlier in 1998, by Kaiser Family Foundation, said they personally, or someone they knew had problems with HMOs of the sort targeted by dozens of bills in Congress and state legislatures.
Patient Satisfaction with Health Plan	Access to Services	• Advice by phone • Getting appointment when sick • Getting appointment for checkup • Wait time in doctor's office • Access to specialty care	70	The Center for the Study of Services (1995). <i>Consumers CHECKBOOK</i> , p. 22, - 23.	

Concept: Health Care Delivery from the Patient's Perspective					
Attribute Category	Attribute	Empirical Indicator	Item#	Source	
				Pear (1998), Americans lacking health insurance put at 16 percent, <i>The New York Times</i> .	After rising slightly more than one million a year, on the average, in the last decade, the number of uninsured population rose by 1.7 million last year. This was the largest increase since 1992.
Patient Satisfaction with Health Plan	Quality of Care	• Thoroughness, carefulness, competency of care • Follow-through on care • Coordination of member care • Listening to member • Providing an explanation of care • Involving member in care decisions • Personal interest in member • Amount of time member has with doctor • Results of care • Advice on prevention	72 71 73	The Center for the Study of Services (1995). <i>Consumers CHECKBOOK</i>, p. 22, - 23. Kertesz, L. (1997). Reporting on HMO quality: Plans receive high marks, but performance varies widely, <i>Modern Health Care</i>, p. 34.	Key findings of the NCQA's report on managed care quality 1. HMOs vary greatly in preventive care, treatment of chronic illness and enrollee satisfaction. 2. If all plans performed at the level of the best plans, the overall health of Americans would improve. 3. Enrollees are satisfied overall with the care they receive but have complaints about service. 4. Managed care plans perform as well or better than fee-for-service plans in specific areas measured, but no overall quality comparison can yet be made.
Patient Satisfaction with Health Plan	Choice of Care	• Choice of primary care doctor • Information to help member choose a doctor • Choice of specialist • Choice of nurse practitioner		The Center for the Study of Services (1995). <i>Consumers CHECKBOOK</i> , p. 22, - 23.	Americans are telling pollsters that

Concept: Health Care Delivery from the Patient's Perspective					
Attribute Category	Attribute	Empirical Indicator	Item#	Source	
				Gardner, J. (1998). Dueling for public support: Americans go gunning for managed care plans as they stand by their docs, <i>Modern Health Care</i> , p. 30.	they are afraid HMOs will not give them what they paid for, but that their doctors will fight to make sure managed care plans give them what they need.

Concept: Information Decision Making Needs				
Attribute Category	Attribute	Empirical Indicator	Item#	Source
Decision Making	Coordination of care	• Degree of fragmentation of care	75	Tietze (1998). Preliminary Exploratory Study.
Decision Making	Relationships	• Degree of adversarial relationships	76	Tietze (1998). Preliminary Exploratory Study.
Decision Making	Financial Aspect	• Need for financial analysis	77	Tietze (1998). Preliminary Exploratory Study.
Decision Making	Financial Aspect	• Need for cost control	78	Tietze (1998). Preliminary Exploratory Study.
Decision Making	Information dissemination	• Need to teach, inform, and discuss why resources are being diminished	79	Tietze (1998). Preliminary Exploratory Study.

APPENDIX G

Overall Health Care Professional Frequency Distribution per MCPI Item Option

**Overall Health Care Professional Frequency
Distribution Per MCPI Item Option**

Nursing Care Delivery

- | | | | | | |
|---|----------------------------|--------------|--------------|--------------|----------------------------|
| 1. Actual worked nursing hours (total direct hours staffed) have . . . | Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| | 4.1% | <u>34.2%</u> | 28.8% | 24.0% | 8.9% |
| 2. RN percentage of total nursing staff has . . . | Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| | 7.5% | 30.8% | <u>39.0%</u> | 21.1% | 1.4% |
| 3. LPN or LVN percentage of total nursing staff has . . . | Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| | 3.4% | 22.6% | <u>43.2%</u> | 28.1% | 2.7% |
| 4. Unlicensed worker percentage of total nursing staff has . . . | Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| | 0.0% | 13.7% | 37.7% | <u>40.4%</u> | 8.2% |
| 5. MSN (Master's prepared nurses) percentage of total nursing staff has . . . | Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| | 0.7% | 21.2% | <u>61.6%</u> | 14.4% | 2.1% |
| 6. BSN (Bachelor's prepared nurses) percentage of total nursing staff has . . . | Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| | 0.7% | 15.8% | <u>60.3%</u> | 21.2% | 2.1% |
| 7. AD (2-year Associate degree prepared nurses) percentage of total nursing staff has . . . | Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| | 0.0% | 11.6% | <u>55.5%</u> | 30.8% | 2.1% |
| 8. Daily total number of admissions and discharges has . . . | Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| | 1.4% | 28.8% | 21.2% | <u>39.0%</u> | 9.6% |

9. Daily total number of transfers in and out of a given area/unit has . . .
- | | | | | |
|-------------------------|-----------|-------------|--------------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 0.0% | 6.8% | 32.9% | <u>50.7%</u> | 9.6% |
10. Incidents of accidental exposure to sharps (e.g., needle sticks) have . . .
- | | | | | |
|-------------------------|-----------|--------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 1.4% | 25.3% | <u>54.1%</u> | 17.8% | 1.4% |
11. Total nursing salary cost per patient day, or unit of service (overtime and agency costs included) has . .
- | | | | | |
|-------------------------|-----------|-------------|--------------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 0.0% | 15.1% | 21.9% | <u>50.7%</u> | 12.3% |
12. Average hourly rate for RNs (excluding agency) has . . .
- | | | | | |
|-------------------------|-----------|-------------|--------------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 0.0% | 6.8% | 29.5% | <u>56.2%</u> | 7.5% |
13. Average hourly rate for LPNs or LVNs (excluding agency) has . . .
- | | | | | |
|-------------------------|-----------|-------------|--------------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 0.0% | 3.4% | 46.6% | <u>49.3%</u> | 0.7% |
14. Percentage of outside nursing agency fees as a percent of total nursing paid hours has . . .
- | | | | | |
|-------------------------|-----------|-------------|--------------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 3.4% | 7.5% | 30.8% | <u>48.6%</u> | 9.6% |
15. RN vacancy rate has . . .
- | | | | | |
|-------------------------|-----------|-------------|--------------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 0.0% | 2.7% | 27.4% | <u>57.5%</u> | 12.3% |
16. Unlicensed worker vacancy rate has . . .
- | | | | | |
|-------------------------|-----------|--------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 0.0% | 8.2% | <u>45.2%</u> | 43.2% | 3.4% |
17. RN turnover rate has . . .
- | | | | | |
|-------------------------|-----------|-------------|--------------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 0.0% | 2.7% | 32.9% | <u>54.8%</u> | 9.6% |

18. Unlicensed worker turnover rate has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	0.0%	2.1%	46.6%	<u>47.3%</u>	4.1%
19. Average in-patient length of stay (based on division of nursing or level of care) has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	9.6%	<u>67.1%</u>	16.4%	6.8%	0.0%
20. In-patient intensity of illness has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	0.0%	0.0%	14.4%	<u>62.3%</u>	23.3%
21. Unplanned readmission within 30 days of discharge has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	0.0%	6.2%	<u>53.4%</u>	38.4%	2.1%
22. Patient satisfaction with nursing care has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	7.5%	<u>44.5%</u>	34.9%	11.6%	1.4%
23. Total number of falls per admission has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	0.7%	9.6%	<u>62.3%</u>	27.4%	0.0%
24. Medication error rate has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	0.7%	4.1%	<u>62.3%</u>	32.2%	0.7%
25. Completeness of medical records documentation has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	4.1%	<u>43.8%</u>	32.9%	18.5%	0.7%
26. Patients' perceptions that there are not enough RNs available to provide direct care has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	0.7%	2.7%	28.1%	<u>50.0%</u>	18.5%
27. Elimination of nursing executive positions has . . .	Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
	0.7%	13.0%	<u>51.4%</u>	32.9%	2.1%

28. Availability of time for staff nurses to provide basic nursing care has . . .
- | | | | | |
|----------------------------|--------------|-------------|-----------|----------------------------|
| Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| 10.3% | <u>64.4%</u> | 24.7% | 0.7% | 0.0% |
29. Opportunity for staff nurses to deliver quality of care that meets their professional standards has . . .
- | | | | | |
|----------------------------|--------------|-------------|-----------|----------------------------|
| Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| 6.8% | <u>56.8%</u> | 32.2% | 4.1% | 0.0% |
30. Patient and family complaints have . . .
- | | | | | |
|----------------------------|-----------|-------------|--------------|----------------------------|
| Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| 0.7% | 6.8% | 34.2% | <u>52.1%</u> | 6.2% |

Medical Health Care Delivery Practices

31. Ability to utilize treatment services from inpatient - acute care facilities (e.g., hospitals) has . . .
- | | | | | |
|----------------------------|--------------|-------------|-----------|----------------------------|
| Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| 6.8% | <u>48.6%</u> | 34.2% | 9.6% | 0.7% |
32. Ability to utilize treatment services from inpatient - sub-acute care facilities (e.g., nursing homes) has . . .
- | | | | | |
|----------------------------|--------------|-------------|-----------|----------------------------|
| Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| 6.2% | <u>39.7%</u> | 32.9% | 20.5% | 0.7% |
33. Ability to utilize treatment services from ambulatory care – generalists (primary care practitioners) has . . .
- | | | | | |
|----------------------------|-----------|-------------|--------------|----------------------------|
| Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| 2.7% | 22.6% | 32.2% | <u>38.4%</u> | 4.1% |
34. Ability to utilize treatment services from ambulatory care – specialists has . . .
- | | | | | |
|----------------------------|--------------|-------------|-----------|----------------------------|
| Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| 6.2% | <u>39.0%</u> | 33.6% | 20.5% | 0.7% |
35. Ability to utilize treatment services from emergency service (hospital-based) has . . .
- | | | | | |
|----------------------------|-----------|--------------|-----------|----------------------------|
| Significantly
Decreased | Decreased | Not Changed | Increased | Significantly
Increased |
| 1.4% | 27.4% | <u>46.6%</u> | 20.5% | 4.1% |

36. Ability to utilize treatment services from emergency service (urgi-center-based) has . . .
- | | | | | |
|-------------------------|-----------|--------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 1.4% | 19.2% | <u>45.9%</u> | 29.5% | 4.1% |
37. Ability to utilize inpatient and outpatient ancillary therapies such as occupational and physical, speech, and respiratory therapies has . . .
- | | | | | |
|-------------------------|--------------|-------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 6.2% | <u>39.0%</u> | 28.8% | 26.0 | 0.0% |
38. Ability to utilize psychiatric/behavioral health care has . . .
- | | | | | |
|-------------------------|--------------|-------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 18.5% | <u>36.3%</u> | 32.9% | 11.6% | 0.7% |
39. Ability to utilize surgical reconstruction has . . .
- | | | | | |
|-------------------------|-----------|--------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 6.8% | 39.7% | <u>44.5%</u> | 8.9% | 0.0% |
40. Ability to utilize/order prostheses has . . .
- | | | | | |
|-------------------------|-----------|--------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 3.4% | 25.3% | <u>63.0%</u> | 8.2% | 0.0% |
41. Ability to utilize work therapy (e.g., work hardening, endurance enhancing, etc.) has . . .
- | | | | | |
|-------------------------|-----------|--------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 5.6% | 28.8% | <u>48.6%</u> | 17.1% | 0.0% |
42. Ability to utilize home care for disability limitation purposes such as intravenous therapy has . . .
- | | | | | |
|-------------------------|--------------|-------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 4.8% | <u>36.3%</u> | 24.0% | 30.8% | 4.1% |
43. Ability to utilize home care for rehabilitative purposes such as activities of daily living training has . . .
- | | | | | |
|-------------------------|--------------|-------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 10.3% | <u>37.0%</u> | 25.3% | 24.0% | 3.4% |
44. Ability to utilize convalescent care (e.g., temporary stay in a skilled nursing facility after a major procedure or illness) has . . .
- | | | | | |
|-------------------------|-----------|--------------|-----------|-------------------------|
| Significantly Decreased | Decreased | Not Changed | Increased | Significantly Increased |
| 7.5% | 28.8% | <u>33.6%</u> | 28.8% | 1.4% |

45. Ability to utilize selective placement (e.g., adult day care and personal services for activities of daily living) has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
9.6%	36.3%	<u>37.0%</u>	16.4%	0.7%

46. Ability to utilize sheltered colony (e.g., institutional and non-institutional assisted living with board and general care) has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
6.2%	27.4%	<u>51.4%</u>	14.4%	0.7%

47. Ability to utilize general supportive services such as delivered meals, equipment, transportation, housekeeping, and structural home changes has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
5.5%	32.2%	<u>47.9%</u>	14.4%	0.0%

48. Ability to utilize community-based treatment services such as senior citizen and health education programs has . . .

Significantly Decreased	Decreased	Not Changed	Increased	Significantly Increased
4.8%	24.7%	<u>49.3%</u>	20.5%	0.7%