

A MODEL OF FACTORS CONTRIBUTING TO HOSPITAL EMERGENCY DEPARTMENT USE FOR NON-URGENT HEALTH PROBLEMS

> Scholarly Project for the Degree of M. S. N. MICHIGAN STATE UNIVERSITY ANNE E. DIRKSE 1997

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A MODEL OF FACTORS CONTRIBUTING TO HOSPITAL EMERGENCY DEPARTMENT USE FOR NON-URGENT HEALTH PROBLEMS

By

Anne E. Dirkse

A SCHOLARLY PROJECT

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ABSTRACT

A MODEL OF FACTORS CONTRIBUTING TO HOSPITAL EMERGENCY DEPARTMENT USE FOR NON-URGENT HEALTH PROBLEMS

By

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Many factors contribute to the use of the Hospital Emergency Department (HED) for health care problems which could better be addressed in a primary care setting. Existing literature does not reveal a single model which identifies and links these variables together. In this project, the "Web of Causation" is the conceptual model used to analyze the use of the HED for non-urgent health problems. This model was selected because of its ability to visually depict the relationships between the contributing factors which influence the use of the HED for non-urgent health problems. The result of its application is the Dirkse Model. Implications for the Advanced Practice Nurse (APN) are presented. Discussion focuses on areas of practice, education, and research for the APN.

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CHAPTER 1

INTRODUCTION

Annual visits to a hospital emergency department in the past ten years have increased by 22% (Young, Wagner, Kellermann, Ellis, & Bouley, 1996). While the hospital emergency departments exist not only to treat clients with life-threatening illnesses and injuries, they also serve clients with less serious conditions. Various authors (Andren & Rosenqvist, 1987; Mayefsky, El-Shinaway, & Kelleher, 1991; Hansagi, Carlsson, & Brismar, 1992; Young et al., 1996) report that 40% to 60% of all Hospital Emergency Department (HED) clients who receive care could be treated in a primary care setting. Concern about the use of the HED as a source of care for non-urgent health problems is well-warranted. This concern is an indicator of the current health care system problem of access to appropriate primary care services. The HED has become a "dumping site" for many clients who do not have access to a regular source of primary care. Since HED visits generate higher charges than comparable visits to physicians in clinics and offices, the inappropriate use of the HED has been cited as one of the contributing factors in the increasing cost of health care. Furthermore, care in the HED is also typically fragmented and lacks continuity (Institute of Medicine [IOM], 1993).

The reasons contributing to the inappropriate utilization of the HED are multiple in nature and few sources agree on the direct causes. Many studies retrospectively determine which visits are "appropriate" by reviewing charts and correlating the frequency of "inappropriate" use with client socioeconomic class and the inability to access alternative sources of primary care (Haddy, Schmaler, & Epting, 1987; Shesser, Kirsch, Smith, & Hirsch, 1991). In other studies clients are interviewed at the time of presentation to the HED to determine the reasons for utilization (Baker, Stevens, & Brooks, 1994; Young et al., 1996). Many of these clients use the HED for its convenience, its twenty-four hour availability, and as a regular source of care. These and other factors contribute to create a complexity of factors which foster the inappropriate use of the HED for non-urgent health problems. By identifying the reasons for using the HED for non-urgent health problems, interventions can be developed which could improve quality of care and health care outcomes. Examples are improved equity of access to primary care services, care provided by appropriate sources, and care which is more cost-effective and of higher quality.

Statement of the Problem

The problem of the utilization of the HED by clients who have non-urgent health problems offers a complexity which has not been easily addressed by health care planners and experts. A study of the reasons contributing to the misuse of the HED can assist providers and policymakers in understanding the issues of access to health care as a whole.

One of the reasons a person uses the HED for non-urgent health problems is lack of access to appropriate primary care services. Thus, access to appropriate health care is a related issue of interest. The Institute of Medicine and the American Academy of Nursing have created committees to study the issues which contribute to problems with the United States health care system. The Commission of Health Care Policy of the American Academy of Nursing (1993) has summarized the issue of access to health care as financial problems, delivery system problems, and health care personnel problems (American Academy of Nursing [AAN], 1993). Both the IOM and the World Health Organization, in conjunction with the Year 2000 Health Objectives for the Nation (IOM, 1993), have developed indicators to monitor access to health care. In addition, the AAN and the IOM committees also identified barriers to health care. The efforts of these health organizations are helpful in understanding some of the factors which contribute to the inappropriate use of the HED, for both are concerned with problems of access to health care in the United States.

Purpose of the Project

The purpose of this project is to develop a conceptual model of factors identified in the literature which contribute to the use of the HED for non-urgent health problems. Existing literature supports the presence of a problem and of multiple factors contributing to the use of the HED for non-urgent health problems, but there is no model which identifies the major contributing variables nor one that attempts to link the variables together.

This project describes several general models in the literature which can be used to examine the health services system and which may be appropriate for the

current issue of interest. Based upon this review, the "Web of Causation" model was deemed the most appropriate conceptual model for the multiple factors contributing to the use of the HED for non-urgent health problems. Thus, this model was utilized to guide the development of the proposed model, the Dirkse Model for the Utilization of the HED for Non-Urgent Health Problems, which reflects the contributing factors and the relationships among the factors. It is proposed that the Dirkse Model can be used as a basis for interventions which may prevent the use of the HED for non-urgent health problems and may assist providers and policymakers.

CHAPTER 2

CONCEPTUAL FRAMEWORK

Definitions of the Concepts

Several concepts must be defined before a clear picture can be painted of the intricate relationship of the factors in the problem. The following phrases are defined for the purpose of this project: Hospital Emergency Department (HED), the client, primary care provider, non-urgent health problems, and primary care.

Hospital Emergency Department (HED). The HED is defined as a public or private hospital outpatient emergency room in which the primary use is for the treatment of life-threatening or acute injuries or illnesses. The HED does not include a medi-center for treatment of minor health problems. The providers of care in the HED are typically specialized emergency medical technicians, physicians, and registered nurses.

<u>Client.</u> The term is synonymous with patient; it is an individual who, as an outpatient, seeks care for a particular health concern.

<u>Primary care provider.</u> A primary care provider is a family physician, a pediatrician, an internist, a gynecologist, or an Advanced Practice Nurse (APN). One study (Aiken, Lewis, Craig, Mendenhall, Blendon, & Rogers, 1979) revealed that one of every five Americans receives continuing general health care from a specialist

physician. For the purposes of this study, a primary care provider is a physician or an APN who is specialized in family practice, pediatrics, women's health, or adult health. The primary care provider's goal is the attainment of primary health care, defined later in this section.

Non-urgent health problems. There is a wide range of variance when defining "non-urgent health problems." The variance lies in the perception of severity of illness between the consumer of health care and the provider of health care. A nonurgent health problem is determined "non-urgent" if it meets the criteria reflected in the guidelines of the American College of Emergency Physicians (Frey, Schmidt, Derksen, & Skipper, 1994), an accepted standard of measurement for determination of urgency of need. The non-urgent health problem is one that could be addressed in a primary care setting. Examples include upper respiratory infections, skin infections, rashes, or non-traumatic back pain. HEDs typically classify non-urgent health problems as presenting complaints which have been present for over seventy-two hours without any change in condition, and conditions in which delay of treatment would result in no ill effects (Frey et al., 1994). A complaint of chest pain or a traumatic injury such as a compound fracture which needs immediate attention is classified as urgent and thus appropriate to treat in the HED.

Primary care. Starfield (1992) differentiates between "primary care" and "primary health care" in the following: "primary care has as its goal conventional primary medical care striving to achieve the goal of primary health care" (p. 6). Collado (1992) and Starfield (1992) quote the Alma Ata definition of "primary health care" as:

Essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation, and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part, both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process. (Collado, 1992, p. 407)

In this project the concept "primary care" is used as an approach in which the outcome is "primary health care." "Primary care" refers to the process of care given by the primary care provider such as the APN. The APN's primary focus combines promotive and curative aspects of health care within the community (Collado, 1992), and therefore is a "natural ally and promoter of primary health care goals" (Collado, 1992, p. 412).

To further define "primary care" Starfield's (1992) conceptualization of "primary care" makes a significant contribution. She describes primary care as the delivery of first-contact medicine and the belief in the importance of longitudinal responsibility for the patient which exists regardless of the presence or absence of disease. According to Starfield (1992), primary care also includes the "integration of physical, psychological, and social aspects of health to the limits of the health

personnel's capabilities" (Starfield, 1992, p. 9). She continues with her primary care definition by distinguishing it from secondary care (consultative) and tertiary care (referral) by writing "primary care deals with more common and less well-defined problems, generally in community settings such as offices, health centers, schools, or homes" (Starfield, 1992, p. 4). This definition includes four dimensions of primary care, namely, first contact of care, longitudinal care, comprehensive care, and coordination of care.

The first dimension of primary care is <u>first contact of care</u>. Inherent in the organization of health services is the presence of a point of entry each time care is needed. This can be called the first contact of care. The health care provider in such a first contact is often referred to as a "gatekeeper." Intrinsic in the concept of a gatekeeper is the idea that there should be one health care provider who serves as the first contact of care for each health problem. There is also the belief that this provider should be a primary care physician, a pediatrician, or a mid-level provider such as an APN. The first contact of care also suggests that this contact is readily available to each client when needed. Availability of a provider to offer health care services when needed or to refer services to a proper alternative source of care encompasses some of the concepts of primary care accessibility.

The second dimension of primary care is that of <u>longitudinal care</u>. The attainment of primary health care, as the goal of primary care, suggests that one place, one individual, or a team of individuals serves as the source of care over a period of time (Starfield, 1992). Individuals should recognize the source of care as "theirs" and both the client and the provider should recognize the presence of a

relationship. This relationship encompasses the essence of longitudinal care, that over time the client comes to know the practitioner and vice versa and that in this relationship there are benefits. Many studies have shown that there clearly are benefits in health care when clients have a regular source of care (Starfield, 1992).

The third dimension of primary care is that of <u>comprehensive care</u> and implies a broad range of knowledge (Starfield, 1992). Although the purpose of primary care is to provide continuous and comprehensive care which includes the basic services, the provider may also be involved in secondary care or tertiary care by way of referral (Millis, 1977). Comprehensive care must also involve problem recognition, diagnosis, management, and reassessment (Starfield, 1992). Properly trained health care providers must be able to utilize these aspects of health care, and if not able to provide the treatment, must recognize the need for referral. Authorities (Millis, 1977; Starfield, 1992) agree that if done properly, comprehensive care promotes effective and quality health care.

The fourth dimension is that of <u>coordination of care</u>. Coordination of care is essential for the attainment of primary health care; it is the "glue" which enables the other three components to fulfill their potential. Coordination of care can be a challenge for the provider. The client may frequently make visits to other health care delivery sites or fail to follow through with needed referrals. Coordination of care suggests that the provider is willing or recognizes the need for outside services and that the client takes responsibility in the follow-through care which the provider advises or encourages. The phrase "care management" has been frequently used to

describe this attribute in recent years, and may eventually become synonymous with primary care provider coordination of care (Starfield, 1992).

These four dimensions of primary care—first contact of care, longitudinal care, comprehensive care, and coordination of care— are needed before one can establish that primary care has been realized by a client. While the four dimensions are present in primary care practices, they are in reality significantly diminished in the HED (AAN, 1993; Baker et al., 1994).

In summary, non-urgent health problems should be cared for in the primary care setting by primary care providers. The goal of this project is to better understand the factors which contribute to client use of the HED for non-urgent health problems. With the development of a conceptual model which depicts the contributing factors and their relationships, interventions which decrease client use of the HED for non-urgent health problems can be developed by primary care providers, including the APN.

Review of Existing Models

The literature review revealed one significant contributor and four existing models of health care utilization which are relevant to the problem of non-urgent use of the HED: the Andersen and Aday Model of health services (Andersen & Aday, 1978), the Starfield Model of the health services system (Starfield, 1992), the Institute of Medicine Model of access to personal health care services (IOM, 1993), and the "Web of Causation" model. However, the latter model was deemed most appropriate as the model of choice, and therefore formed the general approach for development of the proposed model for this project.

The American Academy of Nursing working paper. The first significant contributor to the proposed model is not a visual model but the American Academy of Nursing's (AAN) working paper, "Health Care Access Problems and Policy Recommendations" (1993). The AAN (1993) focuses on four access problems: vulnerable populations, financial access, health care delivery, and health care personnel. The AAN (1993) offers recommendations for each specific problem area in which APNs can improve equity in the access to primary care services. Some examples of the recommendations include: expand the supply of primary care providers in rural areas, identify and eliminate barriers to practice for APNs, increase reimbursement for APNs, and increase scholarships for minorities to encourage further education in nursing (AAN, 1993).

Behavioral Model of health care utilization. The earliest applicable visual model was developed by Andersen and Aday (1978); they have done extensive work related to access to health care services (see Figure 1). They propose a behavioral model of health care utilization to assess equity of access to medical care. Variables in this model are divided into predisposing variables, enabling variables, and illness variables. The model provided in Figure 1 is a diagram of intercorrelated variables which affect and predict health care utilization. This model has since been used by Parboosingh and Larsen (1987) in assessing factors which influence the frequency and appropriateness of utilization of the HED by the elderly.

The predisposing variables are described as those which are not easily changed, or "immutable." They include demographic and social structural variables



Figure 1. The adapted path diagram of variables in Andersen and Aday's (1978) general model of health services.

such as age, sex, living arrangements, marital status, education, and attitudes and beliefs about illness and medical care (Andersen & Aday, 1978).

The enabling variables include situational or individual characteristics that facilitate or impede utilization such as financial resources, availability and accessibility of services, and established patterns of utilization (Andersen & Aday, 1978). They are viewed as "mutable" and can be changed with interventions.

The third set of variables, "need of health care services," are determined by an individual's reported symptoms and his/her perceived health status. Andersen and Aday (1978) emphasize that these variables are often mediated by the enabling factors such as client income, insurance status, or provider per population ratio. They also attempt to determine whether access to medical care is equitable or inequitable by using predisposing, enabling, and illness variables. Although the behavioral model proposed by Andersen and Aday (1978) is not recent in development, there are important variables in the model which are related to this project's issue. The behavioral model, however, does not recognize mid-level providers as deliverers of care in the health care system.

The Starfield Model. A second conceptual model is work proposed by Starfield (1992); this visual model is a modification of Donabedian's model of Structure-Process-Outcome (Figure 2). Starfield developed the model to reflect the structure of the health services system. This model illustrates the interrelationships of the variables defined in Donabedian's model. It attempts to measure the attainment of primary health care through the four dimensions of primary care, that is, first contact of care, longitudinal care, comprehensive care, and coordinated care. Starfield's



Figure 2. The health services system (Starfield, 1992).

book, "Primary Care: Concept, Evaluation, and Policy," focuses on the discussion of primary care services. As seen in Figure 2, multiple structural characteristics have a two-way interaction with practitioners and clients. The outcome is reflected in various aspects of health status. The Starfield Model (1992) is a general model of the health services system, and not problem-specific.

Institute of Medicine. The third model was proposed by the Institute of Medicine (IOM) in 1993 as a project to develop a set of indicators to monitor access to health care services useful to policymakers (Figure 3). This model incorporates barriers to health care services (structural, financial, and personal) which affect the



BARRIERS

Figure 3. Model of access to personal health care services (IOM, 1993).

utilization of services. These barriers are affected by the mediators of appropriateness, efficacy of treatment, quality of providers, and client adherence. The combination of these variables results in outcomes of health status such as morbidity, mortality, and equity of services. Several of the barriers defined in the IOM model are problem specific in this project's proposed model.

The "Web of Causation" model. The fourth conceptual model, the "Web of Causation" or the "web," is rooted in multiple causation to explain the existence of health and illness states, and provides guiding principles for epidemiological practice (Spradley, 1990). The "web" allows one to visualize all the variables affecting a problem from early in the course of causation to the existing problem. With visualization of these factors, one can begin to develop interventions that can prevent development of the problem at the appropriate level of causation.

The "web" was first coined in the literature in 1960 by MacMahon (Krieger, 1994) in an epidemiological textbook. Prior to 1960 the belief that a single agent was responsible for a disease was beginning to lose credibility and was being replaced with more complex models of host, agent, and environment as causative factors of disease (Krieger, 1994). This belief originated with promoters of social medicine who argued in favor of examining the social determinants of disease (Krieger, 1994).

The metaphor of the "web" can be viewed as "an elegantly linked network of delicate strands, the multiple intersections representing specific risk factors or outcomes, and the strands symbolizing diverse causal pathways" (Krieger, 1994, p. 890). It encourages epidemiologists to look for multiple causes and multiple effects,

to consider interaction, and to identify the many routes by which disease and social issues can be analyzed and thus possibly prevented.

In this context the "web" is now being used more in nursing theory and specifically as a conceptual model in the study of disease causation and presenting social issues which contribute to health problems in community health nursing. Existing literature utilizes the "web" in the study of the multiple causations leading to myocardial infarction (in Spradley, 1990 and adapted from Friedman, 1988); in the study of pressure ulcer prevalence, incidence and associated risk factors in the community (Oot-Giromini, 1993); and in the study of contributing factors in pressure ulcers in spinal cord injuries (Lehman, 1995). Figure 4 is an example of the "web" model as applied to the issue of adolescent pregnancy (Clark, 1996).

The Proposed Model

Although each of the previously described potential models is applicable for this issue of interest, the "web" model is selected as the basis for understanding HED utilization for non-urgent health problems. The "web" is ideal for this issue; it illustrates the multiple, interrelated causality of factors which can be adapted to a particular problem. The variables in the proposed model, hereafter referred to as the Dirkse Model (DM), reflect the elements of the "web," and are based upon a review of literature concerning the non-urgent use of the HED as well as barriers which affect access to primary care services.

Since multiple variables contribute to and affect the use of the HED by people who have non-urgent health care needs, this issue can be dissected by using the "web" model to understand personal, socioeconomic, social, and behavioral aspects of the



Figure 4. The "Web of Causation" for adolescent pregnancy (Clark, 1996).

stated problem. The features of the "web" are problem-oriented, and therefore most appropriate for the use of the HED for non-urgent health problems.

The variables in the DM are visualized beginning at the top of the model with factors that affect the use of the HED before the problem exists. These variables have an impact on later factors which occur at a time when a client considers seeking care for a particular health problem. The factors which influence a client's decision to seek care are placed in the center of the DM. At the lower levels are the variables which occur at the time a client uses the HED. At the lowest level of the DM is the stated problem, that of utilization of the HED for non-urgent health problems (see Figure 5).



The Dirkse Model for the Utilization of the HED for Non-Urgent Health Problems. Figure 5.

CHAPTER 3

LITERATURE REVIEW

The literature review enabled the investigator to identify the variables in the DM. Figure 5 reflects these variables. The following description of factors corresponds to the placement of the factors in the DM sequentially, top left to bottom right. The initial factors, client demographics, client socioeconomic status, client health status, and community attitudes are reflected at the top of the DM.

Factors at the next level include attitudes and beliefs, no insurance or underinsured, presence of public aid, low formal education, the presence of health problems, the presence of psycho-social problems, and the lack of a regular provider. Continuing through the DM is illness perception by both the client and provider, client satisfaction with services, client knowledge of access to available services, and the five dimensions of access.

The last level in the DM prior to accessing care in the HED is the motivation to seek care, the ease of access to services, perceptions regarding the need for services, and the presence of a gatekeeper. These contribute to the decision of the client to access care in the HED and the acceptance of the client in the HED resulting in the use of the HED for non-urgent health problems.

Figure 5 also reflects horizontal and vertical relationships between factors. The presentations of the factors in the literature review parallel their introduction in the DM. Some of the literature cited is concerned with access to health care at an appropriate source and is directly related to the client's inability to access care at an appropriate source.

Variables in the DM at the Upper Level

Client demographics. For the purpose of this project, demographics includes culture, race, gender, geographic location, and age. Many sources (Purdie, Honigman, & Rosen, 1981; Thomas & Penchansky, 1984; Haddy, Schmaler, & Epting, 1987; Blendon, Aiken, Freeman, & Corey, 1989; Frey, Schmidt, Derksen, & Skipper, 1994; Berk, Schur, & Cantor, 1995; Young et al., 1996) agree there is a relationship between client demographics and access to health care, but that the relationship is indirect rather than direct. Thomas and Penchansky (1984), in their classic study, view client demographics as having an indirect effect on a client's health motivations and perceptions. For example, the demographic of culture may affect an individual's evaluation of the importance of a symptom or knowledge of a disease. They conclude from their study that sociodemographic characteristics relate to behavior through clients' beliefs and perceptions. Client perceptions are built into the DM at the middle level as influenced by demographics, socioeconomic status, and health status.

Although culture is included in the discussion of the demographics as affecting the utilization of the HED, it tends to be interrelated with race, beliefs, or the identity of a group of individuals rather than the stereotypic "demographics" of an individual.

Merriam and Webster (1995) define culture as "the customary beliefs, social forms, and material traits of a racial, religious, or social group" (p. 282). This definition is much broader than race alone and is much more difficult to measure as an influence towards access to health care. The culture of an individual affects one's perceptions related to health beliefs thus influencing the decision to use the HED as a source of health care. As an example of culture, a Hispanic child with a cough and fever may first be treated at home with an alcohol sponge bath as a folk remedy. If no improvement is seen, the parents may seek care in the HED without trying other means to treat a cough and fever which are conventional to Western medicine.

Race as a demographic variable in the use of the HED for non-urgent health care, as well as access to health care, has been the topic of many studies. Frey et al. (1994) reported in their study that 71 (41%) of 174 Hispanics compared to 70 (25%) of 280 Caucasians used the HED inappropriately as determined by the criteria set by the American College of Emergency Physicians (ACEP) (Buesching et al., 1985). Race would also affect the criteria established by the ACEP, which consists predominantly of Caucasians. The race characteristics of client use of the HED for non-urgent health problems in the study of 1190 subjects by Baker et al. (1994) showed that 226 (22%) were Caucasian, 508 (45%) were Hispanic, and 285 (26%) were African American. Pane, Farner, and Salness (1991), in their study of 1,000 patients who sought non-urgent care in a California HED, found that over half of the study sample was Hispanic.

Blendon et al. (1989) found that African Americans lacked access to physician care more than Caucasians, that is, African Americans reported poorer health status

and fewer physician visits than Caucasians. Although race is cited as an example of inequality of access to health care, it is also noted that a larger percentage of minorities than Caucasians are living below the poverty level. Nationwide, about 30% of Hispanic families are living below the poverty level compared with 15% of the total United States population (Pane et al., 1991). This makes it difficult to separate out race and socioeconomic status as factors in access to primary health care. Blendon et al. (1985) suggested that race and culture together are directly related to the acceptability of the providers who treat them and may indirectly affect access to primary care services.

The demographics of gender and utilization of the HED do not appear significant. One study (Purdie et al., 1981) found that 13 of 16 chronic users of the HED were men, and that lack of appropriate services for their particular health problems was the primary reason for HED use. Several studies reported similar utilization of the HED by men and women (Baker et al., 1994; Young et al., 1996). However, Thomas and Penchansky (1984) reported that gender influences various aspects of accessibility to primary care services. Women reported satisfaction with affordability of services in terms of payment arrangements, health insurance coverage, and cost of services as influential in their decision to access a source of health care (Thomas & Penchansky, 1984). As a result, women tend to utilize the HED for nonurgent care when the care is perceived as more affordable than alternate sources of care.

Geographic location, as part of client demographics, presents as a conflicting predictor of HED utilization for non-urgent health problems. Young et al. (1996)

reported that of 6187 clients, 483 (8%) used the HED for geographical reasons, and 183 (3%) used the HED because of transportation problems. Thomas and Penchansky (1984), however, found there are many people who travel from outside an area to seek care for services because the services are more available in terms of the affordability and acceptability than a source of care in the immediate vicinity.

Several studies suggested that a higher percentage of people between the ages of 19 and 43 use the HED more than other people (Shesser et al., 1991; Young et al., 1996). Grumbach, Keane, and Bindman (1993) reported the mean age of clients with non-urgent problems as 36 years, while Young et al. (1996) reported a mean age of 30 for the study clients. Purdie et al. (1981) reported the mean age of the chronic HED client in their study as 48 years. Frey et al. (1994) reported higher rates of inappropriate visits of children under the age of five.

Attitudes and beliefs. Thomas and Penchansky (1984) proposed that the attitudes and beliefs of both the client and the provider affect the utilization of health care. They referred to health care access as "the degree of fit between the client and the health system" (p. 554). This degree of fit can be narrowed to include the match between a client seeking care in the HED and the ability of the HED to absorb the client into the system as a function of similar beliefs and acceptance. Although the fit may be good, it is not always good longitudinally in terms of cost-effectiveness or optimal outcomes. Thus, attitudes and beliefs of the client precede the level before which a client decides to seek care, and are reflected as such in the DM.

The attitudes and beliefs of a provider of care in the HED may also affect the treatment of the individual and influence client outcomes and client satisfaction with

care received. These attitudes and beliefs of the provider in the HED may be influenced by the provider's educational preparation. As an example, a provider of care in the HED may treat a client experiencing a mild asthmatic attack with a nebulizer treatment and then discharge. A primary care provider may treat this same client with a nebulizer treatment, maintenance and episodic inhalers and provide asthma management education.

In summary, most sources agree that client demographics are indirectly related to other variables by affecting access to health care services. Thus, the demographics of a client are depicted early in the DM and reflect both horizontal and vertical relationships between the other model variables.

Client socioeconomic status. The key components of socioeconomic status (SES) in this project include income, education, and employment. The SES is separated from demographics because of its stronger influence on the use of the HED for non-urgent care. Many studies supported a connection between SES and difficulties with access to an appropriate source of health care. The AAN (1993) cited individuals living in poverty as having the greatest risk for health care access problems. Similarly, the IOM (1993) recognized that individuals who are poor, those who lack transportation, those without adequate health insurance, and those having a lower level of education are less likely to obtain proper health care. Pane et al. (1991) concluded that among HED walk-in clients in their study, low-income individuals were significantly more likely to use the HED as a routine source of health care and to delay seeking care than higher income individuals. The delay in seeking treatment by low income individuals could also contribute to the results of a study by Epstein et al. (1988), in which clients of lower SES had longer hospital stays and higher charges than clients of higher SES.

All of the individuals in the study of the non-urgent, chronic HED client by Purdie et al. (1981) were either on public assistance, had no regular source of employment, or were dependent on a relative for their support. Use of the HED for care by the clients in this study was more likely related to the fact that the HED cannot refuse care to anyone who presents for treatment if another appropriate source of care is unavailable (Buesching et al., 1985). Kasper (1987) found that children from high income families had a 20% greater likelihood of seeing a family physician for care. Likewise, children from low income families had a much higher occurrence of using the HED as their usual source of ambulatory care (Kasper, 1987). Berk et al. (1995) found that of the 3450 persons in their study who were unable to obtain care, 24.4% reported an income of less than \$20,000 compared with 16.6% who reported an income of \$20,000-\$50,000 and 7.9% who reported an income above \$50,000. The data from the study done by Pane et al. (1991) suggested that. compared with higher-income and fully insured clients, poor people and the medically indigent were having "significantly more difficulty in accessing the health care system and are routinely using the HED for basic health care needs" (Pane et al., 1991, p. 733). Pane et al. also suggested the overuse of the HED results from primary care providers' refusal to provide care. Pane et al. (1991) reported that of the 1000 study population, 680 reported an income of less than \$10,000, and 206 reported an income of between \$10,000 and \$20,000. These clients were reportedly walk-in clients, with income being a statistically significant predictor of routine HED non-urgent use.
No insurance/underinsured. The lack or shortage of insurance is related to the ability of one being able to pay for services and is critical in one's access to health care services. There are numerous studies which explore the relationship between an individual's source of payment for HED services for non-urgent health care and access to health care services. The AAN (1993) and the IOM (1993) are both consistent in their studies that individuals who are uninsured and underinsured are at risk for unequal access to health care services and are more likely to rely on the HED for their source of health care (AAN, 1993). It is estimated that in 1989, 37 million people in the United States were uninsured (AAN, 1993), with 75% either employed or dependents of employees whose employer did not offer health benefits. Young et al. (1996) found that of the 6187 people using the HED, 24% were uninsured while 76% either had public or private insurance. Pane et al. (1991) found that 40% of the people using the HED for non-urgent care lacked insurance and that public aid and no insurance together totaled 70% of the 940 people. Berk et al. (1995) found that of the 3450 of those unable to obtain any health care, 33.7% were uninsured compared to 13.6% who were insured.

Presence of public aid. In order to provide basic health care for persons who could not afford to pay either for health care or health insurance, the Medicaid program was initiated by federal legislation in 1965 (Starfield, 1992). There are many studies and statistics on the use of the HED by those who have Medicaid as their source of insurance. The number of visits by Medicaid recipients to the HED increased by 34% between 1985 and 1990 (Medicaid Access Study Group, 1994). Many Medicaid recipients sought treatment in the HED for relatively minor health

problems. The Medicaid Access Study Group (1994) found strong evidence that limited access to ambulatory care outside the HED was the reason the HED was used for basic care. The study suggested factors influencing access to health care for Medicaid recipients which included (a) refusal to grant walk-in appointments to those with Medicaid, (b) no appointment possible within two days, (c) a walk-in appointment after five o'clock in the afternoon not possible, and (d) request of a copayment.

St. Peter, Newacheck, and Halfon (1992) suggested that Medicaid does improve access to care for poor children, but does not ensure them access to the same location or to continuity of care as is available to non-Medicaid children. Kasper (1987) supported the belief that Medicaid increases access for poor children, but that access for care suggested reliance on the HED as a regular source of care. Buesching et al. (1985) found that Medicaid payors used the HED appropriately at a lower proportion than other payors and had a significantly higher proportion of inappropriate use. Young et al. (1996) found that 46% of 6187 ambulatory clients using the HED were on government support.

Although there is strong evidence that Medicaid assists the poor with basic health care benefits, the evidence does not demonstrate access to a regular source of care. One of the attempts by the government to remedy this problem is to assign a regular health care provider to each Medicaid enrollee. This intervention will be discussed later in the paper.

Employment status is related to several variables in terms of affordability of health care because of the presence of insurance. Those with insurance have reported

the presence of a usual source of care in the form of a primary care provider. Buesching et al. (1985) found that a higher percentage of inappropriate HED visits were made by unemployed individuals (13.1%) than employed (6.8%). Grumbach et al. (1993) found that 68% of 700 study clients waiting for care in the HED were unemployed.

Low formal education. A lower level of education is also associated with an increase in the use of the HED, and is connected to lower socioeconomic status. Baker et al. (1994) reported in their study of 1190 subjects that 22.9% of the users of the HED as their regular source of care had no formal education, and 17.4% reported an education level of high school or less. Rask, Williams, Parker, and McNagny (1994), however, reported that a low level of education was not a strong predictor of a regular source of care but was reflected in the individual's delay to seek health care. Thomas and Penchansky (1984) suggested that a lower level of education influences the utilization behavior by fostering dissatisfaction with available services.

A lower level of education can affect health seeking behavior in relation to client knowledge of disease process, prevention, and treatment. To quote the ACEP's introductory statement in the guidelines to appropriate HED use:

We feel that a patient has made an appropriate visit to an emergency department when: An unforeseen condition of a pathophysiological or psychological nature develops in which a prudent lay person, possessing an average knowledge of health and medicine, would judge to require urgent and unscheduled medical attention most likely available, after consideration of possible alternatives, in a HED. (Buesching et al. 1985, p. 672)

This definition of appropriate use of the HED encompasses both knowledge and cognition by an individual; the positive correlation between a lower level of education and non-urgent use of the HED is easy to understand.

<u>Client health status.</u> Similar to the demographics and their relationship to the use of the HED for non-urgent health problems is the variable of client health status. According to Adler, Boyce, Chesney, Folkman, and Syme (1993), socioeconomic status is a strong and consistent predictor of morbidity and premature mortality, therefore the DM depicts health status as connected horizontally to client socioeconomic status. Empirical research has focused on the impact of poverty and its correlates, such as poor housing and inadequate nutrition, while policy debate has focused more attention on insurance coverage as a remedy to SES-related inequalities in health (Adler et al., 1993).

Presence of health problems. Both the AAN (1993) and the IOM (1993) reported that populations with chronic illnesses, disabilities, and/or those who are likely to have worse than average health status, experience barriers to access appropriate health care services. Baker et al. (1994) reported that of the 589 clients who reported the use of the HED as their regular source of care, 178 (30%) reported poor to fair health. Berk et al. (1995) reported that 1031 (29.9%) of 3450 of their study population who reported inability to obtain some aspect of health care also reported poor to fair health, whereas 507 (14.7%) of the study population reported good to excellent health. These studies suggested that people who are in relatively poor health are more vulnerable to barriers in accessing proper health care.

Presence of psycho-social problems. Andren and Rosenqvist (1985), in their study of heavy users of the HED, found that the repeater group of individuals using the HED had more psycho-social problems. In their follow-up study Andren and Rosenqvist (1987) found that the group of clients who continued to be heavy users of the HED reflected an increase in four variables: (a) the proportion of those unemployed, (b) the number of unmarried, (c) the number with a high level of loneliness, and (d) the number who tended to live alone. Andren and Rosenqvist (1987) concluded that those who had less access to an informal social network used the HED to a greater extent than those with better access to a social network.

The lack of social support and presence of psycho-social problems as a function of the use of the HED for non-urgent health problems is suggested in the study by Purdie et al. (1981). In their study, 15 of the 16 chronic users of the HED were single, fourteen of the users experienced alcoholism, and nine were suffering from a chronic psychiatric disorder. Additionally, the results of a study done by Calnan (1984) suggested that social circumstances may be an important influence on client demand for outpatient care in the HED.

<u>Community attitudes.</u> The willingness of a community to take responsibility for insuring adequate health care for all its members plays a significant role in access to primary care services. A community is not only the immediate population in close proximity to the HED, but society in general. The IOM (1993) cites society's ethical obligation to ensure access as follows: "Equitable access to health care requires that all citizens be able to secure an adequate level of care without excessive burden" (p. 32). Community attitudes towards the health care of its members reflect ethical

beliefs and proactive steps to ensure care for all. The action a community takes towards ensuring access to health services includes services that are affordable, services that can accommodate a wide range of population needs, and services that are readily available, acceptable, and accessible to its entire population.

Community attitudes affect several factors in the DM. One of the factors affected by community attitudes is that of the supply of primary care providers. In this project investigator's own community with a population of 60,000, the community hospital has a full time physician recruiter. This recruiter, under the direction of the CEO and board of directors, who are members of the community, makes decisions on the number and type of providers. These are also the people who affect the recruitment and practice of APNs in the community. This particular community is known for its conservative attitudes towards midlevel providers such as the APN and affect the supply of the community's primary care providers.

Community attitudes toward health care are reflected in an article in the Holland Sentinel (Lozon, 1997) in which it was reported that a large corporation with 5,000 employees established an on-site medical center to provide health care. By the provision of extensive health care services on-site, the company can offer more economical, convenient, and accessible care for employees and their families. The providers include a physician, a physician assistant, and an APN in family practice. This is a move in a positive direction to eliminate use of the HED for non-urgent health problems.

Community attitudes also affect the distribution of public aid to individuals by way of state and local laws and guidelines, for states vary in their coverage of

Medicaid for individuals. In 1994, the states of New York and Tennessee each reported that 13% of their respective populations received Medicaid, whereas in the states of Florida and Texas, only 8% of their respective populations received Medicaid. This study also reported variances in the number of urban private-charity clinics; Milwaukee reported a total of seventeen, while Boston reported one (Medicaid Access Study Group, 1994). These statistics reflect differences in community attitudes towards health care.

Lack of regular provider, undersupply, or maldistribution, Again, one influence the community has towards the use of the HED is the number of primary care providers in a community. Buesching et al. (1985) found in their study that the total number of inappropriate HED visits had fallen because of a substantial increase in the proportion of primary care physicians to the population. Hilditch (1981) found that after the establishment of a community health center in an underserved area and a fivefold increase in the family physician per population ratio, the use of the HED decreased. The fact that a person has a usual source of care that provides a point of entry to the health care system is strongly related to the likelihood of the person seeing a physician (Kasper, 1987). The study by Haddy et al. (1987) supported the premise that clients who have a regular personal physician tend to present to the HED with true emergency conditions more often than clients who do not have a personal physician. While the American Academy of Nursing (1993) cities the undersupply of primary care providers affects the access of selected populations to appropriate health care (AAN, 1993), there is nothing in the literature on the impact an APN has on the non-urgent use of the HED.

Not only is there an undersupply of primary care providers, there is also a maldistribution which contributes to an undersupply for vulnerable populations or groups (AAN, 1993). Various studies have shown some relationship between not having a regular source of care and individuals using the HED as their usual source of care (Baker, Stevens, and Brook, 1994; Grumbach et al., 1993). Grumbach et al. (1993) found that of 1190 clients in their study, 309 (28%) had no usual source of care, while 178 (16%) identified the HED as their usual source of care. Pane, Farner and Salness (1991) found that 213 of 1000 clients (24.8%) identified the HED as their regular source of care. Shesser et al. (1991) in their study sample of 325 stable walk-in clients found that 72 (22.1%) had no previously identified source of personal health care. The lack of a regular provider is a critical factor and contributes to the stated problem; it will be discussed more fully later in the implication section.

To summarize the factors in the upper and middle levels of the DM, four main important areas identified include: client demographics, client socioeconomic status, client health status, and community attitudes. From these four variables arise attitudes and beliefs, no insurance or underinsured, presence of public aid, low formal education, presence of health problems, presence of psycho-social problems, and lack of a regular provider.

Variables in the DM at the Middle Level

The following paragraphs describe the variables in the Dirkse Model which affect the use of the HED when a client decides there is a need to access the health care system for a particular problem. The decision is affected by many of the variables depicted in the middle level of the model. These variables include: illness

perception by both the client and provider; client satisfaction with services; client knowledge of access to services; and the five dimensions of access to services, that is, availability, accessibility, accommodation, affordability, and acceptability. These variables are affected both vertically by the previous factors, and horizontally, and are illustrated as such in the DM.

Illness perception. Illness perception by both the client and provider are related to culture as a client demographic, and to formal education, a variable of client socioeconomic status. Illness perception is also expressed in the perception of urgency of need for care. Client perception of the need for prompt medical attention is a factor in the decision-making process to seek care. This need is influenced by culture, level of education, knowledge of appropriate use of services, and the dimensions of access to care. Several studies suggest discrepancies between client perception of urgency of need and provider perception of urgency of need (Baker et al., 1991; Frey et al., 1994). Frey et al. (1994) found that in only 26.6% of 417 visits in their study was there agreement between the provider and the patient as to appropriateness of the HED visit. This would suggest that in the remainder 73.4%, there was a perceptual discrepancy between client and provider.

Illness perception is interrelated to attitudes and beliefs of both client and provider; the authors (Frey et al., 1994) also suggest illness perception is impacted by client education. Approximately 60.3% of the 417 study clients thought that treatment was required earlier than the HED attending physician; this suggests that client perception of severity of need determined the utilization of the HED resulting in an inappropriate use (Frey et al., 1994). Frey et al. (1994) also reported that 65% of

417 visits demonstrated agreement between physicians and criteria by the authors that the visit was appropriate, while the remainder 37% disagreed on appropriateness of the HED visit.

Client satisfaction with services. Client satisfaction with services is also a function of demographics and is another factor in the use of the HED by clients with non-urgent health problems. Several studies cite that clients prefer to use the HED because of its convenience. Shesser et al. (1991) found that 77 (23.7%) of the 325 sample group preferred this setting because it was quicker and always available. Young et al. (1996) found that while 121 (6%) of the 2043 clients without a regular provider identified not having a family physician as the reason a client chose to come to the HED, 1922 (46%) cited other reasons, such as the doctor's office was closed, they were able to get quick medical attention, and they too sick to wait for an appointment.

Client satisfaction is used as an important indicator of measurement of the quality of medical care. In a study by Hansagi, Carlsson, and Brismar (1992) of 758 clients who used the HED, patient satisfaction was found to be high with regards to treatment (87%) and service/care (92%). The 380 clients who were classified as non-urgent scored satisfaction slightly lower than the clients classified as urgent; the investigators (Hansagi et al., 1992) found many of the non-urgent study clients had been unable to be seen by their own primary care provider possibly affecting the level of satisfaction with the HED.

Aside from being a consequence of utilization, client satisfaction is also believed to be a major determinant of care provider choice in the future (Hansagi, et

al., 1992). Young et al. (1996) noted that non-financial barriers to primary care services were related to satisfaction, that is, the clinic was not open, an immediate appointment time was unavailable, or the clinic did not take walk-ins. Young et al. (1996) also cited personal preference for the HED as the reason an individual chooses to use the HED for care of a non-urgent nature.

Client knowledge of access to services. Client knowledge of access to services for non-urgent health problems can be influenced by client demographics and socioeconomic status (Thomas & Penchansky, 1984). Many clients are unaware of the ramifications of seeking care for health problems in the HED that could better be cared for in a primary care setting. Client knowledge of the availability of services may be limited by the lack of education by providers or by guidelines and standards (Starfield, 1992). Some clients may be unaware of the cost of care from the HED versus the cost of care in a primary care setting (Young et al., 1996). The higher cost of care in the HED also includes hidden costs such as duplication of services including laboratory tests or radiographs (Gadomski, Perkis, Horton, Cross, & Stanton, 1995). Discussion of client knowledge of access to services will be expanded in the discussion and implication sections.

Five dimensions of access to health care. The next factors which influence the use of HED services are the five dimensions of access to health care proposed by Thomas and Penchansky (1984) and recognized as influential in access to primary care by Starfield (1992). These five dimensions are incorporated into the DM as variables resulting from the influence of demographics, socioeconomic status, health status, and community attitudes. The dimensions' placement in the model reflect the

HED access point; it is here that the five variables affect the individual's decision to access care in the HED. The five dimensions, availability, accessibility, accessibility, accommodation, affordability, and acceptability, determine how a person seeks and accesses care.

Availability, the first dimension, is described as the adequacy of the supply of physicians and other providers, health care facilities, specialized programs and services (Thomas & Penchansky, 1984). Factors which influence availability include the ability to pay for the services, the provider to population ratio, and the presence of a regular source of care. When there is an insufficient number of primary care providers per population available, clients will access services of care which are available, such as the services of the HED. Although Thomas and Penchansky (1984) suggest that the doctor-to-population ratio should represent a clear measure of availability, this factor was not significant in predicting utilization. A more recent study by Baker et al. (1994) found that clients who identified the HED as their regular source of care had 25% fewer physician visits than those with a source of care other than the HED. The study suggested that the clients' possession of a regular source of care is a strong predictor of physician utilization in the primary care setting or the HED.

Accessibility, the second dimension, is defined by both Thomas and Penchansky (1984) and Starfield (1992) as the relationship between the location of supply and the location of clients, taking into account clients' transportation resources. The accessibility of the HED in terms of structure alone was a factor for 11% of 6167 study clients who used the HED for non-urgent health problems (Young et al., 1996).

Accommodation, the third dimension of access, involves the manner in which the supply resources are organized to accept clients and include appointment systems, hours of operation, walk-in capabilities, and telephone services. Starfield (1992) includes in the definition the extent to which the population perceives these aspects of access to a care source as convenient. A client's willingness to accommodate to these factors predicts the utilization rate of the services. In the study by Young et al. (1996), 50% of the 6187 study clients cited nonfinancial barriers including both accessibility to the structure and appointment accommodation as the main reason for the use of the HED for non-urgent health problems.

Affordability, the fourth dimension, has already been discussed as affecting the use of the HED. While the cost of services for a primary care health concern is notably much higher in the HED, the relationship between providers' insurance or deposit requirements and clients ability to pay is influential in the decision to use the HED. Also affecting the client perception of affordability is the possible credit arrangements with a provider. By law, a hospital cannot refuse to treat a person if payment is not possible, whereas a private physician or a clinic can refuse to treat a person with an inability to pay.

Acceptability, the fifth dimension of access, is defined as the relationship between clients' attitudes about personnel and practice characteristics of existing providers (Thomas & Penchansky, 1984). This definition includes age, sex, location and type of facility as well as religious affiliation of provider or facility. Provider

attitudes about acceptable personal characteristics of clients, including ethnicity and client payment source, also influence the acceptability of a provider source. Figure 5 demonstrates that all four of the initial factors in the DM affect the five dimensions of access.

Motivation to seek care. The most important predictor of frequency of utilization of health care services is client perception of the symptoms of an illness (Parboosingh & Larsen, 1987). Client motivation to seek care is also influenced by the combination of resources available at the time of need, such as financial resources, availability and accessibility of services, and the sense of urgency of need (Parboosingh & Larsen, 1987). A client may be motivated to seek care from his/her primary care provider but the provider may not be available. Baker et al. (1994) suggested a client with a regular source of care may be motivated to seek care at the HED because of dissatisfaction with one's own provider. One study (Young et al., 1991) found the main motivation to seek care from the HED for non-urgent health problems was the client's desire for rapid treatment. The motivation to seek care from the HED is a result of the previous variables and thus included in the DM.

Ease of access to services. The ease of access to appropriate services is affected by the acceptance of the client by the HED staff and the HED triage service. The availability of alternative sources of primary care services at the time of need is also a variable and has been discussed previously. The presence of triage personnel able to make an appropriate referral to alternative sources of care or access to the HED for care is also significant at this point in the DM. According to federal Consolidated Omnibus Budget Reconciliation Act (COBRA) laws, the HED cannot refuse treatment to a client who presents for care unless there is an alternate source of care and a medical screening examination reveals a stable medical problem (Young et al., 1996).

Perceptions regarding the need for services. While perceptions regarding the need for services has been previously discussed, it is important to emphasize that frequently there is a discrepancy between the perception of urgency held by the client and the perception of urgency held by the provider (Frey et al., 1994). Subsequently the client may perceive more of an urgency of need than the HED provider of care which results in client dissatisfaction with services. Further support for the client's perception is provided by Shesser et al. (1991) who found that most clients in their study group expected to receive medical attention within twenty-four hours of their decision to seek care.

Presence of a gatekeeper. Starfield (1992) prefaces her chapter with the phrase "Gatekeepers make sense" (p. 25). Most people do not know enough about the technical details of medical care, as suggested in the previous sections on perception of severity of illness and urgency need, to make informed judgments about the appropriate time and source of care. Advice and guidance from a primary care provider should be expected to facilitate the selection of the best source of care (Starfield, 1992). The presence of a gatekeeper is inherent in health maintenance organizations and has more recently been initiated by Medicaid in many states. The purpose of a gatekeeper is to provide more rational, timely, and appropriate use of resources. Therefore, there should be scientific rationale for the belief that primary

care providers can efficiently and effectively judge who should be referred to the HED and who can be seen by a primary care provider (Starfield, 1992).

The concept of gatekeeper involves several dimensions. At the least a gatekeeper functions to authorize a visit to an alternate source of care in a managed care system. The decision to authorize a visit to an alternative care source may depend upon whether or not the organization is paid for each enrolled member. Pre-authorization for a visit as a means of gatekeeping is merely a phone call to an on-call person to get approval to be seen at the HED.

At a more in-depth level, gatekeeping involves a client's contact with his/her primary care provider. When a visit or call to the primary care provider as gatekeeper is required before the HED visit can be made, HED visits are reduced. A study of 3000 patients enrolled in four Medicaid demonstration programs that required a gatekeeper, demonstrated large reductions in the proportion of persons with at least one HED visit. The reductions ranged from 27% to 37% for children and from 30% to 45% for adults (Hurley, Freund, & Taylor, 1989).

Gatekeeping at the time of utilization of the HED is also reflected by the presence of a triage system. The triage personnel may range from a registration clerk in the smaller HED who registers everyone presenting for care at the HED to an experienced registered nurse who assesses each client before treatment and determines the level of acuity of illness. More recently, HED's are attempting to triage nonurgent clients to alternate sources of care if those sources are available.

Another type of gatekeeping which is growing in popularity is that of twentyfour hour ask-a-nurse services. Ask-a-nurse services are offered by community

hospitals and managed care systems in order to more appropriately treat not only nonurgent health care problems, but also urgent care problems. Ask-a-nurse services will be discussed later in the implication section.

Variables in the DM at the Lower Level

Decision to access care in HED. At the bottom of the DM are the variables which are the end result of interaction of the previous factors. The decision to access care in the HED may be a cognitive process or an impulsive decision determined by the perception of illness on the part of the client and client knowledge of services available (Parboosingh & Larsen 1987). As discussed earlier, another factor which affects the decision to access care in the HED is the availability of services in terms of hours of service and ability to see walk-in clients (Hansagi et al., 1992). A client who decides to seek care may realize that the HED will not require any payment at the time of care, and thus the decision lies in affordability. Many times the decision to seek care in the HED is not a cognitive process at all, but the result of the perception of an urgency for care need.

Clients who are comfortable with the utilization of the HED for care may view the providers of service in the HED as being more receptive, thus, the attitudes of providers affect the use of the HED (Thomas & Penchansky, 1984). The client may also have a high amount of satisfaction with care in the HED if care is rapid and comprehensive in terms of diagnosis and treatment (Hansagi et al., 1992).

In summary, Figure 5, the Dirkse Model for the Utilization of the HED for Non-Urgent Health Problems is a visual model of interrelated factors of causation. In order to reap the benefits of the visual model, it is critical to discuss and formulate interventions which may alter the variables and promote an improved outcome, that of access to care for non-urgent health problems in a primary care setting. In the following section, discussion will focus on interventions which are already impacting the problem of inappropriate use of the HED. In the final section, interventions are proposed in which the APN as an individual and APNs as a group of providers can influence access to health care for clients.

CHAPTER 4

DISCUSSION

The development of the Dirkse Model for Utilization of the HED for Non-Urgent Health Problems is significant for several reasons. In this section there are three areas which have implications for health care professionals and deserve further discussion. The first area of interest is that of access to primary care in general. The second area is that of developing interventions to alleviate or obviate the problem under scrutiny. The third area is that of interventions and areas of interest in which there are already changes which attempt to decrease the use of the HED for nonurgent health problems.

Access to Primary Care

Access to primary care is a complex issue with extensive literature written on the topic, multiple suggestions, and varying interventions. While the DM is problem specific, it can be generalized to access problems in alternate health care systems such as a family practice clinic or a community health center. The visualization of the contributing factors to the stated problem assists the health care professional interested in the topic to understand the strengths and/or weaknesses in his/her own primary care setting. The DM can be used in the evaluation of a health care system.

The DM can also be used to evaluate one's own community HED for nonurgent health care. In this evaluation, the strengths and weaknesses of access to primary care in the immediate community would be of interest. For example, if a community has a higher percentage of a vulnerable population known to have access problems, identification of barriers to appropriate primary care services could occur.

Alternatively, the DM can facilitate the evaluation of the utilization patterns of a community health center or a family practice clinic. Questions of interest could include: How quickly can appointments be made in the current system for an acute problem? Does the setting offer walk-in or same-day appointments for an episodic illness? What are the payment arrangements when the client does not have the ability to pay for a visit? Is there a knowledge deficit on the part of the client concerning hours of service or how to access services? Is the client dissatisfied with any aspect of the service setting? With the DM, many of the factors identified in affecting access to health care can be investigated and alternative interventions which increase equity in access to primary care for all populations can be sought.

There are several assessment tools in the literature which can be used in combination with the DM to further research in access to health care, and specifically the population using the HED for care. Pane et al. (1991) used a pretested health access survey in their study of indigent HED walk-in clients. In this study the assessment tool was comprised of a written survey at the time of presentation for care at the HED. Bilingual investigators were present to enroll patients, answer questions, and collect surveys (Pane et al., 1991). The survey questions included client

demographics as well as questions regarding the reasons the clientd sought care at the HED for non-urgent health problems.

Young et al. (1996) used a survey entitled "Twenty-four Hours in the Life of an Emergency Department" for exploration of factors which prompted the study population to seek care from the HED. The survey in this study was distributed nationwide to site directors who in turn trained volunteers to administer the questionnaire to prospective clients presenting for treatment at the HED. The population used in the study by Young et al. (1996) was a nationwide cross-sectional sample of 6441 ambulatory clients. Questions in the survey included the reasons why the study clients used the HED for care and included such things as financial and nonfinancial barriers to care, personal preference, and clinical reasons. The study also compared clients with and without a regular provider who used the HED for nonurgent care.

The questions in both of these studies (Pane et al., 1991; Young et al., 1996) focused on various factors such as demographics, presence of a usual source of care, and insurance status as well as the reasons why the HED was used by clients who were considered stable walk-in patients. The variables in these surveys are reflected in the DM; they are important factors for inclusion in future research. While many of the variables in these two surveys are included in the DM, one could also use the DM to develop an assessment tool for the purpose of further study in the problem of non-urgent use of the HED.

Developing Interventions

The second critical feature of the DM is its value in facilitating understanding of the levels of prevention. In community health there are primary, secondary, and tertiary levels of prevention of a health care problem; these are appropriate to discuss in relationship to the DM and can be viewed as providing a framework for interventions. Thus, a brief definition of the three levels of prevention are provided.

Spradley (1990) describes primary prevention of health problems as preceding disease or dysfunction and that which keeps the problem from occurring. According to Spradley (1990), "primary prevention involves anticipatory planning and action on the part of community health professionals who must project themselves into the future, envision potential needs and problems, and then design programs to counteract them so that they never occur" (p. 16). The working paper from the AAN (1993) and a committee established by the IOM Access Monitoring Project (1993) are examples of primary prevention which promote equal access to health care services.

Spradley (1990) describes secondary prevention as the need to detect and treat existing health problems at the earliest possible stage. Secondary prevention attempts to discover a health problem at a point when intervention may lead to its control or eradication. In the case of the use of the HED, secondary prevention is aimed at redirecting access for non-urgent health care problem from the HED to appropriate primary care services in which health outcomes can be maximized. The establishment of a gatekeeper, which will be discussed later in greater depth, is a means of secondary prevention.

The tertiary level of prevention "attempts to reduce the extent and severity of a health problem to its lowest possible level (Spradley, 1990, p. 16). At this level in the DM a client has already utilized the HED for a non-urgent health problem and the focus lies in preventing repeated occurrence. Client education of more appropriate sources of health care after the utilization of the HED and assistance in obtaining a primary care provider are examples of tertiary prevention. In the discussion of nursing implications, interventions will include primary, secondary, and tertiary levels of prevention. Examples will be specific for the APN in a primary care practice. Established Interventions

The following paragraphs describe established interventions present in the health care system to prevent non-urgent use of the HED by populations with Medicaid, and to promote access to appropriate primary care services for this same population. From the previous literature review on the increased use of the HED by the population receiving Medicaid, recent changes in the system were noted. In an attempt to discourage use of the HED by those with Medicaid, the Maryland Access to Care Medicaid program (Gadomski et al., 1995) emphasized primary care and appropriate health care utilization by incorporating the following elements of managed care: client assignment to a primary care provider, gatekeeping, mandatory enrollment, and fee for service. These elements are now implemented in other states. Although the intent of the Maryland Medicaid program was to provide all enrollees with a primary care provider who would also act as a first contact of care for all non-urgent care needs, gatekeeping, while a safe practice, had no impact on subsequent HED utilization by Medicaid participants (Gadomski et al., 1995).

The assignment of a primary care provider in managed care has resulted in inconsistent outcomes. Frequently the primary care provider will grant permission to access the HED for care because of unavailable appointment times. Enrollees may also find it easy to change to another provider if they are not satisfied with the assigned provider. To avoid these pitfalls, providers are reimbursed by a flat fee for each enrollee and penalized for having the enrollee cared for at an alternative source such as the HED (i.e., capitation of costs). The capitation issue in health care is a topic of concern for it encourages a lower quality of care by increasing the total number of clients in a primary care practice which may result in shorter visit time for each client.

The establishment of managed care through health maintenance organizations (HMOs) is an intervention to encourage non-urgent care by a single primary care provider and limits the urgent care to be provided by HED personnel for which they are educationally prepared. Managed care is a major health care reform in the United States that both directly and indirectly affects the use of the HED. The intent of managed care is to provide longitudinal care to individuals which allows them to identify a source of care as "theirs" (Starfield, 1992). The outcomes of managed care is infiltrating not only private insurance but also, as mentioned earlier, public aid. Managed care with the presence of a gatekeeper is part of the DM at a primary level of prevention by way of community attitude, at the secondary level by way of the presence of a gatekeeper to redirect care for non-urgent problem to a more

appropriate source, and at the tertiary level by way of non-reimbursement of HED charges when used inappropriately.

Legislative changes in the past decade have focused on attempting to create a narrower disparity in access to primary care services by changes other than managed care. Some of these changes are discussed by the AAN in its working paper on health care access problems and policy recommendations. The AAN (1993) suggests that legislative changes are needed to reorganize the care delivered at the federal, state, and local levels through integrated planning and regulation. Health care policymakers are influential in legislation that affects health care for at-risk populations. While the establishment of community health centers increases the primary care provider to population ratio, sliding fee scales for qualified persons, free care for the indigent, and public aid for qualifying individuals are all ways a community can increase access to health care.

Selby, Fireman, and Swain (1996) studied the effect of a co-payment on HED use in a group-model HMO and found that the group with a co-payment had fewer number of visits to the HED for non-urgent care. Legislation regarding qualification of individuals for public aid, the initiation of co-payment to share the responsibility of payment, the funding of community health centers for the un-insured or underinsured, and the assignment of a primary care provider, are all responsibilities of health care policymakers and the community at large. These acts are the subject of the AAN working paper (1993) for proposed changes needed to increase equity of access to health services for all populations.

In summary, community and legislative involvement is presently in the midst of implementing changes which attempt to decrease the use of the HED for nonurgent health care problems and redirect care to primary care services. The DM presented in this project can serve as an instrument to identify an array of interventions at community and provider levels. The current and future contributions of the APN in promoting access to primary care services and decreasing the nonurgent utilization of the HED will be discussed.

CHAPTER 5

NURSING IMPLICATIONS

The nursing implications for the use of the DM in a primary care setting are multifaceted. The DM can assist the APN in practice, research, and education. The model can also provide a visual aid to illustrate all the factors which affect the access to care for non-urgent health problems. This awareness will hopefully encourage further study and research in the area of access to health care and in the APN's own practice setting.

In the earlier discussion of the Andersen and Aday (1978) model of health care utilization, the concepts of mutable and immutable variables were introduced. When developing interventions for the APN, it should be emphasized that there are variables in the DM which cannot be changed. These variables include the client demographics such as age, gender, culture, and race. Client socioeconomic status and client and provider attitudes and beliefs are not readily mutable but may be altered with interventions at the community level through programs, education, job preparation and job placement. Client insurance status including public aid are frequently subject to change. The interventions for the APN will focus on those factors which can be targets for change such as client health status, community attitudes, presence of primary care providers, and knowledge deficits.

Nursing literature refers to the roles of the APN as expert practitioner, educator, consultant, and researcher (Hamric, 1989; Snyder & Yen, 1995; Sparacino & Cooper, 1990). When developing nursing interventions using the DM, APN roles which are most appropriate for discussion include the APN as practitioner, educator, and researcher. The interventions hopefully can influence the variables in the DM and decrease the non-urgent use of the HED. The nursing interventions will be related to primary, secondary, and tertiary prevention.

The APN as Practitioner

The APN as practitioner can affect change in numerous variables of interventions. Interventions at the primary level of prevention include an increase in the number of APNs as practitioners in primary care settings. The recommendations of the AAN (1993) include expanding the number of APNs practicing in areas of undersupply to match the supply and demand for access to basic health care services. By increasing the number of APNs as primary care providers, the immutable variables of client demographics and socioeconomic status are indirectly affected in terms of offering services to provide care for at-risk populations such as minorities, those with chronic health problems, and the un-insured and underinsured (AAN, 1993). Thus, while client demographics and client SES cannot be changed, these variables are impacted by the availability of providers in terms of numbers.

Also at the primary level, an APN as provider of primary care impacts client health status when engaging in health promotion, illness prevention, and chronic illness management activities. Included in health status are clients who present with psycho-social problems; APNs are well-suited to serve as case managers, counselors

and collaborators with the health care team for clients with psycho-social problems. The APN in the primary care setting will encounter many clients whose health care needs include psycho-social components and as the first contact of care and case manager, the APN can increase the overall health status of the client (Naegle, 1993). The APN can also impact clients by developing longitudinal relationships with the clients which can result in improved health outcomes. Additionally, the APN can affect the attitudes of clients and other providers by presenting themselves as positive role models.

An issue of concern with the APN as practitioner is that of reimbursement. The AAN (1993) recommends the adoption of reimbursement reforms to ensure standard fees for specific procedures and care regardless of provider type or setting. With adoption of reimbursement reforms for primary care services, the APN can deliver care in the home or in other community settings including health centers. To promote the use of the APN in practice in primary care, removal of barriers to practice at the state and federal levels through legislative action is recommended (AAN, 1993). The APN needs to be both a leader and a role model by actively participating in local and state organizations which in turn should strengthen future changes and prevent barriers to practice. Every APN must be a member of his or her local, state, and national nursing organization to maintain involvement in issues of concern.

Also at a primary level of prevention are measures to encourage financial aid for the un-insured or underinsured. Legislation regarding qualification of individuals for public aid, the initiation of a co-payment to share the responsibility of cost of

care, and the funding of community health centers are all aimed at increasing primary care services for individuals without insurance or those who are underinsured. APNs can affect legislative acts as registered voters, as members of their nursing organizations, and as public speakers.

The APN can affect funding in his/her client advocate role by securing assistance for health care needs for the indigent. One example in which an APN can affect funding is to communicate with local services and organizations to convey the needs of special populations who may not receive adequate health care. In the author's own practice setting, a migrant health center, clients are very rarely able to receive adequate services for referral services such as radiographs, dental care, or ophthalmic care because of their inability to pay. Several community groups, working through the county health department, were able to secure state funds to assist the migrant to afford needed services. Throughout the past five years, the funds had not been used to the maximum because of the mechanisms for securing assistance and language differences, so at the present time allotment of vouchers for special needs has been given to the health center manager to avoid an extra step in the process of securing help for the migrant. This type of client advocacy is one role component in which an APN can affect the health status and community awareness of need.

The variables in the DM at a secondary level which can be influenced by an APN in practice include availability, acceptability, and accommodation to health care services. An increase in the number of APNs as providers of primary care can increase the availability and accommodation of primary care services. Acceptability

of services can be addressed by an increase in APNs who may be of like culture or have a better understanding of the cultural beliefs of a client (AAN, 1993).

The APN, acting as a gatekeeper, can affect the use of the HED for nonurgent health problems. With an increase in APNs as primary care providers in many settings, APNs are able to share responsibility for call services and act as gatekeepers in managed care situations. As a gatekeeper, the APN can directly affect access to the HED at the time the problem occurs.

The gatekeeper phenomenon has extended into phone triage of health cere services and is another variable in the DM. A recent article in the <u>Wall Street</u> <u>Journal</u> (February 5, 1997) described how experienced nurses function in health care organizations performing phone triage. As an example, Access Health Inc. in Denver has a staff of 90 registered nurses manning shifts behind a desktop computer. According to the author (Anders, 1997), approximately 35 million Americans now have access to phone-triage lines. The function of the nurse is to elicit information regarding the symptoms for which a client calls and, by following established protocols, give competent advice. According to industry estimates, approximately 2% of the callers are actually steered to the HED with a savings of \$2 in reduced emergency-room use on each dollar spent on an advice line (Anders, 1997). While most triage phone services are staffed with registered nurses specially trained in the area, the APN in primary care acts in the same manner when on-call for a group practice with managed care clientele, and must make similar decisions.

The APN as Educator

The APN as educator can effect change at all three levels of prevention. The educator role is a fundamental component of the APN which distinguishes the APN from other health care professionals (Sparacino & Cooper, 1990). Education is directed towards not only the client, but also families, groups, and communities. As an intervention in the DM, education is applicable to all three levels of prevention.

The APN as educator can affect the variable of health status at a primary prevention level with client education focused on health promotion and prevention. By increasing emphasis on health promotion and prevention, long-term negative health effects can be reduced, thus improving the general health status of the client. With an increase in the number of APNs in practice as health educators and expert assessors, clients can become aware of health risks at a younger age. An example would be the recognition of those at risk for hypertension and diabetes, in which early recognition can lead to improved health outcomes by means of client education and promotion of healthier lifestyles.

Also at the primary level, an APN can educate community members about the role of the APN as a provider of primary health care. Community education is directed at marketing the APN by means of public speaking to various groups in the health care and broader community. Community education by APNs organized as a professional group can have a significant impact. In the author's own community, several leaders within the community hospital assisted area APNs to form such a group. The APN professional group has as one of its goals marketing the APN within the community. Suggestions for marketing the APN in the community include:

writing articles on the role of the APN for local newspapers and hospital newsletters, encouraging the APN to speak publicly at local organizations and clubs, local television programs which focus on health care issues, and local talk radio programs whose audience includes many of the community's elderly population.

At a secondary level of prevention, that is, at the time a client decides to access the HED, an APN can influence the DM variable, illness perception of the client, through client education. An APN, by definition of the role, is adept at educating the client about illness. For example, this can include instruction on fever care to avoid unnecessary visits to the HED and instruction on distinguishing between signs and symptoms of minor illnesses which can be cared for at home or at a primary care visit, as opposed to the signs and symptoms which indicate the need for urgent care at the HED.

Also at the secondary level of intervention, the APN as educator can affect client knowledge of available services as a gatekeeper. The gatekeeper, already discussed, functions as the first contact of care. The APN as the first contact of care in the primary care setting can educate the client on the appropriate use of the HED versus appropriate use of the primary care setting. When the APN functions as a gatekeeper by taking call as a primary care provider in a health maintenance organization, the APN acts as an educator in addition to preauthorizing a visit to the HED. For example, when a mother with a febrile child calls the service, the APN can do the following: solicit information on patient signs and symptoms, inquire as to the use of any home care such as Tylenol administration, offer patient education on fever care, and refer to the HED if indicated. The APN as educator at the tertiary level can affect client knowledge of access to services at the time the HED has been used by a client with a non-urgent health problem. Alternatively, an APN can educate the client seen in the primary care setting as to appropriate utilization of the HED, and increase client awareness of the availability, accessibility, and the accommodation to his/her primary care setting as well as how to access one's own primary care provider. For instance, many times a client cannot make a prompt office visit because of office mechanisms such as busy phone lines or receptionist perception of need for care. The APN can instruct the client to request to speak to the office nurse who has the ability to fit a client into a provider's schedule.

At the tertiary level of prevention, education of the client to appropriate access to future primary care services is essential. If the DM is adopted by professionals in the HED, a greater understanding of client use of the HED may be used as an educational opportunity at the time of service. If the client does not have a regular provider, available primary care services in the community may be recommended by the HED staff. Knowledge of the role of the APN in primary care by the HED personnel can promote vulnerable populations to access care from a primary care provider such as an APN.

The APN as Researcher

The DM can serve as a framework for future research. An APN can influence the non-urgent use of the HED with participation in research aimed at specific factors in the DM. Participation in research can take place at many levels for the APN: principal investigator, project director, co-investigator, or consultant (Hampton &

Snyder, 1995). The APN can target research to all three levels of intervention. At the primary level there is a deficit of information in the area of health outcomes and the APN. With the focus in the present health care system aimed at increasing the number of primary care providers such as the APN in a community, research is needed concerning the effects such an increase has on the utilization of the HED.

Research at the secondary level of prevention is needed in the area of access to existing services. Several surveys were reviewed in this project for future use in the research of access to primary care services, or the access to the HED by clients with non-urgent health care problems. These surveys can be used to focus on specific variables in the DM. For example, research can focus on the relationship between insurance status and use of the HED, on the impact of HED use after an increase in the number of APNs as primary care providers, or on client satisfaction.

Research at the tertiary level has been demonstrated in several studies used in this project (Pane et al., 1991; Young et al., 1996); however, none of the studies were nursing-oriented. The APN possesses knowledge about the research process (Hampton & Snyder, 1995) and is qualified to provide input in using research as a means to evaluate access to primary care services. The APN as practitioner of primary care and trained in research techniques can integrate these two roles to affect evaluation and change in the non-urgent use of the HED.

CHAPTER 6

CONCLUSION

The use of the HED for non-urgent health problems has been the subject of numerous investigations in which various contributing factors were identified and analyzed. However, no study or reference attempted to analyze the issue by diagrammatic display. This project's product was an initial schematic representation of this issue through the utilization of the "Web of Causation" model, a problem-oriented model. The representation, the Dirkse Model for the Utilization of the HED for Non-Urgent Health Problems, identifies factors from existing literature which contribute to the use of the HED for non-urgent health problems. Application of this model should assist the health care professional, including the APN, to develop interventions which focus on specific factors essential to decreasing the use of the HED for non-urgent health problems. The model can enable practitioners to identify points for future interventions at the primary, secondary, and tertiary levels of prevention. The model can also serve as a framework for future research in the area of access barriers to primary care services.

This model is likely not complete and will need to be altered in the future as further changes occur in the issue of access to primary care services. The implications for the APN include but are not limited to the suggestions offered in this
project. With an increase in the numbers of APNs in both primary care settings and the HED, it is hopeful that the DM will encourage APNs and other health professionals to examine and evaluate factors and interventions concerning the utilization of the HED for non-urgent health problems. LIST OF REFERENCES

LIST OF REFERENCES

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