COLLABORATION IN HEALTH CARE:
MEDICAL STUDENTS’ PERCEPTIONS, OBSERVATIONS
AND SUGGESTIONS

by

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for the degree of Doctor of Education
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Abstract

Modern health care requires collaboration between many different professionals. The formal education of health care providers is focused on knowledge and technical expertise, while playing less attention to issues related to teamwork. This thesis reviewed the concept of collaboration in the health care and formal education efforts to foster teamwork in health care. An action research project was implemented, involving a hospital-based pilot program of multiprofessional education. Medical students at the University of Toronto who participated in the program during their first year of medical studies were interviewed three to five years later to explore their perceptions of and clinical experiences with collaboration. The students' conceptualization of collaboration included an understanding of the roles of non-physicians, especially when these professionals provided complementary expertise to the medical profession. The students perceived that collaboration improved patient care. The central role of communication in teamwork was elaborated. Medical students felt that physicians had the primary responsibility to facilitate collaboration. In order to fulfill this function, physicians needed knowledge of the unique roles of other professionals. This knowledge was often obtained in the context of patient care during the clerkship. In patient care settings, structured multiprofessional meetings facilitated teamwork and also served to educate medical students about other professionals. Faculty physicians played a role modeling function by encouraging attendance at these meetings. Most students felt that the pilot multiprofessional education program, conducted early in their training, had been useful, especially with regard to enhancing knowledge about other health care professions. At the pilot multiprofessional education sessions, students of different professions were often at different levels of training. Organizers need to be considerate of potential differences in knowledge and confidence about subject matter between the students of different professions. Medical students suggested that such education interventions, when occurring early in their curriculum, should have goals that were focussed on providing knowledge about
other professions. In addition, the program's goals should encourage social interactions among students of the different professions. This action research will widen to include further study of multiprofessional patient care meetings as a practical means of enhancing health professional education about collaboration.
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INTRODUCTION

Canadian health care has become an increasingly complex and costly endeavour. Governments are exploring numerous opportunities for providing effective yet economical health care for the population. Most of these efforts, either directly or indirectly, assume or require coordination, cooperation, and collaboration between many different health care professionals. This is irrespective of whether these health care professionals are dealing with an individual patient or an entire population. The professional education of health care providers focuses heavily on profession-specific knowledge and technical expertise that must be acquired by the students of the profession. Less attention has been paid to educating health care professional students about values such as teamwork and collaboration. Health professions' students are assumed to acquire these values by observing the behaviours of their teachers in actual clinical practice. Indeed, most health care professional education programs provide for a practicum experience that not only includes actual practice experience but also directly exposes trainees to situations that require collaboration with other health care professionals. However, there is very little written about the acquisition of teamwork skills in the conventional clinical training experiences offered to medical students.

This thesis will explore medical students' perceptions of collaboration in clinical learning settings. In addition, the research will explore ways in which the undergraduate curriculum and the clinical learning environment may be altered to enhance the likelihood of collaboration among health care professionals.

Chapter two explores the concepts of collaboration and teamwork in the health care process. A review of the relevant literature discusses definitions of collaboration and teamwork. Clark (1991) defined an interdisciplinary health care team as

a group of persons who are trained in the use of different tools and concepts, among whom there is an organized division of labour around a common problem with each member using his own tools, with continuous intercommunication and re-examination of postulates in terms of the limitations provided by the work of the other members and often with group responsibility for the final product.

Bond and colleagues (1987) viewed collaboration as an attribute of groups rather than
individuals, thus suggesting that from an individual perspective, collaborative behaviour could be viewed as that which promotes one's participation in a team. Barr (1993) emphasized that the members of a team are united together by shared values and commitment to achieving agreed objectives. In health care, these goals usually relate to competent and coordinated care (Purtilo, 1994) and optimized quality of care (Kappeli, 1997). The benefits and weaknesses of collaboration and teamwork will be enumerated, and examples of barriers to collaboration in health care will be presented.

Chapter three reviews writings about how the concepts of collaboration and teamwork can be incorporated as part of a formal health care professional curriculum. The focus is on the broad concepts of multiprofessional and interprofessional education. The World Health Organization (1988) defined multiprofessional education in the health sciences as:

> the process by which a group of students from the health related occupations with different educational backgrounds learn together during certain periods of their education, with interaction as an important goal, to collaborate in providing promotive, preventative, curative, rehabilitative, and other health related services. (WHO, 1988)

The chapter provides examples of such efforts to prepare students for collaborative behaviours when they become independent working professionals.

Chapter four describes the setting and context of this research. A brief overview of the undergraduate medical curriculum at the University of Toronto highlights those subjects in which issues of collaboration are expected to be addressed. A pilot program of multiprofessional education offered at one of the teaching hospitals within the University of Toronto Faculty of Medicine is described.

Students who participated in the pilot program of multiprofessional education were interviewed several years after the program. These students were training in clinical practice settings. All students had direct experience with the clinical care of patients, which presumably required collaboration with numerous health care professionals. In chapter five, the research findings are discussed. These findings consisted of exploring these medical students' perceptions about collaboration and teamwork in health care. Because physicians are perceived to have a leadership role in collaborative efforts in health care, this research assumed that insights into the views of physicians-in-training about collaboration could assist in the design of future
educational strategies to foster collaboration. The key questions which were explored with these students included:

- What do medical students understand about the concept of collaboration in health care?
- What insights have been gained about collaboration or non-collaboration through actual incidents experienced as medical students?
- Was there any impact on the students of a pilot multiprofessional education program that they experienced as first year medical students?
- What suggestions would medical students offer regarding educational strategies within a curriculum to foster collaboration?

The final chapter summarizes the research findings. In addition, the researcher reflects on actions for the future which derive from the research.

The background of the researcher, the author of this thesis, requires an introduction. Over a decade ago, I qualified as a specialist in Internal Medicine, with additional subspecialty qualifications in Hematology. After fellowship training in basic sciences in the United States, I returned to Canada to assume an academic teaching faculty position at one of the fully affiliated teaching hospitals within the Faculty of Medicine at the University of Toronto. During my fellowship training, I met my wife, who continues to work as a registered nurse. My mentor from the earliest stages of medical school became a clinical colleague when I assumed my first hospital appointment. Under his direction, I experienced my most influential example of multiprofessional collaboration. This occurred in the context of caring for our patients who were suffering from a variety of hematological disorders. On the ward, we had a long-standing tradition of “Kardex rounds”. These multiprofessional meetings were held every week. Attendance included all staff physicians on the ward (usually three), all medical trainees (typically two), all nurses on the ward (usually four, except for one who looked after all the patients during the Kardex rounds) as well as the chaplain, social worker, dietitian and rehabilitation therapist. I believe that these meetings significantly facilitated patient care. They also provided a rich opportunity to learn about the individual talents of all of the members of the health care team. It was only later in my clinical practice that I began to realize how unique and valuable these Kardex rounds had been in my own development as a clinician.
In addition to my clinical duties, I assumed a variety of education-related responsibilities at the hospital and at the University. Craving a theoretical underpinning for many of these education activities, I earned a Master's degree in Education and then continued studies toward a doctorate. In 1989, I was offered an academic position at Sunnybrook Medical Centre. In 1990, I became the Director of Medical Education at Sunnybrook. Shortly afterwards, I became the Chair of the Health Sciences Education Committee at the hospital. This group, representing the faculties and departments that had students at Sunnybrook, was a major ally in future multiprofessional education efforts. As Director of Medical Education, I was also responsible for implementing the revised undergraduate medical curriculum of the Faculty of Medicine, starting in the fall of 1992. In 1994, my organizational efforts at the hospital were rewarded with the creation of a new corporate position, Vice President, Health Science Education. In this role, I oversee the hospital's administrative interface with all health professional students who are engaged in diploma- or degree-earning studies at the hospital. In 1994, the Faculty of Medicine established “academies” to facilitate the delivery of the undergraduate medical curriculum at the University of Toronto. The academy is an organizational unit that consists of a teaching hospital, community health resources of various kinds, and basic scientists from the downtown campus. I became the Director of the Boyd Academy, which is based at Sunnybrook. In this role, I have responsibilities for the academic performance of all medical students at the Boyd Academy.

As a teacher, I have a wide variety of roles. I lead a tutorial group of six first year students in the Health, Illness and the Community course. For the second year of this same course, I serve as the Academy coordinator for all 27 second year students. In the second year, I conduct two Hematology seminars for all 27 students. I also regularly substitute as a Problem Based Learning group tutor for all courses, if teaching faculty are absent due to illness or conference leave. In the clerkship, I teach a Hematology seminar three times a year. Because of my administrative responsibilities, I am no longer involved in the supervision of medical students or postgraduate trainees when they are learning on the wards.

In reflecting back on my personal experiences with other health care professionals, it struck me that no formal educational endeavours had prepared me for teamwork. Kardex rounds had been a critical venue for learning about the roles of other health care professionals. However, in my clinical work on the Hematology ward at
Sunnybrook, the Kardex rounds did not involve the staff physicians. In addition, I frequently witnessed situations in clinical practice that would have benefited from more teamwork among health care professionals. I wondered about the role of undergraduate medical education in fostering collaboration. As part of my doctoral coursework, I reviewed the subject of multiprofessional education. At the same time, Sunnybrook was engaged in a strategic planning process that led to enhanced recognition of the roles of other health care professionals in patient care. Indeed, in 1992, the name of the institution was changed from Sunnybrook Medical Centre to Sunnybrook Health Science Centre.

In the context of these changes at the hospital, and as an extension of the coursework on multiprofessional education, I convened a meeting of the Health Science Education Committee to discuss the design and implementation of a pilot program for the health science students at Sunnybrook. A newly created subcommittee of the Health Science Education Committee, named the Multiprofessional Education Committee (MPEC), was charged with instituting the pilot program. I became the Chair of MPEC. Further details of the Multiprofessional Education Program (MPEP) are provided in chapter four.

I have conceptualized the development and the study of the MPEP as an example of action research. As McTaggert (1991) suggested, action research begins with an idea that some kind of improvement or change is necessary or desirable. Reason (1994) wrote that,

Action science and action inquiry are forms of inquiry into practice; they are concerned with the development of effective action that may contribute to the transformation of organizations and communities toward greater effectiveness and greater justice. (in Denzin & Lincoln, 1994)

As Argyris, Putnam and Smith (1990) remarked,

If researchers or participants hold an interest in a goal, then this is a sufficient criterion for making the goal worthy of pursuit and for inquiring into efficacious ways of achieving it. (Argyris, Putnam, Smith, 1990)

In the case of MPEP, the ends, namely enhanced collaboration in health care, were regarded as a “given” in formulating the problem. Argyris, Putnam and Smith also emphasized the need to scan the basic research in the field of inquiry, looking for problem-solving strategies that might work. The review of the literature about multiprofessional education provided much of the practical underpinning for the design
of the MPEP. Finally, Argyris, Putnam and Smith suggested that one should pick problem-solving strategies that would fit within the existing constraints and norms of the educational setting. As discussed in chapter four, the planning of MPEP was very mindful of this point.

My own role in this research is perhaps best captured by the following description of action inquiry by Reason:

Action inquiry is a discipline relevant to those most deeply committed to participative approaches to inquiry, persons who wish to play leadership roles in cultivating this process with others and who wish to inquire about their actual effects as they do so. (in Denzin & Lincoln, 1994)

This thesis adds to the medical education literature by exploring medical students’ concepts of collaboration in health care. In addition, the research seeks suggestions as to how educational interventions fostering collaboration may be incorporated into a health science faculty’s curriculum. A qualitative approach, via in-depth interviews, captured the perceptions and observations of medical students who, as first year students, had participated in the pilot educational effort aimed at fostering collaboration. These students were in clinical training at the time of the interviews. In effect, the interviewed students were providing two perspectives towards understanding collaboration. First, they were contributing to an evaluation of the pilot program (MPEP) which they had experienced several years previously. Second, they were providing observations, insights and suggestions, based on their clinical training experiences, which may inform the future planning of educational efforts at the University which aim to foster collaboration among the health professions.
CHAPTER 2

TEAMWORK AND COLLABORATION IN HEALTH CARE

The concepts of teamwork and collaboration in health care will be reviewed. After addressing some definitions of teamwork/collaboration, both opinion pieces and research articles regarding the benefits and liabilities of health care collaboration will be discussed. The literature regarding barriers to teamwork in health care settings focuses extensively on the relationship between physicians and nurses. Understanding the tensions of physician-nurse relationships is integral to many collaboration issues. The chapter will conclude with a review of studies that analyzed the outcomes of successful teamwork in health care settings.

The concepts of teamwork and collaboration are interwoven in health care settings to such an extent that the terms appear synonymous. Clark (1991), as mentioned in the introduction, emphasized a team’s use of different tools and concepts, an organized division of labour and continuous intercommunication between team members. He also stressed that often the group felt responsible for the final product. This comprehensive definition of a team itemizes the individual behaviours needed for effective collaboration. Pike (1991) identified shared decision making, responsibility and accountability as attributes of collaborative practice. Furthermore, Pike stated that

Collaboration has come to imply trust and respect not only of one another, but also of the working perspectives each contributes. The concept suggests a bond, a union, a depth of caring about each other and the relationship. It incorporates notions of a synergistic alliance that maximizes the contributions of each participant.... It is the synergy which distinguishes collaboration from other companionships. The synergy allows the collaborative alliance to be more than the sum of its membership. (Pike, 1991)

Drinka and Streim (1994) suggested that an interdisciplinary health care team is "a group of health professionals from different disciplines who engage in planned, interdependent collaboration." These definitions suggest that teamwork in health care means collaboration and vice versa. This is so if one accepts a broader definition of teams to include those that are ad hoc, transient, not geographically based, or not having formal regular meetings. (Fried et al, 1988; Ryan, 1996)
Benefits and liabilities of teamwork

The benefits of teamwork are numerous. A team should have access to new technology and innovations within each profession. Individual professional members bring complementary skills to the collaboration. The organized division of labour should produce efficiencies and economies of scale for many activities. The critical aspect of continuous intercommunication is capable of restoring coherence to patient care, which is often fragmented (Ryan, 1996).

Gray (1985) extended the discussion about teamwork to include those situations that require collaborative alliances or cooperation between teams (a concept referred to as inter-teamwork). These situations also help to define conditions in which teamwork between individuals may be beneficial. Gray’s five conditions included: 1) when issues are bigger than a single individual alone can resolve; 2) when competitive methods do not work; 3) when collaboration is required across organizational boundaries; 4) when resources are constrained; 5) when the environment is changing and turbulent.

Tjosvold (1988) added three key expectations which would sustain the development of inter-teamwork: 1) an expectation of a “win/win” (both teams benefiting) outcome; 2) an expectation that scarce resources would be distributed equally; 3) an expectation that the burden of work would be shared. These premises are also applicable to teamwork among individuals. All of the above conditions are increasingly operative in the health care environment, thus suggesting that attention needs to be focused on fostering teamwork and collaboration.

However, teamwork and collaboration may also have liabilities. Gray (1985) suggested that the negative aspects of teamwork could include increased costs, staff role confusion, ambiguity regarding responsibility, professional insecurity and heightened interprofessional adversarial relationships. These effects could lead to decreased patient satisfaction and decreased health care service to the patient.

Barr (1993), in a study of community-based multidisciplinary teams, reviewed factors which interfered with successful functioning of teams. These included uncertainty about the role of the team in relation to general services and how it fits into the overall service strategy; difficulty in formulating, agreeing and following priorities
between different types of work; difficulty over control of team members by professional superiors outside the team (thus undermining teamwork); and, difficulty in exerting anything more than peer pressure on team members who do not follow team policies. Barr also described poor case coordination within the team and poor liaison with others involved in delivering services to the individual, as well as uneven and unfair work distribution between team members.

**Barriers to collaboration**

Ryan (1996) observed that professions and teamwork have emerged in parallel with each other.

> The history suggests that shifts in care giving paradigms, especially when accompanied by economic restraint, may have a more profound impact on the practice of teamwork than do special interests. (Ryan, 1996)

Abbott (1987) wrote that:

> The central phenomenon of professional life is thus the link between a profession and its work, a link I shall call jurisdiction. To analyze professional development is to analyze how this link is created in work, how it is anchored by formal and informal social structure, and how the interplay of jurisdictional links between professions determines the history of the individual professions themselves. (Abbott, 1987)

Abbott noted that it is the relationship among professions which is potentially the central feature of professional development. It is the control of work that brings the professions into conflict with each other. Understanding these complex relationships is thus critical in understanding the issues related to collaboration in healthcare.

Many researchers have studied barriers to collaboration in healthcare. A large fraction of this work has analyzed the physician-nurse relationship. This is not unexpected, as physicians have traditionally been viewed as the leaders of health care teams while nurses have been the largest single group of health care professionals involved in most organized health care activities. Abbott (1987) pointed out that the nursing profession was created as a subordinate group, with great advantages for the profession (Medicine) with full jurisdiction. Subordination enabled extension of the dominant effort of the medical profession without division of its dominant perquisites. It also permitted the delegation of routine work and settled the public/legal relations between the medical profession and the nursing profession from the start. This subordination assumes a complex division of labour, with extensive workplace assimilation creating consequently fuzzy workplace jurisdiction. However,
It is an inherently uneasy settlement, partly because it is undercut by workplace assimilation and partly because subordinates become absolutely necessary to successful practice by superordinates...dominance and autonomy, not collegiality and trust, were the hallmarks of the American medical profession. (Abbott, 1987)

"The doctor nurse game" was described by Stein (1967) as an interactional framework for the relationship between physicians and nurses. Stein outlined the traditional belief that total responsibility for decisions regarding patient management had been vested in the physician. Nurses could take initiatives and could make specific recommendations, but in doing so, the nurse had to offer suggestions in a manner that was not presumptuous. In fact, it was best if the recommendations appeared to be initiated by physicians. The cardinal rule of the game was that open disagreement between the two sets of players had to be avoided at all costs. The rules of the game were established during student training. Medical students were led to believe in physician omnipotence and infallibility. Nursing students were instructed to accept the superiority of the physicians' medical knowledge. An attitude of deference was expected from the nurse. It was critical that independent recommendations made by the nurse to the doctor were to be phrased in a way that would not seem to be questioning the physician's knowledge. Stein commented that the game persisted because of the "stereotype roles of male dominance and female passivity" and because "the game supported a rigid organizational structure with the physician in clear authority."

Stein and colleagues (1990) revisited the "doctor nurse game". Significant changes to the conditions of the game had occurred in the intervening decades. Public esteem for physicians had deteriorated. The concept of physicians' omnipotence had given way to a broader recognition of their fallibility. Physicians were also more likely to be female, hence lessening the stereotypic role of male dominance and female passivity. In addition, nursing shortages occurred in various jurisdictions. Nurses, because of special training and certification, increasingly began to function on health care teams at a collegial level with physicians. In many fields such as geriatrics, mental health and paediatrics, numerous interprofessional models of practice were shown to offer superior quality of care to the patients. Thus, in Stein's more recent analysis, one of the players, the nurse, had unilaterally decided to stop playing the game. Stein and
colleagues also related these changes toward increased professional autonomy to an extension of the civil rights movement and more particularly, the feminist movement.

Storch (1994) reviewed the division of labour in health care from an ethical point of view. She concluded that

The current division of labour in health care is not ethical for two reasons: first, because it inhibits open and honest relationships with patients and, second, because it leads to a waste of human resources. (Storch, 1994)

Kapp (1987) made a similar point about the strong legal and ethical basis for requiring effective interprofessional, multidisciplinary cooperation in health care. In essence,

In those situations where interprofessional efforts can best help the patient, such efforts are morally appropriate, if not obligatory, assuming the approval of the patient or patient's proxy...to the extent that interprofessional cooperation in the practice of geriatric medicine enhances the quality of patient care and improves the efficiency and effectiveness of that care, it serves the principle of justice; the individual patient has a better chance of receiving the high quality care that he or she deserves, and the efficient, effective use of health resources makes more of those resources available to address legitimate needs of others. (Kapp, 1987)

Kapp also explored the legal basis for collaboration. He suggested that there are several theoretical underpinnings for a legal duty of interprofessional cooperation. In Kapp's opinion, this duty is encompassed within the general standard of reasonable or due care. Physicians risk being found guilty of abandoning the patient if they do not cooperate completely with other health care professionals who are also dedicated to alleviating a patient's common difficulties. Kapp (1987) concluded that, "serious legal jeopardy exists where there is unresolved and undiscussed tension among health care professionals jointly caring for a particular patient."

According to Storch's review (1994), physician dominance in health care in Canada had existed since the early twentieth century. According to Storch, this dominance of physicians had rested on three bases: the cultural authority of Medicine; the market authority of the medical profession through licensing bodies, limits on medical education and resistance to salaried positions; and, the political authority of Medicine through its influence on government policies.

Pillitteri and Ackerman (1993) also observed that early in its formal organization, the nursing profession accepted a passive role in physician-nurse relationships. Florence Nightingale's writings included comments such as the need for "devotion and obedience" as qualities expected of nurses. Other quotes from turn of the twentieth century literature were in the same vein:
In my estimation obedience is the first law and the very cornerstone of good nursing, and here is the first stumbling block for the beginner. No matter how gifted she may be, she will never become a reliable nurse until she can obey without question. (Anonymous, quoted in Pillitteri and Ackerman, 1993)

Kappeli (1997) reviewed the issues of physician-nurse cooperation and why the partnership was so difficult. In reviewing the system of health professions, Kappeli observed that each profession transforms the health problems and needs of a client into the categories of its discipline. Furthermore,

The definition of any patient's situation represents the basic topic in interprofessional cooperation. If one ceases to begin with the premise that the doctor is the main decision maker in the patient's situation, it is often this very definition which is a starting point of a chain of conflict. (Kappeli, 1997)

In Kappeli's experience, physicians often found the nursing approach to be diffuse while nurses viewed the physician's analysis of a client's situation as an oversimplification.

The problems in the working relationship of nurses and physicians were noted as far back as 1977. Kalisch and Kalisch (1977) authored a comprehensive analysis of physician-nurse conflict. The authors expanded upon thirteen sources of conflict between these two health care professions. The issues included:

- physician dominance and nurse deference
- physicians' devaluation of nursing
- lack of knowledge of other professions
- the psychosocial emphasis of the nursing profession
- nurses' retreat from patient care
- the wide range of education available for the nursing profession
- two systems of authority related to nursing
- the lack of professional commitment within nursing
- a devaluation of continuing nursing education
- the policing relationships that nurses and physicians have with each other
- a fear of usurpation of responsibility
- nurses lacking control over nursing as a profession
- political conflicts among national professional organizations.

Kalisch and Kalisch (1977) began their analysis by reviewing the dominant position of the physician. They suggested that most physicians have high expectations
for an independent practice. However, current medical care reality puts that expectation into conflict. In addition, doctors feel threatened when they perceive that they are not totally in control of health care situations. The authors suggested that

This high degree of individualism and desire for independence amongst many physicians seems to preclude or limit their capacity for being integrated into multidisciplinary teams or for developing interdependent relationships with other health care workers. (Kalisch and Kalisch, 1977)

They also commented on the physician attitude of omnipotence, outlining how these feelings began in the earliest stages of medical school. Nurses were often perceived as deferential to physicians for a variety of reasons. Kalisch and Kalisch emphasized the fact that most physicians are male and most nurses are female. The schooling of nurses did not help matters. These researchers suggested that “schools of Nursing have not been noted for developing independent and fearless thinkers.” Over the last decades, university-based schools have replaced hospital-based schools of Nursing. Whereas the hospital schools socialized nursing students to accepting physician authority, the academic schools were far different, with not only an absence of physicians’ influence, but an aversion to it. Nursing deference also derives from a lower level of education compared to the physician. The educational gap, although narrowing, was viewed as being a hindrance to the development of mutual respect. The nurses’ typically lower socio-economic class and its associated lower income and lack of contact in their personal lives also were factors that were felt to contribute to physician dominance and nurse deference. Nurses had grown unhappy about the value they perceived physicians to place on their independent contributions to patient care. These conflicts were exacerbated by a lack of knowledge regarding each other’s profession, with neither being able to fully empathize with the other’s viewpoint. As Kalisch and Kalisch observed, medical and nursing students typically did not study together. In addition, their curricula seldom provided information about the contributions of other health care professions. The authors also believed that the increasing emphasis on psychosocial issues by the nursing profession deflected from an understanding of the patient’s physical needs. Conversely, nurses believed that physicians were not managing their patients in a holistic manner.

Kalisch and Kalisch observed that as nurses acquired seniority, they tended to leave patient care to assume administrative duties. There was also a perceived high turnover of nurses (caused by marriage and nurses’ spouse employment issues). These
two factors, according to the researchers, resulted in the medical profession viewing the nursing profession as having a lack of professional commitment. What resulted, in the view of Kalisch and Kalisch, was nursing being composed of a small proportion of policy makers, nurses dedicated to professionalization and improvement striving to mobilize a group of mostly casual and transient workers. The real leadership in nursing is like the head of a dinosaur, with the massive body of the dinosaur representing by far the largest health profession - but a woefully silent majority. (Kalisch and Kalisch, 1977)

Even the nursing profession’s quest for continuing professional education met with physician skepticism, as physicians believed that the more educated nurses would eventually decrease their degree of patient contact.

Kalisch and Kalisch also suggested that the wide range of educational preparation within Nursing resulted in confusion for physicians, who amongst their own profession dealt with a relatively homogenous degree of professional preparation. Furthermore, in the nursing profession, higher education was often related with more distance from patient care, a trend not typical within the medical profession. These researchers also commented on a variety of institutional and organizational issues. They suggested that in a typical hospital, nurses were the recipients of two systems of authority, one from the hospital administration and the other from the physicians directly involved in patient care. Compounding this authority issue was the rise of the nurse practitioner and other more specially qualified nurses. In the United States, nurse practitioners and primary care physicians battled over the ability to function both independently and cooperatively. Finally, Kalisch and Kalisch reviewed a variety of national political conflicts between Medicine and Nursing in the United States that generated tensions between the two professions. Many of these tensions, not unexpectedly, had financial implications.

Kappeli (1997) quoted a survey done by the American Nurses Association in which nurses believed that 60 to 80 percent of work performed by physicians could be carried out by nurses with the same quality outcomes but at a lower cost. They argue that the nurse as a physician substitute was a direct threat to the relationships between the professions. This threat is also a significant barrier to collaboration.

Fagin (1992) postulated that collaboration between physicians and nurses was rapidly becoming a necessity and was no longer a choice. She suggested that this trend was significantly affected by the development of managed care in the United
States. As more physicians had changes in their traditional autonomous work roles, and more of them became salaried employees, a “convergence of issues” affecting both nurses and physicians brought the potential benefits of collaboration to the forefront. Fagin cited Kurtz’s study of physicians as managers (Kurtz, 1980), which assessed physicians’ preferences for interpersonal interactions. The results revealed that physicians would prefer not to be interactive and preferred to avoid group involvement. Under conditions of stress or conflict, physicians tended to withdraw support from the group, asserted authority, fought for suboptimal points of view, and defined success as winning in these interactions and failure as losing. Physicians did not view reaching a mutually acceptable compromise as success. Fagin noted that if Kurtz’s findings were generalizable, the movement of physicians to a collaborative model could be totally against the grain of the personalities of individuals who chose to practice Medicine.

Empirical studies have provided information regarding the degree of collaboration in health care and barriers to collaboration. Lawrence and colleagues (1977) surveyed primary care physicians in North Carolina to measure their receptivity to nurse practitioners. The survey included a list of clinical tasks of varying levels of difficulty and responsibility and asked physicians about their willingness to delegate these tasks to nurse practitioners. The researchers’ findings suggested that approximately one third of respondents would consider hiring a nursing practitioner. Slightly more than half of the respondents approved of the concept of nurse practitioners, but would not necessarily hire one. Delegation of patient care tasks such as history taking, patient education, and counseling were conceded as legitimate roles for nurse practitioners. Physicians who had previously worked with a nurse practitioner were more willing to hire one and gave higher task delegation scores. The authors suggested that future training of physicians in settings where nurse practitioners are employed might foster increased physician receptivity to and demand for this type of assistance. Even the potential training of nurse practitioners required a combination of didactic courses and on the job training, suggesting a need for a socialization process similar to that which the physician underwent. Lawrence and colleagues pointed out that the process of socializing a physician implies continuous dialogue and learning which in turn usually results in high levels of professional consensus about matters of central importance in the diagnosis and treatment of disease. This very process and the resulting consensus act to deter the delegation of clinically, ethically and legally defined professional responsibilities to non-physicians who have not participated in the process of socialization. (Lawrence, 1977)
Devine (1978) spent one year studying two paediatric wards. The staff included 22 nurses and 11 physicians. She used participant and non-participant observations, formal and informal interviews, daily activity diaries and questionnaires. Devine explored the conflict which exists between nurses' occupational autonomy and their position within the hospital hierarchy, which often obliged them to work with a lower status under the direction of physicians. Devine noted that "buffer" groups such as residents and clinical clerks acted as mediators between staff physicians and nurses. The nurses seemed to be less intimidated by physicians in training. The nurses were observed to more freely ask residents and clerks questions concerning patients. On one ward, which did not have physicians in training, more overt conflict in the relationship between nurses and specialists was both observed as well as demonstrated through analysis of questionnaires.

In the early 1980's, Prescott and Bowen (1985) collected data from physicians and nurses in 15 general hospitals selected from major American metropolitan areas. Their sample included private university-teaching hospitals, community owned and municipal hospitals. Within each hospital, 6 patient care units were selected for study. Units included a mixture of medical, surgical, intensive care and medical-surgical specialty units. Staff nurses, physicians, the head nurse and the nursing supervisor were interviewed and were asked to complete questionnaires. In addition, during a one-week episode of data collection, all staff nurses, housestaff (residents and clerks) and attending physicians were asked to complete questionnaires. The researchers' final sample included over 400 interviews and over 1500 completed questionnaires from nurses and physicians. Prescott and Bowen's (1985) findings suggested that 70% of the physicians and 69% of the nurses described their interprofessional relationships as mostly positive. The authors categorized disagreements into various areas, and found that the greatest number related to the patient's general plan of care. Resolutions of these disagreements were described by two thirds of the physicians and slightly over half of the nurses as competitive in nature, with few examples of joint problem solving (which the authors termed collaboration). In thematically analyzing their interviews, Prescott and Bowen determined that disagreement, in itself, was not always undesirable. Because disagreement brings different perspectives and complementary orientations of the two disciplines together, this kind of conflict was felt to serve an
important role in patient care. Physicians more than nurses viewed this disagreement as a needed part of their interprofessional interaction. Disagreements were resolved more often by competitive and accommodating modes of behaviour. The accommodating behaviours, as described by the authors, were similar to those that Stein described in the doctor-nurse game. Prescott and Bowen pointed out that most disagreements were settled rather than resolved. “Settling relies on solutions based on compromise and imposed authority, whereas resolutions are more integrated solutions that view disagreements more as problems to be solved.” In their conclusions, Prescott and Bowen (1985) urged hospital administrators and health care practitioners interested in better patient care to develop means of more effectively resolving conflicts using collaborative behaviours.

Weiss and Davis (1985) sampled 200 physicians and 200 nurses from a major health science centre in the western United States. The aim of their study was to determine the validity and reliability of the Collaborative Practice Scales, two self-report measures that assessed the degree to which the interaction of nurses and physicians enabled synergistic influence on patient care. Their theoretical framework defined collaboration utilizing three key features: 1) the active and assertive contribution of each party; 2) receptivity to and respect for the other party’s contributions; 3) a negotiating process that builds upon the contributions of both parties to form a new way of conceptualizing the problem. Weiss and Davis (1985) found that nurses who did not have a university degree scored lower on direct assertion of professional expertise and opinion and nurse clinicians scored significantly lower in factors of collaborative practice than nurses who were educators, administrators or researchers. Weiss and Davis (1985) suggested that the average staff nurse may be ill prepared for collaborative practice with physicians and might be expected to experience difficulty functioning in a collegial capacity. Female physicians were shown to be more cognizant of the contributions that other women made, suggesting that a change in physician demographics (toward more females) might serve to foster collaborative efforts between physicians and nurses.

Bond and colleagues (1987) studied interprofessional collaboration in primary health care settings in the United Kingdom. The authors looked at general practitioner and district nurse pairs as well as general practitioner and health visitor pairs. They used personal interviews and a prospective record of referrals and consultations. Bond
and colleagues defined five levels of increasing collaboration, which they labeled isolation, encounter, communication, and collaboration between two agents and collaboration throughout an organization. Using this five-level scale, the interviewers rated the collaboration for over three hundred collaborative units (physician-nurse pairs). In their research, the most commonly observed level of collaboration (level three) was characterized by regular communication between the pairs that resulted in the exchange of mutually meaningful information. Overall, their ratings data suggested that only 27% of general practitioner-district nurse pairs and only 11% of general practitioner-health visitor pairs were working in partial or full collaboration. Their study also determined variables that were associated with higher ratings of collaboration. These included interprofessional meetings where both partners were present, shared decision-making following consultations, comments being made on each other's work, and the physician understanding the role of each member of the health care team.

The editors of Nursing 91 magazine (1991) collected questionnaires from over 1,000 nurses regarding issues of interprofessional relationships with physicians. In their survey, only 43% of respondents were satisfied with their relationships with physicians. The doctors' lack of respect for nursing expertise was the most commonly cited reason for lack of satisfaction with their relationship with physicians. Over two thirds of nurses also doubted that physicians understood nursing responsibilities. The nurse respondents to the survey characterized nurse-physician relationships in hospitals as being predominantly one of nurses being subordinate to physicians. Only 29% of respondents characterized hospital relationships as collegial. The survey also suggested that working with younger physicians was slightly easier for nurses than with older ones. However, 55% of respondents said that their working relationship with female physicians was no better or worse than with their male counterparts.

Other health professions and teamwork

The health care collaborative literature contains less information about interprofessional relationships involving health professions other than Medicine and Nursing. Curtis (1994) studied physical therapists and their interprofessional role conflict with physicians. It was believed that physicians exercised a prescriptive relationship when referring patients to physical therapists. The doctors viewed the physical therapist as technicians, rather than professional colleagues. Curtis studied a
convenience sample of practicing physical therapists in a variety of practice settings. Ninety-one percent of the respondents described at least one situation in which they felt they had compromised professional judgment following an interaction with a physician. Curtis (1994) noted that when therapists attributed their failure to external and uncontrollable sources, such as the receptivity of the physician, the therapists preserved self-esteem in the short-term. However, withdrawal and avoidance of interprofessional conflict came at a cost of poorer patient care when professionals did not share their unique professional perspectives with each other.

Broader views of health care teams (involving more than just physicians and nurses) were provided by Brown (1982), Qualls and Czirr (1988) and Clark (1991). Brown (1982), in an historical review of health care teams, delineated four general categories of team language seen in modern American health care literature. The first usage described teams as groups of highly competent specialists who performed dramatic and usually short-term activities. An example was an intensive care unit team. The second usage of team language described the cooperation of technically oriented providers (for example, specialist physicians) with socially and/or behaviourally oriented providers (such as social workers). As a third category, Brown suggested that allied health professionals, such as nurses, used team language in attempts to achieve less hierarchical and more egalitarian modes of organization and decision-making in health care. Finally, the fourth usage of team language, exemplified by the physician as “team leader”, was viewed as an attempt to use the team concept manipulatively by physicians and/or hospital administrators to gain managerial control over allied health professionals. Depending upon the health care issue involved, different groups of professionals became “allied” to foster teamwork. For example, in the area of mental health, Brown suggested that

Invocation of the team notion was perceived correctly by lesser-status psychiatric personnel (social workers, psychologists) as a means of liberating themselves from the hierarchic dominance of physicians. (Brown, 1982)

Brown’s review also summarized efforts at fostering teamwork in comprehensive family care programs and community neighbourhood health centres, as well as in discipline-related fields such as paediatrics, geriatrics and mental health.

Qualls and Czirr (1988) studied models of professional and team functioning in geriatric health teams. They observed that the values and behaviours that comprised
professionalism were not the same for all professions. Individual health care professionals who failed to realize that a range of models existed, or who judged others within their own model, were at risk of establishing a chain of confusing attributions resulting in interprofessional conflict. Qualls and Czirr reviewed four broad areas in which professional models of good health care differed. These included the logic of assessment, the focus of professional efforts, the locus of responsibility and the pace of action. To this list, Ryan (1996) added the location or place of work, language and style of documentation.

Qualls and Czirr (1988) observed that the logic of assessment was very different for professions. Physicians were traditionally taught to narrow possibilities of diagnosis (the “ruling out” logic of Medicine) while social workers and psychologists were trained to broaden their case formulation (the so-called “ruling in” approach). This logic of assessment was complemented by differences in data gathering. Physicians depended more heavily on objective testing while other health professionals gathered data in a more interactive way with patients.

The focus of professional attention was perceived to derive from the logic of assessment. This created potential conflict between professionals both with respect to the primacy of acute over chronic problems and with respect to the perceived greater status of specialists versus generalists and of the hospital versus the community.

Professions differed also with respect to the locus of responsibility, varying from the extreme direction provided by physicians in emergencies to the more participatory way in which other professionals related to patients with chronic non-emergent health issues.

Qualls and Czirr (1988) also observed that the speed with which decisions are made, which they termed the “timetable for change”, was significantly different among professionals. Minutes or hours could be critical in some physician dealings with patients, whereas other professionals had time frames that extend over weeks, months or even years.

Ryan (1996) observed that the primary location or place of work also differed considerably between geriatric health care professionals. Some viewed the home or community setting as being critical to visit, whereas others emphasized the efficiencies of seeing patients in institutional settings.
Ryan (1996) also mentioned profession-specific language as a dimension that resulted in team conflicts. Heated debate has arisen over the relative values of terms such as patient, client and customer. Finally, Ryan pointed out that even styles of documentation differed widely between members of a team. Patients in acute care hospitals typically received extensive documentation, whereas a practice that was community-based resulted in a more abbreviated written communication from health professionals.

Clark (1991), in a conceptual framework for developing interdisciplinary teams, referred to the concept of the “cognitive map”. By this he meant the entire “paradigmatic and conceptual apparatus” used by a discipline. The cognitive map included the discipline’s basic concepts, modes of inquiry, the way in which problems are defined, techniques of observation and representation, standards of proof, and general ideas of what represents a discipline. Clark warned that if members of a team did not possess at least a basic understanding of each other’s cognitive maps, it was likely that misunderstandings would result.

Outcomes of successful teamwork

Although much has been hypothesized regarding the benefits of collaboration and teamwork, research citing health care outcomes data have been less common than conceptual articles regarding collaboration. However, both on a small scale and increasingly at a larger system-wide level, the benefits of collaboration are being supported with empirical data. Feiger and Schmitt (1979) studied the interactions of physicians, nurses and nutritionists in interdisciplinary health teams looking after elderly patients. A model of collegial interaction was developed. Outcome data consisting of measures of social, physical, physiologic and emotional functions were combined into an index of changes in health status. Their report demonstrated that the rank order of the teams on a combined (participation plus pattern) collegiality score matched exactly the ranked order of the teams on patient outcomes data. Knaus and colleagues (1986) prospectively studied treatment and outcome in over 5,000 patients in intensive care units at 13 American tertiary care hospitals. Each hospital's patients were stratified by individual risk of death using a well-accepted combination of biomedical scores. The authors then compared actual and predicted death rates in these hospitals. Their
analyses concluded that the differences between hospitals and units in patient outcomes related more to the interaction and coordination of each hospital's intensive care unit staff than to the unit's administrative structure, amount of specialized treatment used or the hospital's teaching status. (Their findings supported) the hypothesis that the degree of coordination of intensive care significantly influences its effectiveness. As a general rule, in the 5 best hospitals, physicians respect the nurse's capabilities and readily listened to and trusted what the nurse had to say regarding a patient's condition and course of treatment. (Knaus, 1986)

Cosgrove and colleagues (1988) performed a retrospective audit of randomly chosen charts of patients with rheumatoid arthritis. Predetermined criteria were generated for optimal medical care, including the components of the initial evaluation, treatment plan, outcomes and discharge plan. In a time-series analysis, the patients were analyzed before and after the establishment of a team approach to care. The findings of Cosgrove and co-workers suggested that the development of a team improved many aspects of patient care, though this was not uniformly seen throughout all members of the arthritis care team.

In the late 1980's, Boston’s Beth Israel Hospital began to explore a model of primary nurse-physician collaboration on a combined medical-surgical ward, named Seven Gryzmish. Pike and her colleagues led research into the outcomes of this model. In 1991, Pike reported on the decline in incidence of moral outrage among nurses faced with moral dilemmas. This was seen as an unexpected favourable outcome of the collaborative model at the Beth Israel Hospital. Using a critical incident technique, Pike studied a variety of clinical experiences with moral dilemmas and assessed how they were handled collaboratively. In her analysis, she suggested that the cases demonstrated the empowerment of nurses to see new ways of responding to moral dilemmas. The collaborative model allowed the development of self-confidence among nurses and fostered the courage to confront issues of discord with physicians. The nurses perceived themselves as being able to contribute more as independent members of the patient care team and their own sense of value as health care professionals gained considerably in the collaborative model. Pike's research also suggested that the synergy in the nurse-physician alliance brought about a blending of moral perspectives regarding patient care with the physician contributing the "perspective of justice" and the nurse operationalizing the "perspective of care". Pike
suggested that “taken collectively, the perspectives of care and justice constitute a more comprehensive moral framework.”

Alpert, Goldman, Kilroy and Pike (1992) identified other outcomes of collaborative behaviour arising from the study of Seven Gryzmish. They concluded that collaboration is a conscious and learned behaviour. Using previously validated job satisfaction scales, they were also able to demonstrate that clinical nurse job satisfaction increased after one year of practice to a statistically significant extent. The researchers also used the collaborative practice scale developed by Weiss and Davis (1985) and found that attitudes favourable to collaboration increased amongst nurses and physicians. They also studied the impact of the collaborative experiment on patient outcomes. Without providing data, Alpert and associates suggested that a comparative analysis of the outcomes of surgical bowel procedures showed initial encouraging results in favour of the collaborative unit.

McHugh and colleagues (1996) described an interdisciplinary team’s use of improved communication and collaboration to improve patient care on a busy surgical service. Their initiative, which included a variety of work-design strategies, resulted in shortened lengths of stay for patients in the experimental unit.

Care in the hospital proceeds more smoothly because of the contingency planning that occurs on (multiprofessional) rounds, and because the ideas and perspectives of both nurses and physicians are integrated more fully into a unified thorough plan of care.

McHugh and colleagues also recognized that other beneficiaries of improved interactions included the health care providers themselves. Both physician satisfaction and nursing work satisfaction were documented to improve.

Brita-Rossi and colleagues (1996) described an administrative level example of collaboration between a multidisciplinary group of clinicians and administrators that resulted in significant improvement of quality of care in an inpatient orthopaedic unit. Their primary outcome measures included length of stay and cost per case. Both of these measures illustrated improvements. There were also significant increases in scores for patients' perceptions of their care in the collaborative units.

Conclusions

A working definition of collaboration in health care includes the concepts of an organized division of labour, with unique expertise being contributed by different
professionals. Teamwork requires communication. Teamwork requires that each professional respects the views of other team members. Responsibility for the final outcome may also be shared. In health care settings, the relationship between physicians and nurses is pivotal to collaborative efforts. Many barriers to teamwork between these two professions were reviewed. Although some of the barriers are political and organizational, other barriers are related to physicians’ attitudes toward Nursing and by physicians’ lack of knowledge about other health care professionals. However, both opinion pieces as well as empirical studies have begun to suggest that real benefits do exist for collaboration in health care settings. Chapter three will review educational efforts to overcome some of these barriers to teamwork. In turn, this could foster enhanced collaboration among health care professionals.
CHAPTER 3

EDUCATING MEDICAL STUDENTS FOR TEAMWORK AND COLLABORATION

Evidence is accumulating that better care of patients requires teamwork between health care professionals, each bringing unique expertise to bear upon the patient's problems. The health professional's preparation for and perception of their role as a member of such a team has generated much interest in the education literature. This chapter will begin with a review of studies of medical students' perceptions of teamwork and collaboration with other health care professionals. These studies will serve as a foundation for reviewing educational interventions that have been tried in a variety of settings. The literature regarding multiprofessional education (MPE) will be discussed with respect to definition, rationale and calls for reform, goals and objectives, current reality, content and format, evaluation strategies, student issues, faculty issues and institutional issues.

Medical student perceptions regarding other professions

Several authors have studied medical students' views and attitudes towards other health professionals, especially nurses. Webster (1985) studied medical students' views of the role of the nurse in nine hospitals affiliated with a large American medical school. Data gathering included field observations, semi-structured interviews, as well as informal interviews with students, postgraduate trainees and attending physicians. The students interviewed spanned all four years of the medical curriculum, including the last two years in which they were fulfilling clinical experience requirements.

Webster (1985) found that over the four years of medical school, students' perceptions of the physician's role with the patient and the health care team became more specific, while their perception of the nurse's role became more vague and diffuse. The students' awareness of the composition of health care teams also changed over time. Pre-clinical students defined teams broadly, for example, as "all those concerned with a patient's well-being", whereas more senior students defined team composition more specifically. The team's constituents often related to the needs of a particular patient's medical diagnosis. Webster also noted that among medical students, 70% of male students believed physicians were the natural leaders of health care teams,
whereas this feeling was shared by only 45% of female students. The study indicated that the students received limited exposure to nurses in expanded roles, such as in intensive care units. In addition, the medical students seldom had experience with nurse practitioners. Some medical students believed that the roles of medical students and nurse practitioners would have overlapped extensively. Webster also noted that only in the senior years did medical students perceive the nurse's role as a patient protector or advocate. According to Webster,

"The most striking finding among the third and fourth year students was the difficulty they experienced in defining the nurse's role relative to their own roles. The majority expressed confusion in defining the interface between nursing and medicine." (Webster, 1985)

The students rarely perceived nurses as being independent practitioners. In essence,

"The vast majority seem to assume that, in practice, nursing is essentially a lower level of the practice of medicine or entirely dependent on the physician's instigation or supervision rather than a separate role characterised by variable degrees of overlap or intersection with the physician's role." (Webster, 1985)

Several disquieting perceptions were also discovered. When discussing a variety of menial tasks ("scut work" in medical student parlance), some students expressed the belief that these kinds of tasks had originally been delegated to residents because the nurses - out of laziness, incompetence or inadequate staffing - simply were not able to perform these tasks. Webster, during the participant observation phase of her study, also noted the limited degree of interaction between nursing and medical students. Interdisciplinary conferences seldom occurred. Nurses seldom participated in teaching rounds, either because of timing conflicts with their own morning report or as a conscious decision to leave the patient's bedside when physician teaching occurred at the bedside. A notable exception to this was seen on the psychiatric wards, where other health care professionals were available during medical decision-making meetings. This exposed medical students to the specialised information and skills of these other health professionals.

Webster (1985) suggested that factors such as the growing population of elderly, the increasing importance of economic considerations in medical care and the growing public acceptance of nurses in expanded roles would do more to break down the power differential between physicians and nurses than educational interventions. Webster's study was rich with several types of qualitative data, which had been obtained from multiple sources. It included observations of students from all years of the undergraduate
curriculum, which provided insight into the evolution of medical students’ perceptions about nurses and teamwork.

The change in medical students' attitudes over time was also the focal point for the work of Lasswell and Smith (1987). They surveyed 60 medical students at Brown University, Rhode Island, at the beginning of each academic year, over the four years of medical training. A six-item Likert-type questionnaire was used. Students were asked to rate the appropriateness of involving six different health professions in the care of patients with specific problems. The professionals listed in the survey included nutritionists, social workers, occupational therapists, physiotherapists, pharmacists and psychologists. Of note, the medical students' perceptions of nurses were not surveyed. The medical students indicated a high level of agreement regarding the role of non-physician health care providers in specific situations. The level of agreement increased over the four years, but did not reach statistical significance. The results of this study of student attitudes indicated that students entered medical school with favourable attitudes towards other health professionals and that the favourable attitude was maintained during medical school years. Unfortunately, attitudes about nurses were not included in the questionnaire.

Lasswell and Smith (1987) also surveyed over 500 physician faculty members. They found that the faculty reported limited exposure to other health professionals during their own training. More recent graduates had greater exposure. The researchers noted that the more exposure faculty members had to other health professionals during their training, the higher they rated the extent of their current involvement with other health care professionals. Speciality-specific differences were also noted, with family practice faculty members having more exposure during their training and thus rating the helpfulness of other health professionals more positively. Lasswell and Smith's study concerning the attitudes of physician faculty was unique, in that it offered insight into the relationship between time since graduation and specialty of faculty and the faculty member's ability to foster collaboration.

Ryan and McKenna (1994) found a marked difference in perception of the nurses' role. They compared the attitudes of nursing and medical students towards issues related to patient care and the role of the nurse in organizing that care. Students in their final year of study in Northern Ireland were surveyed using a Likert-type questionnaire. The nursing students emphasized the independent scope of Nursing, while the medical students were less convinced about this issue. Ryan and McKenna concluded that both nursing and
medical students needed to develop a mutual understanding and respect for each other's roles if interprofessional relations were to improve.

Foley and colleagues (1995) studied second year medical students' views of the nurse's role. They surveyed three consecutive years of medical students during workshops designed to enhance nurse-physician collegiality. The workshops at the Mt. Sinai School of Medicine, New York, initially began as an elective learning experience but became a requirement in the medical curriculum for second year students. Data were collected between 1992 and 1994 using the Professional Nursing Image Survey, adapted from the American Nurses Association. Five-point Likert scales assessed the medical students' perceptions of the functions and duties of a nurse, opinions about the nursing profession, and the skills and abilities important for nurses. The authors noted that the item "nurse works independently" was consistently rated lowest on the scale by the medical students. The researchers speculated that on patient care units in large urban medical centres, the medical students perceived that nurses were more likely to function as collaborators rather than as independent practitioners.

Foley and colleagues (1995) were also concerned about misconceptions about the communication responsibilities and capability of nurses. As an example, only 28% of medical students believed that keeping patients informed about their condition was a major nursing role. With respect to general opinions about Nursing, most medical students agreed that Nursing was a challenging career with many specialised fields. Foley and colleagues concluded that pre-clinical year medical students essentially mirrored public opinion in their perceptions of the nursing profession. They viewed their study as a first step toward changing the image of the nurse and urged that "repeated educational opportunities that enable young physicians to understand the unique, interdependent, and collaborative role of the nurse are essential." The researchers did not speculate on what types of educational endeavours would be most useful. In addition, by studying only second year medical students, who had not experienced real clinical situations with nurses, the authors could not capture any changes in students' perceptions occurring as a result of clinical experience.

Hojat and colleagues (1997) compared medical and nursing student attitudes toward the physician-nurse alliance. An attitude questionnaire was completed by 408 medical students (208 for first year, 200 from second year) and 149 nursing students (64 first year, 85 second year). Their survey results disclosed several issues for which there
was concordance between the views of the medical and nursing students. These areas included the following questionnaire items:

- during medical training, medical students should be involved in teamwork with nurses in order to understand the role of nurses,
- there are many overlapping areas of responsibility between physicians and nurses,
- interprofessional relationships between physicians and nurses should be included in medical education.

Hojat and co-workers (1997) also discovered areas of discordance:

- the dominant position of doctors over other health care professionals is necessary for effective delivery of health care (67% of medical students agreed, compared to 30% of nursing students)
- a nurse should be viewed as a collaborator with a physician rather than his or her assistant (97% of nursing students agreed, compared to 79% of medical students)
- the nurse's function is primarily that of carrying out physician's orders (30% of medical students agreed, compared to 15% of nursing students).

This study also revealed that 92% of medical students agreed that physicians should be educated to establish better collaborative relationships with nurses. The authors conceded that these findings represent a hybrid of lay perspectives and the impact of the early years of professional education. These perceptions were not based on extensive first-hand clinical experience. The findings do illustrate how early in the professional education process certain views are developed. The results also offer some hope that junior medical students are receptive to educational interventions aimed at fostering collaborative practice.

In summary, these studies of the perceptions of medical students indicated that physicians in training had significant gaps in their knowledge base regarding the roles and responsibilities of the nursing profession. Conflicting research data have been reported with respect to the changes, if any, of medical students’ attitudes toward nurses which occurs with increasing clinical experience. Since many researchers suggested that educational interventions had the potential to improve medical students’ knowledge and attitudes about other health care professionals, the remainder of the chapter will review past experiences with a variety of educational efforts aimed at improving teamwork.
Definition of multiprofessional education

The World Health Organization (WHO) in 1988 defined multiprofessional education as:

the process by which a group of students from the health related occupations with different educational backgrounds learn together during certain periods of their education, with interaction as an important goal, to collaborate in providing promotive, preventative, curative, rehabilitative, and other health related services. (WHO, 1988)

Other terms used synonymously in the literature include "interdisciplinary", "multidisciplinary", "transdisciplinary" and "interprofessional". The WHO preference for the word "multiprofessional" derived primarily from the common usage, especially in the medical profession, of "discipline" to denote different specialities in Medicine, such as Surgery, Psychiatry, and so on. Using the word "profession" as the root was intended to avoid that connotation and source of potential confusion.

Rationale for multiprofessional education

Snodgrass (1966) postulated that professional stereotyping led to most problems with interdisciplinary relationships. However, "stereotypes are subject to modification with increasing contact and experience with the stereotyped group." Mechanic and Aiken (1982), in an article entitled A Co-operative Agenda for Medicine and Nursing, reiterated that the most important factor contributing to poor physician-nurse relationships was a lack of understanding between both groups. They suggested that "medical students could profit from the strong social and behavioural orientations in nursing and the emphasis on improving patients' levels of function - physical and social". They noted that medical schools and nursing schools should be more closely linked academically. This should be a major item on their joint agenda. They went on to suggest that the practice context was also critical and needed reinforcement.

A key factor is the presence of senior physicians and nurses who demonstrate by their own behaviour their commitment to a stronger partnership. Models are needed to build from the early interaction in which the young house officer is assisted by the experienced nurse in "learning the ropes". (Mechanic and Aiken, 1982)

These authors concluded that

Collaboration between medical and nursing faculty in practice, clinical research, and teaching could be a potent force in improving both patient care and the education of young doctors and nurses. (Mechanic and Aiken, 1982)
In 1988, the WHO Study Group on Multiprofessional Education of Health Personnel issued a report entitled *Learning Together to Work Together for Health*. The WHO rationale for MPE in the health sciences started with the truism that the complexity of most significant health care problems required a co-ordinated, multiprofessional approach to their understanding and management. It was then postulated that learning to work together with other health professions would result in the provision of more highly integrated health care. To accomplish this, *learning together* would prepare future health professionals for multiprofessional team practice.

The WHO report (1988) especially emphasized the value of MPE in primary health care settings and stated that “every effort should be made to use for learning purposes the tasks normally performed in the community”. The study group concluded by observing that

The division, even atomisation of the human body, which is characteristic of the typical single-profession health care curriculum, orients students towards specialisation and away from general and multiprofessional practice. The typical undergraduate curriculum also neglects the contribution which other health professionals or non-health sectors could make. Multiprofessional education is a means of remedying these defects. (WHO, 1988)

The World Conference on Medical Education of the World Federation for Medical Education also met in 1988 and issued the Edinburgh Declaration. One of the suggested improvements was to "increase the opportunity for joint learning, research and service with other health and health-related professions, as part of the training for teamwork".

In addition to international calls for reform, the early 1990's also saw profession-specific recognition of the importance of teamwork. In 1990, Cawley published an article entitled *Educating the Psychiatrist of the 21st Century*, in which he concluded that more emphasis should be placed upon integrated teamwork, without interprofessional rivalry.

In 1993, the World Summit on Medical Education issued its recommendations entitled *The Changing Medical Profession*. An entire section of the recommendations was devoted to health teams and multiprofessional education:

**Action:** Multiprofessional education, where members of different health professions are trained together, establishes and enhances the ethos of teamwork, and the essential collaboration of medicine with allied health professionals.

**Outcome:** More cost-effective doctors who can work as members of health care teams, with enhanced respect for colleagues and for the benefit of patients and communities.
In 1992 the Educating Future Physicians for Ontario (EFPO) Project issued a summary of what the people of Ontario needed and expected from physicians. The EFPO Project, funded by a consortium of the five medical schools and academic health science centres of Ontario, the Ministry of Health of Ontario, and Associated Medical Services (a private insurance company) has been instrumental in effecting a variety of curricular innovations in Ontario's medical schools. The EFPO Societal Expectations Project suggested eight distinct roles for medical professionals. One of these roles was "physician as collaborator". The EFPO summary document listed the educational implications for the "physician as collaborator" role. These included an emphasis on competence in working effectively with other health professionals through learning sessions with students from other health professions and an increase in the educational opportunities in hospital and community settings to work with and learn from other health professionals. EFPO also suggested an emphasis on the role of the patient and, where appropriate, the patient's caregiver as an informed collaborator. Finally, the recommendations highlighted the importance of identification and recruitment of appropriate new role models (including physicians and non-physicians) to participate in MPE programs.

During the early 1990's, the Pew Health Professions Commission was convened in the United States. The Commission was a 27-member group drawn from the health professional, business, and academic and policy-making communities. The Commission's goal was to help health professional schools respond to changes in the health care system and in the health care needs of Americans (O'Neil, 1992). The Pew Commission suggested that one of the characteristics of an effective health care system was the use of integrated and co-ordinated teams of providers. To support this vision, one of the competencies for future practitioners was participation in co-ordinated care and working in teams with other health care professionals. The Commission outlined eight strategies for health professional schools. One strategy specifically commented on the need to create community-centred partnerships, which would involve "new interdisciplinary programs in teaching, research, service and patient care. " Another Pew Commission strategy included a re-definition of the core curriculum so as to develop the competencies desired in graduates who can provide contemporary clinical care as members of health care teams that will function in settings emphasizing cost-effective, integrated services. The health professions as a whole must develop clinical settings and courses aimed at instilling the value of primary care, teaching the skills necessary to providing primary care, and promoting the teamwork skills vital to participation in primary care. As individual schools and professions redefine their core curricula, they should look for
cross-disciplinary linkages, which in turn can lead to interdisciplinary collaborations and pathways that allow for transition, expansion, or promotion of a career path. (O’Neil, 1992)

Dr. Jordan Cohen, current president of the Association of American Medical Colleges, editorialized about the preparations medical educators needed to think about in relation to fundamental shifts that were occurring in Medicine. He wrote:

A hallmark of the successful health care organization of the future will be its ability to utilise the least costly competent provider for every instance of service. Successful physicians in such organizations will work collegially with all manner of non-physician professionals. They will have been schooled in teamwork, will relinquish tasks that can be performed safely and competently by others, and will understand shared responsibility and accountability (Cohen, 1995).

In 1996, the Societal Needs Working Group, CanMEDS 2000 Project issued a report entitled *Skills for the New Millennium*. Following on the work initiated by the EFPO Project, this Working Group of the Royal College of Physicians and Surgeons of Canada (the certifying authority for specialists in Canada) defined seven essential roles and key competencies of specialist physicians. Included in the key roles was that of “collaborator.” Key competencies associated with the collaborator role included consulting effectively with other physicians and health care professionals and contributing to interdisciplinary team activities. The Societal Needs Working Group (1996) had specific objectives for the collaborator role:

- identify the role, expertise and limitations of all members of an interdisciplinary team needed to optimally achieve a goal related to patient-care, a research problem, an educational task, or an administrative responsibility.
- develop a care plan for a patient whom they have assessed, including investigation, treatment and continuing care, in collaboration with members of the interdisciplinary team.
- participate in an interdisciplinary team meeting, demonstrating the ability to accept, consider and respect the opinions of other team members, while contributing specialty-specific expertise.
- describe how health care governance influences patient-care, research and educational activities at local, provincial, regional and national levels.
- communicate with the members of an interdisciplinary team in the resolution of conflicts, provision of feedback, and where appropriate, assumption of the leadership role.

In addition to calls for reform from national professional associations, academics, and health-related commissions, calls for collaboration and an associated change in emphasis of teaching methodologies also came from political sources in Canada. A report entitled *The Future Development of Academic Health Science Centres in Ontario: A Strategic Framework* (Wade, 1991) suggested the need for expanded collaboration in health care, both in the hospital and in the community:
Academic health science centres must ensure that both faculty and students demonstrate knowledge and understanding about conditions affecting the health status in their communities. This should be done in collaboration with community agencies and other health care professionals. (Wade, 1991)

Orser and colleagues (1991), in a report to Ontario’s Minister of Health, recommended that

The education of health care professionals will be broadened to include areas beyond their specific disciplines – for example, health economics, issues of ethics, health care outcomes, and the team approach to delivery of care. (Orser, 1991)

In a speech delivered in January 1992, Ontario’s Minister of Health, when commenting on health human resources strategy, mentioned that,

Issues such as the appropriate numbers, distribution and mix of health professionals, professional relationships and roles in health services, are some of the items of our health human resources agenda. (Lankin, 1992)

The National Forum on Health (1997) suggested that,

If we were building a health care system today from scratch, it would be structured much differently from the one we now have and might be less expensive. The system would rely less on hospitals and doctors and would provide a broader range of community-based services, delivered by multidisciplinary teams with a much stronger emphasis on prevention. (National Forum on Health, 1997)

In summary, over the last two decades, numerous individuals as well as national and international organizations concerned with health care and the education of its practitioners have called for the implementation of education strategies to enhance collaboration in health care. The role of specific educational activities to effect this goal will be explored next.

Educational Goals and Objectives

The rationale for MPE led to educational objectives that emphasized the concept of the health care team and an individual professional's role as a member of the team. The World Health Organization (1988) explicitly stated that "the specific team competencies needed to ensure effective team functioning are the objectives of multiprofessional education". The central importance of the "team" is illustrated by a sampling of objectives from the MPE literature:

• "to promote positive attitudes toward team care" (Lorenz & Pichert, 1986)
• "the development of the person as a member of an interdisciplinary team" (Chartier et al., 1984)
• "to develop an understanding of professional relationships, lines of communication, and the responsibilities of each member of the ward team" (Kent, 1991)
• "to identify the concepts, methods and learning processes for improving interdisciplinary team skills" (Mazur, et al., 1979)
• "to develop attitudes and skills necessary to work co-operatively with other health professionals in a team" (Edinberg, et al., 1987).

Even when the word "team" was not used directly, concepts of collaboration, communication, and enhanced role understanding dominated stated educational objectives in MPE projects:
• "to provide opportunities for interdisciplinary collaboration" (Croen et al., 1984)
• "to increase appreciation for the role of each discipline in caring for the patient" (Croen et al., 1984)
• "to demonstrate how the activities of various professions can be co-ordinated to provide total health care effectively and efficiently" (MacDougall & Elahi, 1974)
• "to improve communications between two major health professions (medicine and dentistry) by instructing them together" (Rose & Escovitz, 1974).

In summary, the educational objectives of MPE are dominated by process goals related to the concept of the health care team and the improved communications and collaboration which should characterise the team.

**Current Status of MPE**

In 1982, McPherson and Sachs (1982) published the results of a survey of American and Canadian medical schools that asked about health care team training. Almost three-quarters of the medical schools replied to the questionnaire. Only 29% of schools, including three in Canada, had formal programs to teach health care team skills. Slightly more than half of these programs were mandatory. One third of the programs occurred in the pre-clinical semesters, one third in the clinical years, and the remaining third occurred in both. Physicians headed two thirds of these programs. Within these educational programs, the participants included medical students in all efforts. Students of
the other health professions were involved as follows: Nursing (97%), Social Work (93%), Physiotherapy (63%), Psychology (53%), Dentistry (33%), and Pharmacy (13%).

Typical content areas for health care team training included family interactions, issues in health care, professional roles, group process skills, team functioning, and concepts of primary care.

In the survey results (McPherson and Sachs, 1982) field or clinical experience was the most commonly reported technique for MPE. Other methods included lectures, small group discussions, and role modelling. Less than fifty percent of the schools responding positively to the survey actually had their students in teams during their educational experiences. MacPherson and Sachs (1982) concluded that,

> What is new is not the team but rather the conscious application of behavioural science concepts to the functioning of the team. Within the health sciences, teaching these concepts in a deliberate and studied fashion to students is not common. (McPherson and Sachs, 1982)

The Faculty of Health Sciences, Linkoping University in Sweden was established in 1986 for the purpose of providing MPE for physicians, nurses, physiotherapists, occupational therapists, laboratory technologists and community care managers. The Linkoping experience, as described by Areskog (1992), represents the single most innovative large-scale application of the MPE model. In the first ten weeks of the Linkoping curriculum, students of all professions study and learn together. Even during the clinical rotations, students from at least two professions engage in patient discussions, seminars and rounds together. The curriculum design deliberately attempted to promote mutual respect and understanding between the different health care professions and to establish a basis for good teamwork in the future.

A study by Horder (1991) in the United Kingdom found that only 11% of professional schools offered joint initiatives among the health professions. Half of these efforts were only one-day events.

No Canadian survey data are available. At the Faculty of Health Sciences, McMaster University (Byrne, 1991), multiprofessional education endeavours included an interdisciplinary orientation to health sciences, a community health day, a population health course, and workshops on sexuality and gender issues. The Faculty defined itself as being
characterised by interdisciplinary, interprofessional, inter-faculty and inter-institutional co-operation, working to achieve our goals of excellence in education, research and service.
(Central Tenets, Faculty of Health Sciences, McMaster University, 1990).

Larsen (1995), while assessing the impact of the Pew Commission recommendations, contacted approximately half of the American academic health centres which had both schools of Medicine and Nursing. Of the 35 schools surveyed, only five (14.3%) had even one interdisciplinary course available. Two centres had courses planned for the future and four centres had offered multiprofessional courses in the past, which had been discontinued as of the mid 1990's. The majority of courses were offered as electives, and were for medical and nursing students only. Occasionally students from other professions, such as Law, Pharmacy, Social Work, or Dentistry were also involved. In Larsen's survey, topics for multiprofessional education sessions included AIDS, ethics, family violence, adolescent health, human behaviour, and growth and development.

Content and Format of MPE

At its simplest level, content within a multiprofessional curriculum involved teaching subjects to other professionals who may benefit from this knowledge. Lorber (1976), for example, inserted three one-hour lectures regarding dentistry topics in the Introduction to Clinical Medicine course at Georgetown University, "so that medical students can develop diagnostic competence concerning common abnormalities". At the University of Pennsylvania (Rose & Escovitz, 1974) combined medical and dental electives were offered, which included conferences on topics such as radiology, infectious diseases, medical emergencies, psychology, neurology, anaesthesiology, and other aspects of patient care. In addition to subject matter of potential mutual interest, "students are exposed to the team approach (via teaching) early in their clinical training, hopefully while attitudes are flexible". Two-profession education most commonly involved Nursing and Medicine. Kenneth (1969) described an interdepartmental division of ambulatory medicine that was established at the University of California, San Francisco Medical Centre. One of the explicit goals of the division was to provide interdisciplinary clinical learning for health students, especially from Medicine and Nursing. Students in their senior years of training shared clinical responsibilities for chronically ill patients in the Home Care Program, and for families with young children in the Family Clinic Program. They also were involved with adult medical patients in a comprehensive clinic. These senior students soon discovered
that their respective curricula did not prepare them well for understanding each other's professional goals and emphases. One of the nursing students outlined the fundamental differences in approach:

The medical students place most emphasis on the diagnosis and treatment of illness while we focus more on helping the person to manage his care and achieve his maximum level of functioning. Knowing these differences and attempting to understand what contributed to them made it easier for me to work with the medical students. (Kenneth, 1969)

Conversely, although medical students also gained an understanding of nurses' viewpoints about patients, medical students took a more pragmatic approach to the experience, as shown by the following quote:

I learned about what could be expected of a public health nurse and how I might use one. (Kenneth, 1969)

Another example of two-profession teaching was reported by Croen and associates (1984), at Albert Einstein College of Medicine, New York. Second year medical and nursing students participated in a series of conferences, seminars and rounds, occurring twice weekly, for five weeks. The setting was the geriatric facility of an urban hospital. Faculty included nurses and physicians as well as lawyers, psychologists, pharmacists and social workers. The students saw patients in teams composed of one medical student and two nursing students, and reported on their patient to the entire faculty and their fellow students at weekly conferences.

Lorenz and Pichert (1986) studied team-teaching at Vanderbilt University. The setting was an ambulatory diabetes care facility. Nursing students and fourth year medical students (as an elective) participated in a 32-hour course, where nurses, physicians and dieticians conducted seminars. Both nurses and physicians supervised clinical exposure. Using a questionnaire that assessed willingness to share clinical tasks, the authors showed that including nurses as teachers appeared to influence medical students towards greater willingness to share responsibility with nurses.

In Sheffield, England, Kent (1991) reported on a mandatory attachment to a nursing unit. Each medical student in the class had to spend a morning and an afternoon working on a nursing unit. The purpose of the intervention was to "develop an understanding of professional relationships, lines of communication, and the responsibilities of each member of the ward team".
Walter and colleagues (1997) reported on a paediatric nurse-medical student preceptor program which was designed to increase direct patient care experiences for the student and to "foster a greater awareness and respect between the medical student and the paediatric nurse". The authors' one-day education intervention took place during the students' first clinical year. Post-intervention surveys were administered to the students. Two-thirds of medical students reported a more positive opinion of nurses (34% were neutral) and 87% of students felt their future interactions with nurses would be more positive as a result of this preceptorship experience.

Multiprofessional education has also been described in non-hospital settings and with the students of more than two professions. MacDougall and Elahi (1974) described a program at Dalhousie University, Halifax, in which small teams of medical students with students of Social Work, Dental Hygiene, Nutrition Sciences and Nursing spent an entire year involved with the care of an entire family in the community. A faculty nurse orchestrated the day-to-day operation of the program. Unfortunately, few details were provided on the role of this course in the curricula of the health science professions.

A four-profession program at the University of Sherbrooke (Chartier et al, 1984) involved second year undergraduate student teams composed of students from Nursing, Medicine, Psychology and Social Work. Unfortunately, the medical students were unable to complete the 15-week, twice weekly program because of scheduling difficulties.

Shepard and colleagues (1985) described a program in which students training to be physiotherapists, physician assistants, nurse practitioners and physicians at Stanford University School of Medicine participated in a clinical geriatrics course. Mazur and associates (1979), while working at a long-term rehabilitation setting associated with the University of Southern California in Los Angeles, involved students from six professions (Health Administration, Medicine, Nursing, Occupational Therapy, Physiotherapy and Social Work) in a pilot program which took place once weekly in the fall of the second year of medical school and the final year of training for the other professions' students. The program included weekly "rap" sessions involving all the professions and their students. There was a heavy emphasis on teamwork role modelling in the care of the patients. "Team learning by team teaching" was one of their goals. Each professional student, with a preceptor, was also involved in a patient-centred group project.

Edinberg, Dodson and Veach (1987), from the University of Nevada, reported on team experiences on a variety of medical services. Although six different professions were
involved (Medicine, Nursing, Education, Nutrition, Communications, Counselling), representation from several was very small. Not all teams had each profession contributing. All students were at early stages of their training. The main goal of this exercise was the development of positive attitudes towards teamwork.

Several authors discussed the choice of appropriate curriculum content. Because each of the health care professions requires different levels of emphasis on the biologic and physical sciences, Shepard and co-workers (1985) advised that these areas be avoided in MPE. Instead, a common core of topics relevant to MPE should be defined by each project. In addition, many authors have advocated formal coursework in "organizational dynamics", including topics such as team problem-solving techniques, goal setting with consensual decision-making, leadership styles and conflict resolution. Lists for "common health sciences topics" were included in the Report of the Presidential Commission on the Future of Health care in Ontario (Ten Cate et al., 1990) and the University of Toronto Committee on Inter-Health Science Faculty Teaching (Skinner et al., 1991).

Generic health care issues, which normally involved the participation of many health professionals, often provided the content of multiprofessional education efforts. Subjects such as ethics, health care financing and government regulations regarding health care were highlighted as appropriate for MPE. One example described by Browne and colleagues (1995) and by Kent (1997), taught health care ethics to medical and nursing students over the course of 12 sessions. Lectures, panel presentations, and small group seminars were utilised at the University of British Columbia for this purpose. The course, which was a mandatory part of the curriculum, required a seminar presentation as well as a term paper and a final examination. As part of the written assignment, students were required to interview at least one student from another profession and incorporate the results of the interview in their assignment.

The fields of geriatrics and mental health have dominated MPE efforts. In geriatrics, the work of Croen and associates (1984), Clark and co-workers (1987), Smith and Sloane (1988), Jackson and colleagues (1990), Drinka and Ray (1991), Olsen and co-workers (1992), Robertson (1992) and Macpherson and Blumberg (1992) emphasized the centrality of the interdisciplinary concept in geriatrics. Similar enthusiasm for the value of interprofessional education was also demonstrated in the mental health field, with the publications of Couchman (1995) as well as Carpenter (1995). The other health care area
in which MPE research occurred was community and ambulatory settings. Examples of such educational endeavours included those of Kenneth (1966), MacDougall and Elahi (1974), Berger and Schaffer (1986), Wade and colleagues (1994) and Carlton and Westin (1997).

In summary, as few as two and as many as six different health care professions were described in MPE initiatives. A variety of different teaching methods were utilized in settings that ranged from the community to various in-patient facilities. Most course content has included domain-specific topics as well as teamwork process topics.

**Evaluation of MPE**

Byrne's review (1991) of MPE highlighted the paucity of evaluative data regarding this concept. Careful thought was urged regarding outcome measures, but Byrne pointed out that there is no consensus regarding which outcomes constitute valid and important measures of the effectiveness of interdisciplinary experiences.

Shepard, Yeo and McGann (1985) observed that there was no evidence to suggest any long-term benefits from MPE. Until recently, its role was not tacitly acknowledged by either accreditng bodies or by national licensing authorities. Mandatory MPE courses are difficult to grade, except by using a pass/fail standard, yet in many settings, this standard itself devalues the initiative in the eyes of both the students and the faculty. Byrne (1991) suggested that lack of an adequate database regarding background variables of students involved in MPE also contributed to poor evaluation strategies. In her literature review, four of six evaluation studies did not even attempt to study control groups. Several MPE evaluation studies reported on only one group of students (usually the medical students) within the MPE program.

Most reports of MPE included some kind of "satisfaction with the program" questionnaire, which almost always suggested encouraging results for the initiative. However, the value of such "happiness index" evaluations is small, especially since many of the MPE experiences were done in the context of an elective, with predominantly if not exclusively volunteer or self-selected students.

Several studies used questionnaires with a pre- and post-program design. Edinberg and colleagues (1987) used a self-report inventory of 30 statements about MPE. Each statement was rated on a seven-point scale. Their students showed significant learning in the areas of team skills, as well and knowledge of and abilities in client communications.
Croen and associates (1984) administered a Role Assessment Questionnaire (RAQ) to their medical and nursing students. Students were asked to rate 13 tasks as "not needed", "frequently needed" or "essential" to each of seven health professions. After the MPE program, medical students demonstrated a significant increase in their awareness of the role of nurses. Lorenz and Pichert (1986) administered a questionnaire which assessed the willingness to share clinical tasks. Medical students increased their willingness to share seven of 25 tasks. This study also showed a correlation between willingness to share a specific task and which professional (nurse or physician) had supervised the seminar specifically related to the task.

Mazur and colleagues (1979) performed an ambitious pre- and post-program evaluation. Their evaluation was multi-faceted, and included short-answer and open-ended questions, a traits questionnaire (in which one's views of other professions was assessed by a rank order scale), an "attitude toward disabled persons" scale, a team effectiveness survey, and a team opinion questionnaire. Preceptor evaluations of student performance were also included. The authors conceded that

empirically, assessing the effects of the program on the most important variable, ability to practice effectively as a team member, was extremely difficult. A paucity of valid and reliable instruments exists to measure such an elusive quality as team effectiveness. Most of those which do exist are subjective and indirect. (Mazur, 1979)

Luecht and colleagues (1990) described the design and validation of an Interdisciplinary Education Perception Scale to gauge perceptions among students in the health care professions. Students of Occupational Therapy, Health Informatics, Speech Pathology, Audiology and Therapeutic Recreation were used for the research regarding the psychometric properties of the scale. The authors concluded that the scale appeared to demonstrate sound measurement properties and supported the four underlying constructs which included professional competence and autonomy, perceived needs for professional co-operation, perception of actual co-operation and resource sharing, and understanding of the value and contributions of other health care professionals. Luecht and co-workers suggested that the measurement instrument could be used in future research related to interprofessional education.

Not all evaluations use quantitative approaches. Kent (1991) asked medical students to write three short essays on their nursing attachment experience. The suggested topics for these essays included: "How a particular person you met on the ward was experiencing their stay in hospital, focusing on his or her feelings and concerns";
"What you personally found most uncomfortable during the attachment"; "What evidence you found for the importance and difficulty of good communication"; and "What you personally found most valuable about the attachment". Kent (1991) generated a fascinating compendium of excerpts from medical students about their nursing attachment experiences.

Clark (1991) echoed the importance of qualitative aspects of evaluation. He noted that the insights and skills acquired by the participants in an interprofessional education experience are the learning. His suggestions for evaluation included the keeping of a journal, case discussions, and abundant time for reflection on how students, as members of a team, were functioning as a team.

In summary, evaluation of MPE efforts has been limited by a number of factors. The composition of participant groups, the timing in the curriculum and the content and format of MPE activities have varied greatly across reported studies. Considerable debate remains regarding the choices of outcomes for MPE endeavours.

**Student Issues Regarding MPE**

The survey results published by McPherson and Sachs (1982) determined that two thirds of MPE efforts in North America occurred at the pre-clinical undergraduate level of training. This early timing of MPE may have reflected a wish to influence students before they become fully entrenched in their respective professional ideologies and stereotypes. Early timing may also represent the "easiest" place in the curriculum to position an MPE initiative. However, early curricular timing brought with it a significant problem: limited clinical experience in one's profession made the student unable to provide clinical input to the team's efforts. As Mazur and colleagues (1979) wrote, "teamwork requires that each individual be able to contribute his unique professional knowledge and interpersonal skill to the decision-making process". According to Shepard and associates (1985), the students must already have their own professional identity, an awareness of their own profession's values, traditions, aims, and goals. Norman (1991) suggested that early efforts are "consciousness-raising". He suggested that as clinical experience accrued, teamwork experiences would be more meaningful. As Mazur and co-workers (1979) summarised

Interdisciplinary team training for students seems most timely during the clinical phases of education. Students appeared to be unable to participate as team members until they had learned the basic skills of their own discipline. (Mazur, 1979)
Several authors warned that students required learning experiences that were actual rather than contrived and participatory rather than observational (MacPherson et al., 1984). The World Health Organization (1988) suggested that one "use for learning purposes the tasks normally performed", a view supported by Chartier and colleagues (1984) and by Norman (1991).

Scheduling also influenced student enthusiasm for MPE efforts, especially if MPE conflicted with profession-specific course work. The entire issue of evaluation also bears upon student involvement. Most reported MPE experiences have been elective, but this "add-on" perception may weaken the impact of the educational effort (Byrne, 1991).

Finally, as acknowledged by Shepard and associates (1985), health professions students come into MPE projects with differing academic backgrounds, learning styles, personal goals and career commitments. These differences should be viewed as sources of potential strength to a multiprofessional education effort.

Faculty Issues Regarding MPE

At the level of the individual faculty member, several challenges are posed by the concept of MPE. Foremost among these is the need to evaluate one's personal perception of the relationships between the health professions. Stereotyping and misunderstanding of other health professionals' roles continues, in part perhaps because MPE opportunities have not been widely available. McPherson and co-researchers (1984) found that health professionals have difficulties with the semantics of MPE and teamwork. Profession-specific semantic issues such as the use of the word "client" or "customer" as a synonym for "patient" pose interprofessional relationship hurdles. Professional perceptions of authority, power, status and income all contributed to deeply rooted feelings about multiprofessional teamwork.

Counterbalancing these concerns is the hope that most practising professionals will have enough personal experience and insight into the ever-increasing need for health care teamwork. Translating this practice reality into an educational setting then becomes an issue of curriculum scheduling, personnel and time resources.

Institutional Issues Regarding MPE

At the level of traditional health science faculties, universities and hospitals, MPE imposes challenges above and beyond those mentioned for individual faculty members.
"Health sciences education thrives on the orderliness and separatism created by the academic institution's organization" (Shepard et al., 1985). In addition, as Horder (1992) noted, professional bodies educate and support only their own members. Furthermore, although some faculties have recommended collaborative behaviour,

This is not enough to prevent defensive reactions when individual professionals feel inadequate or when members of professional groups sense a threat to their corporate identity. (Horder, 1992)

Horder suggested that separate educational curricula were more likely to promote such protective reactions. Bulger and Bulger (1992) commented that

If the academic health centre is to grow beyond the conservative and protective role of preserving the status quo and is to become more effective at helping with appropriate societal adjustments to new realities and new futures, then we must extend beyond our reductionist disciplines and specialities, without diminishing or denying them, and embrace cross-professional and interdisciplinary, integrative approaches to the individual and social value issues that confront us all. (Bulger and Bulger, 1992)

However, Mazur and colleagues (1979) pointed out that hospitals are often organized at on a multiprofessional, programmatic basis. In his rehabilitation setting, he cited special units for patients with strokes and spinal cord injury. Because of its programmatic structure, the hospital may serve as a more suitable site for MPE programs than the university.

As the number of different stakeholders increases, scheduling logistics can become intimidating. Although suggestions have been made for a block of time to be set aside for all health sciences students (Skinner et al., 1991), Shepard and colleagues (1985) argued strongly that short experiences over a long period of time were likely to be better than a single intense experience. Real issues include limited curricular time, limited teaching space, and limited numbers of interested faculty. Methods of curriculum delivery need a variety of settings and approaches which all have resource implications.

Conclusions

Despite the potential benefits of collaboration in health care, a review of studies of student perceptions and multiprofessional education efforts suggests that very few institutions in North America are currently aggressively pursuing educational interventions to foster collaborative behaviour in medical trainees. The next chapter will explore the
current perceptions of students at the University of Toronto, who have experienced some curricular innovations which were intended to foster collaboration with other health care professionals.
CHAPTER 4

THE SETTING AND CONTEXT OF THE STUDY

The Curriculum of the University of Toronto Faculty of Medicine

Before reviewing the views of the students, some background regarding the University of Toronto medical curriculum will be reviewed. The allocation of students to different institutions will also be described, as it has relevance to a pilot program on Multiprofessional Education conducted at one institution. The University of Toronto Faculty of Medicine currently accepts 177 students into its first year of medical studies. (The first graduating class of students involved in this research consisted of 252 students.) Beginning in 1994, all entering students required at least a Bachelor's degree from a Canadian or American university. Approximately one third of entering students have Masters or Doctoral degrees. Over the last several years, slightly less than half of the students have been women.

Upon entry into medical school, students are allocated randomly to one of four academies. Each academy is based at one or two fully affiliated teaching hospitals. The academies are used as sites of field training in the first two years of the curriculum, but in some instances have also been used as the sites of Problem Based Learning (PBL), thus complementing teaching facilities at the Medical Sciences Building, located on the downtown university campus. The Faculty of Medicine's Council also envisioned a role for the academy structure in multiprofessional education. In the September 23, 1992 document, Academies of the Faculty of Medicine, which established the academy structure, it was stated that

Within each academy, there will be opportunities to develop educational programs in which medical students interact with other health professionals, experiences that are very difficult to coordinate between Deans' offices. (Faculty of Medicine, 1992)

The first two years of the curriculum, the pre-clerkship years, are taught using a variety of educational techniques, including lectures, seminars, small group teaching, clinical practicum experience, as well as experiential learning in a variety of community teaching sites. The University of Toronto curriculum, revised in 1992, strives for an emphasis on self-directed learning for its students, and provides curriculum time for this endeavour. With respect to curricular content, a typical array of basic science and applied medical topics are taught in the pre-clerkship. To varying degrees, the courses utilize Problem Based Learning, in which students, under the supervision of a faculty
tutor, learn about particular topics in small groups. A two-year course, Art and Science of Clinical Medicine, introduces the students to the basic techniques of history taking and examining patients. An innovative course in the curriculum, Health, Illness and the Community (HIC), also extends over two years in the pre-clerkship. In this course, students study a wide variety of health care related settings in the community, largely on an experiential basis. In the first year of the HIC course, students report on their experiences in small group sessions, both orally and with written reports, to faculty tutors. In the second year of the HIC course, each student chooses an individual project related to health and social issues and pursues this project throughout the year. At the University of Toronto, the Health, Illness and the Community course is the only one that overtly attempts to address issues of health care collaboration and teamwork. The overall goals of the first year course include becoming "aware of the delivery of health care services in the community" and "understanding the role of the physician in the community." As collaboration-related objectives for Health, Illness and the Community course, the MD Curriculum Directory 1997-98 lists the following:

- To consider alternative roles of physicians;
- To understand various issues in relation to the provision of health care services in the home;
- To develop an understanding of team building, communications and social justice;
- To learn to relate to community-agency personnel and clients.

In the second year of the Health, Illness and the Community course, the overall goals include:

- To develop further the capacity to work collaboratively with community agencies: and,
- To understand further the role of the physician in the community.

(MD Curriculum Directory, 1997-98)

The third and fourth years of medical school at the University of Toronto are termed the clerkship. The primary aims of the clerkship are to enable the student to apply the knowledge and skills of the pre-clerkship experience while working in a predominantly clinical setting. In preparation for the clerkship, all students are given an opportunity to choose the academy at which their clerkship will occur.

The general aims of the clerkship include ten specific items. Two of these aims deal directly with issues of collaboration and teamwork:
- Understand the importance of human relationships, both personal and communal, and the importance of communication both with patients and their relatives and with other professionals involved in their care ("attitudes" are as important as "knowledge" and "skills").
- Gain an awareness of one's own limitations and the ability to seek help when necessary. *(MD Curriculum Directory, 1997-98).*

The two-year clerkship experience includes rotations through the following medical disciplines: Family and Community Medicine, Medicine, Obstetrics and Gynecology, Ophthalmology, Otolaryngology, Paediatrics, Psychiatry, Surgery, Anaesthesia, Dermatology and Emergency Medicine. During the clerkship, the students also have significant blocks of time to pursue experiences on an elective basis.

Upon successful completion of undergraduate medical training, students are matched, on a competitive basis, to further specialty training of their choice. This postgraduate period can extend from a minimum of two years to as many as eight years of further training, depending upon the specialty chosen.

**The Multiprofessional Education Program (MPEP)**

One of the four academies at the University of Toronto's Faculty of Medicine is the Boyd Academy, based at Sunnybrook Health Science Centre. Under the leadership of the Academy Director (the author of the thesis), a pilot program in Multiprofessional Education was instituted in 1992. As mentioned in the introductory chapter, the Multiprofessional Education Committee (MPEC) assisted the Academy Director in the design, implementation and evaluation of the pilot program. MPEC membership consisted of representatives from all of the University of Toronto health care professions that educated students at Sunnybrook. This included the Faculties of Nursing, Pharmacy, Dentistry and Social Work and the Faculty of Medicine, including its Departments of Occupational Therapy, Physical Therapy and Speech-Language Pathology. Senior academic officials at the University were aware of and were supportive of this pilot program. The support of the Dean of Nursing was especially vital. In 1992, when this initiative began, no similar efforts were occurring within the University of Toronto health sciences’ faculties.

At the initial meetings of MPEC, the objectives of the proposed program, called the Multiprofessional Education Program (MPEP), were discussed and outlined:
• increasing the knowledge of all students with respect to the educational backgrounds of health professionals
• increasing the knowledge of all health professional students with respect to the roles of all professionals in various health care settings
• increasing the students' awareness of issues related to teamwork and group dynamics.

The initial target groups for MPEP were first-year medical students and third-year nursing students. First year medical students were chosen for this pilot program for several reasons. First, it was believed to be important to introduce values related to teamwork as part of the early professional socialization process. Second, medical students in their first year of training had a schedule at the hospital which provided an opportunity to organize such a program. The third year nursing students were chosen because they also had free time in their hospital-based training at the same time. The only available time was a series of Friday noon-hours. MPEC decided to schedule sessions only for those dates that were available to both medical and nursing students, since these two groups together formed the vast majority of the potential audience. Students of the other health professions were also invited to attend, if their academic schedule permitted. Topics and session design were discussed by MPEC during several “brain-storming” meetings. During the first MPEP session, input about potential future topics was also requested from the students. The literature review about multiprofessional education was also used to inform these discussions. MPEC attempted to choose topics that were of general interest to all health care professionals and tried to avoid topics that would be of interest only to one profession. In addition, several topics related specifically to teamwork processes were included. Each session was designed to be as interactive as possible for the students.

For each session, students were divided into five or six groups of approximately 14-18 students per group. These groups then remained consistent for an entire semester. (The Nursing curriculum changed students at the hospital each January.) All participating students' names were listed on a bulletin board with their group assignment. In this way, we tried to encourage each group to have representation from as many different professions as possible. The group meetings were held in seminar rooms in the education wing of the hospital. Efforts were made to have each group
facilitated by a member of MPEC. In case a facilitator was not available, students were also provided with a written handout outlining the session’s objectives and detailing the hour’s activities. Photocopies of articles related to the topic under discussion were also circulated to the students. As indicated in the table below, a few sessions were conducted as large group lectures or large group interactive sessions. The students evaluated each session. Evaluations consisted of Likert-scale-based one page questionnaires that inquired about the effectiveness of the components of the individual session. In addition, each evaluation also asked for an assessment of the degree to which the three primary objectives of MPEP, listed above, had been met by the session. Over the years, MPEC utilized the evaluations to make modifications to the program.

The dates and topics for the MPEP sessions held between 1992 and 1995 are outlined in table 1. Students who were in their first year of medical studies during this time-span (1992-1995) were subsequently approached to participate in the research described in this thesis.

Between 1992 and 1996, Sunnybrook and the Boyd Academy were the only hospital and academy mounting such an initiative at the University of Toronto. In 1996, enthusiasm for educational efforts to foster collaboration spread to the other academies and the first Interprofessional Education (IPE) sessions began. These IPE sessions are three hours in length and are targeted at third year medical students as well as health professions’ students from the Departments of Occupational Therapy, Physical Therapy and Speech-Language Pathology. These three departments, which are all part of the Faculty of Medicine, were formally incorporated into the academy organizational structure in 1996. This has permitted the dates and times of the IPE sessions to be co-ordinated across the University, so that the sessions do not conflict with any other aspects of the curriculum. Students from the Faculties of Nursing, Dentistry, Pharmacy and Social Work are also invited to participate in the IPE sessions. At the Boyd Academy, MPEC has assumed ongoing responsibility for these IPE sessions in addition to the ongoing MPEP. Several of our IPE sessions are extensions of the one-hour sessions that had originally been part of the MPEP.
Table 1

The Multiprofessional Education Program at
Sunnybrook Health Science Centre (1992-1995)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 27</td>
<td>An introduction to Pharmacy, Psychology and Clinical Nutrition</td>
</tr>
<tr>
<td>December 11</td>
<td>An introduction to Social Work, Physical Therapy and Occupational Therapy</td>
</tr>
<tr>
<td>January 8</td>
<td>&quot;What is a Hospital&quot; – lecture by the hospital's president</td>
</tr>
<tr>
<td>January 15</td>
<td>Group work in health care (Team-building - part I)</td>
</tr>
<tr>
<td>February 12</td>
<td>Communicating with the hearing impaired</td>
</tr>
<tr>
<td>March 5</td>
<td>Team-building – part II</td>
</tr>
<tr>
<td>March 26</td>
<td>&quot;Breaking bad news&quot; – lecture by a medical oncologist</td>
</tr>
<tr>
<td>April 30</td>
<td>Ethics issues in health care</td>
</tr>
<tr>
<td>May 21</td>
<td>Knowing the family and the patient, not only the disease</td>
</tr>
</tbody>
</table>

1993-1994 academic year

| September 24       | Getting to know you – student introductions                           |
| October 15         | Team-work and interdisciplinary problem-solving                       |
| December 3         | Communicating with the hearing impaired                               |
| January 14         | OT/PT: What's the difference?                                         |
| February 25        | "Breaking bad news" – lecture by a medical oncologist                 |
| March 18           | Team-building                                                          |
| April 29           | Ethics issues in health care                                          |

1994-1995 academic year

| October 7          | What's in a name – student introductions                              |
| October 28         | Trauma – team-work in action (large group interactive session)       |
| November 25        | Patient-focused care                                                  |
| December 2         | "The grief of miscarriage" video presentation – small group discussions |
| January 20         | Ethics issues in health care                                          |
| February 24        | "Breaking bad news" – lecture by a medical oncologist                 |
| March 3            | Roles and team-work – The stroke patient                              |
| March 10           | The psychotic experience: A personal view                             |
| March 24           | Communicating with the hearing impaired                               |
| April 28           | A visit with Canada's veterans                                        |
CHAPTER 5

MEDICAL STUDENTS’ PERCEPTIONS, OBSERVATIONS AND SUGGESTIONS

What perceptions do undergraduate medical students at the University of Toronto Faculty of Medicine have regarding issues of collaboration in health care? Do they believe that formal educational interventions during the undergraduate years will have any impact on fostering collaboration and teamwork in health care settings? In order to answer these questions, a sample of medical trainees was interviewed in depth about issues related to collaboration in health care. The students’ perceptions, observations and suggestions for educational intervention will be detailed as follows:

- participants’ demographic information
- defining collaboration
- behaviours facilitating collaboration
- examples from the students’ clinical experiences
- responsibility for collaboration
- educational efforts to foster collaboration
- the role of Kardex rounds
- Sunnybrook’s Multiprofessional Education Program
- the timing of multiprofessional education
- the role of the Health, Illness and the Community course
- the non-medical health professionals

Research Methods

The form of enquiry chosen for this research is action research, as characterized by Carr and Kemmis (1986). The action researcher aims at intervention, but also expects to achieve advances in theory or understanding as consequences of the real world intervention.

Action research is a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out. (Carr & Kemmis, 1986)

With respect to method, Carr and Kemmis (1986) described the self-reflective
spiral of cycles of planning, acting, observing and reflecting as the central feature of the action research approach. In this research, the Multiprofessional Education Committee (MPEC) followed those four steps repeatedly over the years in regard to the pilot program. This thesis also can be viewed as the reflecting stage of the author's own self-reflective spiral related to the entire MPEP initiative.

As Carr and Kemmis (1986) stressed, action research is the method of choice for those situations in which a social practice is the focus of research activity. They outlined the three basic requirements for action research. First, the subject of the research had to be a social practice. In the case of this research, collaboration in health care is the social practice. Second, the methodology had to involve a spiral of cycles of planning, acting, observing and reflecting. The activity of MPEC fulfilled this requirement. Third, the action research project had to involve those responsible for the practice. In this research, the health professionals of MPEC, the students of the program and especially the students interviewed for the research have been directly involved in the research project. As will be discussed later, a widening participation of others is anticipated to occur as a result of the dissemination of these reflections of the researcher.

Action research places great emphasis on the participants' perspectives. Action researchers

Place the practitioners at centre stage in the educational research process and recognize the crucial significance of the actors' understandings in shaping educational action...Action researchers accept that transformations of social reality cannot be achieved without engaging the understandings of the social actors involved...Action researchers accept that understanding the way people construe their practices and their situations is a crucial element in transforming education. (Carr & Kemmis, 1986)

In deciding upon research tools, I was also mindful of Patton's comments:

Any given design is necessarily an interplay of resources, practicalities, methodological choices, creativity, and personal judgements by the people involved. (Patton, 1987)

Furthermore, Grundy (1995) observed that,

As teachers, our time, energy and resources are limited. Therefore, we need to focus our attention carefully upon what needs to be changed. (Grundy, 1995)

Interviewing medical students was the key strategy chosen. The students were directly involved in collaborative efforts in patient care settings. They could recount their personal experiences and offer their perspectives on the research questions. In addition, they were also still enrolled in a formal education program, namely the clerkship or the first year of postgraduate studies. From this vantage point, it was
anticipated that the students could comment on the nature and timing of formal educational efforts to enhance collaboration.

The advantages of interviewing as a research strategy were outlined by Guba and Lincoln (1988). Interviews are more flexible, more personal and more exploratory than questionnaires. Interviews are also better than questionnaires in potentially sensitive subject areas. The interviewer is capable of observing the affective responses of the participants. Guba and Lincoln suggested that interviewing could provide better sampling, because of fewer turn-downs. Argyris, Putnam and Smith (1985), when discussing the evaluation of action science, were emphatic in stating that, "the most important form of action is talk." McTaggert (1991) suggested that action researchers should create "records of changes in the language and discourse in which they describe, explain, and justify their practice." Interviewing was also feasible within my research setting. Because of my position in the hospital, issues of intrusiveness, and because of limited time resources, naturalistic inquiry by direct observation of health care professional interactions was not practical. In addition, observations would not have directly assisted in the evaluation of the MPEP, nor would they have provided suggestions for potential changes to the curriculum.

Research participants

For the purposes of the doctoral research, I specifically chose to interview Boyd Academy medical students who had been eligible to participate in the MPEP (described in chapter four) in their first year of medical school studies. These students were approached to participate in the research when they were completing their third or fourth year of undergraduate education or were already completing their first year of postgraduate training. The years of graduation for these students were 1998, 1997 and 1996, respectively. At the time of the interviews, all study participants had a minimum of one clinical year of experience.

University of Toronto ethics approval was obtained for this research study. In early February 1997, 82 requests for participation in the study were mailed to eligible students (appendix A). Consent forms (appendix B) were included with the covering letter. A questionnaire was included in the study design in an attempt to gather some data from students who might not have been comfortable being interviewed. There was a poor response rate to the written questionnaire, but students did consent to be
interviewed. (The few written responses to the questionnaire were not included in the research data. All students who had provided written responses had also consented to be interviewed.) From May 1997 to July 1997, 20 consenting students were interviewed, either in person or by telephone. In November 1997, three additional men were interviewed, after analysis of the demographics of the initial cohort of 20 students indicated a disproportionately high number of women in the initial group. All students gave consent for the interviews to be transcribed for research purposes. All were guaranteed anonymity. The interviews were largely based on a set of pre-determined questions (appendix C). These questions had been reviewed by a pilot group of four students in March 1997. The transcripts were prepared on a word processor both as a regular file and as a text file. The latter was used for thematic coding using HyperRESEARCH (Research Ware Inc., Randolph, Massachusetts). For the purposes of the thesis, quoted comments were edited for readability.

The research data, in the form of a draft of chapter five, was circulated to a sample of respondents in December 1997. Each of these students was asked to critically review the contents of the chapter and make any comments that they felt would be relevant to understanding the issues. These responses were reported in the subsection of chapter five entitled “Students’ responses to the data.”

Research Participants' Demographic Information

Of the total eligible students for the study, 31 were from the class of 1996, 27 were 1997 graduates and 24 were from the 1998 class. Of these 82 students, 46 were men and 36 were women. The interview sample included eight students from the class of 1996, five from the class of 1997 and ten from the class of 1998. Eleven students were men and 12 were women. The larger proportion of students interviewed from the class of 1998 could be explained by their proximity to the location of the researcher (at Sunnybrook Health Science Centre). The class of 1997 was in the midst of preparing for licensure examinations during the interview timeframe and then was on vacation until the start of postgraduate studies.

Members of the class of 1996, already in their first postgraduate year of study, were widely dispersed throughout the country. To illustrate, of the 31 students in the class of 1996, requests for participation in the research were mailed to Toronto addresses in 15 instances, to other Ontario addresses in nine instances, to other Canadian addresses in
four cases and to North American addresses for the remaining three eligible students.

Each interviewed student was asked three basic demographic questions: their year of graduation; their area of specialty training (for those who had already decided or been accepted into specialty training) or their perceived area of interest (for the more junior trainees) and whether any family members or close friends from before medical school were members of any of the health care related professions.

Of the 23 participants, four had parents who were physicians. One of the trainees who had a physician father also had a mother who was a nurse. This individual also volunteered that close friends of the family were physicians. One student had a mother who was a nurse.

The research participants (who will be referred to as “students”, even though some were already in postgraduate training) were enrolled in or expressed an interest in a variety of medical specialties. Five students were in the Family and Community Medicine program, four were in Surgery programs, three were in Medicine, two in Anaesthesia, Ophthalmology and Psychiatry, and one each in Emergency Medicine and Paediatrics. One-third year student was undecided about future specialty training. Other third year students were deciding between Family Medicine and Surgery in one case and Family Medicine and Medicine in another case. This distribution of specialty choices is typical for graduates of the Faculty of Medicine at the University of Toronto, where approximately forty percent of graduates enter Family Medicine.

The interviews began with the researcher explaining that the study was asking students about their views of and experiences with collaboration in health care settings. The researcher indicated to the interviewees that it was his belief that the students' perspectives would be invaluable to the research because they were at a key stage in their education.

**Defining Collaboration**

The students were first asked what they understood the concept of “collaboration in health care” to mean. All students clearly saw collaboration as a process of cooperation and working together with various other health care professionals, not just fellow physicians. Their definitions of collaboration also emphasized that better patient care is a goal of collaboration. Some definitions also included concepts such as collaboration promoting overall efficiency in the health care system. The latter aspect
was shown by comments such as “trying to avoid overlapping of jobs” (student 9) and “working together, not contradictory to each other” (student 7). The students’ perceptions of a health care system were shown in definitions of collaboration such as something that is continuous with services which don’t overlap and no gaps are left (student 16)

Some responses also indicated that collaboration was a benefit not just for the medical problems of the patient but for other non-medical aspects of care. Students mentioned the patients’ psychosocial problems as an example. The following three quotations are representative of the definitions of collaboration:

Collaboration in health care refers to the notion that patient care is best delivered through a variety of different health care professionals coming at the problems from different angles and possibly dealing with different aspects of patient care according to their own expertise. (student 17)

Collaboration means all the different professionals working together as a team for the patient. (student 20)

Collaboration means that different health care professionals sit down and communicate and work out management plans ... on patients so that everybody has the patient's best interest at stake and is working together, not contradictory to each other. (student 7)

One of the students, who was at a more senior level of training, defined collaboration more broadly, as it affects the health care system:

I assume it means a multi-faceted, multi-member team whose initiative is probably to further health care in terms of patient care efficiency, cost and productivity within the team. All benefiting patient care. That can range organizationally from the CEO and the administrators all the way down to patient care managers, doctors, resource managers. I see it as a pyramid approach with all these people contributing. The decision up where the CEO is effects everything right down to which curtain you use on the OR table or which scrub suits you use. (student 10)

Behaviours Facilitating Collaboration

The students were asked to reflect on the specific behaviours that would indicate that collaboration was occurring. All mentioned various aspects of communication as the key to collaboration. The most comprehensive remark, from a senior student, emphasized that:

Without communication you can't collaborate. Whether it’s written communication, verbal or e-mail. Unless you speak with one another or leave messages for one another it's impossible to be able to know exactly what direction you're taking things. Communication is vital to collaborating. I think you also have to have an understanding of what different people are able to do, what their capabilities are, what their role is. To be able to appreciate that, to be able to apply that to the patient that you're taking care of...and also to show one another respect for the roles that you do have. And respect for their opinions, which is part of the communication. (student 6)
Several key themes are encompassed in the above quote. The student mentions that one has to be aware of the roles and responsibilities of those professionals with whom one is going to collaborate. Even more important, there is an acknowledgment of the need to respect those roles and to respect the opinions that come from other health professionals.

Several students also specifically mentioned the importance of meeting together as collaborative behaviour. According to one student, team meetings allow “consulting with each other...basically learning from each other” (student 7). Kardex rounds were cited as a common meeting opportunity. (Typically, Kardex rounds are a weekly, scheduled session in which multiple members of the health care team meet in a room and review the health status, medications, social issues and other topics for each patient on a ward. They derive their name from the nursing Kardex, a chart that lists patient diagnoses, medications, consultation requests, family information, and other relevant information about a particular patient).

Although meetings were commonly mentioned as an important element of communication, other students specifically mentioned the importance of good charting as a means of collaboration. In addition, several students noted that reading the charted comments of other health professionals was an important communication strategy. One student mentioned that the work environment itself could facilitate meeting opportunities:

The hospital is set up, the workstations, everybody works at the same workstations so often you run into the patient’s nurses and other health care team people there. (student 7)

One student specifically highlighted the importance of listening as a specific behaviour to facilitate collaboration:

Listening is the key thing I find. As you get into more tenuous and financial difficulties in the medical care profession, people won't necessarily listen as well and just look at the bottom line. (student 10)

The students were asked to comment on whom, as physicians, they would be collaborating with. The intention of this question was to ascertain whether the students viewed collaboration as a process more widespread than with their fellow physicians or medical specialists. Uniformly, all students commented on and listed specifically many health care professionals with whom they viewed themselves as collaborating. In no
instance was collaboration seen as a process involving physicians only cooperating amongst themselves. In reviewing the students' responses to this question, the other health care professionals most commonly mentioned included nurses, physical therapists, occupational therapists, social workers and pharmacists.

**Examples from the Students' Clinical Experiences**

After being interviewed about general concepts of collaboration in health care, the students were asked to recount one or two specific examples of collaboration that they had observed or experienced during their clinical training. Examples that had a positive influence on health care were requested first.

Among the 23 students, several unique specialty clinics or practices were mentioned as examples of collaborative care. These included sports medicine clinics, a spina bifida clinic, a failure to thrive clinic at the Hospital for Sick Children, the burn unit, trauma team, and the cardiac team. Mention was also made of taking care of homeless patients and taking care of patients who were elderly. Two students mentioned clinics dedicated to the care of patients with diabetes. Palliative care settings were mentioned by three students as an example of the students seeing collaboration in action. Nine students of the 23 specifically mentioned examples that included patients with stroke benefiting from collaboration amongst their health care professionals. The roles of physiotherapists, speech language pathologists and occupational therapists in the care of patients with strokes were especially highlighted by several of these students.

Two clerkship rotations were mentioned frequently as examples of collaborative behaviour. Four students highlighted Psychiatry in their examples and sixteen mentioned their Medicine rotations when recounting examples of collaboration. In addition, three of the nine students who had discussed stroke patients benefiting from collaboration had not specifically mentioned the Medicine ward as a location for this activity. Adding those three to the previous 16, 19 of the 23 interviewees directly or indirectly cited examples of collaboration from Medicine clerkship experiences.

One of the most significant areas of collaboration in medical ward settings was the facilitation of discharge planning for patients. Fifteen students mentioned this theme while giving examples of collaboration they had experienced. The students recounted how physiotherapists, occupational therapists, Home Care personnel and especially social workers needed to work
as a team to facilitate discharge planning. Not surprisingly, the social worker played a pre-eminent role in this issue. In addition, the capabilities of the social worker seemed to be one of the most important revelations that medical students learned in their clerkship activities:

Social Work probably surprised me the most as to what their capabilities are and how easy they can make the transition from medical or surgical management to discharge planning. (student 18)

We were working with the social worker and the social worker did definitely benefit the patient because we had a better idea of what was available and what the options were for this patient before she was discharged. (student 3)

Kardex rounds were mentioned frequently when students discussed examples of collaboration. These meetings were often the location at which communication occurred. These rounds will be further discussed in the context of educational strategies.

The students were also asked to recount specific examples of the lack of collaboration negatively influencing health care. Seven students specifically mentioned surgical services where they witnessed or experienced lesser degrees of collaboration. Two trainees offered potential explanations for less collaboration on surgical services:

I think surgeons first of all are very busy people. They have enough on their plate as far as physical illness of the patient and they don't have enough time for other aspects...They're more focused on the physical aspect of their disease. (student 15)

I think on Surgery rotations, you know patients come in for a particular purpose. They come in to have an operation or a particular procedure done and that is the primary goal of getting them in there...Surgery patients just don't tend to be in the hospital for a long period of time so you don't start getting into family issues, social issues unless the patient brings it up, or it becomes an issue when you're trying to discharge a patient home and there's a problem...Maybe on Surgery it's also the mentality of the people that you work with, we don't deal with these things. (student 6)

One student observed that:

On the Surgery services there was a lot less of it (collaboration). Or it was done behind the scenes...it was done more through paper. There were fewer people actually meeting together because it was more difficult with the surgeons to arrange for actual meetings in one place. (student 9)

A student, when commenting on the lesser degree of collaboration in Surgery, observed that:

On surgical rotations patients frequently are sent home without any thought to their social situations. They will then come back to the hospital worse than they were before because they went home to an empty house and fell. (student 17)

Three students mentioned delays in consultation as an example of lack of
collaboration. This was most often a consultation request between medical specialities although one student mentioned a case in which the social worker had not been consulted promptly. Failure to consult other professionals led to delays in various aspects of patient care. Failure to communicate was cited by several students in their examples of less than optimal collaboration. One student recounted frustrations with trying to have laboratory results performed promptly. Failure to carefully read the hospital charts was also mentioned:

They hadn't really asked or looked at our notes to find out where we were headed with this patient. Things were changing on a day-to-day basis and I think that really underscored for me, even though I wasn't directly involved in this patient's care, how important it is to try and make sure people know what you're asking for. (student 6)

Another example, involving lack of communication between specialists, was recounted as follows:

They didn't read through the chart. They decided they didn't know the whole story and they looked at this in the realm of (specialty "x"). Sure, let's do this. It would be interesting what we find. And then they wrote an order and walked away... They didn't read the chart. (student 13)

One student summarized an example of failed communication leading to less collaboration by saying:

It's sort of one hand not knowing what the other hand is doing and it just turns up that two different plans are made for the same patient and the discussion doesn't take place until it's far too late. (student 12)

The students were asked to give examples where collaboration occurred but a negative rather than a positive effect may have resulted. A variety of examples were provided which illustrated that collaboration (and specifically consultations) has the risk of leading to confusion and/or wasting time. A few students mentioned examples of additional professionals being involved because of an overly cautious approach to the patient. One mentioned that:

You can be overly cautious especially if you view the chart as a medical legal document. (student 19)

Another mentioned that

Maybe we were being a little too careful with her because her daughter is a physician and so we got everyone involved with this who could possibly impact on her care. (student 6)

Students had seen examples of attempting to involve other health professionals where "it
just took a lot of time to get things arranged” (student 6). Another student found that

If you’re trying to get more people involved, each one of them may bring in their own delays. (student 9)

Two students gave specific examples where their focus was on the patient viewpoint:

On Medicine we wrote automatic referrals to social workers, physiotherapy, and occupational therapy. Sometimes patients who were weak and run down would be flooded by four professionals at the same time. They’re trying to go through an assessment independently. I don’t know how much they got out of all these assessments. Everybody came to the same conclusion. (student 16)

Another student reported:

In geriatrics, if you have to bring in too many people, too many specialists into the patient management, it can become a nightmare in that everybody is going to be looking for a specific disease entity... They’re going to be investigated to no end and my experience is that most of the time it doesn’t need much in the way of management. So it’s detrimental both to the patient because of the invasiveness of a lot of the procedures as well as in terms of the economy. It’s not a wise use of resources. (student 4)

In addition to consuming time, collaborative behaviour may also lead to confusion between various viewpoints. As one student expressed it, after hearing from different health professionals regarding one aspect of management,

I was left in the middle again in terms of opposing ideas. (student 5)

Other students recounted instances of different information being given to family members by different health professionals. In addition, students provided examples of conflicts within the medical profession about which was the appropriate specialty to perform a particular procedure. As one student concluded, “Too many cooks spoil the broth” (student 8).

Responsibility for Collaboration

The students were asked to comment on where the responsibility for collaboration in health care situations rested. Seventeen of the 23 students saw the physician as having the major role in being responsible for collaboration. In several instances the students also mentioned that each member of the health care team had their own responsibilities, depending on the area of expertise. This quotation is typical of the dichotomy of responses to this question:

Currently, I think the responsibility lies with the physician. It may be my egocentric view...
(Patients) present to the health care system either to the emergency room or to the family physician's office. (Family physicians) are the ones responsible ... to collaborate and make sure other people are involved. But I may take that back and say it's everyone's responsibility. I'm used to patients presenting to the physician, but there are times when someone comes to an occupational therapist. I don't know if they require referral services or not, but if they came and they said look this is a medical patient, it's their responsibility to get a physician on board. (student 11)

Several students indicated that
Since physicians are ultimately responsible for patient care, it should be physicians who co-ordinate.(student 15)

The idea of responsibility was often intertwined with the concept of co-ordinating aspects of care. One student suggested that:
The way our system is set up, the physician is the gatekeeper with regard to getting different services involved.(student 18)

Other students noted that:
It's the physicians who tend to be the ones to set up all the various consults or all the various services that you think you'll need for a particular patient that you're taking care of. (student 6)

The physician, as the primary care giver of the patient, is to instigate, to initiate the other members of the team and get them involved.(student 2)

Only two students mentioned other professionals as having primary responsibility for collaboration. One student, having just seen a different approach to collaboration, responded:

The responsibility for collaboration?...Well I have two answers. Up until this week I thought that would be the physician's responsibility to consult everyone. But now that I'm in a different hospital, I think that it's actually the nurse coordinator or nurse manager who really did all the co-ordinating for the patient. There are two different views and I don't know which one is correct. (student 20)

Another student mentioned that the primary responsibility rests with the administration in the hospital. This student used the concept of responsibility at a higher administrative level and mentioned, as an example, trying to set up a dialysis unit. In this instance, the administration would be responsible for seeing that appropriate personnel and resources were available to provide efficient patient care.

Some students' answers indicated an awareness of the potential political implications of this question, especially as it related to the perceived leadership responsibilities of physicians. For example:
I think really that everybody is responsible. Maybe in the past it was felt to be the doctor’s responsibility of being in charge of the team and somehow pulling people together. I think to a certain extent that’s still there. But on the other hand, now I think everyone’s trying to see each other as more of an equal having an equal contribution...As a result the responsibility for collaboration should lie with all of those people. (student 3)

Another student responded that:

I think it’s the medical profession that should be collaborating or being responsible for arranging all these things. But at the same time I think that you can’t be so self important in that role that you don’t take other people’s suggestions. For instance the nurse who’s looking after the patient most of the time, who has the most contact with the patient, feels that requesting social work to come and see the patient would be appropriate, then I think it’s our responsibility to take those concerns seriously and to listen to them and to act upon those suggestions. (student 6)

Others candidly admitted their physician-centered viewpoints when responding to this question. For example, students noted that:

I think the responsibility (granted it’s a biased view because I’m a medical student) does rest with the physician as the physician is the primary care giver of the patient. (student 2)

I don’t know if this is politically correct or not. I actually do believe it’s the physician. (student 10)

It may be my egocentric role, I’m not sure...I think the responsibility lies with the physician. (student 11)

In summary, the majority of students felt that the physician had a primary role in being responsible for collaboration, either as the instigator or the coordinator of collaborative efforts. Nine of the 23 students also mentioned the shared responsibility of other health professionals involved in an individual patient’s care.

Education Fostering Collaboration

The researcher sought advice from the students about the role of formal or informal educational interventions in attempting to prepare health care professionals for collaborative work with each other. The interview questions began with a simple yes or no question, asking whether collaboration in health care can be increased by educational interventions. Suggestions as well as comments on the appropriate time in the curriculum for such educational interventions were welcomed. Those students who answered in the negative were asked to expand upon why they did not feel that education had a role in fostering collaboration. The students were then asked specifically about the first year voluntary Multiprofessional Education Program they had been exposed to at Sunnybrook
Health Science Centre. Questions were also asked about the Health, Illness and the Community course in the first two years of their curriculum.

In answer to the question, “Do you think that collaboration in health care can be increased by educational interventions?”, 20 students answered affirmatively while three answered no.

Among the affirmative group, two major themes emerged to explain why education could foster collaboration. One theme involved the acquisition of practical knowledge about other professionals, which would make the transition from pre-clerkship to clerkship easier,

to know what’s out there and what you can use (student 1)

The second theme related to a broader appreciation of teamwork:

I think it's a philosophy and I think that it can be instilled early on...that philosophy of teamwork and having each member having distinct roles. (student 11)

I think education is important and useful in training the attitude of the physician toward the other members of the medical team...One of the goals should be to educate students that while they will be physicians and thus responsible for patient care, there are other allied health professionals that are also involved in patient care. (student 23)

Among the three students who did not think that any kind of education was necessary to foster collaboration, one responded that:

I think it's been emphasized and I don’t think there’s any need to emphasize it even more than it is...Ultimately, it is the responsibility of the different members of the team whether they’re interested in collaborating in the first place. (student 15)

When asked about specific suggestions for educational interventions in the medical curriculum, a variety of answers came forth. Six students specifically mentioned including issues of collaboration with other health care professionals in the Problem Based Learning cases within the first two years of the curriculum (in the pre-clerkship). Students mentioned specific examples where this had already occurred, though one mentioned that the extent to which other professions were discussed in PBL was tutor dependent. One student recounted that:

There were some cases, like the case of a woman who fell. They did talk about the roles of Home Care and of the other professionals and that was actually part of the session. They actually brought in the orthopaedic team and how they work. I think that a lot of the geriatric cases did that. ... I suppose it could be part of some case where it was relevant but I wouldn't start adding it into cases just for the sake of adding it in. (student 7)
One student also remembered that in some of the first year teaching, physiotherapists and occupational therapists taught medical students about Rheumatology. This student remembered that:

There are things I hadn't really thought of from a more functional point of view as opposed to just a medical point of view. (student 6)

Many of the students' suggestions related to the clerkship. One student suggested that

When you come to a new floor on a new rotation, it would be nice to be properly oriented to the different people (professionals). (student 20)

Three students mentioned the concept of clinical attachments as a suggestion to enhance awareness of the roles of other professionals:

I'm wondering if you could spend a day with a nurse or a physiotherapist and just see what they do... I think that maybe if we put ourselves in their shoes we'd be more appreciative (student 2)

I think it's useful to go around for a day or a half day a couple of times with the pharmacist or the occupational therapist while they are doing their assessment in stroke rehab... I think that would not be a bad idea... I'm not sure from the clinician's point of view what the benefit would be other than seeing the kind of blood, sweat and toil that the nurses go through on a regular basis (student 4)

I think that would be an interesting experience because it gives you some insight early on into what these people do and then that way when you come on the ward you have a better sense of it. (student 17)

One student specifically mentioned physiotherapists, occupational therapists, and Home Care personnel as examples of professionals with whom a medical student could spend some time.

Eleven of the 23 students specifically emphasized that the clerkship experience brings with it the opportunity and the need to collaborate with other health care professionals. A sample of comments related to this theme includes:

In clerkship you already know you have to collaborate, because you can't get through your rotations without collaborating... Even if you knew nothing at all about collaboration before you came in you would rapidly learn about it simply by necessity. (student 1)

Within the clerkship you end up interacting with everyone anyway, so that's already occurring in a sense because you are attending Kardex, you are interacting with all the other health care professionals through various means. (student 5)

With the two-year clerkship now you already get a good exposure (to collaboration)... It's just something you learn from exposure. (student 7)
I think that collaboration occurs out of necessity... I think there's a lot of on the job learning... I think that's what clerkship is for. (student 17)

**The Role of Kardex Rounds**

During the clerkship experience, Kardex rounds, or variants thereof, were frequently mentioned as specific examples of collaboration with other health care professionals. Only one student, of the 23 interviewed, had no personal experience with Kardex rounds during medical school training. Most students mentioned Kardex rounds in the context of their Medicine rotations, though some also mentioned Psychiatry, Surgery and Paediatrics as examples of where Kardex rounds occurred.

These multiprofessional rounds were perceived by the students as having benefits both for patient care as well as for their own education. One student recalled that:

> I can think of probably five or six instances where it really had an impact... where the team as a whole gained a different perspective and gave information to each other. (student 5)

Another mentioned that:

> Sometimes it reminded me that social work was available and that occupational therapy was available. Sometimes I wasn't sure whether they were consulted on everything or it was only under certain conditions. (student 9)

One student reminisced:

> Now I can see how Kardex Rounds can really work... I think that they're very valuable and I learned a lot about what's happening with my patients during Kardex rounds because all the professionals are there. (student 20)

The students also perceived the reciprocal benefits of attending these multiprofessional meetings:

> A lot of time they (the other professionals) want information from me and a lot of time you need information from them. (student 14)

One student mentioned another specific example:

> It was interesting because often you'd be following a patient and something was brought up at Kardex rounds that you weren't even aware of. It was your patient, but you had no idea that this was going on because the social worker had dug up something or had talked to the patient and found out this different aspect of their life and it was really valuable. (student 12)

Kardex rounds were especially useful as a means of communication between health care professionals:
Kardex rounds are useful to clarify orders, to re-establish communications links that may have been frayed between the health care professionals, including physicians and nurses. They're useful for the physicians as a source of information about the patient that they're looking after. (student 23)

Kardex rounds were also seen as being valuable for focusing the goals of patient care. As one student commented,

Kardex rounds would provide an opportunity to see what direction you're going, what are your long-term goals. (student 11)

Kardex rounds also had a direct educational benefit to the medical students with respect to the roles of other professionals. One student commented that,

we just organized it so that everybody knew what their role was and what the objectives were in terms of a specialty placement of patients. (student 5)

Another student described Kardex rounds as,

a time when you realize the different approach and different angles that different professionals come from. (student 14)

Students recounted personal examples:

For instance one area that I was exposed to is speech pathology and swallowing studies and determining whether or not people were able to take certain foods and what sort of diet they were allowed to have that was safe for them to have if they were at any potential risk for aspirating. That was something I didn't realize that speech pathology did at all. (student 12)

In Psychiatry, I learned a little bit about (nurses who were) case managers. (student 15)

In a variety of ways, students echoed this sentiment:

In the clerkship at least Kardex rounds, if and when they're held, tend to be a major way of either reinforcing or reminding clerks about the different roles and capabilities of the other professions. (student 11)

One of the key ingredients of success for these multiprofessional meetings was the involvement of staff physicians, and to a lesser degree, postgraduate resident supervisors of more junior medical trainees. Four students recounted examples of staff physicians participating in Kardex rounds themselves. These supervising faculty members had a positive influence on the quality and usefulness of these rounds. As one student remarked,

I think it does make an impact because I think the discussion tends to be more enthusiastic and lively and there is more interaction. People are more willing to bring things forward. (student 12)

The lack of staff physician enthusiasm was cited in three instances where Kardex rounds
were viewed negatively, "it's a pain that they have to go" (student 9). Two other students felt that Kardex rounds were seen to be a low priority for the medical team.

Overall, however, the interviewees' comments regarding these rounds were very positive:

In Medicine, especially the (patient) population in Sunnybrook is elderly, and they have a lot of social problems and psychological problems, which have an impact on their organic disease. That's why they're in hospital. In order to solve their problems long-term, you have to involve the multiprofessional approach. (student 15)

To summarize the sentiment of most students regarding the benefit of Kardex rounds, one student stated simply that

I think that they are amazing when they are done well.(student 20)

Sunnybrook's Multiprofessional Education Program

The students commented on Sunnybrook's Multiprofessional Education Program (MPEP). Specifically, the researcher was interested in discovering whether this initiative had any value in preparing students for more collaboration in practice and for heightening their awareness of the roles of other health care professionals. Both positive and negative statements were plentiful. Students also offered suggestions for improvement of future sessions. For all students, the first year MPEP had occurred at least two years prior to the interviews. Despite this, several students recounted specific sessions that they described as particularly useful. These included the sessions on ethical issues, the session which explored differences between physical therapy and occupational therapy, a session on dealing with hearing impaired individuals, as well as sessions related to mental health and the war veterans population at Sunnybrook. Many students believed that the MPEP did provide knowledge regarding the roles and educational backgrounds of other health care professionals. As a direct result of this program, students suggested that:

I think that we were prepared in our pre-clerkship years for interaction with other professions. (student 1)

When I started third year I had a pretty good idea of who was there and why they were there. (student 9)

I think there's always value in being able to bring new perspectives to medical students, who can have a lot of tunnel vision at times and for those sessions that we had, I think I certainly got a lot out of it even if it was just in a very general sense in terms of making me aware of, well, there are other people who are training to do things other than Medicine and I am going to need to work with them. (student 6)

Fifteen of the 23 students mentioned that the MPEP had served to introduce them to students of other professions and to the educational background and roles that they
would play. As one student suggested,

it is a good first step just because you get to know people in the different areas but you also get to have an idea of what training they have in order to complete their course and also what sorts of things they’re doing at the same time as you are. (student 3)

Knowing about the educational backgrounds of students in other health professions may facilitate communication. The same student went on to say,

For example if you know that a physio student has done anatomy and physiology and all those things then you know when you’re communicating with them later what sort of level you can communicate at. (student 3)

Eight of the students also mentioned the importance of establishing social interactions and rapport with students of other professions:

The social aspect was important, I think. (student 20)

It makes you less hesitant to call upon them because if you can put a face and a personality to a particular profession, it’s easier. (student 6)

To know personally some of the people you are going to be working with in consultation... it definitely makes the collaboration process easier. (student 14)

This social dimension may even have some longer-term benefits, as recounted by one student:

It was very funny because now whenever I see her we always talk and joke and stuff and I suppose it’s from meeting her there. (student 8)

Students who viewed the MPEP positively also suggested that some degree of clinical relevance would make the Program easier to sell to medical students:

Maybe one or two sessions where you’re discussing a disease would grab people in a way because that’s what they’re in training for. (student 3)

The easiest way to focus in on getting people to learn about different professions maybe is to center those sessions around a particular case that has a lot of different issues. (student 6)

We always are trying to think that we have to learn everything medical and everything we should be learning should have a medical twist to it to be gaining our knowledge base. (student 18)

In the interdisciplinary sessions, I think more of that sort of stuff, just nuts and bolts, real practical stuff, would be useful. (student 12)

Two students mentioned that the MPEP should be part of the actual curriculum. One suggested that knowing that the Program was something extra only for Sunnybrook students made it easier for students not to participate in it.
Four students specifically wondered whether the MPEP was occurring too early in the medical curriculum:

With respect to preparing people for future interactions on the ward, I'm not sure of that, I think it's a little too far removed. (student 17)

I think at the time it was very early and it was hard for us to understand why it was important and everyone was a little bit uncomfortable. (student 20)

I don’t think it’s a useful endeavour in the pre-clerkship years because as I said before, most people are just so their heads are spinning trying to get from one place to another and making sure they’re ready for exams and so on that I don’t think this sinks in. (student 4)

Those (MPEP) sessions were held at a stage where from a medical knowledge point of view we were in our infancy. From a confidence point of view, we were certainly lacking confidence because we didn’t know very much. The sessions tended to be dominated by the other members of the health care team, trying to impress upon our impressionable young minds what or how much they did for each of their patients. (student 23)

Because the first year medical students were often relating to more senior students of other professions, a few students commented that they were “intimidated by the fact that there were these third year students and I’m a first year student” (student 8). Some of the MPEP exercises also involved asking students about health care responsibilities that they may not have yet been aware of. One student pointed this out:

I think not everyone understood why they were there and I remember in some of the assignments that we had to do, ... not understanding what (other professionals) did... I felt that there was a right answer, and I didn't know it. (student 20).

During the MPEP, medical students were also exposed to the other health care professionals’ perceptions of the medical profession. The following comments illustrate some of the medical students’ concerns:

The general drift with respect to the Friday lunches was that sometimes I think all of us were feeling that doctors were somehow to blame for everything. (student 3)

There was some resentment... Maybe they felt that we didn't understand what they did and didn't appreciate the kind of training they went through... They were saying, you know, I've done four years of University as well. (student 6)

I know from the sessions that I did go to where the person like the social worker would come and talk ... that I noticed from most of them really turned me off from wanting to collaborate... There was a lot of doctor bashing... They told us what they didn't like about what the physicians did and that we had better be different ... in a very accusatory way. (student 7)

I’m thinking of a particular Multiprofessional Education meeting where we did a case based thing, almost like PBL, and we were talking about how each person can help. It got to the point where everyone seemed defensive about their turf... as a medical student, I remember thinking, dam, there’s not much that we’re the best at. (student 11)

It became more of a political forum than an educational forum. (student 23)
Other students remembered that in some of their sessions, the intended mixing of students from different professions simply did not occur. One student remembered that there were

medical students in one corner and nurses in another corner and then physiotherapists and there wasn’t a lot of mixing going on. There was a little bit of polite discussion but it certainly wasn’t as interactive as it could’ve been. (student 12)

Another student mentioned that “the ice never broke in my group” (student 8). In offering suggestions about how to improve this situation, one student mentioned that “if the groups are well facilitated, I think that would make a huge difference” (student 12). In total, nine of the 23 students mentioned some negative aspects of the MPEP while offering suggestions for improvement.

Finally, because the MPEP was conducted over the lunch hour, spontaneous trainee comments regarding the availability of lunch were analyzed. Eleven of the 23 students spoke favourably about the presence of the lunch, which at least enticed some individuals to come:

I’ll take a free lunch no matter what. (student 13)

Timing of Multiprofessional Education

The students were asked about the appropriate time in the curriculum for multiprofessional education activities to occur, if they occurred at all. Eleven of the 23 students voiced opinions that were supportive of multiprofessional education activities occurring in the pre-clerkship. As one student commented,

It gives you a little bit of rock to stand on when you’re making your first leap. (student 1)

Another recalled that,

I think that certainly having that pre-clerkship exposure to it was helpful because prior to that I’d only known about nurses just because my mom was a nurse. (student 6)

One student’s comments indicated an understanding of the benefit of early exposure to other health care professionals:

I think that certainly the idea has to be introduced pre-clerkship, because if you don’t introduce it then you’re going to think that Medicine is in this bubble. (student 20)

Eleven of the 23 students commented on the potential value of having multiprofessional education experiences in the immediate four-week period before the
beginning of the clerkship. Currently, the University of Toronto medical curriculum has a very brief “Link Experience” which attempts to prepare medical students for entry into the clerkship. One student characterized the practical rationale for multiprofessional educational activities as part of the Link Experience:

Once you start clerkship you are accessing these people all the time so I think you should know before you access them what they’re doing. (student 2)

One student went on to emphasize that there would be added benefit to having the multiprofessional education experiences with students who are also going to be studying on the wards of the hospital:

Then you’ve got people who are both going to be working in the same environment and they’re going to be co-workers for at least a year. (student 14)

Six of the 23 students suggested that the emphasis on multiprofessional activities should occur during the clerkship itself, including some who believe that it should be at the beginning of the Medicine rotation. As seen from the examples of collaboration recalled by students, “that chunk of time where you’re most going to be requesting these services” (student 6) was most often the Medicine rotation. Another student, when supporting the clerkship as an appropriate time for MPE, suggested that:

I think there’s a lot going on in pre-clerkship that you don’t appreciate the nuts and bolts and the nitty gritty of patient care management like you do once you’re out there in clerkship. (student 14)

The issue of multiprofessional educational activities being clinically relevant was also echoed by the following comments:

I think the best time to see, to talk about how it’s useful and to point out how to work with different people is probably during clerkship when we’re experiencing it ourselves and can see how it’s relevant. (student 20)

I don’t think it’s a useful endeavour in the pre-clerkship years because...their heads are spinning trying to get from one place to another and making sure they’re ready for exams...I don’t think this sinks in...I don’t think it’s too late in fourth year to start. By then, people have been on rotations in hospitals and have seen actually how things work. They’ve already been coerced into accepting the idea of multidisciplinary interaction and probably find it easier to sit down with OTs etc. and work together on a problem. (student 4)

Role of the Health, Illness and the Community Course

The students were asked their opinion regarding the role of the Health, Illness and the Community course in preparing them for more collaboration in clinical practice. In addition, the researcher wondered whether the course heightened the students’
awareness of the roles of other health professionals.

In the first year of the course, medical students spend four half days visiting Home Care clients at home with either a nurse or a rehabilitation therapist (an occupational therapist or a physiotherapist). Thirteen of the 23 students specifically mentioned these Home Care visits as contributing to their understanding of the role of the Home Care Program in health care. Four of the students recounted how useful this first year experience was in their clerkship, especially as it related to discharge planning. For example:

Going out with the Home Care Program was really excellent because I now know when I'm looking at discharging a patient home what sorts of things they would be able to go home with. (student 3)

However, only two students recalled that they had learned anything about the roles of health professionals while on Home Care visits. Both students mentioned an enhanced awareness of occupational therapists as a result of these visits. No mention was made of the role of nurses in the Home Care setting, with the exception of one student who said, "I'm not sure whether they (the nurses) gave me any insight into the nursing side of Home Care" (student 4).

In the second year of the HIC course, each medical student is asked to select a health care setting in the community for an individual project. Very few students who were interviewed could recall specific examples of collaboration in these settings. However, the nature of many projects did not necessarily place medical students in contact with many other health professionals. One student did have occasion to deal with other professions:

It (the second year HIC project) brought together many of the health care fields, mostly outside of Medicine. (student 1)

One other student mentioned that,

I think (collaboration has) been very heavily emphasized actually in our curriculum with having the Health, Illness in the Community course to see how the different members of the team function inside and outside the hospital. (student 15)

In summary, the Health, Illness and the Community course seemed to have modest impact on the medical students as a way of heightening awareness of other professionals' roles.
The Non-medical Health Professionals

During the interviewing, no effort was made by the researcher to systematically ask the students about each health profession. However, the interviews with medical students contained a large number of comments about specific health professionals. Sufficient numbers of spontaneous observations were made concerning nurses, occupational therapists, physical therapists, pharmacists, social workers and speech language pathologists to warrant descriptions of these comments.

Sixteen medical students commented on their interactions with nurses. Students understood the continuous nature of the nurses' contact with patients and how this contributed valuable knowledge to the health care team:

Nurses have the most patient contact...They're more consistently with the patient...They are telling us how patients are on a more continuous basis. We only see the patients once or twice a day. (student 16)

The nurse who is actually looking after the patient...(provides)...a direct transfer of information. (student 5)

Nursing has the greatest input as to what service may also be required. (student 18)

Nurses run the show - we've got to collaborate with them. (student 11)

Several medical students perceived that they had a special role as intermediaries between nurses and staff physicians:

The clerks are around more during the day...The nurses were probably more likely to tell you, then you could relay the message on (to the staff physician) (student 3)

Lots of times they'll ask you because they're afraid to page the staff physician or ask the staff...so they'll ask you and then you ask the staff. (student 7)

The medical students also recounted examples of specialized nursing expertise that they had experienced. These encounters included in-hospital settings such as the operating room, the labour and delivery suites and the psychiatry wards, as well as outpatient settings such as the Home Care Program and the Breast Diagnostic Clinic. The extensive contact between medical students and nurses also contributed to the education of the medical students. One student remembered a particular discussion regarding pain medication management for a patient. He concluded,

I appreciate them...I think I've learned a lot from nurses. (student 21)

However, the same student conceded that:
Several students recalled examples of tension between themselves and nurses. In some instances, this was seen as a normal part of the learning process:

I did find that during clerkship there tended to be...a reluctance on the part of nursing staff to fulfil orders...that had been written in the chart by a medical student. (student 6).

Two students specifically perceived their female gender as having a role in the tension between the medical and the nursing profession:

I know being a female, as a doctor, that a lot of the time the way nurses treat female physicians is a lot different from the way they treat male physicians...A male physician can be very blunt and not very friendly and [the nurses] will take it...if I say I want it done now, they say she's not very co-operative. (student 7)

I think partly it's because I'm a young female. It's a funny thing for them to have a young 25-year old female as an authority, or as a person giving them orders, which is what they do...They follow orders. (student 17)

Other examples of medical students "getting flak" from nurses had occurred in specialized nursing environments, such as the operating room, the labour and delivery suite and the emergency department. One student viewed this as an evolutionary phenomenon, which lessened as the individual in training became more senior:

I've noticed that some allied health workers tend to be quite antagonistic towards physicians...For a junior [trainee] it's easy to take your frustrations out on them...I haven't noticed the same sort of thing with staff physicians or senior residents, as opposed to junior [residents] (student 22)

Beyond the examples of tensions between nurses and physicians-in-training, the students had witnessed or perceived tensions between the nursing and the medical professions:

I sometimes feel that there's a lack of collaboration between the nurses and the doctors or at least there's a sense of tension between them...They were insinuating that doctors didn't do this or that...comments that just came out which I think were unfortunate.(student 3)

I think the relationships between doctors and nurses are sometimes less than collaborative. (student 17)

Sometimes there's some hostility going on between the medical resident and the nurse.(student 8)

They're saying you're just a doctor, you don't know anything. (student 4)

In conclusion, the medical students' comments about nurses were diverse. They included an understanding of the integral role nurses play in health care, but also reflected
many examples of witnessed discord between these two professions.

Sixteen of the 23 students included occupational and/or physical therapists in their interview comments. These two professions were often mentioned in the same sentence. Six students specifically emphasized the potential educational goal of understanding the differences between the two. One student had experience with a single physiotherapist who had not related well to the health care team. All other comments about physical and occupational therapists were positive and showed an awareness of the unique roles played by these professionals, especially in certain clinical situations:

For stroke patients, we rely really, really heavily on the occupational therapists and the physiotherapists. (student 20)

Occupational therapists and the physiotherapists were really important...and really put a lot of time into helping their patients get better. (student 19)

I'm very impressed by how well they could assess people and how much they do...I find they have a good understanding of both the social and the biological aspect of the patient. (student 21)

Some of the medical students' comments also indicated an awareness of the independent contribution made by these professions:

It seemed that the physio and the occupational therapists had a great deal to say in terms of the type of management [for the patient]. (student 4)

In summary, a large majority of the students recounted positive experiences about the role of both occupational therapists and physical therapists in health care settings.

Social workers were mentioned by 15 of the 23 students interviewed. The central role of the social worker in discharge planning was always mentioned. Their knowledge of community resources and the steps needed to “navigate through different governmental systems and bureaucracy” (student 14) was recognized and appreciated. Medical students understood that social workers brought a unique expertise to the team:

I just find that I have little or no knowledge of what resources are available [in the community]. I find working with them [social workers] has been very good for the patient. The patients seem to respect her expertise. (student 21)

I am pretty reluctant to discharge an elderly patient who I know there’s no one at home for, without having the social worker involved. (student 18)

In addition to discharge planning, medical students did observe that social workers had other skills. One student recounted an occasion during which the family meeting was facilitated by the social worker. Another student had sensed some of the frustration social workers see in their professional roles:
[The social workers] thought their responsibilities were mainly filling out papers, calling about waiting lists... They didn't feel that they used a lot of the resources they might have to offer in health care settings, like communication or counselling [skills]. (student 16)

To conclude, medical students seemed to recognize at least one major unique expertise, facilitation of discharge planning, which social workers bring to the health care team.

Eight medical students made mention of pharmacists during their interviews. All of the comments were laudatory. Students noted the increased activism of pharmacists and how they were “a very important part of the team” (student 7). One student observed that the pharmacist on one clinical ward had directed Kardex rounds. Students recognized “the amount of detail and the great wealth of knowledge that the pharmacists have” (student 20). The following remarks also illustrate specific examples of working together with a fellow professional:

I worked very closely with the pharmacist, who had a lot of recommendations. She knew a lot about the medications... Together with her we were able to solve the problem. (student 20)

I really value their input primarily because the [medical] staff was also accepting their input for changing and questioning why people were on [certain] medications. (student 4)

Every time you write an order the pharmacists check it over. Often they’ll call up and make suggestions about why one medication interacts with another medication. You collaborate with them to tell why you want to use this medication. You’re working together to decide based on your information from a physician’s point of view and their information from a pharmacist’s point of view. (student 14)

Medical students’ comments about their working relationship with pharmacists illustrated respect for the special knowledge and abilities of the pharmacists.

Six students specifically highlighted the contribution of speech-language pathologists to the health care team. In all instances, the context was in the care of stroke patients. The medical students discovered that speech-language pathologists had unique expertise in the investigation and management of swallowing disorders.

Students’ Responses to the Data

The research data, in the form of a draft version of chapter five, was circulated to a sample of participating students for their comments and further observations. The students provided both written and verbal feedback. No concerns were expressed about the draft chapter. Specifically, the students believed that the data was presented with appropriate balance. None of the students felt that the researcher had over-emphasized any issues in an inappropriate way. The students enjoyed reading the quotes from their colleagues. One
student wrote, “At times during my clerkship, I think that I have agreed with almost all of the comments contained within”. Another student reflected on her negative experiences with Kardex rounds. After reading the positive experiences of her classmates, she suggested that she may have been misled by more senior trainees to not fully appreciate the benefits of Kardex rounds.

Conclusions

The interviews with the 23 medical students provided a rich array of anecdotes, observations, perceptions and attitudes about the issue of collaboration in health care, as seen from the viewpoint of trainees in the medical profession. The next chapter will review and discuss the key themes derived from these interviews and will relate these themes to the previously reviewed literature on collaboration in health care and on multiprofessional education.
CHAPTER 6
SUMMARY AND DISCUSSION

Physicians of the future are experiencing, understanding and practicing collaborative behaviour in health care settings during their training. In-depth interviews with 23 medical students, each of whom had one to three years of clinical experience at the time of the interviews, illustrated these findings.

What did medical students understand about the concept of collaboration in health care?

Collaboration was viewed as a behaviour that included not only physicians, but also all other health care professionals involved in the care of patients. Collaborative behaviour was understood to lead to a higher likelihood for improved patient care. In addition, the students understood that the involvement of other professionals provided complementary expertise to patient care, especially involving the psychosocial aspects of care. The discharge planning of hospitalized patients was a commonly cited example.

The central role of communication as a collaborative behaviour was well enunciated. Communications activities included talking with other health care professionals, meeting regularly with them and reading their comments on the hospital chart. Good communications also involved an awareness of the importance of mutual respect for each other’s opinions. At the opposite pole, the lack of communication was often cited in examples where the medical students perceived that collaboration was not occurring.

University of Toronto medical students felt strongly about the primacy of the physician in facilitating collaboration. However, numerous students were also able to broaden the concept of responsibility to include other members of the health care team. Pike (1991) suggested that shared decision-making, responsibility, accountability, as well as trust and mutual respect were hallmarks of teamwork in health care settings. This research illustrated numerous examples of those criteria being fulfilled. Weiss and Davis (1985) defined collaboration as the active and assertive contribution of each party toward solving a patient problem. As a result, a negotiation occurred to form a new conceptualization of a patient’s problem. The collaborative framework of Weiss and Davis was most powerfully seen in the examples of shared decision-making between
physicians and pharmacists. The interviews described a direct exchange of professional viewpoints between physicians and pharmacists, which then led to a mutually acceptable solution that benefited the patient. With the other health care professionals, examples of shared decision-making were less overt. The relationships between physicians and other health care professionals were better characterized as a concession by the medical students that another profession had unique expertise to contribute to an aspect of patient care. These observations are in keeping with Clark's (1991) definition of an interdisciplinary health care team, as "a group of persons who are trained in the use of different tools and concepts, among whom there is an organized division of labour". However, Clark's definition concluded with the concept of "group responsibility for the final product", a theme which was not detected in these research interviews.

What insights had the medical students gained about collaboration or non-collaboration through actual experienced incidents?

The students had a good working knowledge of the roles of many health care professionals. The unique expertise offered by occupational therapists and physiotherapists, especially in the realm of analyzing and assisting with patient function, was well appreciated. The special talent of social workers, especially with respect to the facilitation of discharge planning, was widely acknowledged. Students also described close collaboration and shared-decision making with pharmacists. The collaborative efforts required for many patients with strokes were mentioned when describing the roles of several health professionals. The care of patients with strokes brought the special abilities of speech language pathologists to the attention of medical students.

This research on the observations and perceptions of medical students regarding collaboration is complementary to the findings of other researchers. Webster (1985) noted that medical students viewed collaboration as a means of addressing very specific patient needs. In this study, the special expertise of occupational therapists, physiotherapists, social workers, and speech language pathologists, for example, was mentioned in relatively narrow terms. These health care professionals were often viewed by students as having an independent and specialized contribution to make to the team's activities. It seemed as if the medical profession was contracting out to other
professionals certain patient care functions, especially if the other health care professionals’ activities did not overlap with the role of the physician.

Conversely, on general medical wards at least, this research found that the nurse’s role was ill defined. Although the University of Toronto medical students recognized the extensive daily contact nurses had with patients, few examples came forth illustrating an independent nursing contribution to the overall management of the patient. This is in agreement with the observations of Foley and colleagues (1995). In contrast to Webster’s findings (1985), medical students at the University of Toronto did see many instances of nurses functioning in specialized roles. Examples included nurses in the operating room, labour and delivery suites and on psychiatry wards. In these settings, the role of the nurse was seen in an enhanced capacity. In these specialized nursing examples, the nurses’ activities were at least partially overlapping with those of physicians.

The Medicine rotation, along with Surgery, represents the single longest component in the University of Toronto’s clerkship (six weeks in each of the two years of clerkship). Because most of the recounted clinical examples of collaboration occurred on the Medicine rotation, the time spent by students on Medicine is clearly an important opportunity for learning about the roles of other health care professionals. Many of the examples of collaboration cited by students, including the care of stroke patients, geriatric patients and patients in palliative care settings, involved nursing care provided by general medical nurses. However, no examples of specialized nursing expertise were mentioned in the context of these Medicine rotations in clerkship. As one student succinctly summarized the role of these nurses, “They follow orders”.

In both general medical ward environments and in specialized settings, medical students described tensions and antagonism with nurses more commonly than with any other health care professionals. As Gray (1985) suggested, one of the liabilities for close teamwork was the potential to heighten interprofessional adversarial relationships. The use of medical students as a “buffer group” between nurses and attending physicians, described first by Devine (1978), was confirmed in this research setting. However, interdisciplinary conferences (especially Kardex rounds during Medicine rotations) were widely mentioned by University of Toronto students as an opportunity to relate to other professions. This observation was not mentioned in other studies that assessed medical students’ perceptions. As Bond and colleagues (1987)
remarked, interprofessional meetings were one of the key ingredients for higher levels of collaboration in clinical practice. Bond’s other criteria for collaboration, including the presence of shared decision-making, commenting on each other’s work and the physician understanding the role of each member of the team, seemed to be fulfilled by the Kardex rounds experiences of the University of Toronto students. Students also recognized that Kardex rounds improved patient care, supporting the observations of McHugh and colleagues (1996) regarding the benefits of regular multiprofessional meetings.

In the context of regular meetings, such as Kardex rounds, Mechanic and Aiken (1982) had suggested the importance of senior physicians as role models. The role of faculty role models to support collaboration was also emphasized by EFPO (1992). The importance of teaching faculty support for Kardex rounds was confirmed by several students during this research, who commented on the important positive impact that attending physicians brought to Kardex rounds.

What suggestions did medical students offer regarding educational strategies within the curriculum to foster collaboration?

A large majority (20 of 23) of the University of Toronto students saw a role for education in enhancing collaborative efforts. The importance of early exposure to concepts of teamwork and especially to practical knowledge of the roles and skills of other health care professionals was emphasized. The students had a variety of suggestions related to interprofessional education activities. Some suggested incorporating discussions about the roles of other health professionals into existing problem-based learning cases in the pre-clerkship curriculum. Others recommended the continuation of direct teaching of medical students by other health care professionals. The most commonly cited example involved physical therapists teaching medical students about the musculo-skeletal physical examination. Several mentioned the importance of providing a formal introduction to other health professionals on a patient care unit. There were even suggestions for clinical attachments, which would allow medical students to experience health care delivery from the perspective of other health care professionals. There was a strong sense that the clerkship experience, “by necessity”, brought about opportunities for collaboration. A significant majority of students viewed Kardex rounds as both beneficial to patient care as well as having a
role in their own education. This related specifically to enhancing their knowledge of the roles, expertise and the perspectives of other health care professionals. These expressions of support for interprofessional education, coming from students who have had clinical experience, are an important complement to the findings of Hojat and colleagues (1997). In their study, medical students in their first two years of education, who had no clinical experience, also strongly supported having interprofessional relationships as a specific topic for medical education.

The University of Toronto medical students' reminiscences regarding the Health, Illness in Community course provided modest encouragement related to the collaboration-related objectives of the course. A majority of the students commented that they learned about the capabilities of the Home Care Program during their field visits in the first year of the curriculum. However, the students did not mention themes illustrative of an understanding of collaboration. It is uncertain from this research whether students attained the desired course objective of "developing an understanding of team building". Only a small number of students mentioned that they had learned anything about the roles of other health care professionals while on Home Care visits. The medical students recalled this knowledge as a benefit in preparing themselves for discharge planning issues when they were in clerkship. In this regard, some medical students learned "to relate to community-agency personnel and clients" and "to understand various issues in relation to the provision of health care services in the home", which were two additional course objectives.

Was there any impact on medical students of the pilot Multiprofessional Education Program (MPEP) that they experienced in first year medical school?

The students were able to provide a balanced assessment of this program, which had occurred between two and four years prior to the interviews. The positive attributes of the Sunnybrook / Boyd Academy's MPEP included the enhancement of medical students' knowledge about the roles and training of the other health care professionals. This knowledge allowed medical students to be better prepared for clerkship. The MPEP was also seen as an opportunity for social interactions, which eased the collaboration process in the clerkship period. However, students also remarked that the MPEP occurred too early in their education. For several of the MPEP sessions, medical students felt that they did not have enough knowledge or enough confidence about the
subject matter. As first year medical students, they were sometimes at a disadvantage compared to nursing students, who were typically in their third year of training. This led to feelings of insecurity among the medical students. These findings are in agreement with the observations of Mazur and colleagues (1979) and Shepard and co-workers (1985) who emphasized that the timing of multiprofessional education efforts must take into account the lack of basic clinical skills and professional identity that affects students who are too junior in their training. The medical students also offered a variety of suggestions for future MPEP efforts. Recognizing the craving that junior medical students have for clinical information, several students suggested that the topics of MPEP activities should be clinically relevant and practical. In addition, if the MPEP sessions were case-based, they would be similar to the problem-based learning style featured in other parts of the undergraduate medical curriculum.

Medical students also suggested that faculty members should always facilitate MPEP sessions. This was prompted by concerns that “doctor bashing” had occurred in some of the sessions when faculty facilitators had not been present.

The students also offered valuable insights into the appropriate timing of collaboration-related educational efforts involving other health care professionals. Multiprofessional education activities were valuable in the pre-clerkship, but it was suggested that they be limited in purpose to introducing the roles and educational backgrounds of other health care professionals. Care needed to be taken in the choice of topic matter for education sessions so that medical students would not feel threatened with issues for which they were not yet equipped. The Link experience, the period of transition between pre-clerkship and clerkship at the University of Toronto, was also seen as a valuable time for further interprofessional education activities. This would be an ideal time to introduce professional students to each other. This was especially important if these students were going to be actually working with each other on the same patient care unit. The clerkship itself was seen as a time where more clinically focused educational activities would be possible, since the medical students had acquired appropriate knowledge, skills and confidence in their own roles.

Mazur and colleagues (1979) suggested that the hospital rather than the university might be better able to initially facilitate multiprofessional education efforts. In part, this was because hospital-based patient care programs cut across established university departmental lines. At the University of Toronto, one of the mandates for the
newly established academy structure was to facilitate multiprofessional education. The efforts of the Boyd Academy with its pilot MPEP demonstrated that a new academic structure, which incorporated both the hospital and the university, could organize multiprofessional education activities for students from several health professions' faculties.

The researcher's reflective spiral

Carr and Kemmis (1986), in writing about action research as critical educational science, distilled for me the essence of my initiative of exploring educational means of enhancing collaboration:

The problems of education are not simply problems of achieving known ends; they are problems of acting educationally in social situations which typically involve competing values and complex interactions between different people who are acting on different understandings of their common situation and on the basis of different values about how the interactions should be conducted. (Carr & Kemmis, 1986)

With this thesis, I have concluded only the first of many reflective spirals of planning, acting, observing and reflecting about enhancing collaboration in health care through education. Have the two essential aims of action research been achieved, namely, to improve and to involve? To frame an approach to this question, Carr and Kemmis (1986) described a dialectical quality to the reflective spiral of the action researcher, namely, the dialectic of retrospective analysis and of prospective action.

Retrospective analysis

As the action researcher leading the MPEP initiative, I have reflected personally on both the pilot program and the research that has led to this thesis. I remain convinced that the goal of seeking ways to enhance collaboration through education is worthwhile. Carr and Kemmis (1986) suggested that improvement as a result of action research should be sought in three areas: in a practice, in the understanding of the practice by the practitioner, and in the situation in which the practice takes place. The six year history of MPEP at Sunnybrook and its recent expansion to the Interprofessional Education initiative has clearly established a social practice within the formal curricula of the health professionals studying at Sunnybrook. The expansion of these education activities to other hospitals and academies within the University of Toronto, as the Interprofessional Education initiative (starting in 1996), has added
support to our initial modest efforts. The overall situation of this practice has now expanded. The degree to which this research has brought an understanding of the practice by students and practitioners remains for others to evaluate in the future.

I remain deeply appreciative of the assistance of members of MPEC, who have steadfastly continued to be involved in the MPEP. Although MPEC as a group has been involved in the planning, implementation and evaluation of the sessions, individual members have not been able to take an active role in the evaluation of the overall initiative. In large part this is because they do not have the protected time to devote to this aspect of the endeavour. Thus, with respect to the involvement of MPEC members as co-researchers, this action research was less participatory than would have been ideal. As the leader of the initiative, I must take some responsibility for this weakness of the study, though I am not sure how I could have corrected this limitation. I was at least partly comforted by the observation of Elden and Chisholm (1991) that, "Full participation in all phases (of action research) is rare, demanding, and seldom feasible."

I believe that the choice of research design, focussing on interviews with medical student participants of MPEP, was fundamentally sound. Medical students were more readily available for interviewing, as their professional training had not been completed. The vast majority of the nursing students who participated in MPEP were in practice by the time of the research interviews. In addition, as a physician and as the students' former Academy Director, I perceive that I had a higher likelihood of recruiting medical students for the research study. Medical students were also in the unique position of being able to suggest potential modifications to their undergraduate curriculum. In turn, I feel that I personally have some capacity to influence the medical undergraduate curriculum in the future. As Argyris, Putnam and Smith (1985) mentioned, "In action science, we seek knowledge that will serve action." Elden and Chisholm (1991) also stressed that, "Action research is change oriented and seeks to bring about change that has positive social value." Since my personal ability to effect change resides with my administrative involvement with medical students, they were the natural subjects for interviewing.

As a physician, I was quite comfortable with my interviewing abilities. The presence of the interview script and the audiotape, as well as my conscientious effort to remove my white coat for the interview, were intended to re-enforce the research nature of the interviews in the minds of the students. With respect to the content of the
interviews, I now believe that a more systematic inquiry from each medical student about his or her perceptions of each of the other health care professionals would have been valuable. In my semi-structured interview questions, I deliberately chose not to ask specifically about nurses, for example. I expected that the clinical examples of collaboration (or lack thereof) related by the students would spontaneously mention each of the health care professionals who had a major role in collaboration. Although this occurred in the aggregate, I think the research would have benefited from an additional series of questions about each student’s perceptions about each health care profession.

With respect to the process of the interviews, while reviewing the interview transcripts I noted several occasions on which leads could have been followed up in more detail. Thus, even though I have significant clinical interviewing experience, the special demands of social science research interviewing, as outlined by Guba and Lincoln (1988), require ongoing practice before expertise can be claimed.

My initial concerns about students providing “socially acceptable” answers to my questions were unfounded. Honesty and candor characterized the students’ responses. This was especially evident when the students said negative things about the MPEP, which they all knew was instituted under my leadership. As Argyris, Putnam and Smith (1985) suggested, research participants’ misrepresentation of facts to the researcher is a significant threat to the validity of this type of research. In part, asking students for accounts of actual performance (incidents in clinical settings), not just their perceptions of it, was a strategy to combat this threat. The process of asking research participants to review the draft of the interview data chapter was also designed to allow for discussion, disagreement or dissent among interviewees. These “member checks” (Guba & Lincoln, 1988) were more time-consuming for the respondents than I had anticipated. I expected more written feedback from the students than actually occurred. I also hoped that the comments would be detailed, but most were rather superficial. However, as the students returned the draft chapter, I was able to further interview each of these students about their reactions to how I had presented and interpreted the interview data.

Hamilton, in describing action research (Denzin & Lincoln, 1994), suggested that the subjects of action research are often partners, collaborators and/or stakeholders in the process. To the degree that the medical students cooperated by giving of their time for the interviews, this idea of partnership in the research was true. However, I was
disappointed that no student offered any further insights about collaboration after the completion of the interview, despite a specific closing plea from me to write, call, e-mail or talk to me further.

Argyris, Putnam and Smith (1985) also cited the role of other data sources to triangulate the data. As I mentioned previously, direct observation of medical student behaviour was beyond the resources available to me as a researcher. However, interviews with other health care professionals involved with these medical students in clinical settings may have provided complementary data. In addition, other health care professionals were also stakeholders in this research effort. Their views would be helpful in determining whether the social relationships on patient care units are perceived to be more collaborative. As Elden and Chisholm (1993) observed, “Action research attempts to study important organizational or social problems together with the people who experience them.” Interviews with other University of Toronto students who did not participate in the MPEP would have provided insights about their perceptions of collaboration, but would not have been useful to assist in the evaluation of MPEP itself. Other data sources about collaboration, namely the views of other health care professionals and the perceptions of medical students who have not experienced MPEP, though not feasible for the current study, may be utilized in future extensions of this research.

Prospective action

Elden and Chisholm (1993) suggested that, “Action research is change oriented and seeks to bring about change that has positive social value.” It is interesting to note that many suggestions made by the students during the research interviews have already been implemented over the last few years. The students suggested that fewer sessions were needed in the first year. The pilot MPEP, which started with between seven and nine one-hour sessions in each of its first three academic years, has been decreased to four sessions per year for the last two years. This change was also partly necessitated by a change in curriculum scheduling which reduced the time students spent at the Academy in the first year. In addition, MPEC has increasingly sought to make these sessions more socially interactive and less dependent on specific knowledge and skills by the participants. A combination of student evaluations and the experience of MPEC members helped to identify those sessions that were successful
over the years. MPEC thus was able to spend less time concerned about content issues. Instead, more attention was directed at trying to enhance the quality of the contact between different professions during the sessions. In the last two years, all sessions and all student groups have been facilitated by at least one member of MPEC who is knowledgeable about the issues related to a particular session.

As suggested by the medical students in this research, opportunities for orientation sessions to include the roles of other health care professionals are also being explored for the Link experience (the transition between the pre-clerkship and the clerkship). All of these initiatives will benefit from ongoing research.

As Patton (1990) remarked, “Action researchers publish reports for specific stakeholders who will use the result to make decisions, improve programs, and solve problems.” One of my first responsibilities will be to share the results of this research with my colleagues on the Multiprofessional Education Committee (MPEC). These health care professionals have worked with me since 1992 to design, implement and evaluate this program. I have already shared the observation that stroke patients were often mentioned by the students as an example of collaboration with members of Sunnybrook’s stroke care team. This team has subsequently hosted a 3-hour session on teamwork and stroke care for health care professional students as part of the Interprofessional Education initiative that is now ongoing at the University of Toronto. I have also noted the frequently cited confusion between the roles of occupational therapists and physiotherapists as a potential topic for future MPEC sessions. However, a more formal presentation of these research findings to MPEC will be beneficial. It will be one way of acknowledging the many contributions of MPEC members to this work. In addition, a formal presentation will serve as a basis for future planning. Furthermore, the report of this initial self-reflective spiral of one participant may be the inspiration for other members of MPEC to consider similar reflective study with their own profession’s students. As Carr and Kemmis (1986) suggested,

*Action research precipitates collaborative involvement in the research process, in which the research process is extended towards including those involved in, or affected by, the action. Ultimately, the aim of action research is to involve all these participants in communication aimed at mutual understanding and consensus, in just and democratic decision-making, and common action toward achieving fulfillment for all.*

(Carr & Kemmis, 1986)

The results of this study, especially as they relate to the clerkship experience in Medicine, will be shared at medical grand rounds at Sunnybrook with an audience that
includes teaching faculty, postgraduate trainees, medical students in clerkship as well as other health care professionals. This presentation and others to local audiences will widen the circle of participants involved in continuing the action research cycle, especially in relation to further study of Kardex rounds. I believe that the role of Kardex rounds as a practical means for enhancing collaboration is a major area for ongoing research. The involvement of teaching faculty, other health care professionals as well as medical students and postgraduate trainees will broaden the base of research participants in a real world setting. Research methods will be expanded. Quantitative information will be gathered regarding the occurrence of these kinds of multiprofessional meetings at all teaching institutions and for all clinical rotations. In addition, surveys would be able to determine basic details such as the extent of involvement of staff physicians, the composition of the multiprofessional team who attends Kardex rounds, as well as the duration and frequency of these meetings. Interviews and questionnaires directed at staff physicians, other health care professional members of the team and postgraduate medical trainees and medical students could further explore the educational aspects of these multiprofessional meetings. Interviews with the non-physician professionals could seek out perspectives concerning the empowerment of these other professionals in the processes of health care. Kardex rounds would also be a possible venue for observational study by a non-obtrusive researcher. In a sense, I feel as if I have returned to my own beginning. It was my positive experience with Kardex rounds during my formative years that initiated my interest in multiprofessional education. Is it possible that the clinically based aspects of this research have merely confirmed what was known years ago, that regular multiprofessional meetings can have enormous benefits to patient care and to education? Yes! Yet, in many jurisdictions Kardex rounds have not been effectively utilized for these dual purposes. It is my vision that the results of this project will “re-invent the wheel” of multiprofessional patient care meetings, not only for enhanced patient care, but also as a specific strategy to enhance collaboration among all health care professionals.

These research results, in turn, could then form the basis of faculty development initiatives. Such efforts could highlight the potential benefits of regular multiprofessional rounds not only for efficiency of patient care but also as a direct educational effort supporting collaborative practice. Because of these potential benefits, funding and support for these initiatives could come both from hospital administrators (who are
concerned with efficient patient care) as well as from universities (which are concerned with educating health care professionals). Kardex rounds, because they are already in existence, may represent a relatively easy way to formally enhance efforts at fostering collaboration.

The results of this thesis research will also be shared with colleagues at the University of Toronto who are involved with the ongoing organization of Interprofessional Education initiatives. Since 1996, the University of Toronto has begun to formally encourage Interprofessional Education (IPE) initiatives at the four academies. These events are beginning to involve all of the health science faculties. In the 1997-1998 academic year, for example, four dates for IPE were agreed upon during curriculum planning. This has facilitated interprofessional education activities for medical students in third year, as well as for occupational therapy students, physiotherapy trainees and students from speech and language pathology. These IPE sessions are three hours in duration, compared to the Sunnybrook pilot MPEP sessions, which were only one hour in length. At Sunnybrook / Boyd Academy, MPEC was able to capitalize on its previous five years of experience with one-hour sessions to very quickly and effectively modify previous MPEP sessions to become three-hour IPE initiatives. The Boyd Academy’s one-hour sessions for first year medical students and others will continue, as will the scheduled three-hour interprofessional education sessions for all academies.

This research will also be presented at the faculty-wide education research rounds. Portions of this work will be incorporated into a workshop on multiprofessional education that I am co-sponsoring at an upcoming national meeting of medical educators. I will also attempt to present this research, in whole or in part, at a variety of international education conferences. All of these communications initiatives are part of the process of seeking ongoing collaboration with others involved in health professional education who have similar interests.

I conclude this thesis with optimism that the enhanced awareness of the need for collaboration in today’s medical students will equip them well for their professional roles in health care settings. However, barriers to collaboration still exist. Educational strategies, informed by the views of students and their teachers, are needed to foster collaborative behaviour among all health care professionals.
REFERENCES


OTHER READINGS


Dear

Since 1992, Sunnybrook Health Science Centre has been developing a Multi-Professional Education Program (MPEP) whose purpose is to try to enhance awareness of the educational backgrounds of health professionals, to enhance awareness of the roles each health professional has in health care and to enhance the awareness of the need for collaboration among health care professionals. As a First Year student, you may or may not have participated in some of the Program's sessions.

This year, as part of a Doctoral thesis in Education, under the auspices of the Ontario Institute for Studies in Education of the University of Toronto, I am studying collaboration in health care settings. This study includes a questionnaire and/or interviews with medical students.

Participation in the Research study is entirely voluntary. Respondents' data will be reported anonymously. You may participate in the interviews and/or the completion of the questionnaire, and you may withdraw at any time during the study.

This Program did not play any role in your academic program of study. Non-participation in the Research study WILL NOT have any role in your academic grading. Information gathered as part of the study will be kept confidential and the interview records will be destroyed when the thesis has been completed.

The proposed Research study will not provide any immediate personal benefit to you, but you may find it an interesting and thought-provoking experience. The cost to you is the use of your time. However, the Research study will occur during non-curriculum times and should not conflict with your academic studies.

Further information about the Research study may be obtained from Peeter Poldre, primary researcher, 416-480-4274, room E322, Sunnybrook Health Science Centre, or from George Geis, thesis supervisor, 416-923-6641 ext. 2294, Ontario Institute for Studies in Education.

Thank you for reading this information and for considering your participation in this Research study.

Peeter Poldre, MD, M.Ed.
January 1997
A RESEARCH STUDY OF COLLABORATION IN HEALTH CARE

CONSENT FORM

I have read the information sheet which describes the Research study of collaboration in health care.

I understand the voluntary nature of the Research study.

I hereby provide consent to be involved in the Research study of collaboration in health care.

Signature:______________________________

Name (print):______________________________

Address:______________________________

Date:______________________________

Please Return To Room E313, Sunnybrook Health Science Centre In The Separate “Consents” Envelope Provided
Consenting students were contacted by an administrative assistant to arrange for a suitable date, time and method (by telephone or in person) for the interview. For the interviews conducted by telephone, the researcher called the student using the phone system built into a home computer. This allowed a tape recorder to be placed beside the speaker of the computer. The researcher sought permission to audiotape the interview over the telephone and recorded this request on the tape. Questioning followed the outline of questions provided below. For the interviews conducted in person, the researcher's administrative office was used. This office is located in the education area of Sunnybrook Health Science Centre, a locale that was very familiar to all of the students. The researcher was always in civilian clothes, without a white laboratory coat. The interview was conducted at a small round table, with the tape recorder placed in the middle of the desk. The researcher's question outline was the only other thing on the table. No supplementary notes were taken during the interview by the researcher.

INTERVIEW QUESTIONS
Peeter Poldre, HEG
March 1997

- Thank you
- Request permission to audiotape for transcription purposes
- Assurance of anonymity

Basic demographics:
- year of study
- area of interest/specialty
- members of family or close friends who are in health care?

As you know, the concept of collaboration in health care is being talked about in a variety of settings for a number of reasons. The study I am doing asks medical students about their views and experiences with this increasingly critical topic. Your perspective will be invaluable because you are at a key stage in the education process for Medicine.

First of all, I would like to ask about collaboration in general terms.

1. What do you understand the concept "Collaboration in health care" to mean?
2. What does it involve in terms of behaviour?
3. Who are we, as physicians, to collaborate with?

Now I would like to put some flesh on the bare bones intellectual definition of collaboration and ask about what collaboration involves in health care work.
4. From your clinical experiences, can you give me one or two specific examples of collaboration which you observed or experienced which had a positive influence on health care?

5. From your clinical experiences, can you give me one or two specific examples where the lack of collaboration negatively influenced the resultant health care?

6. From your clinical experience can you give me one or two examples where collaboration occurred which had a negative rather than a positive effect upon the resultant health care?

Now I would like you to think back about these experiences and consider the relationships and behaviour of the parties involved.

7. With whom do you think the responsibility for collaboration in health care situations rests?

Next, I would like to ask about preparing health care professionals for collaborative work.

8. Do you think that collaboration in health care can be increased by educational interventions?

9. If yes, could you give some possible suggestions.

10. Could you comment on the appropriate time in the curriculum for such educational interventions. Pre-clerkship? Clerkship?

11. If no, could you expand upon why you do not feel that education has a role in fostering collaboration.

12. Did Sunnybrook's Multiprofessional Education Program have any value in preparing you, as a first year medical student, for more collaboration in practice?

13. Did Sunnybrook's MPEP heighten your awareness of the roles of other health professionals?

14. Did the Health, Illness and the Community course have any value in preparing you for more collaboration in practice?

15. Did the Health, Illness and the Community course heighten your awareness of the roles of other health professionals?

16. Are there any final comments you would like to make about collaboration in health care?

If you wish to make additional comments after this interview, or if some incident occurs in the next few months which might assist in this research, please do not hesitate to contact me in person, by phone, voice mail, email or in writing. Your continued assistance is always welcome, and any additional information, like this interview, will be held in the strictest confidence.

Thank you