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A STUDY TO DETERMINE THE ROLE OF ATTENDING PHYSICIANS
IN THE CLINICAL TRAINING OF MEDICAL STUDENTS
AND RESIDENT PHYSICIANS

A Dissertation Presented

By

CHRISTOPHER JARVIS DAGGETT

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

April 1977

Education

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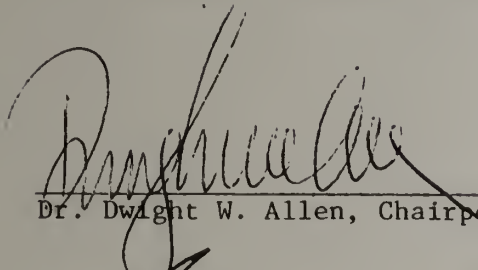
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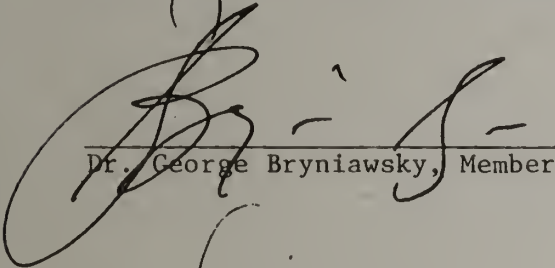
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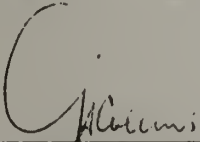
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To My Parents:

MARY ELLEN LEWIS DAGGETT

and

THOMAS RANDOLPH DAGGETT

A C K N O W L E D G E M E N T S

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Finally, I must pay special tribute to Dr. Patricia Cranton, who gave me valuable feedback on the various chapters, and more importantly, provided continual support in the final months of my work on this study.

ABSTRACT

A STUDY TO DETERMINE THE ROLE OF ATTENDING PHYSICIANS
IN THE CLINICAL TRAINING OF MEDICAL STUDENTS
AND RESIDENT PHYSICIANS

(May, 1977)

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In the field of medicine, rapid advances in knowledge, a greater demand for services and an increase in the number of people entering the profession are creating enormous pressures on the system, particularly medical schools. New roles for practitioners are required while traditional roles are becoming more demanding, thus forcing training programs to be revised for greater effectiveness and efficiency. To make such revisions, current efforts and roles must first be assessed. The purpose of this study was to begin that process by examining the role of attending physicians in the clinical training of medical students and resident physicians at the Montreal Children's Hospital. A review of related literature included a survey of the history of, and research on, clinical teaching.

Using an adaptation of a model of a teaching improvement process developed by the Clinic to Improve University Teaching of the

University of Massachusetts at Amherst, data were collected through:

(1) videotapings of portions of ward rounds conducted by attending physicians and senior residents; (2) questionnaires administered to attending physicians, residents, interns and clinical clerks; (3) individual interviews with each person videotaped, the chief residents and the physician-in-chief of the hospital; and (4) a workshop for attending physicians and residents.

Videotapes were analyzed according to the teaching improvement process and using a category observation system (interaction analysis). Analysis of the questionnaires was completed using non-parametric statistics. The individual interviews and the workshop were summarized from notes taken as they proceeded.

The following conclusions were drawn:

1) The role of the attending physician at the Montreal Children's Hospital, in terms of both teaching of trainees and service to patients, had not been clearly defined;

2) The roles of the senior residents and junior trainees were also ambiguous;

3) Teaching which did occur was haphazard and generally mediocre;

4) Attending physicians frequently did not systematically learn the strengths and weaknesses of each trainee;

5) There was a lack of organization of time and work on ward rounds;

6) Teaching was often simply an exchange of medical information,

or "book knowledge";

7) The videotape protocols clearly showed that attending physicians rarely did more than make casual examinations of patients during ward rounds;

8) Trainees were rarely, if ever, challenged by attending physicians to improve upon the various skills necessary for effective and efficient patient care;

9) Little of the teaching which did occur on ward rounds was explicit, well organized or followed-up on; and

10) Attending physicians were unanimous in their interest in teaching and in becoming better teachers.

It was recommended that:

1) Specific definitions of roles for attending physicians and senior residents be outlined;

2) Emphasis be placed on identifying those skills of the attending physician which are of most practical value to trainees;

3) Educational objectives for clinical training be defined;

4) Standards of trainee performance be established and attending physicians assisted in developing appropriate assessment procedures;

5) Emphasis be placed on spending a much greater amount of time examining patients during ward rounds;

6) A teacher training program for attending physicians be developed;

7) At the start of each rotation, the attending physician and senior resident meet to discuss individual approaches to ward

management;

8) Attending physicians take the time to prepare adequately for teaching which is done on ward rounds;

9) A teaching evaluation program be employed for attending physicians to continually examine and improve their instruction;

10) A number of different approaches to ward rounds be systematically developed and tested; and

11) A major project be undertaken to examine clinical training in general and clinical teaching in particular.

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C H A P T E R I

INTRODUCTION AND BACKGROUND TO THE STUDY

The field of Medicine in the United States, Canada and throughout the world is becoming increasingly large and complex. New advances in knowledge about the various aspects of health and disease are being made every day. A new thermometer has been developed which is a cheaper, safer, easier, and more accurate way of taking one's temperature; a new and controversial delivery method at birth has been developed by Fredrick Leboyer in France; in England, it was recently announced that a cure for rheumatoid arthritis has been found; the ever-elusive cure for cancer seems to be close at hand; laser beam surgery is opening up entirely new hope for people who previously could not be cared for. These are but a few of the vast strides that are taking place, and will continue to take place, as new research is done.

Other factors also are involved in the growth of the field. For example, industrialized countries are showing a rise in life expectancy. As this occurs, there will be a corresponding rise in the number of people requiring specialized medical attention as well as general health care services. In addition, the medical profession's attempts to educate the public to utilize its services in the maintenance of good health, as well as in the cure of ailments and diseases,

will produce a greater demand for services. Finally, as it is more widely accepted that health care should not be based solely on one's ability to pay, but should be a right of each citizen, people who have been unable to benefit from the services offered will receive assistance from the medical profession.

From every indication, the demand for services is increasing rapidly. The factors involved in this rise in demand are creating a need for more people to enter the profession at all levels. As new problems are identified, more research is needed to find solutions. As knowledge expands, more specialists are needed to cope with the complexities of each of the medical disciplines. And as more people begin to use the health care facilities, more generalists are needed to handle all of the "common" problems of patients.

The increase in demand for services and the corresponding influx of people to the profession are creating a stress on the entire system. Questions are arising as to the kinds of additional facilities that must be provided, how those facilities should be allocated, what resources are available for their development, and finally, who shall pay for them. These are questions with no easy answers. And before they can even be addressed, we must first look at what is presently being done by the practitioners. Where are resources currently being allocated? Are expenses and time being used wisely? Are programs effectively responding to the needs of the population at large? In short, are we getting the most for our dollars? Again, there are no easy answers.

Perhaps nowhere are these pressures being felt more acutely than in medical schools. The training needs of the profession are growing at an enormous rate. New and more complex roles are being required while traditional roles are becoming more demanding. At all levels, there is a need for broadened training programs. However, the number of medical schools is limited. There are only so many spaces for incoming students and there are only so many faculty members available to train them. Hence, it is necessary that schools become much more efficient and effective in their work with students. Materials and facilities must be economized and roles must be examined and changed where necessary. Every aspect of training must be considered--from pre-medicine courses all the way through residency training.

Medical schools have already begun this process. Courses are being streamlined in order to allow students to complete them more rapidly. Technological advances have fostered the development of mannequins and other aids which simulate actual patient disorders, thereby giving students an opportunity to learn more about diagnosis and treatment without needing to see patients. Curriculum and certification changes are being made in order to produce more competent professionals. New programs are being designed to train paraprofessionals, medical technicians and nurses to handle a greater amount of the primary care problems of patients. Community courses and seminars are being offered in order to make people more aware of preventative medicine, hopefully averting some of their needs to use medical facilities.

These are only a sample of the efforts currently being undertaken. Yet, much more needs to be done if the ever-increasing medical demands of modern society are to be met. Additional studies need to be made so as to more adequately address the important issue of more effective and efficient training programs for students entering Medicine. The study reported here was an attempt to add to the knowledge which is required to accomplish that goal. The focus was on only one role in one aspect of medical education--that of the attending physician in clinical training.

In a hospital, the attending physician

. . . typically . . . is not an employee of the institution, but a member of the 'voluntary' staff.
 . . . Although not an employee, he has considerable, if not primary influence over what happens in the hospital. It is he who will decide who enters, what is done to and for the patient while he is there, and how long he stays. It is the physician who, to a large extent, controls the activities of such hospital employees as nurses and technicians, who report to him and follow his directions even though he usually occupies no formal position in the hospital chain of command. Not only do physicians influence the day-to-day activities of the hospital, but they play a major role in determining what capital equipment will be purchased and what long-run policies will be followed.

There are, to be sure, changes taking place in the hospital-physician relationship. A significant new development in the United States is the growth of full-time medical staffs. Some hospitals now have senior physicians acting as chiefs of the various services on a salaried basis. There has also been an increase in salaried house staff, particularly interns and residents. These developments modify the role and influence of the attending physicians. . . .¹

¹Victor R. Fuchs, Who Shall Live? Health, Economics, and Social Choice (New York: Basic Books, Inc., 1974), pp. 57-58.

At the Montreal Children's Hospital,² the attending physician's role and influence fits the more limited of the above descriptions. In return for admitting privileges (being permitted to admit and treat patients) and \$500 per month (paid not by the hospital itself, but through fees charged to patients by Medicare), the attending physician provides service to the hospital for approximately ten hours per week. These physicians are fully trained pediatricians and generally are responsible for the care of patients and the training of clinical clerks, and residents on a particular ward. These service and teaching roles usually are performed during ward rounds. The more exact interpretation of roles is left entirely to the discretion of the particular physician--there are no guidelines suggested by the hospital. Consequently, questions arise regarding the current and future roles of the attending physician, given the demands presently bearing down upon the medical profession.

To answer those questions, it would be helpful to examine the history of the attending physician's role. Much has been written about the history of medicine,³ and, as part of that history, about the development of clinical medicine. In addition, studies have been undertaken which examine medical education in

²The following information is based on a conversation with Dr. George Collins, Director of Residency Training at the Montreal Children's Hospital. There is nothing written concerning the attending physician at that hospital.

³See, for example, Henry E. Sigerist, A History of Medicine (New York: Oxford University Press, 1951).

6

general⁴ and clinical teaching in particular.⁵ Although these histories and studies do an effective job of describing the development of clinical medicine, they all but neglect the teaching role of the attending physician. Here and there can be found references to the fact that an attending physician is a part of clinical training and that he/she employs certain methods of instruction. However, there is almost no mention of the appropriate role of the attending physician or of the skills he/she needs in order to be effective as a teacher or as a practitioner. Thus without such a role definition, it seems difficult, at best, to make decisions regarding the future of clinical teaching. This study was an attempt to examine the role of attending physicians and to identify guidelines to be used in their training and development as clinical teachers.

Purpose of the Study

New and greater demands for service are being placed on the health care systems of the United States and Canada. As this occurs, strong emphasis will be placed on making training programs as effective and efficient as possible. To do so will require an understanding of the

⁴Perhaps the most important study being, Abraham Flexner, Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching (New York: The Carnegie Foundation for the Advancement of Teaching, 1910).

⁵David Riesman, "Clinical Teaching in America, With Some Remarks on Early Medical Schools," a reprint from, Transactions and Studies of the College of Physicians of Philadelphia, 4 Ser., Vol. 7, No. 1, April, 1939.

present roles played by the various medical faculty members. One such role is that of the attending physician.

The major objective of this study was to examine the role of the attending physician in the clinical training of clinical clerks and residents at the Montreal Children's Hospital. This was accomplished in two steps. First, a variety of data-gathering techniques were employed to examine the role of the attending physician at the Montreal Children's Hospital. The techniques used included: (1) videotapes; (2) questionnaires; (3) interviews; and (4) a workshop for attending physicians.

Secondly, this investigator formulated conclusions and recommendations regarding: (1) the future role of the attending physician; and (2) further studies concerning the role of the attending physician in particular, and medical education in general.

Definition of Terms

The following terms are defined as they were used in this study:

Clinical Training: That aspect of medical training which deals with clinical practice (i.e., patient care). Clinical training progresses from an undergraduate clerkship, through internships, to residency training. This progression involves an increasing amount of trainee responsibility for the patient and his or her care.

Clinical Trainee: Any student who is involved in clinical training. This includes clinical clerks, interns and residents.

Hospital Wards: The various sections of the hospital which treat patients having similar problems or similar characteristics; e.g., infectious diseases ward, adolescent ward, etc.

Hospital Staff: Anyone connected with offering services in the hospital, regardless of whether they are physicians, trainees, administrators or support staff.

Hospital Rounds: A general term for many hospital activities. Specifically, rounds are used by a group of staff and trainees to consider a patient problem or series of problems. Rounds may be used for a ward, for a specialty, or for the entire hospital staff and may be used for the purpose of service to patients, teaching of staff and trainees, or both.

Hospital Ward Rounds: Rounds conducted (usually twice a day) for the purpose of discussing patient care on a particular ward. On a regular basis, some of the ward rounds are conducted by an attending physician who serves as both a consultant to and a teacher of the trainees as they serve their patients. The remaining ward rounds are conducted by the senior resident on the ward, and are used primarily for service to the patients.

Clinical Clerk: A fourth year student in medical school; i.e., a student in the final year as an undergraduate. Clinical clerks have no medical degree, thus any orders given for patients must be countersigned. No prescriptions can be given.

Internship: The one-year period of clinical training which immediately follows graduation from medical school. An internship is required for licensure; i.e., the intern has a medical degree but cannot practice alone. After the internship, the trainee receives a license as a general practitioner (G.P.), and may or may not choose to continue training (in order to specialize in one field). Students choose one of three forms of internship:

1. Rotating Internship: Rotations of two months each in the major clinical disciplines (internal medicine, surgery, obstetrics and gynecology, pediatrics, and three months of elective rotations).

2. Mixed Internship: A form of rotating internship. Six months are spent in one discipline, six months in another.
3. Straight Internship: An internship in one discipline for twelve months. This year, a change in the Quebec licensing regulations will withhold a G.P. license to practice until these trainees have completed four years of specialist training.

Residency Training Program: That aspect of clinical training in which a trainee specializes in one particular medical discipline. The program takes four years to complete. In years one and two, the resident works in a general area (internal medicine, etc.). In years three and four, the resident works in an area of specialty concentration (internal medicine, etc.). Years one and two are considered junior residency; years three and four, senior residency. If a resident has completed a straight internship in his/her specialty, then he/she is considered a second year resident upon entry into the residency training program.

Attending Physician: A physician, in a non-teaching hospital, who has admitting privileges (i.e., one who can admit and treat patients.

In a teaching hospital, an attending physician is one who has admitting privileges and is considered part of the teaching staff.

Delimitations of the Study

1) The scope of the study was limited to the Montreal Children's Hospital. The question of what was the training role of the attending physician was a specific staffing concern peculiar to that hospital. Thus, the conclusions drawn from this particular study may not automatically be applicable to other clinical settings.

2) The study sample, particularly with regard to the trainees, was very transitory in nature. The group of clinical clerks changed every two months, depending on which rotation was chosen. The residents changed every two or four years (actually, they changed every year, as fourth-year students graduated and first-year residents entered). Thus, the opinions of the sample might differ from month to month as the make-up of the group changed.

Significance of the Study

As the demands upon the medical profession continue to increase over the next several decades, a corresponding increase in demand will be made upon the people in medical education. A particular concern will be the area of clinical training, for it is there that aspiring doctors practice and further add to the knowledge and skills they have gained to date.

If medical schools are to be able to respond to the changing needs of the society, it is incumbent upon them to train students in the most effective and efficient manner possible. Inherent in this statement is the need to examine and, where necessary, to change the roles of those responsible for medical education. The attending physician in hospitals represents one such role.

In his survey of the health care system in the United States, Victor R. Fuchs stated that:

All too frequently hospitals have viewed interns and residents as a cheap source of labor for the delivery of care in emergency rooms and for the coverage of patients

of the attending physicians. Now that salaries for interns and residents have increased appreciably, some hospitals will re-examine the desirability of maintaining such so-called teaching programs, and some will probably drop this activity.⁶

This prediction might very well come to pass in the next few years. However, it is vital that the re-examination be done in a thorough fashion, so that any decision made will be based upon solid information rather than haphazard guessing. It would be most damaging to the profession to design a new system which would represent a change but not necessarily improvement.

The significance of this study, then, was in the attempt to begin to gather the data necessary to make appropriate improvements in the training of medical personnel. The data-collection techniques used could be employed in any setting. Thus, the design should be replicable, thereby allowing for the comparison of results of this study to any other that is undertaken.

While the role of the attending physician is only one among many in the field of medical education, it is a crucial one. This investigator feels that in conducting this study, a need for information has been met and the need for further studies concerning every aspect of medical education has been demonstrated.

⁶Victor R. Fuchs, op. cit., p. 90.

CHAPTER II

REVIEW OF THE LITERATURE

The design of this chapter is in two parts. First, in order to create a framework for examining clinical teaching, a history of that field is presented. Secondly, a review of research on clinical teaching is given in four parts: general observations on clinical teaching, sociological studies, teacher training programs, and studies on clinical teaching.

History of Clinical Teaching

The origins of clinical teaching can be traced back to ancient Egypt, some two thousand years before Christ.¹ There, in the "sacred books," instruction was given in various aspects of medicine, supplemented "most probably" by practical training in the temples, under the guidance of priests.² This training consisted mostly in the observation of external signs of disease, as surgery was then very primitive, and often performed in disobedience of religious beliefs.³

¹Theodor Puschmann, A History of Medical Education From the Most Remote to the Most Recent Times, translated and edited by Evan H. Hare (London: H. K. Lewis, 1891), pp. 20-22.

²Ibid.

³Ibid., p. 23.

Evidence of clinical teaching also exists in Sanskrit literature of the sixth century B.C.⁴ There, Susruta mentioned a problem which was to become a major concern of medical educators from that point in time all the way up to the present day--that of the combining of practical and theoretical training. He said:

The man who has had nothing but a theoretical training . . . and is unskilled in the details of treatment knows not what to do when he comes to a patient and behaves himself as pitiably as a coward on a battle-field. On the other hand a doctor who is only practical does not win the esteem of the best of men.⁵

This emphasis on theoretical and practical training in India led to an apprenticeship system similar to that in Egypt.

Perhaps the most well-known of ancient writings were those of Hippocrates in Greece during the fifth and fourth centuries before Christ. At the time of his birth at Cos in 460 B.C.,⁶ the teaching of medicine was heavily influenced by the school there and at Cnidus. The two schools represented the struggle between theoretical and practical training. The physicians of Cnidus looked upon medicine as a science, and thus strove to create "a theoretical basis for teaching medicine on top of which a rational therapy could be built."⁷ This

⁴Ibid., p. 8.

⁵Ibid., p. 11.

⁶James S. Elliott, Outlines of Greek and Roman Medicine (New York: William Wood and Company, 1914), p. 25.

⁷T. Meyer-Steineg and K. Sudhoff, Geschichte der Medizin, 2nd ed., Jena: Gustav Fischer, 1922, translated by W. B. Wartman in, W. B. Wartman, Medical Teaching in Western Civilization: A History Prepared from the Writings of Ancient and Modern Authors (Chicago: Year Book Medical Publishers, Inc., 1961), p. 16.

view of medicine arose from the school of thought which had produced the foundation of mathematics. Given the success to date in that field, it was felt that the scientific study of medicine would yield similar results.⁸ In keeping with this approach, the Cnidians were not interested in the study of patients and, in fact, neglected the sick individual.⁹

In the school at Cos, the physicians felt that "the true task of the physician consists less of the drive for knowledge and its soul-satisfying insight of the nature of disease than of the search for general principles of treatment."¹⁰ The patient was the center of the study of medicine, and "the essence of the training [of physicians] is the collection of individual experience through personal observation at the sick bed."¹¹

Hippocrates was the main proponent of the views of the physicians at Cos. The strength of his writings, especially the Laws and the Oath, held sway until the time of Galen in the second century A.D., and were used as the basis, as will be shown later, of a revival of interest in practical training in the 1500's.

Galen, born at Pergamos in 130 A.D.,¹² became a physician of the

⁸I. Snapper, Meditations on Medicine and Medical Education Past and Present (New York: Grune and Stratton, 1956), p. 53.

⁹Ibid., p. 54.

¹⁰Wartman, op. cit., pp. 16-17.

¹¹Ibid., p. 17.

¹²Elliott, op. cit., p. 96.

scientific school of thought. While acknowledging and praising the work of Hippocrates, Galen's emphasis in his writings was on the reduction of medical knowledge to a number of general principles. These principles were then used in the treatment of patients, often in disregard of individual facts and the details of experience.¹³

Galen's works influenced the teaching of medicine all the way into the sixteenth century.¹⁴ Throughout this period, discussions about teaching were limited to descriptions of proper physician conduct, of methods of practice and/or of praise for one's works. No specific statements about teaching roles were made: only general indications reflective of the particular school of thought being espoused.¹⁵

The form of teaching was basically an apprenticeship system, where "a teacher undertook the whole medical training of a student and made him acquainted with everything worth knowing in the various branches of medicine."¹⁶ Groups of students would gather to listen to famous physicians, then to be shown various patients---a practice not always highly regarded:

¹³Ibid., pp. 99-100.

¹⁴Ibid., p. 110.

¹⁵See, for example, the description of medical teaching in ancient Rome, in Puschmann, op. cit., pp. 96-120.

¹⁶Ibid., p. 54.

Faint was I only, Symmachus, till thou
 Backed by an hundred students, throng'dst my bed;
 An hundred icy fingers chilled my brow:
 I had no fever; now I'm nearly dead.
 -- Martial (c. 80 A.D.)¹⁷

Despite some apparent reservations, this teaching method was utilized until the rise of universities in the early thirteenth century. At that time, due to the continuing influence of Galen, emphasis on research was stressed, leaving practical training in the hands of non-affiliated (to universities) guilds of surgeons.¹⁸ In these guilds, the apprenticeship system prevailed. Meanwhile, in universities, no practical training was given to students. Objective investigation of nature was replaced by dialectical and rhetorical discussions.¹⁹

The guilds and the universities were so adamant in their views that in Paris, the struggle between them lasted for two centuries.²⁰ In the beginning of the sixteenth century, though, with the revival in France of the Hippocratic Doctrine, and through the growth of chemistry and anatomy, interest in clinical training developed in universities.²¹ Finally, in Padua, Italy, in 1543, at the University of

¹⁷Elliott, op. cit., p. 59.

¹⁸T. Billroth, The Medical Sciences in the German Universities: A Study in the History of Civilization, translated by W. H. Welch (New York: The MacMillan Company, 1924), p. 2.

¹⁹David Riesman, "Clinical Teaching in America, With Some Remarks on Early Medical Schools," reprint from Transactions and Studies of the College of Physicians of Philadelphia, 4 Ser., Vol. 7, No. 1, April 1939, p. 90.

²⁰Billroth, op. cit., p. 3.

²¹H. Boerhaave, Academical Lectures on the Theory of Physic, Being a Genuine Translation of His Institutes, 6 Vols. (London: W. Innys, 1766), Vol. 1, p. 38.

Padua, bedside teaching was inaugurated by Giovanni Battista da Monte in the Ospedale San Francesco.²² This marked the first attempt by universities to combine the theoretical and practical in the training of medical students.

From Padua, the concept of bedside teaching was taken to Leyden, Holland.²³ Principally under the influence of Hermann Boerhaave, it thrived there and spread, through Boerhaave's students, across Europe.²⁴ After the lull in its movement during the latter part of the eighteenth century, this method of training was revived in the early 1800's,²⁵ then modified for use in the middle of that century by the hospital schools of England²⁶ and the great universities of Germany.²⁷

The growth of clinical training in universities of Europe and England during the sixteenth to the nineteenth centuries occurred only because of the persistent efforts of its proponents. Institutions yielded slowly, and even then often reverted quickly to former curricular patterns having no clinical component. For example, shortly after the death of da Monte in Padua in 1561, and Boerhaave in Leyden in

²²Riesman, op. cit., p. 91.

²³Wartman, op. cit., p. 57.

²⁴Ibid., p. 58.

²⁵Ibid., p. 76.

²⁶Ibid., p. 84.

²⁷Ibid., p. 101.

1738, bedside teaching was replaced by professional didactic lectures.²⁸ The situation was similar elsewhere, for in other reported instances,²⁹ clinical training was removed from the course of studies when its most ardent supporters either died or left the various universities.

In Padua, the method used in clinical teaching was the lecture, with some discussion occurring between the instructor and the pupils.³⁰ In Leyden, in 1630, Otto van Heurne and E. Schrevelius attempted to use a different method.³¹ Each student would examine the patient and state his views on the case. The professor would respond by confirming or refuting the various opinions, then would add any explanation required. The risk of displaying ignorance being too disturbing to students, the method was abandoned in favor of the physicians simply examining the patients and stating their findings.

Another physician, F. de le Boe, pretended not to know the details of the case or the disease, and questioned students until all the facts were exposed. In this manner, students felt that they had made the diagnosis themselves, and had not learned it from him.³²

²⁸Snapper, op. cit., pp. 125-126.

²⁹Ibid., p. 126.

³⁰A. Castiglioni, Una pagina di storia della'insegnamento clinico (de Padova a Leida), Bijdragen tot de geschiedenis der geneeskunde 18: 246-258, 1938, translated by R. Baserga, in Wartman, op. cit., p. 55.

³¹Puschmann, op. cit., p. 411.

³²Ibid., pp. 411-412.

As in the case of the earliest writings on medical teaching, few specifics of effective teaching were mentioned during this period.³³ Rather, only general statements were made about various men, their works, and their character.³⁴ Virtually no studies of clinical teaching were undertaken--a problem, which as will be demonstrated, still exists today.

In the United States, medical training was first conducted via an apprenticeship system or by sending students abroad.³⁵ In Philadelphia in 1765, the first medical school in the country was founded,³⁶ and clinical teaching was inaugurated there the following year.³⁷ Despite the excellent start made by the Philadelphia School, the growth of medical education was hampered by rapid westward expansion occurring at that time. Newly opened territories could not keep up with the demand for physicians, thus fostering the growth of ill-conceived and poorly staffed medical schools, most of which were unconnected to universities.³⁸ This situation existed for nearly 150 years, being reversed only after 1910, the publication date of the

³³For an exception to this trend, where general teaching duties of the clinical professor are outlined, see J. P. Frank, Plan d'ecole clinique, Vienna: C. F. Wappler, 1790, in Wartman, op. cit., pp. 60-62.

³⁴See, for example, Billroth, op. cit., pp. 246-252.

³⁵Snapper, op. cit., p. 85.

³⁶Ibid., p. 87.

³⁷Riesman, op. cit., p. 100.

³⁸Snapper, Op. cit., p. 101.

famous Flexner report for the Carnegie Foundation for the Advancement of Teaching.³⁹

Once again, as in other countries, the literature on medical education in the United States before the Flexner report displayed a reluctance by medical establishments to accept a clinical component of the curriculum. For example, from a number of rules set down by the Massachusetts General Hospital in 1824, two referred to the presence of pupils on the wards:

5. On the regular days of visiting, the pupils are not to remain at the Hospital longer than is absolutely necessary for the visits. They are not to converse with the patients or nurses. During operations and while in the wards, they are to abstain from conversation with each other; they are not to walk about; nor in any other way disturb either the medical officer, or the patients.
6. In all cases, in which it will be proper for the pupils to make any personal examination of a patient, such as feeling the pulse, examining a tumor, an intimation to that effect will be given them by the physician or surgeon. It must be obvious that the greatest inconvenience must arise, if such examinations were commonly made by the pupils.⁴⁰

In addition to discussions of hesitancy about clinical teaching, pre-Flexner literature yielded a paucity of information about effective

³⁹Abraham Flexner, Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching (New York: The Carnegie Foundation for the Advancement of Teaching, 1910).

⁴⁰T. F. Harrington, The Harvard Medical School, 3 Vols. (New York: Lewis Publishing House, 1905), Vol. 2, pp. 582-583. For a second example, see Flexner, op. cit., p. 116.

teaching. As before, descriptions about the professor or his general approach to teaching were given.⁴¹ Only occasionally were efforts made to elaborate on a professor's role.⁴²

The history of clinical teaching at McGill University has not been described. In the two histories of the school,⁴³ and in a third source concerning medical history in Canada,⁴⁴ no mention of it was made. Clinical facilities did exist though, for Flexner spoke very highly of them in his report.⁴⁵ However, he, too, made no specific mention of the quality of clinical teaching at McGill.

The Flexner report grew out of a general purpose of the Carnegie Foundation "to begin a critical study of the work of the college and of the university in different parts of this wide area [the U.S.A., Canada and Newfoundland], and to command to colleges and universities the adoption of such standards as would intelligently relate the

⁴¹See, for example, George R. Minot, "James Jackson as a Professor of Medicine," New England Journal of Medicine, 208: 254-258, February 2, 1933.

⁴²See, for example, Thomas G. Morton, assisted by Frank Woodbury, The History of the Pennsylvania Hospital, 1751-1895 (Philadelphia: Times Printing House, 1895), p. 463.

⁴³Cyrus Macmillan, McGill and Its Story, 1821-1921 (New York: John Lane Company, 1921).

Maude E. Abbott, "An Historical Sketch of the Medical Faculty of McGill University," Montreal Medical Journal, 1902, pp. 561-672.

⁴⁴John J. Heagerty, Four Centuries of Medical History in Canada, 2 Vols. (Toronto: The Macmillan Company of Canada Limited, 1928). See, in particular, Vol. II, Chapter XLIV, pp. 58-71.

⁴⁵Flexner, op. cit., p. 324.

college to the secondary school and to the university."⁴⁶ The starting point in the effort was the examination of colleges. This quickly led to the consideration of professional schools and their relationship to colleges and universities. A wide disparity in these relationships was found to exist.⁴⁷

Emphasis was then placed on studying schools of law and medicine. With medicine, enormous strides were being made in the fundamental sciences and in understanding the importance of the laboratory for purposes of training. As a result of these conditions, and due to rising standards in the best medical schools, the Foundation undertook to define "the relation of professional education in medicine to the general system of education. . . ."⁴⁸ The outcome of this effort was the Flexner report, issued in 1910.

The major, general finding was that, "for twenty-five years past there has been an enormous over-production of uneducated and ill-trained medical practitioners," due mainly "to the existence of a very large number of commercial schools. . . ."⁴⁹ As a result, it was recommended primarily that "progress for the future would seem to require a very much smaller number of medical schools, better equipped

⁴⁶ Ibid., p. vii.

⁴⁷ Ibid., p. vii.

⁴⁸ Ibid., p. viii.

⁴⁹ Ibid., p. x.

and better conducted than our schools now as a rule are. . . ."50
 The report included recommendations with respect to all facets of
 medical training, particularly emphasizing the importance of a clinical
 component having appropriate facilities and personnel.⁵¹

Included in this emphasis on clinical training was a brief
 description of the role of the clinical teacher:

. . . the clinical teacher has closely followed the
 development of the case. At brief and regular intervals
 its status is reviewed. All other members of his group,
 and the patient too, are at hand when the student pre-
 sents his report, which forms, once more, part of the
 permanent record of the case. At every point he has been
 checked up; the instructor in charge of the clinical
 laboratory inspects and verifies his work there; the
 clinical instructor, here. The latter officer reviews
 everything, pointing out omissions, errors, misinterpre-
 tation. The student has always an appeal. He may on
 second trial convince himself of his blunder. He may,
 however, be only the more convinced he was right, where-
 upon another look may persuade the instructor that it is
 he who errs!⁵²

Other than this brief passage, though, and a few comments on the growth
 of clinical teaching from being didactic to demonstrative to scientific
 (the student actually has responsibility for the patient),⁵³ little
 mention was made of the role of the clinical teacher. It was only in
 a later book⁵⁴ that Flexner went into some depth on this topic.

⁵⁰Ibid., p. xi.

⁵¹Ibid., pp. 93-94, 105, and 124.

⁵²Ibid., p. 97.

⁵³Ibid., p. 93.

⁵⁴Abraham Flexner, Medical Education: A Comparative Study (New
 York: The MacMillan Company, 1925), pp. 265-281.

Flexner's work had a major impact on medical education in the United States. Many of the so-called "diploma mills" were closed, and those schools that remained significantly up-graded their curricula and facilities, largely through private and public research grants.⁵⁵ In addition, clinical medicine became a science in its own right, and in 1913, the Johns Hopkins Medical School appointed the first full-time professor of medicine.⁵⁶ Finally, following the example of Rush Medical College in 1905, many schools added a fifth year to the curriculum, primarily to enhance clinical training.^{57,58} A balance between the theoretical and practical components of medicine was indeed being made.

With this balance gained, more emphasis was able to be placed on examining the role of clinical teachers. While no formal studies were conducted until the late 1950's and beyond, discussions of the responsibilities of clinical teachers began to appear in various journals. In 1934, James H. Means mentioned⁵⁹ the need to be careful

⁵⁵Snapper, op. cit., p. 102.

⁵⁶Ibid., p. 103.

⁵⁷John M. Dodson, "The Addition of a Fifth Year to the Medical Curriculum," Journal of the American Medical Association, 59: 589-593, August 24, 1912.

⁵⁸James Ewing, "Principles and Experiments in Medical Education," Journal of the American Medical Association, 66: 635-639, February, 1916.

⁵⁹James H. Means, "The Teaching of Medicine at the Massachusetts General Hospital," Harvard Medical Alumni Bulletin, 9(1): 1-5, October, 1934.

when discussing a patient's problem within his/her earshot, to have special topics rounds for clinical clerks and to bring social components into discussions of patients. In a second article, in 1945,⁶⁰ Means expanded his comments to include proper ways to approach the patient, position of trainees at the bedside, how to present a case, the role of the head nurse and senior intern on ward rounds, consideration to be given to consulting physicians and ways to conduct grand rounds.

Atchley⁶¹ wrote about the need to focus on "dynamic units of the individual: his respiratory, cardiovascular, or gastrointestinal apparatus." Teaching, in his view, should follow that framework, with particular emphasis on helping the student to recognize the limits of his/her capacity. In addition, he felt an attempt should be made to mold the teaching of basic knowledge with its practical use. Finally, he called for the creation within the faculty of a "permanent Teaching Commission on Authority, to which would be delegated not only the future planning but the present management of the overall teaching program." Such centers have appeared in the past two decades, focussing primarily on the study of medical education.

⁶⁰James H. Means, "The Amenities of Ward Rounds," The Modern Hospital, November, 1945.

⁶¹D. W. Atchley, "The Orientation of an Undergraduate Medical Curriculum," Science, 104: 67-70, 1946.

In 1948, Means⁶² spoke about the lack of teacher training in the professions, adding that, "Apparently it is generally assumed that if a person in a professional discipline possesses a scholarly knowledge of his subject, he can, ipso facto, teach it adequately. But such an assumption is obviously not justified." He went on to call for some such training, as well as to discuss the need for human relations training for students, and to mention briefly the role of the attending physician during ward rounds.

During the time that these discussions of clinical teaching were taking place, medical knowledge and training were becoming increasingly specialized. This was true in both the basic sciences and in the clinical fields. The result was a diversification of clinical training such that students began to spend less time in more specialty areas. This alarmed some educators, such as Lester J. Evans, who examined the problem and called for an effort "to pull together all patient care and clinical activities into a coordinated and integrated whole so as to meet both the basic and the specialty needs of health profession education."⁶³

Concurrent with the move toward specialization was a return to

⁶²James H. Means, "The Clinical Training of the Medical Student," in Education for Professional Responsibility, a report of the proceedings of the Inter-Professions Conference on Education for Professional Responsibility (Pittsburgh: Carnegie Press, 1948), pp. 114-123.

⁶³Lester J. Evans, The Crisis in Medical Education (Ann Arbor: The University of Michigan Press, 1964), p. 87.

emphasis on research. Snapper,⁶⁴ Evans⁶⁵ and Kendall⁶⁶ all made note of this. In particular, Kendall reported that from this there had resulted a shift in power and prestige away from clinicians.⁶⁷ This was due also in part, she felt, to the growth of full-time faculties which relied less and less on part-time instructors from the surrounding community. She recommended that to overcome these problems, "practicing physicians [should] be encouraged to play a larger role in teaching medical students and house officers."⁶⁸

During the past decade, despite occasional articles lamenting either the emphasis in medical education on research and grantsmanship rather than teaching,⁶⁹ or the lack of attention paid to bedside teaching in the undergraduate years,⁷⁰ clinical training seemed to be firmly rooted in the curriculum of schools of medicine. The forms of this

⁶⁴Snapper, op. cit., p. 106.

⁶⁵Evans, op. cit., pp. 1-2.

⁶⁶Patricia L. Kendall, The Relationship Between Medical Educators and Medical Practitioners: Sources of Strain and Occasion for Cooperation (Evanston, Illinois: Association of American Medical Colleges, 1965).

⁶⁷Ibid., pp. 81-82.

⁶⁸Ibid., pp. 108-109.

⁶⁹J. F. Mullins, "What's Happening to Clinical Teaching," Journal of the American Medical Association, 206: 1073-1074, October 28, 1968.

⁷⁰F. O. Stephens, "Evolution of Modern Teaching Methods: tourner en rond," Medical Journal of Australia, 2(13): 501-504, September 27, 1975.

training often varied,⁷¹ with some schools experimenting with vastly different approaches.⁷² What remained at the time of this study appeared to be less a struggle to maintain such training as an integral component of the curriculum, and more a struggle to modify it to make it as effective and efficient as possible. Efforts in this regard are explored in the next section, Research on Clinical Teaching.

Research on Clinical Teaching

Research and training efforts in clinical teaching are not very extensive nor particularly revealing. The paucity of such studies has been noted by several authors in recent years. In 1970, Mumford noted⁷³ that:

The relatively meager number of studies of interns and residents by sociologists is surprising since sociologists claim that an intensive and extended training period can have profound influence on the developing

⁷¹W. A. Altemeier, 3rd, et al., "The Demonstration of Private Practice to Pediatric Residents Through Office Rotations," Journal of Medical Education, 51(2): 138-140, February, 1976.

⁷²One of the most widely known new programs is at McMaster University in Hamilton, Ontario. For a description and critique of it, see:

V. R. Neufeld and H. S. Barrows, "The McMaster Philosophy: An Approach to Medical Education," Journal of Medical Education, 49(11): 1040-1050, November, 1974.

and

J. D. Hamilton, "The McMaster Curriculum: A Critique," British Medical Journal, 1(6019): 1191-1196, May 15, 1976.

⁷³E. Mumford, Interns: From Students to Physicians (Cambridge, Massachusetts: Harvard University Press, 1970), p. 234 (footnote 6).

professional. . . . [A] 1962 bibliography in medical sociology listed eighteen titles on medical education; none of these specifically related to interns, residents, or their training programs. . . . The 1964 Cumulative Book Index reports several works on medical students, yet nothing on interns or residents. In 1965, the New York Public Library Catalogue had no entries for the subjects, intern or resident, either separately or as a subhead under medicine, hospitals, or education. . . . The Library of Congress had only eight entries on interns or residents. But each of these was a product of physicians' efforts, not the work of social scientists.

In 1971, while giving an overview of the supervision of counseling, Bocknek observed:⁷⁴

All of the practicing professions--teaching, social work, law, ministry, medicine, clinical and counseling psychology--require that a novice be trained in the skills of his discipline in addition to the acquisition of formal knowledge of theory and precept. Given this tradition, it is all the more remarkable that so few of the professions give specific attention to the training of supervisors.

Finally, in an exhaustive review of research on "client-related supervision"⁷⁵ (that supervision which ". . . involves situations where the supervisor has the responsibility for the treatment of a client and for the instruction of the candidate or candidacy group, and where the candidate acts as a working practitioner"⁷⁶) completed in 1975, Eriksson concluded that, "As most people seem to agree that supervision is an

⁷⁴G. Bocknek, "Supervision of Counseling: An Overview," Journal of Education, 1971, 153, 3, 3.

⁷⁵Mona Eriksson, Client-Related Supervision: Survey of Problems; Part One: Introduction, Pedagogiska rapporten, No. 2 (Lund, Sweden: Department of Education, University of Lund, 1975). (In Swedish--translated for this researcher by Anne Dragemark.)

⁷⁶Ibid., p. 1.

important, if not the most important, part of professional education, there should exist a rich literature and research around the instruction in question. This is unfortunately not the case."⁷⁷

Through an extensive review of a variety of books, as well as Index Medicus, Dissertation Abstracts, and ERIC, using the descriptors, bedside teaching, curriculum, education, faculty, inservice training, internship and residency, preceptorship, supervision, supervisory training, teaching, and training support, this researcher came to the same conclusion as others before--the literature on clinical teaching is weak. Nevertheless, a number of studies have been conducted during the past fifteen to twenty years. These studies have thrown some light on the subject, but have done little to suggest adequate supervisory roles nor, in turn, effective supervisory training programs. The review of that research is presented here in four categories: general observations on clinical teaching; sociological studies; teacher training programs; and studies on clinical teaching.

General Observations on Clinical Teaching

Much of the literature in education which deals with teaching consists simply of authors' ideas, or beliefs, about what constitutes effective instruction. Most often, their beliefs are not backed by research. In nursing, although much has been written concerning

⁷⁷Ibid., p. 26.

clinical teaching,⁷⁸ the great majority of it falls under this characterization. In addition, nursing literature, when dealing with clinical teaching, focusses a great deal on content learning (continuing education) as well as on actual pedagogical techniques. There is little in the literature stressing specific skills of teaching. Discussions center generally on the need to be a role model, to be enthusiastic, to be personally approachable, etc. For all that has been written on the subject, there is a surprising lack of emphasis on teaching skills per se.⁷⁹

While nursing clearly has the largest literature on clinical

⁷⁸See, for example, the bibliography in, G. K. Clissold, How to Function Effectively as a Teacher in the Clinical Area (New York: Springer Publishing Company, Inc., 1962).

⁷⁹See, for example, the following:

D. M. Jensen, Clinical Instruction and Its Integration in the Curriculum (St. Louis: The C. V. Mosby Company, 1952).

Amy F. Brown, "Organization of Clinical Learning Experiences," Nursing Outlook, V, February, 1957, pp. 95-97.

L. A. Sholtis and J. S. Bragdon, The Art of Clinical Instruction (Philadelphia: J. B. Lippincott Company, 1961).

J. D. Geddes, "Patient-Centered Teaching: Chance, Choice or Charybdis," Nursing Times, 65: 43-44, January 9, 1969.

J. D. Geddes, "Patient-Centered Teaching: Teaching with a Purpose," Nursing Times, 65: 239-241, February 20, 1969.

J. Sheahan, "A Silver Milestone in Clinical Teaching," Nursing Times, 68: suppl. 125-127, August 10, 1972. (See especially the bibliography on p. 127.)

T. Habeshaw, "New Teaching Methods in Training Clinical Teachers," Nursing Times, 71(8): 300-302, February 20, 1975.

teaching, other disciplines do have a number of articles dealing with the topic. However, a large portion of these is also very general in nature. In counseling, Arbuckle⁸⁰ mentioned some of the problems of evaluation versus helping in the role of the supervisor, while Truax, Carkhuff and Douds⁸¹ discussed the difference between the didactic-intellectual approach and the experiential-accepting approach to training students, Boyle⁸² considered the importance of developing the humanistic and emotional qualities of the counselor as a person, and Vinal⁸³ dealt with the fluctuating role of the supervisor between administrator and colleague.

In dentistry, Henry and Halperin⁸⁴ discussed the why, what, how, when and who of instructor evaluation of students, and Shrock⁸⁵ considered the history of teacher evaluation and the lack of such in the

⁸⁰D. S. Arbuckle, "The Learning of Counseling: Process Not Product," Journal of Counseling Psychology, 1963, 10, 2, pp. 163-168.

⁸¹C. B. Truax, R. R. Carkhuff and J. Douds, "Toward an Integration of the Didactic and Experiential Approaches to Training in Counseling and Psychotherapy," Journal of Counseling Psychology, 1964, 11, 3, pp. 240-247.

⁸²H. Boyle, Jr., "Promoting Experiential-Feeling Qualities in Counselor Education and Supervision: Some Schemes," Journal of Education, 1971, 153, 3, pp. 19-37.

⁸³L. A. Vinal, "The Supervisor's Changing Role in Counselor Training," Journal of Education, 1971, 153, 3, pp. 46-54.

⁸⁴J. L. Henry and V. Halperin, "Consensus Report on Clinical Teaching and Clinical Teachers," Journal of Dental Education, 31: 219-220, 1967.

⁸⁵J. G. Shrock, "Evaluation of Clinical Instruction and Instructors," Journal of Dental Education, 31: 238-242, 1967.

field. In medicine, the literature is somewhat broader in scope, covering a number of aspects of clinical teaching, but again it is often quite general in approach. Pillay⁸⁶ commented on the most effective qualities in a clinical teacher and stated some basic principles of clinical teaching, while North⁸⁷ suggested using films to teach clinical skills, and Dudley⁸⁸ and Stritter⁸⁹ stressed the need for having specifically stated clinical educational objectives.

Shifting specifically to teaching at the bedside, a number of articles have been written. Hawkins⁹⁰ referred to the needs of patients during ward rounds and, in a series of articles, MacLennan,⁹¹

⁸⁶V. K. Pillay, "Reflections on Clinical Teaching," South African Medical Journal, 40: 663-664, July 30, 1966.

⁸⁷A. F. North, Jr., "Learning Clinical Skills Through the Use of Self-Teaching Films," Journal of Medical Education, 42: 177-180, February, 1967.

⁸⁸H. A. F. Dudley, "Taxonomy of Clinical Educational Objectives," British Journal of Medical Education, 1970, 4, pp. 13-18.

⁸⁹F. T. Stritter, "The Teacher As Manager: A Strategy for Medical Education," Journal of Medical Education, 47: 93-101, February, 1972.

⁹⁰C. Hawkins, "Bedside Teaching," British Medical Journal, 1: 702-703, March 16, 1968.

⁹¹H. MacLennan, "Is the Teaching Ward Round Obsolete?," Proceedings of the Royal Society of Medicine, 62: 845-846, August, 1969.

Milne,⁹² Jennett⁹³ and Cohen⁹⁴ considered whether or not the teaching ward round was obsolete. In 1968, Dabezies⁹⁵ moved in the direction of specifying the role of attending physicians when, speaking of the obligations of part-time medical faculty, he called for the setting up of a specific schedule of teaching activities and a commitment by them to that schedule. Finally, in early 1974, Hussey⁹⁶ stated, among other things, that:

The medical staff of each training hospital [should] explore the roles of all parties involved in the teaching program and develop suitable guidelines delineating the roles of the attending personal (admitting, private) physician, the teaching attending physician, the house officers, the program director, and the referring physician.

This last point is particularly revealing of the lack of any available literature either discussing in depth, or demonstrating through research evidence, the various roles to be assumed by attending physicians, as well as the skills needed to assume those roles, in the clinical training of medical students and resident physicians. That

⁹²M. D. Milne, "Is the Teaching Ward Round Obsolete?" Proceedings of the Royal Society of Medicine, 62: 846-848, August, 1969.

⁹³W. B. Jennett, "Is the Teaching Ward Round Obsolete?" Proceedings of the Royal Society of Medicine, 62: 848-850, August, 1969.

⁹⁴M. Cohen, "Is the Teaching Ward Round Obsolete?" Proceedings of the Royal Society of Medicine, 62: 850, August, 1969.

⁹⁵O. H. Dabezies, Jr., "Private Practice and Clinical Teaching," International Ophthalmology Clinics, 8: 47-51, Spring, 1968.

⁹⁶H. H. Hussey, "Teaching Rounds: Third-Party Rounds," Journal of the American Medical Association, 227(3): 317-321, January, 1974.

these roles need to be thoroughly defined, then studied, is evident if one examines the recent United States congressional legislation calling for the establishment of Performance Standard Review Organizations (PSRO's), established to "promote the effective, efficient, and economic delivery of health care services of proper quality."⁹⁷ As trimmings in costs and evidence of quality care are demanded at teaching hospitals and elsewhere, the training programs themselves, and hence the roles played by trainers, will also be examined for evidence of efficiency and effectiveness.⁹⁸ To date, though, such a delineation of roles has been made only superficially at best.

In summary, there are a good number of articles which essentially concern themselves with general observations on clinical teaching. Occasionally, one can glean from them some clues as to what would be appropriate skills for an instructor--establish a schedule, state educational objectives, be open and responsive to trainees, encourage student participation, be dynamic, model appropriate clinical

⁹⁷J. Kavet and H. Luft, "The Implications of the PSRO Legislation for the Teaching Hospital Sector," Journal of Medical Education, 49: 321-330, 1974.

⁹⁸For other information concerning PSRO legislation, see:

W. F. Jessee and M. J. Goren, "The Role of the Academic Medical Center in the PSRO Program," Journal of Medical Education, 51(5): 365-369, May, 1976.

J. L. Mulligan, et al., "Quality Assurance in Undergraduate Medical Education at the Medical College of Ohio," Journal of Medical Education, 51(5): 378-385, May, 1976.

behavior, etc.--but they are rarely, if ever, presented in a comprehensive fashion which would help one articulate an appropriate role for attending physicians, nor are they based on systematic observations of actual clinical teaching. Indeed, that there is still much to be accomplished in this regard is obvious from the fact that as late as the middle of last year, an article appeared which essentially presented evidence of an interest in faculty development in medicine.⁹⁹

Sociological Studies

While there exist a large number of articles simply presenting one or another author's view of clinical teaching, there also exist some research studies in the field. These studies can be classified in two general areas: sociological studies, which deal primarily with trainees, but which have subsidiary comments on the role of attending physicians; and specific studies on clinical teaching. The former is the topic of this section of the chapter, the latter of the fourth section.

Of the sociological studies, there are but a handful. The first such study published was by Becker in 1961. He reported on a 1956-1957 research effort conducted at the School of Medicine of the University of Kansas. His work dealt "precisely with the way in which students, at various points in their progress through medical

⁹⁹V. D. Morris, "A Positive Approach to the Utilization of Student Feedback in Medical Education," Journal of Medical Education, 51(7): 541-545, July, 1976.

school, see and solve the immediate problems of dealing with their teachers and the tasks they assign."¹⁰⁰ By accompanying various students in their daily activities, and by conducting both informal and formal interviews with students and faculty, Becker was able to obtain a rather comprehensive picture of student perspectives on and approaches toward their medical training.

Little emphasis in the study was placed on the role of faculty. As Becker stated, "Many observations of both the house staff (residents and interns) and the faculty were made during the field work with students, but these observations were limited to what could be seen while these persons were with the students. . . . Unfortunately, we made no . . . intensive observations of the faculty."¹⁰¹ Nevertheless, while he did not specifically discuss faculty roles, he did conclude that ". . . the lack of consistent [teaching] philosophy among the faculty turns the students back upon themselves for a solution to their problem of how to reduce their work to manageable proportions."¹⁰² Overall, while the study provided little of substance regarding faculty roles in clinical teaching, it did provide some initial insights into the tremendous influence attending physicians have on students' assimilation of values and a sense of responsibility.

¹⁰⁰Howard S. Becker, Boys in White: Student Culture in Medical School (Chicago: The University of Chicago Press, 1961), p. 5.

¹⁰¹Ibid., p. 25.

¹⁰²Ibid., p. 134.

In a study conducted in May, 1959, Payson and others,¹⁰³ using stopwatches, made a ten-day time schedule of two straight interns on the Medical Service at the Grace-New Haven Hospital. In viewing their results, they were surprised to find that the interns spent very little time with patients. Consequently, the researchers raised a series of questions such as, "Does the attending physician encourage interns to broaden their experience of doctor-patient contact?", "Are teachers making rounds more likely to emphasize differential diagnosis and tangible therapeutic matters?", "Does an intern feel more secure dealing with medicine impersonally. . .?", and "When does an intern learn how to relate himself to patients?"

To answer the above questions, Payson made a time study of ward rounds in 1960-1961.¹⁰⁴ In this, the only such study of attending physicians, Payson observed a total of 43 house staff, 53 regular attending physicians and 24 special attending physician ward rounds, in three university and one non-university affiliated hospitals. He attempted to discern: (1) how senior physicians spent their time on rounds; (2) the self-estimate of senior physicians' allocation of time on rounds; and (3) the correlation between perceived and actual behaviors.

From his results, Payson concluded that the "findings revealed

¹⁰³H. E. Payson, et al., "Time Study of an Internship on a University Medical Service," New England Journal of Medicine, 264: 439-443, 1961.

¹⁰⁴H. E. Payson, "A Time Study of Medical Teaching Rounds," New England Journal of Medicine, 273: 1468-1471, December 30, 1965.

less emphasis on bedside demonstration of individual or personal aspects of medical care than most attending physicians realized. Rounds appeared to show how senior physicians arrive at decisions and relate case findings to medical theory; they did not emphasize physicians' approach to the patient and the establishment of the doctor-patient relation."¹⁰⁵ This conclusion later led Nahum to surmise that ". . . in the future the internist is likely to become mostly reliant on laboratory and non-personal techniques in the management of the sick person."¹⁰⁶

Payson's work raised some issues which seemed to imply the need to examine in depth the role of attending physicians, to develop a systematic approach to clinical teaching and to design and implement appropriate teacher training programs. Such efforts have yet to be made, despite the results of additional studies which would lead one to similar conclusions. Two such studies were those conducted by Miller in 1964-1965,¹⁰⁷ and Mumford from 1958-1968.¹⁰⁸ In Miller's research, completed at the Harvard Medical Unit of the Boston City Hospital, the concern was with ". . . the processes by which candidates for the medical profession are recruited and trained during a

¹⁰⁵ Ibid., p. 1471.

¹⁰⁶ L. H. Nahum, "Medical Teaching Rounds," Connecticut Medicine, 30: 225-226, April, 1966.

¹⁰⁷ S. J. Miller, The Educational Experience of Interns (Waltham, Massachusetts: Brandeis University, 1968), ERIC Document #023 353.

¹⁰⁸ Mumford, op. cit., 1970.

phase of their education and the implications of that recruitment and training for their subsequent careers in medicine. . . . It is not an attempt to evaluate quality of training. . . ." ¹⁰⁹ Nevertheless, like Becker, through accompanying students during every aspect of their internship experience, as well as through a series of informal and formal interviews, Miller made a number of observations about attending physicians.

Miller reported that ward rounds, conducted three times weekly by visiting physicians (his terminology), were either done in a seminar format (if the visiting physician was more academically oriented) or in a patient-by-patient discussion format (if the attending physician was interested in patient care as well as the study of disease). ¹¹⁰ Whatever the format, though, he described the relationship between the visiting physician and the trainees as one of complete manipulation by the trainees, if the sessions were to be at all useful to them. This was necessary because the visiting physician made no preparation for ward rounds; he or she simply appeared on the wards and responded to patient problems from his or her own clinical experience. If his or her experience with a particular case was minimal, little of worth could be passed on to trainees. Thus,

. . . interns, students, and residents accept the responsibility for making rounds interesting. In fact, they base their actions before and during visiting

¹⁰⁹ Miller, op. cit., 1968, pp. 3-4.

¹¹⁰ Ibid., pp. 156 and 158.

rounds on the assumption that a good visiting physician is made and not born. By selecting patients and deciding what information they will present to the visiting physician, they influence the content of teaching on the wards. The visiting physician plays only a small part in determining the content of visiting rounds.¹¹¹

In this situation, the visiting physicians gained at best a look at some additional cases related to their field, while trainees learned a bit more about the visiting physicians' specialty.¹¹² No mention was made of explicitly conveying skills in establishing and maintaining the doctor-patient relationship or of other such important skills aside from "book-knowledge." This situation seemed again to suggest the need for a better organization of ward rounds or, indeed, a reconceptualization of what was the purpose of ward rounds and what attending physicians ought to be teaching trainees. However, as such a suggestion was outside the scope of his study, Miller made no mention of it.

Using the same approach as Miller and Becker, Mumford¹¹³ conducted a study of two training programs, one at a university hospital, the other at a community one. For comparative purposes, she later expanded her efforts through interviewing and a questionnaire, to a total of twenty-four teaching hospitals in the United States. Thus, hers was the most comprehensive of the sociological studies. However,

¹¹¹ Ibid., p. 165 (See also pp. 235-243).

¹¹² Ibid., p. 243.

¹¹³ Mumford, op. cit., 1970.

she came to some of the same conclusions as did Miller regarding the control of attending physicians by trainees. As opposed to Miller and Becker, though, but similar to Payson, Mumford went on to emphasize experiential skills of handling patients that attending physicians were well-qualified to offer, but rarely did. She attributed this in some instances to attending physicians' preoccupation with, and uneasiness about, meeting trainee expectations regarding "book knowledge,"¹¹⁴ and in others because attending physicians themselves could benefit from such instruction.¹¹⁵

Again, as with each of the studies preceding this one, there was an implication that further study of attending physicians' roles and the development of clinical teacher training programs were necessary. None of the authors made such recommendations, but efforts in these directions were being made. Of these, training programs will be considered first.

Teacher Training Programs

Instructional training programs for clinical teachers fell under the same characterization as articles presenting views on effective instructional techniques--they were general in nature and, in the case of the training efforts, dealt almost solely with in-classroom situations. In fact, in the programs reviewed here, only two dealt in any depth with teaching on the wards.

¹¹⁴Ibid., p. 113.

¹¹⁵Ibid., p. 187.

Clinical teaching courses were initiated in England in 1947,¹¹⁶ where a one-month program was designed for Teachers of Assistant Nurses at the Royal College of Nurses, London. This effort consisted of in-class sessions, with a two-week visit to wards to watch experienced clinical teachers. Despite this early attempt to include ward teaching, no mention was made of specific teaching skills examined, nor even of what actually was focussed on during the visits.

In 1962, Clissold¹¹⁷ published a resource unit to assist new clinical nursing instructors in stating behavioral objectives, in designing ways to operationalize those objectives, and in evaluating student work. While this unit dealt more with program goals (and was thus quite general), rather than specific teaching skills, it did provide a structure to the entire clinical training component that is lacking in the training of physicians today. This structure is evident in the pre- and post-test and the sample weekly ward schedule for nursing students, located in the appendices of the book.

Aside from Clissold's work, the only other significant ward teacher training effort was made by Byrne¹¹⁸ in describing a series of four one-week courses at the University of Manchester in England. There, the focus was on "person-to-person" teaching, beginning with a session on counseling, followed by one on small-group teaching,

¹¹⁶Sheahan, op. cit., 1972.

¹¹⁷Clissold, op. cit., 1962.

¹¹⁸P. S. Byrne, "Training Teachers of General Practice," Lancet, (7880): 568-570, September 7, 1974.

another on simulations and a fourth on microteaching, using audio-tapes of actual surgery consultations. Throughout the program, stress was placed on defining learning objectives, then facilitating learning in a non-directive fashion. This course has continued to be developed during the past decade,¹¹⁹ and seems to be the most comprehensive program of its kind. Yet, in all but one excellent exception, focussing on counseling skills needed in clinical teaching,¹²⁰ the descriptions of the program included no attempt to pass on what may have been learned about effective or ineffective approaches in, or skills of, clinical teaching.

Other clinical teacher training programs, primarily developed only during the past twelve years, have focussed on in-service

¹¹⁹See the following two articles:

P. S. Byrne, et al., "Teaching the Teachers," Medical Education, 10(3): 189-192, May 1976.

C. M. Harris, et al., "A Teaching Methods Course in Manchester for General Practitioner Teachers," Medical Education, 10(3): 193-197, May, 1976.

¹²⁰B. E. L. Long, et al., "A Method of Teaching Counseling," Medical Education, 10(3): 198-204, May, 1976.

workshops on lecturing skills¹²¹ (some not always highly judged¹²²), or, in two instances, on training residents and graduate students in

¹²¹See, for example, any or all of the following:

G. E. Batterson, "Inservice Teacher Training, University of Oregon Dental School," Journal of Dental Education, 30: 34-36, 1966.

C. E. Kinley and G. R. Langley, "Observations on a Medical Teacher Training Program," Canadian Medical Association Journal, 94: 785-788, April 9, 1966.

C. M. Harris, "A Teaching Methods Course in Liverpool for General Practitioners," British Journal of Medical Education, 4: 149-157, June, 1970.

J. Lowe, "Teaching Methods in the Faculty of Medicine," British Journal of Medical Education, 5: 138-141, June, 1971.

G. M. Arsham, "An Instructional Skills Workshop for Medical Teachers: Design and Execution," British Journal of Medical Education, 5: 320-324, December, 1971.

A. Perlberg, et al., "Microteaching and Videotape Recordings: A New Approach to Improving Teaching," Journal of Medical Education, 47: 43-50, January, 1972.

I. D. Gregory and B. Hammar, "Case Study of First Course in Teaching Skills and Methods for University Medical Staff," British Journal of Medical Education, 8: 92-98, June, 1974.

J. N. Hall and K. M. Brooks, "Teaching Psychologists to Teach Psychology: The Improvement of Teaching Skills in Health Service Professions," Medical Education, 10(3): 183-188, May, 1976.

¹²²See, for example:

E. G. Cantrell, "A Course in Teaching Methods (A Consumer Report)," British Journal of Medical Education, 6: 37-43, March, 1972.

_____, "Trainer-Teaching Techniques," British Medical Journal, 4(5992): 348-349, November 8, 1975.

skills of classroom teaching.¹²³ Other than the one at Manchester,¹²⁴ though, there have been no reported instances of systematic training efforts in skills of clinical teaching specifically on ward rounds or in any other one-to-one situation. There appears to this researcher to be a strong need to develop such programs, focussing particularly on practice and feedback in the actual clinical teaching setting.

Studies on Clinical Teaching

The pioneering studies of teaching in medical education arose largely from early work done by Miller in Illinois, supported by the Commonwealth Fund. There, in 1956, he and twelve faculty members spent twenty "relatively unstructured" hours discussing the teaching process.¹²⁵ One of their conclusions was that teachers might be major obstacles to student learning. As a result, Miller began a series of seminars and workshops on the nature of the medical student, the effect of the medical school environment on students, the evaluation of learning, and methods and materials of instruction. These initial efforts (with the exception of sociological studies already discussed)

¹²³A. M. Lazerson, "Training for Teaching: Psychiatry Residents as Teachers in an Evening College," Journal of Medical Education, 47: 576-578, July, 1972.

E. D. Prentice, et al., "Training Teachers in the Anatomical Sciences," Journal of Medical Education, 51: 1006-1009, December, 1976.

¹²⁴Harris, et al., op. cit., 1976.

¹²⁵G. E. Miller, "Adventure in Pedagogy," Journal of the American Medical Association, 162: 1448-1450, 1956.

were largely classroom based; it was not until the early 1960's after the rise of several centers for medical education,¹²⁶ that studies of clinical teaching were undertaken. Such studies came from several disciplines and can be grouped under four headings: studies of supervisors' training roles; studies isolating important components in clinical teaching; studies of actual clinical teaching; and studies exploring alternative clinical teaching models.

Studies of Supervisors' Training Roles. Several studies have been undertaken to determine the training role played by supervisors in the helping professions. In one of the earliest of these studies,¹²⁷ Pohl investigated the teaching activities of nurse practitioners, through the use of a fifteen-page questionnaire mailed to 1818 people from the 1960 membership list of the American Nurses Association. One-half of the respondents were prompted by a definition of teaching; the other one-half were not given such prompting. Pohl received 1500 replies and, through an analysis of the data, found that nursing practitioners did an extensive amount of teaching, but that unless they were prompted, tended to see that teaching as formal classroom instruction rather than all the activities they performed in helping people to learn about health and illness. In addition, the practitioners reported having had no, or inadequate, preparation for

¹²⁶For a general discussion of the beginnings of medical education research, see G. E. Miller, "Medical Research and Development," Journal of the American Medical Association, 197: 992-995, 1966.

¹²⁷M. L. Pohl, "A Study of the Teaching Activities of the Nursing Practitioner," unpublished dissertation, Columbia University, 1963.

teaching, and expressed a desire to include such training in their preparation for nursing.

In 1963, Gysbers and Johnston¹²⁸ examined enrollees' and supervisors' expectations of a practicum supervisor's role before, during and after a practicum experience in counseling. Through a review of the literature and informal and formal interviews, they developed the Supervisor Role Analysis Form (SRAF), a list of forty-six behavioral statements relative to supervision. In administering the SRAF to fifty-one enrollees and ten supervisors, Gysbers and Johnston found that expectations of both groups shifted over time from a directive to a non-directive approach to training, and that agreement about supervisors' roles became closer. These results led the researchers to conclude by calling for some discussion and clarification of the role of the supervisor, at the beginning of the training period, and by asking a number of questions about what caused the changes in expectations and whether or not those changes were in a desired direction.

Several studies arose as a result of the work of Gysbers and Johnston. Hansen¹²⁹ conducted a study very similar to theirs, using, instead of the SRAF, the Barrett-Lennard Relationship Inventory, a

¹²⁸N. C. Gysbers and J. A. Johnston, "Expectations of a Practicum Supervisor's Role," Counselor Education and Supervision, 4: 68-74, Winter, 1965.

¹²⁹J. C. Hansen, "Trainees' Expectations of Supervision in the Counseling Practicum," Counselor Education and Supervision, 4: 75-80, Winter, 1965.

scale based on Rogers' "necessary and sufficient conditions of personality change" (e.g., level of regard, congruence, empathic understanding and unconditional regard). He found that trainees did not expect the atmosphere and conditions that educators deemed necessary in a good supervisory relationship, but that after the training experience, the 30 respondents in the study reported that their expectations had been surpassed. From this, like Gysbers and Johnston, Hansen concluded by calling for supervisors to establish a good working relationship with trainees, through the outlining of roles at the outset of the training period.

In 1966, Delaney and Moore¹³⁰ factor analyzed the SRAF after administering it to 123 pre-practicum students at Arizona State University. Finding 15 factors and grouping them under four headings (didactic-instructive, instructive-consultative, counseling, and critique of counseling performance), they came to the same conclusions as Gysbers and Johnston, emphasizing the directive approach expected by trainees at the start of their practicum experience. They closed by questioning whether or not the role was perceived as it should have been. If not, they felt there was a need to define the role of the supervisor more clearly for trainees.

Using the SRAF as a model, Johnson and Knaupp¹³¹ developed a

¹³⁰D. J. Delaney and J. C. Moore, "Student Expectations of the Role of the Practicum Supervisor," Counselor Education and Supervision, 6: 11-17, 1966.

¹³¹W. D. Johnson and J. E. Knaupp, "Trainee Role Expectations of the Microteaching Supervisor," The Journal of Teacher Education, 21, 3, pp. 396-401, 1970.

slightly different rating scale to examine expectations of the role of a microteaching supervisor. As did Delaney and Moore, they factor analyzed the results received from their sample (224 students in an introduction to education course at the University of Illinois), and came to similar conclusions. They also suggested the need to study the effectiveness of the non-directive approach to supervision.

Finally, there were two studies of supervisors' roles conducted in medicine. In a survey of 84 freshmen and senior nursing students in the Milwaukee area, using a behavioral rating scale, Raven¹³² found the expectation that the clinical instructor be a role model, and that such modeling was perceived to be an essential influence on learning the nursing role. McCarthy,¹³³ in a study of 126 clinical instructors holding joint teaching-service appointments in a total of 20 accredited baccalaureate nursing programs, concluded that joint appointments followed neither an academic nor medical model, but a service model, and that there was confusion as to the differentiation between this service model and a clinical one. As a result, McCarthy recommended the clarification of the responsibilities of both the faculty and the organization in regard to the joint faculty-service roles in education, in practice and in clinical investigation. This was to be accomplished

¹³²K. C. Raven, "The Clinical Instructor as Role Model," Journal of Nursing Education, 13: 33-40, August, 1974.

¹³³Sister M. McCarthy, S.C., "Functions and Responsibilities of Incumbents of Joint Appointments in Baccalaureate Nursing Programs in University Medical Centers," unpublished dissertation, Columbia University, 1974.

by directors and faculty together, and was to be followed by providing the proper environment in which to implement the roles.

Studies Isolating Important Components in Clinical Teaching.

This type of study is characterized by researchers attempting to determine general categories of effective clinical instruction, most often through the factor analysis of data gathered from rating scales or critical incident instruments. The first such study was conducted in 1963 by Cotsonas and Kaiser.¹³⁴ Employing a "Teacher Rating Scale," they identified three important components in teacher performance: an attitude factor representing the attitude of the teacher towards patients as well as students; a teaching factor which encompassed the use of certain teaching techniques; and an estimate of the teacher's knowledge.

Jacobson,¹³⁵ in 1964-1965, completed a study of 961 undergraduate students in five of the eight university schools in the southern region of the United States. She gathered 1182 critical incidents, which she categorized, grouped and re-grouped into 58 critical requirements comprising six categories: availability to students;

¹³⁴N. J. Cotsonas and H. F. Kaiser, "Student Evaluation of Clinical Teaching," Journal of Medical Education, 38: 742-745, September, 1963.

¹³⁵M. D. Jacobson, "Effective and Ineffective Behavior of Teachers of Nursing as Determined by Their Students," Nursing Research, 15: 218-224, Summer, 1966.

For a more complete description of the study, see M. J. D. Jacobson, "Effective and Ineffective Behavior of Teachers of Nursing as Determined by Their Students," unpublished dissertation, George Peabody College for Teachers, 1965.

apparent general knowledge and professional competence; interpersonal relations with students and others; teaching practices (mechanics, methods, skills) in classroom and clinical areas; personal characteristics; and evaluation procedures.

In a shift of emphasis to affective behaviors, Carkhuff,¹³⁶ reviewing research in the field of counseling, stated that "perhaps the most critical variable in effective counselor training is the level at which the counselor-trainer is functioning on those dimensions related to constructive helpee change . . . (empathy, respect, concreteness, genuineness, self-disclosure, confrontation, immediacy)."¹³⁷ In addition, he went on to emphasize that the counselor-trainer should have demonstrated a level of expertise and be experienced in the area that he or she is teaching.

In a study similar in design to Jacobson's, O'Connor¹³⁸ examined the behaviors of supervisors in rehabilitation counseling. In his analysis of 842 critical incidents identified, he isolated seven major categories: relationship; interaction; feedback; allowing experiential autonomy; instruction; demonstration and modeling; and structure.

¹³⁶R. R. Carkhuff, "Critical Variables in Effective Counselor Training," Journal of Counseling Psychology, 16: 238-245, 1969.

¹³⁷ibid., p. 238.

¹³⁸J. B. O'Connor, "Behaviors Perceived by Rehabilitation Counseling Interns and Agency Supervisors to be Associated with Effective and Ineffective Supervision in Clinical Practice," unpublished dissertation, New York University, 1972.

Finally, in two additional studies using rating scales of specific behaviors or teaching approaches, and asking respondents which ones contributed most to their learning, Mayberry¹³⁹ and Stritter and others,¹⁴⁰ identified similar factors of effective teaching. For Mayberry those factors were dental communication skill, interpersonal skill, availability, and instructor-student rapport, while for Stritter, they were active student participation, preceptor attitude toward teaching, emphasis on applied problem-solving, student-centered instructional strategy, humanistic orientation, and emphasis on references and research.

For all of the different disciplines represented--medicine, nursing, counseling psychology, rehabilitation counseling, and dentistry--there is a great congruence in the studies reported here of what constitutes effective and ineffective clinical teaching. As a result, one would expect to find evidence of well-thought out approaches to clinical teaching, as well as appropriate training programs for clinical instructors. Sadly, this is not the case. In fact, in all of these studies, Stritter was the only one to conclude by recommending the development of a teaching improvement process for clinical teachers to analyze their teaching, the development of a questionnaire to evaluate the quality of clinical instruction, and the design of teacher

¹³⁹W. E. Mayberry, "Some Dimensions of Clinical Teaching," Journal of Dental Education, 1973, 37, 7, pp. 8-12.

¹⁴⁰F. T. Stritter, et al., "Clinical Teaching Re-Examined," Journal of Medical Education, 50(9): 876-882, September, 1975.

training workshops for new clinical instructors.

Studies of Actual Clinical Teaching. One of the earliest studies of clinical teaching was conducted by Jason¹⁴¹ in the late 1950's. Employing what he called the Medical Instruction Observation Record (MIOR), a twenty-point scale for each of seven dimensions of teaching, Jason and several colleagues observed a total of 406 teaching sessions during three days at each of seven medical schools in the United States. Only 25 (6.2%) of the sessions were ward rounds. However, two of his conclusions were of interest relative to the study reported here--first, that teaching practices in at least some medical schools, varied considerably according to the setting in which teaching was done, and second, that a dimension of teaching along which various groups of teachers differed significantly from each other was "Use of Challenge."

In a much more comprehensive study of clinical teaching than Jason's (and the most comprehensive one to date), Reichsman, Browning and Hinshaw¹⁴² interviewed departmental chairmen, faculty and students, as well as observed 82 teaching sessions, 56 of which were floor (regular ward) rounds and "OPD-ED" (outpatient department and specialty

¹⁴¹H. Jason, "A Study of Medical Teaching Practices," Journal of Medical Education, 37: 1258-1284, December, 1962.

For a more complete description of the study, see H. Jason, "An Analysis of Teaching Practices at Seven Selected American Medical Schools," unpublished dissertation, The University of Buffalo, 1961.

¹⁴²F. Reichsman, F. E. Browning and J. R. Hinshaw, "Observations of Undergraduate Clinical Teaching in Action," Journal of Medical Education, 39: 147-163, February, 1964.

ward) rounds. Their findings were in many respects related directly to this study. They included: (1) in three-quarters of the ward rounds, the teacher saw the patient with the students, but often missed opportunities to make significant patient observations or to show meaningful interaction between himself or herself and patients; (2) in an overwhelming majority of cases (more than 90%), "the instructor did not ask students to do any part of the physical examination under his supervision or to interview the patient briefly. Thus, we encountered only rarely a teacher's direct evaluation of the student's techniques"; (3) in almost one-half of the sessions observed, teachers evaluated student data; in the others, the data were accepted as presented; (4) due to what may be an insecurity about not having time to keep as abreast of medical knowledge as students, teachers rarely taught basic science material on ward rounds; (5) in only about one-half of the cases did the instructor teach about "syndromes and concepts," and even then, did so unaware of the students' actual knowledge in the area; (6) in about two-thirds of the cases on ward rounds, differential diagnosis was discussed on the basis of material presented. However, less than one-half of such discussions had a high degree of clarity; (7) fewer than one-half of the ward rounds had an amount of information taught which was appropriate to objectives of the session; and (8) in only one-third or less of all ward rounds did the instructor attempt to stimulate students to acquire new knowledge.

The three researchers made some additional observations of import to the present study: (1) due to a lack of clarity regarding what was

to be taught or due to teachers being asked to perform roles alien to them, ward rounds occurred where patients were not seen or where only residents and interns discussed the case with the instructor; (2) due, in part, "to the rapid growth in available knowledge [making bedside] teaching a very difficult task for the physician," little preparation for ward rounds was made by teachers; (3) few case presentations by students were very organized, clear or concise, but more importantly, teachers rarely commented on nor tried to improve such performance; (4) teachers rarely were aware of students' individual needs or learning styles; (5) students occasionally acted in an "unprofessional" manner on the wards, but no attempts were made to correct them; (6) despite a very humane attitude toward patients by teachers and students, there were occasional instances of procedural preoccupation which caused the neglect of patient needs; (7) clinical reasoning was often taught implicitly, but rarely explicitly; (8) defining "challenge" as "a timely, appropriate, and meaningful stimulus to the student to extend his effort in learning or thinking beyond his past achievement," there was "unequivocal" agreement that students were not challenged; and (9) on a number of occasions, but often with a lack of awareness and hence, control, teachers acted as role models for students; however, in a number of other opportune instances, they did not.

The researchers concluded that many teaching sessions, particularly ward rounds, were haphazard, mediocre, and lacking in intellectual excitement. Yet, despite all of the observations made, and

despite one recommendation for department chairmen to hire interested teachers and to provide them with opportunities for growth and recognition, no suggestions for change or improvement of teaching were made.

In a similar, but less exhaustive study than Reichsman's, Adams and others¹⁴³ observed 19 individual teaching sessions where students presented the initial study of new patients to their preceptor, an internist. They developed a rating scale from these observations and from it, judged the various performances. Their findings were that patient history-taking was taught less effectively than physical examination; there was insufficient effectiveness in teaching presentation of a case, recognition of major problems of patients, and specific aspects of management; content received much emphasis; attitudes were emphasized ineffectively as often as effectively; problem solving was effectively emphasized; instructors could recognize student weaknesses, but were less able to deal with them; and laboratory studies were given little emphasis. The authors concluded by calling for improvement programs for teachers, as well as for the possible matching of students and teachers according to abilities.

In a study conducted by Western Reserve University, Hinz¹⁴⁴ found that direct observation of students by faculty highlighted aspects of

¹⁴³W. R. Adams, et al., "A Naturalistic Study of Teaching in a Clinical Clerkship," Journal of Medical Education, 39: 164-174, February, 1964.

¹⁴⁴C. F. Hinz, "Direct Observation as a Means of Teaching and Evaluating Clinical Skills," Journal of Medical Education, 41: 150-161, February, 1966.

student performance not otherwise apparent, such as history-taking and physical examinations. Ward rounds were seen as being good for assessing student abilities only in organizing and presenting information. Metz and Haring,¹⁴⁵ by questioning 215 students and 162 residents and interns, reached the tentative conclusion that the effectiveness of clinical instructors decreased with age.

Several minor studies of clinical teaching which were conducted yielded little. Bolender and Guild¹⁴⁶ used a simple, three-question, open-ended teaching analysis form and found, among other things, that effective teachers strongly challenged students. Thomas and Pinel,¹⁴⁷ in a study of 83 nursing staff, concluded that "clinical instructors placed too much stress on theoretical points that could be learnt in the training school." Finally, Meadow,¹⁴⁸ employing a questionnaire to rank the usefulness of various aspects of a clinical rotation, concluded simply that teaching effectiveness depended a great deal on the gifts of the individual teacher, and that enthusiasm was highly valued.

¹⁴⁵R. Metz and O. Haring, "An Apparent Relationship Between the Seniority of Faculty Members and Their Ratings as Bedside Teachers," Journal of Medical Education, 41: 1057-1062, November, 1966.

¹⁴⁶C. L. Bolender and R. E. Guild, "Student Evaluation of Clinical Faculty: An Experiment with Encouraging Results," Journal of Dental Education, 31: 304-312, September, 1967.

¹⁴⁷E. Thomas and C. Pinel, "Ward Teaching: What Nurses Think," Nursing Times, 66: 287-287, February 26, 1970.

¹⁴⁸R. Meadow, "Student Assessment of Clinical Teaching," Guy's Hospital Reports (London), 119: 263-274, 1970.

In a study focussing less on skills of supervision and more on improving the training of residents, Watters¹⁴⁹ came to a conclusion similar to those who conducted research on role expectations for supervisors. Examining videotapes of supervisors reviewing with residents other videotapes of residents' therapeutic interviews, Watters stated that "residents . . . find they are better equipped to use supervision once the supervisor's technique is discussed openly, at some length and his aims clarified." He followed up this effort with workshops for the supervisors.

In 1974, Scully¹⁵⁰ observed thirty-one clinical teachers and queried them about the meaning of their actions. Upon reviewing her results, she concluded that clinical teaching in physical therapy was a process of pacing students to professional competency, by diagnosing their readiness level, selecting clinical problems, and supervising and evaluating their performance. Furthermore, she felt that students should demonstrate their skills in a setting that produced the least risk to the patient, the profession, the learner and the institution in which their training was conducted. Finally, Scully reported that instructors should be allowed to grow in the clinical setting both personally and professionally.

¹⁴⁹W. W. Watters, "Psychotherapy Supervision--A Videotape Technique," Canadian Psychiatric Association Journal, 16: 367-368, August, 1971.

¹⁵⁰R. M. Scully, "Clinical Teaching of Physical Therapy Students in Clinical Education," unpublished dissertation, Columbia University, 1974.

There are two final studies of actual clinical teaching to be considered. In one, Gorn and others¹⁵¹ studied five videotapes of as many supervisors of psychiatric residents, and found only that outstanding supervisors imparted information about psychotherapeutic principles as they applied to the specific patient being discussed. In the other, Coppernoll and Davies¹⁵² sent questionnaires assessing ward rounds to 180 faculty and students. In reviewing their results, they concluded that ward rounds were most effective when used to develop communication skills, factual knowledge, problem solving skills, laboratory and clinical skills, initiative, and professional behavior.

Studies Exploring Alternative Clinical Teaching Models. Of these studies, there are quite a number, only one of which discussed the models in terms of replacing attending physicians, and few even of modifying their roles in the clinical training of medical students and resident physicians. However, when involving the use of students as teachers, the studies have included a discussion of the benefits to the student-teachers of being observed utilizing skills of teaching as well as those of medicine. The research mentioned here is intended only to provide a sampling of alternative teaching models existing in the literature. An exhaustive analysis of these is beyond the scope

¹⁵¹M. K. Gorn, et al., "Supervision Observed," Journal of Nervous and Mental Disorders, 158: 208-213, March, 1974.

¹⁵²P. S. Coppernoll and D. F. Davies, "Goal-Oriented Evaluation of Teaching Methods by Medical Students and Faculty," Journal of Medical Education, 49: 424-430, May, 1974.

of the study.

In 1968, Coppola and Gonnella¹⁵³ introduced peer teaching into a twelve-week junior surgical clerkship and had encouraging results as the physician-instructor was able to take a less authoritative and central role in the situation. In a similar use of peer teaching in psychiatry, DeVito and others¹⁵⁴ found that "for the peer supervisee, the entire supervisory process was perceived as 'less threatening' than that encountered in staff supervision."

Again using a peer teaching approach, Marram¹⁵⁵ had the following results in a nursing program: instructors' time was conserved; student enthusiasm, creativity, problem-solving and spontaneity were enhanced by group participation; group supervision led to breadth and depth of insight into the nurse-patient relationship and the supervisory process; students moved away from dependency on the instructor; feedback received led to self-awareness; students were provided a way of sharing feelings of empathy; and immediate feedback was received by students.

In a change from the case presentation approach to ward rounds,

¹⁵³E. D. Coppola and J. S. Gonnella, "A Non-Directive Approach to Clinical Instruction in Medical School," Journal of the American Medical Association, 205: 487-491, August 12, 1968.

¹⁵⁴R. DeVito, et al., "Peer Supervision Among Psychiatric Residents," British Journal of Medical Education, 3: 62-65, March, 1969.

¹⁵⁵G. D. Marram, "Incorporating Supervised Supervision in the Graduate Curriculum," Nursing Outlook, 18: 46-47, September, 1970.

where students' medical skills were poorly checked, Wiener¹⁵⁶ had an intern unfamiliar with a patient interview that patient and take his or her history for fifteen minutes. The intern's techniques were critiqued, then the intern moved on to do a physical examination, which was also critiqued. The results of this experiment were more time spent at the bedside, an easier process of supervision for the instructor, and improved skills of the staff and trainees.

In an attempt to achieve balance in the "juggling act of academic practice," Tyers and others¹⁵⁷ alternated one week of practice with one week of research and teaching for attending physicians. They found that there were advantages of guaranteed average research time of thirty hours per week; minimal, if any, loss of clinical income to the department; a loss of the disruptive effect of emergency surgery on teaching and research; an increased role of the resident staff in initial decision-making and contact with referring physicians; and the staff physician being familiar with patients' problems. There were also disadvantages of some loss of the traditional doctor-patient relationship; a decrease in intensity of the physicians' personal involvement; an annoyance to some referring physicians; and a loss of clinical prestige. The researchers concluded that this approach was

¹⁵⁶S. L. Wiener, "Teaching on Ward Rounds," Annals of Internal Medicine, 79(4): 606-607, October, 1973.

¹⁵⁷G. F. Tyers, et al., "Alternating Periods of Full-Time Clinical and Full-Time Teaching-Research Responsibility Versus All Things to All People at All Times," Journal of Surgical Research, 16: 124-130, February, 1974.

best used in a high intensity, low patient volume specialty service.

Helfer and others¹⁵⁸ used a different system altogether by having "simulated mothers," instead of physicians, assist students in learning interviewing skills. The "mothers" were given information about a patient problem. Students then interviewed them and the "mothers" critiqued their performance. Using a microteaching format, the cycle lasted for ten weeks.

In two final examples of work in the area of establishing alternative clinical teaching models, Block and others¹⁵⁹ used a written summary in group psychotherapy supervision, and Altemeier and others¹⁶⁰ had residents serve part of their training program in office rotations. For Block, the summaries were useful in highlighting events occurring in the group and in reviewing student work. Altemeier, while providing an interesting opportunity for residents to obtain experience outside the hospital setting, showed a glaring neglect of consideration of the supervision of that process. Although unfortunate, this was not an uncommon omission in discussions of alternative clinical teaching ideas.

¹⁵⁸R. E. Helfer, et al., "Pediatric Interviewing Skills Taught by Non-Physicians," American Journal of Diseases of Children, 129(9): 1053-1057, September, 1975.

¹⁵⁹S. Block, et al., "The Use of a Written Summary in Group Psychotherapy Supervision," American Journal of Psychiatry, 132(10): 1055-1057, October, 1975.

¹⁶⁰W. A. Altemeier, 3rd, et al., "The Demonstration of Private Practice to Pediatric Residents Through Office Rotation," Journal of Medical Education, 51(2): 138-140, February, 1976.

Summary

Generally speaking, although in scattered and sometimes remote places in articles and books dealing with the history of medicine, there do exist a number of passages regarding the role of attending physicians in the clinical training of medical students and resident physicians. In addition, in research on various aspects of medical education, quite a few people have commented peripherally on that same role. However, despite a number of studies of actual clinical teaching, some of which are quite revealing, if not disturbing, little has been done by the medical profession in the way of improving upon, or vastly changing, the work of attending physicians on ward rounds. Moreover, and perhaps more importantly, there have been no instances in which the attending physician has been studied to determine what he or she should be attempting to accomplish with trainees in medical schools.

The present study attempted to respond to these issues by specifically examining the role of the attending physician in the clinical training of medical students and resident physicians. Through doing this, it was anticipated that clues would emerge as to what attending physicians should accomplish, the skills they needed to accomplish these things and methods by which they could obtain such skills. As well, it was hoped that this research would build on the research of others, perhaps developing for medical school leaders a more substantial case for the need to make changes in present training programs.

CHAPTER III

DESIGN OF THE STUDY

Introduction

The purpose of the study, as mentioned in Chapter I, was to determine the role of attending physicians in the clinical training of medical students and resident physicians at McGill University. The study was initiated in response to a general concern expressed by the Undergraduate Curriculum Committee of the Faculty of Medicine regarding evaluation of the clinical experience of third and fourth year students. Since at McGill, there were two adult medicine teaching hospitals and only one for pediatric medicine, a decision was made to work at the Montreal Children's Hospital (MCH). This provided an opportunity to study clinical teaching of medical students in a setting where an entire training program took place.

At the request of the physician-in-chief of the MCH, the effort was expanded in order to include the residency training program, because it was very much intertwined with the clinical program for undergraduates. Furthermore, since clinical teaching occurred in a number of settings, a decision was made to limit this initial study to only one such area. Ward rounds, and the attending physicians' role in them, were chosen because trainees spent the first two hours

of every working day on ward rounds. It was there, presumably, that the greatest amount of clinical learning occurred.

In order to gather some preliminary information about the hospital, the attending physicians and the pediatric training program, a group interview was held with eight administrators and staff of the MCH. The interview was relatively informal and unstructured, however a number of general questions were formulated to initiate discussion. These questions included the role and responsibility of attending physicians; the amount of time necessary to conduct efficient and effective ward rounds; the appropriateness of ward rounds in light of the trainee experience; the teaching and service responsibilities of senior residents; the evaluation of trainees; and general concerns about ward rounds and clinical teaching.

The answers given to these questions provided guidelines for the design of the study, which was developed following a model of teaching improvement used by the Instructional Development Service Project (IDSP) of McGill University. The Project functioned primarily as a service to professors who were interested in taking a critical look at their classroom teaching. The process (see Appendix B for a complete description) involved the identification and improvement of instructional strengths and weaknesses, through the collection, analysis and interpretation of data from a variety of sources--interviews, classroom observations, questionnaires and videotapes.

In adapting the process for use in the study of clinical teaching on ward rounds, two specific changes were made. First, instructors

normally worked with the Project on an individual basis for a complete term, with strict confidentiality of results maintained. For the purpose of this study, however, instructors often met in groups, and results of the work were shared with the study population.

Second, since there were no hospital guidelines as to the role of the attending physician, only the diagnostic portion of the teaching improvement process was employed to determine that role. No effort was made to examine improvement strategies attempted as a result of the study. In this sense, the study was strictly descriptive in nature.

The format of the study, then, consisted of the following:

(1) videotape samples of a number of attending physicians and senior residents during their conduction of ward rounds; (2) questionnaires administered to the attending physicians, residents, interns and clinical clerks of the MCH; (3) individual interviews with each of the people videotaped, each chief resident and the physician-in-chief; and (4) a workshop for attending physicians and residents. These various data collection techniques were used in order to ensure comprehensiveness and depth in the study. The design of each technique was based on results obtained from the technique(s) previously employed. Before discussing in detail the format of the study, the study setting and population will be described.

The Study Setting and Population

The Montreal Children's Hospital is a general pediatric hospital

servicing most of the infant and adolescent care needs of the greater Montreal community. In its affiliation with McGill University, four wards were designated as general teaching wards, housing children who: (1) were ages two months to two years; (2) were ages two to twelve years; (3) were ages twelve to eighteen years (adolescent); and (4) had infectious diseases (no age limit). On each of these wards, an attending physician was assigned the responsibility for service to patients and for training of students, interns, and residents.

Ward duty for attending physicians was determined on a rotating basis from a pool of seventy physicians, some of whom were staff of the hospital and others practicing in the surrounding area. During the three years 1973-1975, rotations increased in length from one month to three months. Within this system, an attending physician went on rotation once every two to four years.

The study population consisted of the attending physicians, all of the residents and interns, and two groups of clinical clerks at the MCH. Clinical clerks were in a unique situation relative to the other trainees. As undergraduates, these clerks were obtaining their first opportunity to work in the clinical setting. In the past, in order to expose them to as wide an experience as possible, McGill University required that clerks serve eight-week rotations in each of the following subspecialty areas: pediatrics, surgery, obstetrics and gynecology. In addition, there was a twelve-week required rotation in internal medicine, plus a twelve-week elective block.

At the time of this study, the School of Medicine was in the

process of changing from a four-year, four-phase to a four-year, three-phase undergraduate curriculum. This change was designed to make the training program more flexible, allowing students more options and introducing them more fully to family practice. In the new program, the clinical aspect was designed in four "streams," medical, surgical, family practice and psychiatry. Depending on the stream chosen, students went through a prescribed clerkship which included a compulsory eight-week block in pediatrics and psychiatry and two elective blocks.

In the changeover from one curriculum to another, an overlap occurred; i.e., there were both fourth-phase and third-phase students completing clerkships at the MCH. In each program, there was a total of 160 students. Students in each program were divided into six groups of approximately 25 to 28 students. These groups were then scheduled for the various rotations. Since each rotation lasted only a short period of time, and since this study was conducted in a pediatric setting, an effort was made to gather opinions from clinical clerks toward the end of their pediatric rotation. Furthermore, only two of the groups were surveyed for this study; one from the old four-phase curriculum and one from the new three-phase curriculum. Since assignment to a group was relatively random, it was felt that the two study groups would be representative samples of their respective programs, and that comparisons between the two groups could be made.

A request for background information yielded the following characteristics of the study group. A large majority of the attending physicians completed their undergraduate training between 1950 and

1970 (Table 1), attended McGill or another Canadian school (Table 2), and proceeded to do at least a portion of their post-graduate training at a hospital in Montreal. There were, however, many institutions throughout the world represented in that training (Table 3).

Most residents graduated between 1973 and 1975 (Table 4), had attended McGill or another Canadian school (Table 2), and had done post-graduate training only at the MCH (Table 5). Fourth-phase clinical clerks were to be 1976 graduates of McGill while third-phase students expected to finish in 1977.

In total, 1966 people were included in the study population. Following is a more complete discussion of the format of the study.

Videotapes

Subsequent to the group interview, videotapes were made of attending staff and senior residents in their conduction of ward rounds. The purpose of these tapings was to document exactly what occurred during the rounds, and, later, to be able to compare that documentation with comments made on the questionnaires. For each person, the first half-hour of each session was taped. Equipment utilized consisted of a Panasonic porta-pac videotape unit, which included a camera, tripod, recording deck and power source. Sound was recorded using an Edcor wireless microphone. Equipment was placed on a three-tray hospital cart and the group was followed at a distance of approximately fifteen to twenty-feet. As there normally is a great deal of activity in the corridor of the ward, the presence of the video unit did not interfere

TABLE 1
ATTENDING PHYSICIANS' YEAR OF GRADUATION
(N=32)

Before 1950	1950-1959	1960-1969	After 1970
4/12.5%	15/46.9%	13/40.6%	0/0.0%

TABLE 2
 ATTENDING PHYSICIANS' AND RESIDENTS' SCHOOL

	McGill	Other Canadian	U.S.A.	Elsewhere
Attending Physicians (N=32)	16/50.0%	9/28.1%	2/6.2%	5/15.6%
Residents (N=24)	9/37.5%	7/29.2%	5/20.8%	3/12.5%

TABLE 3
INSTITUTIONS REPRESENTED IN POST-GRADUATE TRAINING OF
ATTENDING PHYSICIANS

1. Pathological Institute, McGill University (2)
 2. Royal Victoria Hospital, Montreal (7)
 3. Queen Mary Veteran's, Montreal (3)
 4. Montreal Children's Hospital (23)
 5. Hospital for Sick Children, Toronto (2)
 6. Joslin Clinic, Boston
 7. Jewish General Hospital, Montreal (6)
 8. Children's Hospital of Philadelphia (2)
 9. Montreal General Hospital (7)
 10. Children's Medical Center, Boston (2)
 11. St. Mary's Hospital, London, England
 12. University College Hospital, London, England
 13. _____, Edinburgh, Scotland
 14. University of California at San Francisco
 15. Philadelphia General Hospital
 16. Children's Hospital of the District of Columbia
 17. University of Maryland Medical Center
 18. _____, Pittsburgh
 19. Reddy Memorial Hospital, Montreal
 20. _____, Hungary
 21. University of Michigan at Ann Arbor
 22. _____, Cleveland
 23. Massachusetts General Hospital, Boston
 24. Hospital of St. Justine, Montreal
 25. University of Montreal
 26. Case Western Reserve
 27. Johns Hopkins, Baltimore
 28. Verdun General Hospital
 29. University of Colorado at Denver
 30. Acadia University, New Brunswick
 31. Buffalo Children's Hospital
 32. Laval University, Quebec City
-

TABLE 4
RESIDENTS' YEAR OF GRADUATION
(N=32)

1968-1972	1973	1974	1975	No Answer
4/16.7%	6/25.0%	7/29.2%	6/25.0%	1/4.2%

TABLE 5

INSTITUTIONS REPRESENTED IN POST-GRADUATE TRAINING
OF RESIDENTS

-
1. Hospital for Sick Children, Toronto
 2. QCMH, London, England
 3. Montreal Children's Hospital (15)
 4. Ottawa General Hospital
 5. _____, Edmonton
 6. Loyola University Medical Center
-

with the sounds. Following the videotapings, each attending physician or senior resident commented that he or she had not been overly conscious of the videotape equipment. All indicated that they had conducted rounds in their usual fashion.

Since assignments for rotation were made in a random fashion, attending physicians to be videotaped were identified by chance. Each of the people on the April-May-June, 1975, and July-August-September, 1975, rotations were videotaped. On the October-November-December, 1975, rotation the ward housing patients with infectious diseases was not included in the videotaping because of the risks involved in being present on that ward. A total of eleven attending physicians were videotaped.

As the videotapings progressed, it became increasingly apparent that it would be valuable to compare the manner in which senior residents and attending physicians conducted rounds. It was felt that any similarities or differences in method could be examined in order to establish more concretely the appropriate role of the attending physician and his/her proper working relationship with senior residents. Accordingly, on the October-November-December, 1975, rotation, three senior residents (excluding the one on the infectious diseases ward) were videotaped.

Videotapes were analyzed according to the teaching improvement process outlined in the description of the Instructional Development Service Project (Appendix B). Using the teaching skills and behaviors (see Appendix A) from the IDSP, and the results of the group interview

and the questionnaires, videotapes were examined for evidence of effective and ineffective teaching. As part of that analysis, the tapes were studied to determine the amount of time spent by the attending physician (or senior resident) discussing each patient either at bedside, in the corridor or in a nearby conference room.

Further study of the videotapes was done using a category observation system (see Appendix C), designed by Dr. Lawrence Shulman of the School of Social Work at the University of British Columbia at Vancouver, Dr. William P. Hillgartner of the Instructional Communications Centre of McGill University in Montreal, and the staff of the IDSP at McGill. The system was developed for the systematic recording, at timed intervals, of instructor and student behaviors. The behaviors examined (see Appendix C) differed slightly from the ones employed in the teaching improvement process of the IDSP, but considerable overlap did exist.

The videotapes were rated by a research assistant trained in the use of the system. The total number and percentage of each of the behaviors for both the instructor and students were displayed using an interaction map. The maps of each of the tapes were studied in order to determine: (1) whether or not any distinct differences in procedure existed among attending physicians, or between attending physicians and senior residents; (2) whether rounds were used primarily for case presentations or for conveying or discussing general medical information; and (3) the differences in the amount of time spent talking by the attending physician (or senior resident) and the

various trainees.

In summary, then, fourteen people were videotaped during their conduction of ward rounds; eleven were attending physicians, three senior residents. The tapes were analyzed using components of the IDSP teaching improvement process, and using a category observation system. The information obtained in this phase of the study as well as that from the group interview was utilized in the next phase: designing questionnaires for attending physicians, residents, interns and clinical clerks.

Questionnaires

At this stage of the study, two questionnaires were designed, tested, and administered to the study population of the Montreal Children's Hospital. The questionnaires were used to gather opinions as to the perceived nature and purpose of ward rounds and the role of the attending physician in them. This information was later compared with results obtained from the videotapes and the individual interviews to check for consistencies and inconsistencies in the data.

The two questionnaires, one for the attending physicians and one for the trainees, were identical in design, with the exception of background items and several changes in wording to make the questions more personalized. Both questionnaires were made up of "closed" questions in areas designed to gather specific information about the purpose of ward rounds and the attending physicians' role in them. "Open" questions were used in the sections dealing with more general

issues. For both the "closed" and "open" questions, specific subsample (e.g., clinical clerks, residents, etc.) results were summarized and comparisons between subsamples were made.

In attempting to move toward greater precision regarding the reliability and validity for the questionnaires, the following steps were taken: (1) the first draft of the questionnaires was given for critical analysis to two medical specialists and to two educators with expertise in questionnaire design. Appropriate revisions were then made; (2) the second draft of the questionnaires was field-tested at the Royal Victoria Hospital in Montreal. Ten attending physicians and a combination of ten residents, interns and clinical clerks were asked both to complete the respective questionnaires and to make suggestions for their improvement. Based on their responses, revisions were made again; (3) the third draft of the questionnaire was given at the Montreal Children's Hospital to a medical specialist who worded the questions and placed them in a sequence which was most clear to medical personnel; (4) the fourth draft was reviewed by this investigator, a specialist in questionnaire design, and the aforementioned medical specialist at the MCH. Final revisions were made at that time; (5) the fifth draft was the one administered at the MCH.

The first questionnaire (see Appendix D) was administered to all seventy physicians in the hospital and surrounding community who formed the pool from which attending physicians for the wards were chosen. For the purpose of the study, completed questionnaires were

accepted only from those attending physicians who had served at the MCH for at least a one-month period between January 1, 1973, and December 31, 1975. It was decided that beyond these three years, people would have a difficult time remembering what had occurred on the ward rounds. There were 52 people in this group.

The questionnaires were mailed to each physician and a code number was placed on each form to identify the respondent. In this manner, the group of 52 could be distinguished from the larger pool of 70. After two weeks, a follow-up telephone call was made as a reminder to those who had not returned completed questionnaires. In the end, a total of 32 (61.5%) of the 52 people responded to the questionnaire.

The second questionnaire (see Appendix E) was administered to all residents and interns and to two groups of clinical clerks currently in training at the MCH. There were 46 residents and 17 interns included in this sample. As with the attending physicians, questionnaires were personally addressed and coded, and again, a follow-up telephone call was made after two weeks to those who had not returned completed questionnaires. A total of 24 residents (52.2%) answered the questionnaire, while only 2 (11.8%) of the interns did so.

For clinical clerks, at the administration of the questionnaire, the four-phase group was on rotation. The trainees completed the questionnaire following an examination given at the conclusion of the pediatric rotation. There were 28 students in this group; 25 (89.3%) responded to the questionnaire. Eight weeks later, at the end of the

next rotation (this time of third phase students), the questionnaire was administered in the same fashion. There were 23 students in this group, all of which answered the questionnaire.

At this point in the study, due to the low return rate, a decision was made to exclude from the results the opinions of the interns. The interns in this situation were all rotating interns, a group which caused a particular problem at the MCH. Rotators were all doctors from Canada and other countries who recently had come to live and practice in Quebec. As part of the requirements for licensure in Quebec, they served a two-month rotation in each of the major clinical disciplines. In nearly all cases, the rotators were not part of the overall training program, were not pediatricians, were not at all interested in the field of pediatrics, and did not particularly desire having to fulfill the requirements of the province. Consequently, they had little interest or investment in the MCH or this study.

This decision caused the loss of only two completed questionnaires. As "straight" interns were considered by the MCH to be first-year residents, their results were included in that group. There were no "mixed" interns at the MCH at the time of this study.

In summary, two questionnaires, one for attending physicians and one for trainees, were designed, tested and administered at the MCH. The intent was to gather opinions as to the perceived nature and purpose of ward rounds and the role of the attending physician in them. The total, revised sample consisted of 149 people, 104 (68.9%) of which returned completed questionnaires. Within this group, the

four general teaching wards were evenly represented by attending physicians and residents (Table 6). Fourth-phase clerks predominantly had been on the adolescent or infectious diseases ward; third-phase students on the other two wards (Table 6).

Information gathered from the questionnaires was tabulated and summarized, and comparisons between groups were made. Results were combined with those obtained through the videotapes, then summarized for use during individual interviews with attending physicians and senior residents who had been videotaped.

Individual Interviews

General findings from data collected through the videotapes and questionnaires were presented informally in individual interviews with each of the attending physicians and senior residents who had been videotaped, each chief resident and the physician-in-chief. The interviews were conducted by this researcher and the Associate Director of the Centre for Medical Education. The purpose of the interviews was to afford the people an opportunity to review their videotapes of ward rounds, and to gather informally more information from them about the role of the attending physician on those rounds. The reason for waiting to conduct the interviews until after the questionnaires were returned was to prevent bias which could occur through observation of the videotapes. The intent was to gather opinions as they existed prior to the study.

TABLE 6
 ATTENDING PHYSICIAN AND TRAINEE WARD REPRESENTATION

	Age		Infectious Diseases	Adolescent	Age		No Answer
	2-12 Years	2 Mos. - 2 Years			2 Mos. - 2 Years		
Attending Physicians (N=32)	8/25.0%	5/15.6%	8/25.0%	8/25.0%	3/9.4%		
Residents (N=24)	4/16.7%	6/25.0%	4/16.7%	6/25.0%	4/16.7%		
4th Phase Clinical Clerks (N=25)	3/12.0%	11/44.0%	9/36.0%	3/12.0%	0/0.0%		
3rd Phase Clinical Clerks (N=23)	13/56.5%	0/0.0%	0/0.0%	9/39.1%	1/4.4%		

The format of the interview was to play back the videotape, then to ask several general questions about it. Those questions included: the opinion of each person as to the quality of his/her performance; opinions concerning the logistics of the rounds, i.e., the setting, the style of teaching, the frequency of rounds, the number of participants, and the variety in levels of training of each participant; difficulties or frustrations encountered while on ward rounds; the role of the senior resident relative to that of the attending physician; methods used in evaluating trainees; whether or not opinions expressed on the questionnaire had changed as a result of reviewing the videotape; and whether or not the interviewee would make any changes in the conduction of ward rounds.

The interviews lasted between 60 and 90 minutes each. Notes were taken and from them a summary of the interview was written. These results were then combined with the results from the group interview, the videotapes and the questionnaires to prepare for the workshop.

Workshop for Attending Physicians and Senior Residents

The final stage of the study was the development of a workshop for attending physicians and residents. The purpose of the workshop was to present to the participants the results of the work to date, and to discuss further their thoughts and ideas about the role of the attending physician on ward rounds.

Prior to the workshop, a memorandum was circulated which briefly

summarized the results of the videotapes, questionnaires, and interviews, and posed a number of questions about ward rounds. The workshop lasted three hours and was attended by thirty-six people--eleven residents, twenty-one attending physicians and four outside observers. The format of the session was an introduction by the Director of Residency Training, playback of segments of several of the videotapes, discussion of the videotapes and the questionnaire results, and a summary of conclusions and recommendations. Included in the discussion of results was a verification and clarification of opinions and an attempt to determine what changes, if any, people were willing to make in the conduction of ward rounds.

Minutes of the meeting were taken and were combined, by this researcher, with all previous results in order to prepare a final report for the Physician-in-Chief, and to formulate plans for a follow-up program.

Summary

This study arose out of a concern at the McGill University Faculty of Medicine about the clinical teaching component of medical education. As clinical teaching encompassed a wide variety of activities, an attempt was made to focus initially on only one aspect of that teaching--the role of the attending physicians on ward rounds. The site chosen for the study was the Montreal Children's Hospital (MCH).

Following a model of teaching improvement used by the

Instructional Development Service Project (ISDP) of McGill, data were collected through: (1) videotape samples of a number of attending physicians and senior residents during their conduction of ward rounds; (2) questionnaires administered to all attending physicians, residents and interns, and to two groups of clinical clerks at the MCH; (3) interviews with each of the people videotaped, each chief resident and the physician-in-chief; and (4) a workshop for attending physicians and residents.

Results from each stage of the study were utilized in the planning of the next one. Analysis of the videotapes was made according to the teaching improvement process of the IDSP and through the use of a category observation system. Analysis of the questionnaires was completed using a chi square test of significance. A final report was prepared for the physician-in-chief of the MCH, and plans were developed for a follow-up study.

CHAPTER IV

RESULTS OF THE STUDY

Introduction

The results of the study were based on data collected from four stages of work at the Montreal Children's Hospital: (1) videotapings of portions of ward rounds conducted by attending physicians and senior residents; (2) questionnaires administered to attending physicians, residents, interns and clinical clerks; (3) individual interviews with each person videotaped, the chief residents and the physician-in-chief of the hospital; and (4) a workshop for attending physicians and residents. Major findings are summarized under the headings listed below.

- A. The Role of the Attending Physician
- B. The Role of the Senior Resident
- C. The Junior Trainees
- D. The Logistics of the Wards
- E. The Organization of Time on the Wards

The Role of the Attending Physician

Throughout the data, it was reported that a considerable amount of ambiguity existed regarding the role of the attending physician.

This ambiguity was attributed by respondents to three basic reasons. First, in individual interviews and in the workshop for attending physicians and residents, they reported that there were no clearcut guidelines as to the proper role attending physicians should assume. The attending physicians noted an understanding of their legal and moral responsibility for patient care on the ward, and of the expectation that they were to contribute to the training of students and residents. However, they indicated that those responsibilities were stated only in a very general fashion.

Second, attending physicians reported in individual interviews and in the workshop that they did little thinking about or planning for their ward duty. They simply appeared on the ward each day and, as evidenced on the videotapes, spent a great deal of their time reviewing the various patients. Coupled with the lack of guidelines, this resulted in virtually no effort to determine what might be most effective either in terms of patient care or teaching. (This will be handled in greater detail in the section on organization of time.)

Third, and finally, the attending physician often was not perceived by trainees to be a member of the ward team. In the view of this researcher and as reported by several attending physicians in individual interviews, this was due to the fact that attending physicians were rarely present at times other than ward rounds, and to the existence of a competing hierarchical structure involving the resident staff, which resulted in the most accessible line of authority for a trainee being:

TRAINEE - SENIOR RESIDENT - CHIEF RESIDENT - CHIEF-OF-STAFF

rather than:

TRAINEE - SENIOR RESIDENT - ATTENDING PHYSICIAN - CHIEF-OF-STAFF

This meant that decisions made by the ward staff with the attending physician during morning rounds might well be changed at afternoon sign-out rounds, with no involvement of the attending physician, whatsoever. Thus, to this researcher, the service role of the attending physician seemed to be superfluous in view of the way patient care decisions actually were made.

The ambiguity generated by these three factors led to other hindrances to efficient patient care and effective teaching. These additional problems are listed below.

1) On questionnaires and in individual interviews, attending physicians and trainees alike viewed teaching and service on the wards to be inextricably entwined, that to do one was to do the other. Few respondents made any clear distinction between the two sets of responsibilities. Furthermore, in nearly all questionnaires and individual interviews, service was seen as being the main function of the hospital; any training which occurred was incidental. In the view of this researcher, the result of this often was service which was inefficient and teaching which was ineffective. (This will be handled in greater depth in the section on organization of time.)

2) On questionnaires, in individual interviews and in the workshop, attending physicians indicated a great deal of uneasiness regarding their role on ward rounds. As no guidelines existed, they

reported not knowing to what extent they could (or should) intervene in patient care being provided by the various trainees. This was exacerbated by a reportedly often-displayed lack of respect for the attending physicians by the trainees. In individual interviews and in the workshop, there was evident a degree of arrogance among trainees, brought on, in the opinion of this researcher and as reported by several trainees during the workshop, through the attainment of some responsibility and knowledge--and by the lack of clearly established lines of authority.

3) Among attending physicians, questionnaires and individual interviews highlighted an implicit definition of teaching as "the transfer of information from teacher to student." This was corroborated by the videotapes, where there was a great deal of emphasis on knowledge exchange and little on skill training. This caused additional role ambiguity since, in many cases, the attending physician was a general pediatrician who was less up-to-date with current literature than was the senior resident on the ward. In addition, a shifting hospital population made the disease entities on the general wards less and less similar to those the attending physician dealt with in practice. Even specialists acting in the role of attending physicians on general wards reported finding themselves in much the same position since they were acting outside of their area of expertise. The end result was that, in the videotapes, the attending physicians made no real attempt to display their greatest strengths--the process of diagnosing and solving problems--skills which were

gained best through experience in practice.

4) Evaluation of trainee performance was a particularly difficult task for attending physicians. This opinion was voiced frequently in individual interviews with attending physicians and residents. In addition to the lack of guidelines as to the attending physician's role, there were no hospital-set standards of performance for trainees. Provincial evaluation forms had to be completed for each trainee, but even there, definitions and unacceptable performance were not described. Attending physicians noted that exacerbating this problem was their frequent difficulty in getting to know each trainee, particularly the clinical clerks. There was often time only for daily ward work, and none for gathering data to pass judgment on the ability of the trainees.

Within this context, however, attending physicians were required to fill out evaluation forms, covering a number of aspects of clinical training, for each trainee. Their ability to perform such a task during ward rounds, and the frequency with which they did so, are summarized in Tables 1 through 4. Basically, despite all the difficulties involved, and despite the fact that little time was spent examining trainee performance during rounds (see the section on organization of time), attending physicians and trainees agreed that much of the evaluation could be, and was being, done. Specifically (Tables 1 and 2), delineation of problems, knowledge of pathophysiology, differential diagnoses, planning of further investigations, therapy, and continued responsibility for patient management were seen by the

TABLE 1*

OUR EVALUATION SYSTEM ASKS US TO ASSESS THE FOLLOWING SKILLS. CAN THIS BE DONE BY THE ATTENDING PHYSICIAN ON WARD ROUNDS? (FIGURES REPRESENT NUMBER OF RESPONDENTS)

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		
	Yes	No	Frequently	Occasionally	Not At All
a) Techniques of History Taking [++;+]	24/13/ ¹⁴ ₉	6/9/ ⁹ ₁₄	13/4/ ³ ₁	13/9/ ¹¹ ₁₀	3/5/ ⁷ ₁₀
b) Confirmation of Historical Data [-; -]	13/13/ ¹⁴ ₁₃	16/9/ ⁹ ₉	4/3/ ⁰ ₃	13/8/ ¹¹ ₈	7/8/ ¹⁰ ₁₀
c) Techniques of Physical Examination [-; +]	21/12/ ¹² ₁₁	9/10/ ¹¹ ₁₂	7/1/ ¹ ₆	16/6/ ⁶ ₇	5/12/ ¹⁴ ₁₃
d) Confirmation of Physical Findings [-; +]	28/18/ ¹⁹ ₁₂	1/4/ ⁴ ₅	17/3/ ¹ ₃	10/8/ ¹⁶ ₁₃	2/8/ ⁵ ₆
e) Delineation of Problems [-; +]	31/20/ ²⁰ ₂₁	0/2/ ¹ ₁	29/12/ ⁹ ₁₃	1/8/ ¹¹ ₈	0/0/ ⁰ ₁

TABLE 1--Continued

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		Not At All
	Yes	No	Frequently	Occasionally	
f) Knowledge of Pathophysiology [-;+]	29/22/20	1/0/3	17/4/2	11/12/16	1/4/4
g) Differential Diagnosis [-;+]	31/22/21	0/0/2	25/12/10	5/8/13	0/0/1
h) Planning of Further Inves- tigations [-;-]	31/22/22	0/0/2	28/15/14	2/5/7	0/0/1
i) Therapy [-;-]	31/21/20	0/1/3	27/15/19	3/5/4	0/0/1
j) Continued Responsibility for Patient Management [-;+]	27/19/17	3/3/5	20/8/9	7/12/12	2/0/3

TABLE 1--Continued

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		
	Yes	No	Frequently	Occasionally	Not At All
k) Ability to Talk to Parents of Patients [-;-]	14/6/ ⁹ / ₄	16/15/ ¹⁴ / ₁₉	3/1/ ¹ / ₂	16/7/ ⁷ / ₃	8/11/ ¹¹ / ₁₆

* Presentation of numbers is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Clerks (N=25)
(N=32) / 3rd Phase Clinical Clerks (N=23)

+ Denotes Significance at .05 Level of Confidence (Chi Square).

- Denotes No Significance.

TABLE 2*

OUR EVALUATION SYSTEM ASKS US TO ASSESS THE FOLLOWING SKILLS. CAN THIS BE DONE BY THE ATTENDING PHYSICIAN ON WARD ROUNDS? (FIGURES REPRESENT NUMBER OF RESPONDENTS)

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		
	Yes	No	Frequently	Occasionally	
				Not At All	
a) Techniques of History Taking	75.0/54.1/56.0 39.1	18.8/37.5/36.0 60.9	40.6/16.7/12.0 4.4	40.6/37.5/44.0 43.5	9.4/20.8/43.5 28.0
b) Confirmation of Historical Data	40.6/54.1/56.0 56.5	50.0/37.5/36.0 39.1	12.5/12.5/0.0 13.0	40.6/33.3/44.0 34.8	21.9/33.3/40.0 43.5
c) Techniques of Physical Examination	65.6/50.0/48.0 47.8	28.1/41.7/44.0 52.2	21.9/4.2/4.0 0.0	50.0/25.0/24.0 30.4	15.6/50.0/56.0 56.5
d) Confirmation of Physical Findings	87.5/75.0/76.0 52.2	3.1/16.7/16.0 21.7	53.1/12.5/4.0 13.0	31.2/33.3/64.0 56.5	6.2/33.3/20.0 26.1
e) Delineation of Problems	96.9/83.3/80.0 91.3	0.0/8.3/4.0 4.4	90.6/50.0/36.0 56.5	3.1/33.3/44.0 34.8	0.0/0.0/4.4 4.4

TABLE 2--Continued

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		
	Yes	No	Frequently	Occasionally	
				Not At All	
f) Knowledge of Patho- physiology	90.6/91.7/ 82.6	3.1/0.0/ 17.4	53.1/16.7/ 16.0 8.7	34.4/50.0/ 64.0 69.6	3.1/16.7/ 8.0 17.4
g) Differential Diagnosis	96.9/91.7/ 91.3	0.0/0.0/ 8.0 8.7	78.1/50.0/ 40.0 30.4	15.6/33.3/ 44.0 56.5	0.0/0.0/ 4.0 8.7
h) Planning of Further Investigations	96.9/91.7/ 88.0 91.3	0.0/0.0/ 4.0 8.7	87.5/62.5/ 60.0 60.9	6.2/20.8/ 28.0 30.4	0.0/0.0/ 0.0 4.4
i) Therapy	96.9/87.5/ 88.0 87.0	0.0/4.2/ 4.0 13.0	84.4/62.5/ 64.0 73.9	9.4/20.8/ 16.0 17.4	0.0/0.0/ 0.0 4.4
j) Continued Responsibility for Patient Management	84.4/79.2/ 68.0 87.0	9.4/12.5/ 20.0 8.7	62.5/33.3/ 20.0 39.1	21.9/50.0/ 48.0 39.1	6.2/0.0/ 12.0 13.0

TABLE 2--Continued

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		
	Yes	No	Frequently	Occasionally	Not At All
k) Ability to Talk to Parents of Patients	43.8/25.0/ 17.4	50.0/62.5/ 82.6	9.4/4.2/ 8.7	50.0/29.2/ 13.0	25.0/45.8/ 69.6

* Presentation of percentages is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Clerks (N=25)
(N=32) (N=24) 3rd Phase Clinical Clerks (N=23)

respondents as possible to assess on ward rounds. For each of these skills, respondents noted that attending physicians made the assessment frequently or occasionally.

There were several exceptions to this agreement among respondents regarding evaluation of trainee performance. First, attending physicians indicated that they could assess trainees' techniques of taking a patient history and of making a physician examination, and that they made these assessments frequently or occasionally. Trainees were evenly divided in their opinion as to whether or not these assessments could be made, and felt that they were done only occasionally or not at all. Those people who felt that attending physicians could not perform these tasks noted that they could best be done by the most senior person at the time of patient admission.

Second, both attending physicians and trainees felt that the attending physician was more able to confirm the data from the physical examination than from the patient history. Even so, attending physicians noted that they performed both tasks frequently or occasionally. The trainees felt that they were completed occasionally or not at all.

Finally, respondents felt that attending physicians could not assess very well the ability of trainees to talk to parents of patients, and that this evaluation was made only occasionally or not at all. The senior resident was judged to be the best person to assess this--by watching the ongoing trainee care of the patient.

In addition to the above skills, and again despite difficulties

encountered in evaluation, approximately two-thirds of the attending physicians and just over one-half of the trainees felt that attending physicians could assess each of the following trainee attitudes, emotional reactions and feelings (Tables 3 and 4): empathy with terminally ill patients; uneasiness about their own competence as medical professionals; frustrations about the uncooperative or hostile patient (or parent); uneasiness about the service/education conflict; difficulties in relationships with other health professionals; and frustration about the organization of the hospital and the health system. Furthermore, attending physicians indicated that these were assessed frequently or occasionally. However, trainees felt that they were assessed occasionally or not at all. Those who felt that these characteristics could not be evaluated by attending physicians suggested that it could be done more readily by senior residents in the course of daily ward work.

5) There was a general feeling among all respondents, particularly the residents, that attending physicians were very hesitant to challenge the trainees regarding the quality of their presentations, the thoroughness of their examinations or the accuracy of their diagnoses. This feeling was reported in individual interviews and the workshop, and was evident also in the analysis of the videotapes using the category observation system (see Appendix C). In the categories of Demand Work, Criticizing and Monitoring, attending physicians' activities consumed only 2.7%, 0% and 1.5% respectively, of the time. Virtually no constructive criticisms of trainee performance

TABLE 3*

OUR EVALUATION SYSTEM ASKS US TO ASSESS THE FOLLOWING ATTITUDES, EMOTIONAL REACTIONS, AND FEELINGS. CAN THIS BE DONE BY THE ATTENDING PHYSICIAN ON WARD ROUNDS? (FIGURES REPRESENT NUMBER OF RESPONDENTS)

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		
	Yes	No	Frequently	Occasionally	Not At All
a) Empathy With Terminally Ill Patients [+;+]	24/11/ ¹² / ₅	8/10/ ¹⁰ / ₁₈	10/2/ ¹ / ₁	15/10/ ¹⁰ / ₆	5/6/ ⁸ / ₁₃
b) Uneasiness About One's Own Competence as a Medical Professional [-;-]	23/14/ ¹⁴ / ₉	8/7/ ⁸ / ₁₂	10/3/ ² / ₀	11/10/ ¹⁰ / ₁₂	7/4/ ⁶ / ₉
c) Frustration About the Uncooperative or Hostile Patient (or Parent) [-;-]	29/18/ ¹⁷ / ₁₅	3/3/ ⁴ / ₆	9/3/ ³ / ₀	17/14/ ¹³ / ₁₃	3/2/ ¹ / ₆
d) Uneasiness About the Service/Education Conflict [-;+]	24/13/ ¹⁴ / ₁₀	6/8/ ⁷ / ₁₁	9/1/ ⁰ / ₀	12/11/ ¹¹ / ₉	6/6/ ⁶ / ₉

TABLE 3--Continued

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		
	Yes	No	Frequently	Occasionally	Not At All
e) Difficulties in Relationships With Other Health Professionals [-;+]	26/14/15	6/7/10/8	12/1/1	11/9/12/8	6/7/6
f) Frustration About the Organization of the Hospital and the Health System [-;+]	23/14/17/16	8/7/5/7	11/0/1/4	10/11/10/12	7/5/3/7

* Presentation of numbers is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Clerks (N=25)
(N=32) / 3rd Phase Clinical Clerks (N=23)

+ Denotes Significance at .05 Level of Confidence.

- Denotes No Significance.

TABLE 4*

OUR EVALUATION SYSTEM ASKS US TO ASSESS THE FOLLOWING ATTITUDES, EMOTIONAL REACTIONS, AND FEELINGS. CAN THIS BE DONE BY THE ATTENDING PHYSICIAN ON WARD ROUNDS?
(FIGURES REPRESENT NUMBER OF RESPONDENTS)

	Can Be Assessed On Ward Rounds		How Often Does the Attending Assess These On Ward Rounds?		
	Yes	No	Frequently	Occasionally	Not At All
a) Empathy With Terminally Ill Patients	75.0/45.8/ ^{48.0} / _{21.7}	25.0/41.7/ ^{40.0} / _{78.3}	31.2/8.3/ ^{4.0} / _{4.4}	46.9/41.7/ ^{40.0} / _{26.1}	15.6/25.0/ ^{32.0} / _{56.5}
b) Uneasiness About One's Own Competence as a Medical Professional	71.9/58.3/ ^{56.0} / _{39.1}	25.0/29.2/ ^{32.0} / _{52.2}	31.2/12.5/ ^{8.0} / _{0.0}	34.4/41.7/ ^{40.0} / _{52.2}	21.9/16.7/ ^{24.0} / _{39.1}
c) Frustration About the Uncooperative or Hostile Patient (or Parent)	90.6/75.0/ ^{68.0} / _{65.2}	9.4/12.5/ ^{16.0} / _{26.1}	28.1/12.5/ ^{12.0} / _{0.0}	53.1/58.3/ ^{52.0} / _{56.5}	9.4/8.3/ ^{4.0} / _{26.1}

TABLE 4--Continued

	Can Be Assessed On		How Often Does the Attending Assess These On		
	Ward Rounds		Ward Rounds?		
	Yes	No	Frequently	Occasionally	Not At All
d) Uneasiness About the Service/Education Conflict	75.0/54.1/43.5	18.8/33.3/28.0/47.8	28.1/4.2/0.0	37.5/45.8/39.1	18.8/25.0/24.0/39.1
e) Difficulties in Relationships With Other Health Professionals	81.2/58.3/65.2	18.8/29.2/34.8	37.5/4.2/4.4	34.4/37.5/52.2	18.8/29.2/32.0/26.1
f) Frustration About the Organization of the Hospital and the Health System	71.9/58.3/69.6	25.0/29.2/30.4	34.4/0.0/16.0/4.4	31.2/45.8/52.2	21.9/20.8/30.4

* Presentation of percentages is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Clerks (N=25)
 (N=32) (N=24) 3rd Phase Clinical Clerks (N=23)

were given.

6) Finally, although not a specific problem, but certainly, in the opinion of this researcher, a contradiction resulting from ambiguity in the role of the attending physician, was the fact that 28 (87.5%) of the 32 attending physicians, 15 (63.5%) of the 24 residents, 20 (80.0%) of the 25 fourth-phase clinical clerks and 12 (52.2%) of the 23 third-phase clinical clerks indicated that ward rounds were the most appropriate activity through which attending physicians could fulfill their service and teaching responsibilities on a general ward (Table 5). Thus, it seemed to this researcher that despite many criticisms, attending physicians had much to offer to trainees which for some reason was not getting across to them.

The Role of the Senior Resident

The role of the senior resident, although not the focal point of the study, was important in relation to the role of the attending physician. Theoretically, the senior resident and the attending physician were to be a team who, together, were responsible for the service and teaching on the ward. In practice, however, respondents reported in interviews and the workshop that there was nearly as much confusion about the role of the senior residents as about the attending physicians. There were no hospital guidelines outlining the nature and responsibilities of the role, and there was no training program to prepare someone to assume it. Senior residents reported that they learned their jobs by watching others, by talking to various

TABLE 5

DO YOU FEEL THAT WARD ROUNDS ARE THE MOST APPROPRIATE ACTIVITY THROUGH WHICH ATTENDING STAFF CAN FULFILL THEIR SERVICE AND TEACHING RESPONSIBILITIES ON A GENERAL WARD?

	Yes	No	No Answer
Attending Physicians [+] (N=32)	28/87.5%	3/9.4%	1/3.1%
Residents (N=24)	15/62.5%	4/16.7%	5/20.8%
4th Phase Clinical Clerks (N=25)	20/80.0%	3/12.0%	2/8.0%
3rd Year Clinical Clerks (N=23)	12/52.2%	11/47.8%	0.0.0%

+ Denotes Significance at .05 Level of Significance.

staff members and/or through direct experience, i.e., trial-and-error.

In individual interviews and in the workshop, attending physicians indicated that due to the lack of hospital guidelines for senior residents, their own role became even more ambiguous. There was little understanding among them as to who was responsible for the various tasks to be accomplished, how to develop a complementary working relationship between attending physicians and senior residents, what to stress in training, and who to turn to for help in the job at hand. Furthermore, the lack of definition of roles of these two key people on the ward tended to produce either a competition between the two for the position of ward manager and/or withdrawal by one or the other to a position of relative non-involvement. In most cases, respondents reported that there was no attempt on the part of the attending physician to spend time with the senior resident in the absence of the junior trainees, or to use the senior resident to help in planning and carrying out service and teaching responsibilities on the ward.

When asked about the role of the attending physician relative to that of the senior resident, attending physicians indicated that the roles should be complementary, with the main input from the attending physician being the knowledge and insight gained from his/her practice. In addition, they felt the need to supervise from a distance determined by the competence of the senior resident. Trainees, on the other hand, placed most emphasis on a consultative/teaching role for the attending physician.

As a group, respondents overwhelmingly indicated on the questionnaires and in the individual interviews that the role of the senior resident should be ward manager. This included being knowledgeable about all patients, acting as a liaison between hospital staff, being up-to-date on the latest research, and coordinating opportunities for teaching of trainees by attending staff. Generally, this role was assumed by senior residents in practice. However, attending physicians in the individual interviews noted that some senior residents were much better ward managers than others. They felt that effective senior residents often were great aids to attending physicians; those who were ineffective had to be monitored constantly, and sometimes overruled in decisions--a delicate situation, especially when the relationship between the two was not clearly defined.

In short, the lack of a clearcut definition of roles and the existence of the two hierarchical systems outlined earlier, reportedly blurred the relationship between the attending physician and senior resident such that the attending physician generally was not viewed as a supervisor who was truly responsible for the ward, nor at times, even part of the ward team. In the opinion of this investigator, this may explain, in part, the reason why respondents indicated that in order of importance in learning, interactions between trainees and senior residents were most important, followed by those between trainees and attending physicians, and finally, by those among trainees.

The Junior Trainees

The junior trainees on the ward were a particular problem for the attending physicians. Although there were three distinct types of junior trainees, there was little attempt in the training program to differentiate among them with respect to role or responsibility. Pediatric residents, although having a continuing commitment to the Department of Pediatrics, were rotated in exactly the same manner as were rotating interns and clinical clerks whose commitment to the hospital was about eight weeks. Within this context, the individual interviews and the workshop highlighted the fact that the attending physician generally did not attempt to meet separately with these three groups, although most attending physicians reported that there should be such separate teaching sessions, especially for clinical clerks.

An additional problem was the widely varying level (from clinical clerks to fourth-year residents) and expertise of trainees. If discussions on ward rounds were aimed at clinical clerks, residents became bored; if aimed at residents, clinical clerks did not always understand. Furthermore, attending physicians indicated in the individual interviews that the quality of the trainees was much better toward the end of their training experience than toward the beginning. Thus, attending physicians going on service at the start of training in July, often seemed to have more difficulties than those going on in April.

Related to the above problem, using the category observation

system (Appendix C), only 1.5% of the time of attending physicians and 0.0% of that of the senior residents was spent checking on whether or not trainees were following the discussion (Category 14--Monitoring). This was consistent with the opinion that it was difficult to separate teaching from service; that given the short amount of time on ward rounds, it was most important to focus on patient care. Teaching which occurred during those rounds was seldom planned--it was most often incidental, and determined by the alertness of the trainees.

The Logistics of the Wards

The logistics of the wards often hampered both efficient service and effective teaching. This was attributed by respondents to two basic reasons. First, the wards were quite small, such that most ward rounds were punctuated by a series of interruptions. Towel carts, bottle carts, cleaners, repair men, parents and others were at least as numerous on the videotapes as were the actual participants on ward rounds. The frequency of these interruptions was seen by respondents as interfering with learning (Table 6).

On the videotapes, in addition to the interruptions, participants themselves were constantly joining and leaving the group. There was also a noticeable inattentiveness on the part of many of the participants, and comments by trainees indicated that standing for one and one-half hours was not especially conducive to learning.

The second problem with logistics was the number of trainees on the ward. Respondents varied between eight and ten in their estimates

TABLE 6*

PLEASE INDICATE WHETHER YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENT: EXTRANEUS MATTERS CAUSING FREQUENT INTERRUPTIONS DURING WARD ROUNDS INTERFERE WITH LEARNING [+]

	STRONGLY AGREE		STRONGLY DISAGREE		
	1	2	3	4	5
Number	21/16/10 5	7/3/10 8	3/2/2 7	1/1/3 1	0/0/0 1
Percent	65.6/66.7/40.0 21.7	21.9/12.5/40.0 34.8	9.4/8.3/30.4 8.0	3.1/4.2/12.0 4.4	0.0/0.0/0.0 4.4

* Presentation of numbers and percentages is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Clerks (N=25)
(N=32) (N=24) 3rd Phase Clinical Clerks (N=23)

+ Denotes Significance at .05 Level of Confidence.

of this actual number, and the videotapes documented the difficulties with such a large group. However, despite apparent problems and despite what many respondents indicated was "a lack of patient material," nearly two-thirds of each group, with the exception of fourth-phase clinical clerks, felt that these were suitable numbers (Table 7).

This inconsistency in the data, in the view of this investigator, is attributable to the fact that the more senior trainees were given the greater responsibility for patients. As such, they would have more to do regardless of the number of junior trainees on the ward, and could use the junior trainees as their assistants.

Third-phase clinical clerks, being at the start of their training year, and thus receiving their first exposure to clinical medicine, more than likely did not expect to be given responsibility for patient care, and so found the number of trainees on the ward to be suitable. Fourth-phase clinical clerks, on the other hand, were in the final rotation of their clerkship. Given this situation, they more than likely expected to receive a greater responsibility for patient care. Not being given that responsibility, they saw the number of trainees on the ward as being too many. They, and other respondents who answered no to the question of whether or not eight to ten trainees on the ward was a suitable number, indicated that a more appropriate arrangement would include only five to seven trainees.

TABLE 7

DO YOU THINK THE NUMBER OF PEOPLE ASSIGNED TO A WARD IS SUITABLE?

	Yes	No	No Answer
Attending Physicians [+] (N=32)	20/62.5%	9/28.1%	3/9.4%
Residents (N=24)	16/66.7%	6/25.0%	2/8.3%
4th Phase Clinical Clerks (N=25)	7/25.0%	18/72.0%	0/0.0%
3rd Phase Clinical Clerks (N=23)	16/69.6%	7/30.4%	0/0.0%

+ Denotes Significance at .05 Level of Confidence.

The Organization of Time on the Wards

The lack of attending physicians' organization of time on the wards was the most consistent and glaring problem throughout the data. The ambiguity of the role of attending physicians, problems encountered with junior trainees and logistical difficulties on the wards all were contributing factors to and in turn, were affected by, poor organization. The extent to which this problem went is evidenced by the widely varying respondent estimates of time spent on the wards by attending physicians. Attending physicians felt that they spent an average of 10.5 hours per week performing ward duties, which included ward rounds of 2.2 hours per day, four days each week. Trainees felt that these figures were lower. Residents estimated 6.5 hours per week on ward duties, including ward rounds of 2.0 hours per day, three days each week. Fourth-phase clinical clerks felt it was 6.8 hours per week, including ward rounds of 1.8 hours for four days. Finally, third-phase clinical clerks indicated 8.2 hours per week with ward rounds of 2.1 hours for four days.

Twenty-two (68.8%) of the attending physicians viewed this time spent on ward rounds as sufficient, while only 13 residents (56.5%), 14 fourth-phase clinical clerks (56.0%) and 11 third-phase clinical clerks (47.8%) had formed a similar opinion (Table 8). Finally, attending physicians felt that during ward rounds, teaching duties consumed 45.9% of their time; residents felt that this figure was 36.5%; fourth-phase clinical clerks, 23.5%; and third-phase clinical clerks, 24.6% (Table 9).

TABLE 8
 OPINIONS AS TO THE LENGTH OF TIME PER DAY ATTENDING PHYSICIANS
 SPENT ON WARD ROUNDS

	Too Long	Sufficient Time	Too Short	No Answer
Attending Physicians [-] (N=32)	5/15.6%	22/68.8%	2/6.2%	3/9.4%
Residents (N=24)	6/26.1%	13/56.5%	1/4.4%	4/16.7%
4th Phase Clinical Clerks (N=25)	6/24.0%	14/56.0%	2/8.0%	3/12.0%
3rd Phase Clinical Clerks (N=23)	11/47.8%	11/47.8%	0/0.0%	1/4.4%

- Denotes No Significance.

TABLE 9
PERCENTAGE ESTIMATE OF ATTENDING PHYSICIANS' TIME SPENT ON
VARIOUS WARD DUTIES

	Patient Management	Teaching	Other
Attending Physicians	51.1%	45.9%	3.0%
Residents	53.5%	36.5%	10.0%
4th Phase Clinical Clerks	62.2%	23.5%	9.6%
3rd Phase Clinical Clerks	65.0%	24.6%	8.3%

There was additional evidence highlighting the problem of attending physicians' organization of time on the wards. The primary purpose of ward rounds was judged by both attending physicians and trainees to be patient management. In performing this task, two-thirds of all respondents indicated that "all patients were seen" or that "all patients were reviewed," with special emphasis placed on new admissions and/or problem patients. However, review of the videotapes revealed that the greatest percentage of time spent on ward rounds occurred in the corridor. Of a total of 247 minutes of videotape of eight attending physicians on walk rounds (the other three attending physicians conducted ward rounds in a ward conference room-- a much quieter setting), only 39 minutes, or 15.8% of the time, was spent at bedside. Of this bedside teaching, very little was employed in examining a patient. Most often, bedside discussions consisted only of a brief chat with the patient about how he/she was feeling, or simply of looking at the patient so that the attending physician could match a name and a face.

Sit-down rounds (ward rounds conducted in a conference room), although having fewer interruptions, also were not utilized to examine patients. Of a total of 94 minutes of videotape, no time was spent with patients. Overall, for the eleven attending physicians, 341 minutes (5 hours, 41 minutes) of videotape were filmed, with only 39 minutes (11.4% of the time) being spent with patients.

Of the three senior residents videotaped, two conducted walk rounds and one, sit-down rounds. Thirty-five of 64 minutes (54.7%)

of walk rounds and 0 of 32 minutes of sit-down rounds, were spent with patients. Thus, of a total of 96 minutes of videotape, 35 (36.5%) occurred at bedside. The 35 minutes here were used mostly for a thorough examination of patients, not, as with the attending physicians, simply to identify them or to ask several questions about how they felt.

The procedures used on ward rounds were similar for both senior residents and attending physicians. In general, one patient after another was presented by each trainee responsible for his/her care. The presentations usually were used to up-date the attending physician or senior resident, rather than to discuss a disease entity, differential diagnosis or other such topic. The length of these presentations often varied depending on how active the attending physician was--time spent talking by attending physicians during ward rounds ranged from 28.8% to 68.4%.

Perhaps more important than the amount of time spent talking was the type of interaction which occurred. From the category observation system analysis, it was revealed that, for both attending physicians and senior residents, interaction consisted almost totally of Data Lecturing (Category 1), Data Illustration (Category 3), Structuring (Category 6) or Asking Questions (Category 8).

Trainees spoke between 51.4% and 89.6% of the time (the total instructor and trainee time is greater than 100% because both often spoke during the same five-second interval). The overwhelming majority of this time was spent presenting cases (Category 3). The remainder

was taken up about evenly by Offering Data (Category 1) and by Questions (Category 8). These results are consistent with data indicating that there was virtually no challenge of trainee performance by attending physicians.

On that point of challenging trainees, other problems arose in relation to attending physicians' organization of time. During individual interviews and in the workshop for attending physicians and senior residents, an emphasis was placed on the need to keep accurate, succinct records on each patient. These records would include the patient's history, the results of the physical examination, the differential diagnosis, treatment information, the discharge summary and follow-up care, and were important not only for service, but also for making presentations and for keeping other trainees abreast of circumstances. However, respondents reported that trainees were not challenged in their performance of this task.

Respondents reported in interviews that there virtually were no chart (records) reviews at any time. However, attending physicians reported that during ward rounds they usually checked on the accuracy of a trainee's data base (i.e., patient history, physical examination, etc.), and that they did this by direct observation (of performance), report (from trainees), inference and questioning (of trainees). Trainees disagreed with this opinion. In interviews, they indicated that checks on trainees' patient records should be made, but seemed to be unsure as to the proper timing of such checks (Tables 10 and 11).

Finally, in regard to the organization of time, attending

TABLE 10*

THE EXTENT OF RESPONDENTS' AGREEMENT ON SEVERAL STATEMENTS REGARDING THE
ATTENDING PHYSICIANS' EVALUATION OF A TRAINEE'S DATA BASE
(FIGURES REPRESENT NUMBER OF RESPONDENTS)

	STRONGLY AGREE			STRONGLY DISAGREE	
	1	2	3	4	5
18. Attending Staff Usually Check on the Accuracy of a Trainee's Data Base During Ward Rounds [+]	4/1/1	17/3/4	5/6/7	6/8/7	0/3/4/5
19. Attending Staff Should Check on the Accuracy of a Trainee's Data Base During Ward Rounds [+]	10/7/2	12/5/13/8	7/2/6	2/3/5	0/2/1/2

TABLE 10--Continued

	STUDY ACRIT	2	3	4	STUDY OF STUDY
26. Attending Staff					
Special Check on					
Accuracy of					
Attending's Data					
Case at Same Time					
Other than (Harl)					
Rounds []	2/6/4	6/2/2	12/5/7	3/7/4	3/7/4

A. T. distribution of numbers is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Rounds (6/2/4)
 (N=24) / 3rd Phase Clinical Rounds (3-10)

Significance at .05 Level of Confidence.
 - Indicates No Significance.

TABLE 11*

THE EXTENT OF RESPONDENTS' AGREEMENT ON SEVERAL STATEMENTS REGARDING THE ATTENDING PHYSICIANS' EVALUATION OF A TRAINEE'S DATA BASE (FIGURES REPRESENT PERCENTAGE OF RESPONDENTS)

	STRONGLY AGREE				STRONGLY DISAGREE				
	1	2	3	4	1	2	3	4	5
18. Attending Staff Usually Check on the Accuracy of a Trainee's Data Base During Ward Rounds	12.5/4.2/4.4	53.1/12.5/24.0/17.4	15.6/25.0/28.0/26.1	18.8/33.3/30.4	0.0/12.5/21.7				
19. Attending Staff Should Check on the Accuracy of a Trainee's Data Base During Ward Rounds	31.2/29.2/8.0	37.5/20.8/52.0/34.8	21.9/8.3/16.0/26.1	6.2/12.5/20.0/21.7	0.0/8.3/8.7				

TABLE 11--Continued

	STRONGLY AGREE		STRONGLY DISAGREE		
	1	2	3	4	5
20. Attending Staff Should Check on the Accuracy of a Trainee's Data Base at Some Time	9.4/25.0/13.0	18.8/8.3/8.0	37.5/20.8/28.0	15.6/20.8/26.1	12.5/8.3/0.0
Other Than Ward Rounds		30.4			

* Presentation of percentages is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Clerks (N=25)
 (N=32) (N=24) 3rd Phase Clinical Clerks (N=23)

physicians did virtually no planning for their service or teaching duties during ward rounds. Attending physicians reported being very pressed for time while on rotation, because of the continuing demands of their outside practices. Nearly all of them indicated that a three-month rotation was too long a time. Planning thus became difficult.

Efforts to plan were further hampered, they felt, by time constraints on the wards. In general, the nursing staff insisted that ward rounds be completed by 10:30 A.M. each day so that the nursing day could be planned. In addition, trainees needed time before ward rounds in order to finish patient work-ups, to check on lab results, etc., and were not ready before 9:00 or 9:30 A.M. This meant that senior residents were generally unable to conduct work rounds before the attending physician came on to the ward, and so had to combine these with the attending physician's rounds. In the view of respondents, this arrangement allowed little time for teaching and, in fact, teaching during rounds sometimes became a source of irritation to the senior resident who saw it as an interruption of his/her work day, and not as an educational opportunity.

These ward constraints, taken together with an ambiguity of roles, problems centered around junior trainees and logistical problems of the wards, were such that little time during ward rounds was able to be given to patient and parent concerns (Tables 12 and 13), chart reviews, discharge summaries or follow-up patient care. Instead, attending physicians felt that they had time for little more than an up-date on each patient. Some tried to schedule sit-down sessions

TABLE 12*

PATIENTS AND THEIR PARENTS ARE CONCERNED ABOUT THE NATURE AND PURPOSE OF WARD ROUNDS. INDICATE WHETHER OR NOT THESE CONCERNS ARE DISCUSSED (BY THE STAFF, WITH PATIENTS, ETC.) DURING WARD ROUNDS (FIGURES REPRESENT NUMBER OF RESPONDENTS)

	Frequently	Occasionally	Not At All
Uneasiness about the large number of people participating in ward rounds [+]	3/1/0 ¹	20/18/9 ³	9/3/1 ²⁰ ₁₁
Reservations about the competency level of the people involved [-]	1/0/0 ¹	16/6/5 ⁵	13/16/18 ¹⁸
Anxieties arising from discussions about the patient:			
a) which are overheard but not necessarily understood [-]	9/5/2 ⁴	18/12/14 ¹⁰	3/5/6 ¹⁰ ₆
b) which are outside earshot but not sight [-]	5/3/1 ³	14/14/10 ⁷	9/5/1 ¹ ₁₀

TABLE 12--Continued

	Frequently	Occasionally	Not At All
c) which involve criticism of the care of the patient [-]	5/3/ ₁ ²	17/10/ ₆ ⁵	7/9/ ₁₃ ¹
Anxieties and anger about unanswered questions [+]	3/5/ ₁ ¹	22/13/ ₁₀ ¹⁵	3/3/ ₁₀ ⁶

* Presentation of numbers is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Clerks (N=25)
(N=32) / 3rd Phase Clinical Clerks (N=23)

+ Denotes Significance at .05 Level of Confidence.

- Denotes No Significance.

TABLE 13*

PATIENTS AND THEIR PARENTS ARE CONCERNED ABOUT THE NATURE AND PURPOSE OF WARD ROUNDS. INDICATE WHETHER OR NOT THESE CONCERNS ARE DISCUSSED (BY THE STAFF, WITH PATIENTS, ETC.) DURING WARD ROUNDS
(FIGURES REPRESENT PERCENTAGE OF RESPONDENTS)

	Frequently	Occasionally	Not At All
Uneasiness about the large number of people participating in ward rounds	9.4/4.2/4.0	62.5/75.0/12.0/39.1	28.1/12.5/80.0/60.9
Reservations about the competency level of the people involved	3.1/0.0/4.0	50.0/25.0/20.0/21.7	40.6/66.7/78.3/72.0
Anxieties arising from discussions about the patient:			
a) which are overheard but not necessarily understood	28.1/20.8/16.0/8.7	56.2/50.0/40.0/60.9	9.4/20.8/26.1/40.0
b) which are outside earshot but not sight	15.6/12.5/12.0/4.4	43.8.58.3/28.0/43.5	28.1/20.8/56.0/43.5

TABLE 13--Continued

	Frequently	Occasionally	Not At All
c) which involve criticism of the care of the patient	15.6/12.5/4.4	53.1/41.7/20.0	21.9/37.5/50.5
Anxieties and anger about unanswered questions	9.4/25.0/4.4	68.7/54.1/43.5	9.4/12.5/43.5

* Presentation of percentages is in the following format:

Attending Physicians / Residents / 4th Phase Clinical Clerks (N=25)
 (N=32) / (N=24) / 3rd Phase Clinical Clerks (N=23)

once weekly to discuss in detail a particular patient or disease entity, but this, too, was difficult to plan, even though all respondents agreed on the questionnaires that such discussions were most important in learning.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

This study was an attempt to determine the role of the attending physician in the clinical training of medical students and resident physicians at the Montreal Children's Hospital (MCH) in Montreal, Quebec, Canada, a hospital which has enjoyed and continues to enjoy an excellent reputation for research, training and patient care. Data were collected by employing videotapes, interviews, questionnaires and a workshop for attending physicians and residents.

Analysis of the videotapes was completed according to skills of teaching examined in the teaching improvement process of the Instructional Development Service Project of McGill University. The process was an adaptation of one originally designed and developed at the Clinic to Improve University Teaching of the University of Massachusetts at Amherst. Further analysis of the videotapes was made using a category observation system designed by Dr. Lawrence Shulman of the University of British Columbia School of Social Work.

Individual interviews, held with all those who were videotaped as well as with the two chief residents and the physician-in-chief of the MCH, were summarized from notes taken as they proceeded. The workshop was summarized in the same fashion as the interviews. The questionnaires, sent to all attending physicians, residents, interns and

to two groups of clinical clerks at the MCH, were analyzed using a chi square test of significance.

The interruptions and inconvenience in daily work caused by the study were well received by the staff and trainees of the hospital. They were most sensitive to the effort and willingly took part in all of its phases. Indeed, without such cooperation and interest, the study could not have been completed.

In general, the results of the study were encouraging. While those results led to the specific conclusions listed below, there were a number of isolated incidents of excellent clinical teaching, where trainees reported being sufficiently challenged and able to learn a great deal, and attending physicians used their time on ward rounds efficiently and effectively. Moreover, without exception, there was much interest on the part of attending physicians not only to examine their teaching, but also to make improvements indicated by conclusions drawn from the data.

Conclusions

From the data collected and results analyzed, the following conclusions were drawn.

1. The role of the attending physician at the MCH, in terms of both teaching of trainees and service to patients, had not been clearly defined by the administration, the medical school, and/or the individual attending physicians themselves. What was attempted and

actually accomplished on ward rounds was determined largely by the personal and professional judgement of the attending physician, and seemed to be affected by the attending physicians' legal responsibility for patient care, and by the situation with which the attending physician was confronted each time he or she appeared on the ward. There was no clearly articulated process through which to proceed with tasks at hand.

2. The roles of the senior residents and the junior trainees were as ambiguous as that of the attending physicians. At times, this seemed to be the cause of unclear understandings as to who was in command or to whom one should turn when in need of advice.

3. The teaching which did occur was haphazard and generally mediocre. This result was consistent for each of the data collection techniques which were utilized. In part it may have been due to the fact that virtually no preparation was made by attending physicians before going on to the wards; they simply appeared and responded to what they encountered.

4. Attending physicians frequently did not systematically learn the strengths and weaknesses of each trainee, and when it came time to make an evaluation of trainees during a particular rotation, attending physicians were unable to do so with any confidence. Thus, many trainees went through the training program without receiving an adequate assessment of their skills. It was extremely rare that a trainee was asked either to repeat a portion of the training program or to terminate his or her studies. Fortunately, most students were

highly qualified before entering the medical school in the first place, but such a lack of evaluation has evident implications to the medical profession and society, given potential ramifications of each mistake.

5. There was a lack of organization of time and work on ward rounds. This was exacerbated by the amount of extraneous activity occurring on the wards during ward rounds. In the apparent effort to be all things to all people at all times, the attending physicians simply constructed a situation where training became ineffective and service to patients inefficient. Inefficiency in both teaching and service resulted in a waste of the valuable resource of physician time that otherwise could have been spent seeing additional patients or performing alternative tasks.

6. Teaching was often simply an exchange of medical information, or "book knowledge." Occasionally, residents and medical students were more up-to-date on advances in medicine than were the attending physicians, thereby frustrating their attempts to teach in this fashion. Often the doctor-patient relationship and other such skills that are gained only through the experience of actual medical practice were not dealt with--skills at which most, if not all, of the attending physicians excelled. Indeed, this lack of stress placed on human relations skills for trainees undoubtedly adversely affected trainees' views toward total patient care.

7. The videotape protocols clearly showed that attending physicians rarely did more than make casual examinations of patients during

ward rounds. This was contrary to data from the questionnaires, where attending physicians indicated that they "saw all of the patients" on each ward round.

From these data, several questions arose related to ward rounds. Were patients adequately being cared for? Were decisions made according to the best medical knowledge? Were all tests performed on patients necessary? Could patient length-of-stay in the hospital be decreased by more stringent supervision, and hence more efficient care?

8. Trainees were rarely if ever challenged by attending physicians to improve upon the various skills necessary for effective and efficient patient care. This was true for history-taking, physical examinations, differential diagnosis, treatments and follow-up care. When cases were presented by trainees during ward rounds, errors of omission, inaccuracy, length or detail were not corrected, nor in most instances, even noted by attending physicians.

9. Little of the teaching on ward rounds was explicit, well organized or followed-up on. This might lead one to conclude that trainees were not learning very much from their work with attending physicians. This was definitely not the case. Clinical training took place in several settings, where a number of instances arose in which attending physicians taught trainees a great deal. Often, these sessions were incidental, though, occurring in a brief chat in the hallway, over the telephone, during coffee breaks or in informal discussions at workshops or seminars.

10. Attending physicians were unanimous in their interest in teaching and in becoming better teachers. In several instances, changes on ward rounds were made immediately after the individual interviews. Thus, the mediocre quality of teaching on ward rounds was less from a lack of interest, and more from a lack of training in teaching techniques. Moreover, ward rounds were seen as valuable opportunities for attending physicians to learn from trainees and other doctors about new information and techniques in medicine. This was a reward which could not be dismissed lightly.

Recommendations

Recommendations made as a result of the study are listed below. Those marked by an asterisk are ones which were also suggested by residents and attending physicians during the individual interviews and the workshop.

It is recommended that:

*1. Specific definitions of roles for attending physicians and senior residents be outlined. Distinctions clearly should be made between responsibilities of service to patients and training of medical students and resident physicians. These roles must be flexible enough to allow for individual differences among the attending physicians, the trainees and the various wards.

2. Specific emphasis be placed on identifying those skills of the attending physician which are of most practical value to the

trainees (e.g., differential diagnosis, professional manners around patients, human relations skills, etc.), and creating the setting and climate in which those skills can most effectively be conveyed to them.

3. Educational objectives be defined for the clinical training aspect of the medical education program for students and residents.

*4. Standards of trainee performance be established (e.g., succinct case presentations, sound reasoning to support professional activities and actions, etc.), and attending physicians be assisted in the development of appropriate assessment procedures for the same.

5. Recommendations 1 through 4 be addressed by convening a representative group of hospital and medical school administrators, attending physicians, residents and clinical clerks. To the extent that they are affected by the decisions of such a group, nurses should also be represented.

6. Specific emphasis be placed on spending a much greater amount of time examining patients during ward rounds, in order to capitalize on the unique contribution which can be made then by attending physicians.

*7. A teacher training program for attending physicians be developed in order to acquaint them with the guidelines for ward rounds set down by the group suggested in recommendation 5, and in order to give them the necessary background for the carrying out of their tasks. The training program would include elements such as

small group instruction techniques, evaluation of learning, the use of audio-visual materials and other instructional media, etc.

8. At the start of each rotation, the attending physician and senior resident meet to discuss individual approaches to ward management, and that an agreement be reached on procedures to be followed. General plans for teaching to be done should also be made at the time.

9. That in order for his/her legal responsibilities for patient care to be clearly differentiated from teaching responsibilities of trainees, the attending physician meet for five to ten minutes with the senior resident before each ward round in order to receive an up-date on the progress of each patient.

10. Attending physicians take the time to prepare adequately for teaching which is done during ward rounds. This is suggested while fully recognizing both that attending physicians have little time for such preparation, and that such preparations must be flexible enough to allow for alterations to be made as a result of unforeseen situations arising which could prevent the plans from being carried out. However, data from this study suggest that such situations do not occur as often as many would suggest, and that planning could be completed in a five- to ten-minute discussion with the senior resident immediately before convening each ward round.

*11. A teaching improvement process, using specific skills and behaviors of instruction, be developed in order for attending physicians to work with a consultant to identify specific teaching strengths

and weaknesses, to develop improvement strategies directed at the weaknesses, and to check on progress made over time. The model suggested for this recommendation is the process employed by the Instructional Development Service Project, with the replacement of the standard questionnaire (Appendix F) and list of teaching skills and behaviors (Appendix A) by versions specifically designed for ward rounds (Appendix G).

12. A number of different approaches to ward rounds be systematically developed and tested. These might include any or all of the following:

- *a. The employment of full-time attending physicians who would serve six- to twelve-month rotations;
- *b. The convening of ward rounds in a conference room, examining later, or bringing into the room, the patients who are of particular concern to the group;
- *c. The scheduling, at times, of separate ward rounds for clinical clerks, which would not be of particular interest to more advanced students; e.g., techniques of history-taking and physical examinations, hospital guidelines and procedures, etc.;

- *d. The inclusion of specific teaching sessions concerning a particular disease entity or skill development;
- *e. The use of paraprofessionals, nurses and various peers to conduct ward rounds and training sessions;
- f. Varying the amounts of time spent in the hospital by attending physicians, where some would conduct ward rounds once per week, others five or six times. On days when the attending physician did not come to the hospital, legal responsibility for patient care could be handled by telephoning the senior resident to receive a ten-minute up-date on the condition of patients; and
- g. The complete removal from the wards of attending physicians.

13. Using the master teaching model, to identify several master attending physicians and to develop special assignments for them, for example, as teaching advisors to wards, as leaders of workshops on clinical teaching (before new attending physicians go on rotation), as model teachers for others to view while on ward rounds, etc.

14. Given the lack of substantial research on clinical teaching in particular and clinical training in general, there be undertaken a major research project in the two areas. The primary goal of the project would be to study the clinical component of medical training programs across North America, in order to make them as effective and efficient as possible. The work could be supported by a major foundation and by professional medical societies.

Implications For Future Research

In conducting this study, a number of issues and questions arose which had a bearing on clinical training, but were not directly related to the central focus of this research. They deserve mention in terms of suggested directions for future studies.

The first major issue concerned the costs involved in the use of attending physicians. The most significant contribution they made was in conducting ward rounds for two hours on each weekday morning. Was this the most economical use of their time? Might their time be better spent in a task such as leading training sessions unaffiliated to ward rounds, but focussed on some aspect of patient care? Was the contribution they made during ward rounds as valuable as that which they could have made seeing patients in their offices? What is the actual cost per trainee of having an attending physician on ward rounds? Does the contribution of the attending physician overlap and make redundant the work of the senior resident? These are but a few

questions, the answers to which would begin to provide data in decision making regarding the efficiency of training programs.

A second area for exploration is the viability of the use of hospitals for clinical training. One of the most rapidly growing fields of medicine is family practice, where care to patients encompasses the entire spectrum of health needs within a community. It became increasingly clear during the study that trainees were receiving little to no exposure to such community needs, partly due to the specialized nature of diseases being treated in the hospital setting. Given the situation, is it practical to continue to conduct clinical training programs in hospitals? Might it be wiser to place aspiring doctors in community health centers under close supervision of physicians located there? (This might also contribute to a more efficient use of supervisors; i.e., attending physicians.) Might such placement also better prepare trainees in skills of management which are necessary in setting up a practice or in providing for an efficient family practice unit? Finally, might such community-based clinical training programs interest more trainees in later working in more remote areas, where few to no health care facilities exist?

A third area of concern is the development of values. It was evident throughout the study that values are being taught explicitly to trainees in many different situations. Attending physicians', nurses' and other trainees' approach to patient care, especially affective needs, decisions about whether or not to allow a patient to die rather than to prolong his or her life with expensive machines,

cost consciousness, or a lack thereof, and normal hospital routines, etc., all must have had an impact on what trainees took away from the clinical setting. How much of an impact did they have, though? Could the impact be controlled, or at least made more explicit? In short, what values were being taught and what values should be taught in the clinical setting?

This study has suggested a number of issues concerning the clinical aspects of medical training, and has provided data to question present patterns of utilization of attending physicians during ward rounds. Research into these areas will hopefully lead to a reconceptualization of the clinical component of medical education.

Epilogue

In support of attending physicians' interest in teaching and in becoming better teachers, mentioned at the outset of this chapter and again in the tenth conclusion, it should be noted that much has occurred since the completion of this study in March, 1976. In orientation workshops before the start of each rotation (now every two months), a capsulization of results is presented to attending physicians and plans made for assistance to be given to them following the model of the Instructional Development Service Project. As well, changes in ward rounds have occurred; for example, when appropriate, they are conducted in the quiet of a conference room rather than in the hallway and they are utilized for teaching more effectively by the

attending physicians. Finally, a follow-up study is being conducted to test the extent of assistance necessary to be given to attending physicians as they carry out their teaching responsibilities on the wards, and a grant proposal has been submitted to respond to a number of the recommendations suggested here.

In closing, it should be said that the problems of developing adequate training programs are not new. Indeed, that this is true is evident in the following passage from the April 12, 1912 edition of Science:

Efficient teaching requires three essential conditions: (1) Complete mastery of the subject-matter on the part of the teacher; (2) A clear notion of the aim of teaching; and (3) Well-chosen methods of accomplishing the aim. The first . . . is everywhere clearly recognized. . . . The second and third conditions are those oftenest overlooked.¹

This study has been another of many efforts to move in the direction of answering questions associated with the second and third conditions. Despite the results of such studies clearly pointing to the need for change, little to date has been accomplished in actual practice. Physicians at the Montreal Children's Hospital are now attempting to reverse this trend.

¹C. M. Jackson, "On the Improvement of Medical Teaching," Science, N.S., Vol. XXXV, No. 902, pp. 566-571, April 12, 1912.

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B I B L I O G R A P H Y

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A P P E N D I X A

TEACHING SKILLS AND BEHAVIORS: DEFINITIONS

INSTRUCTIONAL DEVELOPMENT SERVICE PROJECT

ROOM 102-G MACDONALD CHEMISTRY BUILDING

Teaching Skills and Behaviors:
Definitions and Questionnaire Items

- I. ESTABLISHING A LEARNING SET: The instructor's ability to create in students a cognitive and affective predisposition to engage in a given learning activity (1-4).
- II. LOGICAL ORGANIZATION: The instructor's skill in arranging and presenting course content and learning activities so that students understand the relationships among the various topics, ideas, issues, activities, etc., covered in the course (5-7).
- III. PACING: The instructor's skill in introducing new topics or activities at an appropriate rate and in spending enough, but not too much, time developing those topics or activities (8).
- IV. ELABORATION: The instructor's skill in clarifying or developing an idea or topic (9).
- V. EXPRESSION: The instructor's skills in using verbal (voice tone, inflection, pitch, emphasis) on nonverbal (facial expressions, gestures, body movements) techniques to increase the power and meaning of his/her communication (10).
- VI. ASKING QUESTIONS: The instructor's skill in using various questioning techniques at appropriate times and for a variety of instructional purposes (11, 12).
- VII. RESPONDING TO QUESTIONS: The instructor's ability to answer questions clearly and concisely and with an appropriate emotional tone (13).
- VIII. STUDENT PARTICIPATION: The instructor's skills in facilitating student participation in class discussions and in leading those discussions in fruitful directions (14-16).

- IX. CLOSURE: The instructor's abilities to integrate the major points of a lesson or unit of instruction, to establish a cognitive link between the familiar and the new, and to provide students with a feeling of accomplishment (17, 18).
- X. EVALUATION: The instructor's skills in specifying the criteria for evaluation, in designing valid and reliable evaluation procedures, and in providing adequate feedback to students about their progress (19-21).
- XI. LEVEL OF CHALLENGE: The instructor's skills in selecting course objectives, content, and activities which challenge students' conceptual abilities but which are not too difficult for students to master (22, 23).
- XII. METHODS AND MATERIALS: The instructor's ability to use various teaching methods effectively and to provide variation in cognitive behaviors, classroom activities, and instructional materials (24, 25).
- XIII. CREATIVITY: The instructor's ability to use creative and imaginative teaching strategies (26).
- XIV. MANAGEMENT: The instructor's skill in performing the organizational and administrative tasks in providing learning experiences for students (27).
- XV. FLEXIBILITY/INDIVIDUALIZATION: The instructor's ability to deal with differing interests and abilities among students in his/her class and to respond constructively to student suggestions, criticisms, comments about his/her teaching strategies (28-30).
- XVI. INTERPERSONAL RELATIONS: The instructor's ability to relate to people in ways which promote mutual respect and rapport (31).
- XVII. LEARNING ENVIRONMENT: The instructor's ability to create and maintain an atmosphere conducive to student involvement (overt and/or covert) and learning (32).
- XVIII. ENTHUSIASM/INSPIRATION: The instructor's abilities to conduct and direct learning activities in a dynamic manner and to stimulate interest and excitement in content and activities (33).

XIX. PERSPECTIVE: The instructor's ability to establish a frame of reference for concepts, issues, ideas, etc., and to expand that frame of reference to include an increasingly wider variety of viewpoints, implications, and relationships (34-36).

XX. VALUE CONTENT: The instructor's abilities: (a) to identify explicitly his/her own values and to clarify the implications of those values in the selection and interpretation of subject matter; (b) to explore other values and their implications as they relate to his/her subject matter; and (c) to help students clarify their values and recognize the implications of those values for their personal and professional conduct (37-38).

A P P E N D I X B

THE INSTRUCTIONAL DEVELOPMENT SERVICE PROJECT

THE INSTRUCTIONAL DEVELOPMENT
SERVICE PROJECT

MCGILL UNIVERSITY
MONTREAL, QUEBEC

SEPTEMBER 1, 1976

The Instructional Development Service Project (IDSP) is a program funded by the McGill Development Fund. At present, the purposes of the Project are: (1) to implement and adapt to the needs of the McGill community, a teaching improvement process developed and tested by the Clinic to Improve University Teaching at the School of Education of the University of Massachusetts at Amherst; (2) to implement, on a more extensive basis, a course and teacher evaluation program using a questionnaire item bank developed by the Centre for Learning and Development (CLD) and the IDSP; and (3) to work in close liaison with the Centre for Learning and Development and the Instructional Communications Centre (ICC) to continue to design and to provide faculty development services across the McGill campus.

The supervisor of the project is Mr. Christopher J. Daggett, a former staff member of the Clinic to Improve University Teaching. The staff associates are Ms. Susan Cowan and Ms. Elizabeth Ritchie.

BASIC ASSUMPTIONS

Before describing each aspect of the program, several assumptions of the Instructional Development Service Project should be emphasized briefly. First, we believe that universities should allow instructors the opportunity to take a critical look at their instruction with no fear of the results being used for personnel decisions. Thus, we have designed the Project to be used on a voluntary and strictly

confidential basis. All data collected and analyses made are seen only by the instructor and the staff of the Project. Any other use of the data is controlled solely by the instructor.

The second assumption is that there is no one best way to teach. There are advantages to the lecture method, the discussion session, simulations, tutorials or whatever other method may be used. In keeping with this philosophy, teaching improvement specialists work with an instructor to identify that teaching style which is most appropriate for him or her and which is most appropriate for the given situation. The Project does not try to influence instructors to move toward one particular teaching style.

The third assumption is that the use of this improvement process and the teaching skills and behaviors by which we analyze teaching, are applicable across disciplines, class sizes, and styles of teaching, as well as at the undergraduate and graduate levels. This is not to say that the process or the skills and behaviors always will be used in the same fashion, but merely that they can be applied to many different situations. Accordingly, the improvement process has been tested in hospital ward rounds, laboratory classes, small groups, and large classes of up to 500 students. Additionally, it has been tested in such varied disciplines as Law, Medicine, Engineering, English, Computer Science, History, Business, Anthropology, Biology, Chemistry and Psychology. Finally, the process has been used at the elementary and secondary levels as well as at universities.

The fourth assumption is that instructors do not have to have

teaching problems in order to make use of this process. It is entirely possible that an instructor can enter the process with the knowledge that his or her teaching is adequate in the eyes of students and himself or herself. In this sense, the process can be used solely to continue to develop one's teaching ability.

The fifth assumption is that critically examining learning skills is equally as important as critically examining teaching skills. Occasionally, problems in a classroom may relate more to learning difficulties of students than to teaching difficulties of instructors. If, after examining all of the data, the teaching improvement specialist and the instructor agree that this is the case, then appropriate intervention strategies may be designed to deal with the problem.

The final assumption, and perhaps the most important one, is that the teaching improvement process is flexible. While we strongly encourage instructors to go through the entire process, there are a variety of ways in which this can be accomplished, for the process can be used to take a critical look at one's teaching, to test specific ways to improve that teaching, or to design and to test vastly different teaching styles. By dealing with individual instructors from the basis of their present teaching styles, the Instructional Development Service Project hopes to continue this procedural flexibility in order to create for instructors a forum in which changes can take place that are beneficial both to themselves and to students.

THE TEACHING IMPROVEMENT PROCESS

The teaching improvement process is a program designed to assist instructors in taking a critical look at their classroom teaching. Specifically, it involves the identification and improvement of instructional strengths and weaknesses, through the collection, analysis and interpretation of data from a variety of sources. The entire process is undertaken by faculty members for a full term, with the ongoing assistance and support of trained teaching improvement specialists.

The first step of the process (see TABLE ONE for an outline of the entire process) is a personal interview between the teaching improvement specialist and the faculty member. The interview affords the teaching improvement specialist the opportunity to establish a working relationship with the professor and to gather some preliminary information about the course and the class. This information includes a course description, syllabus, reading list, objectives, assignments, and examinations. In addition, the initial interview is used to schedule the various steps of the process and to answer any questions which the faculty member may have. Typically, the interview requires 45-90 minutes of the faculty member's time.

Following the initial interview, data about the class is collected by several means. First, a class session is observed by the teaching improvement specialist. Then, in a subsequent class, a questionnaire is administered to the students and to the faculty member. To complete this data collection stage, a segment of the class

TABLE ONE

TEACHING IMPROVEMENT PROCESS

1. Initial interview between teaching improvement specialist and faculty member to establish working procedure, to gather preliminary information and to answer questions about the process.
2. Data gathering through the use of classroom observation, questionnaire, and videotape.
3. Data processing, synthesizing and presentation of results to the faculty member for independent review.
4. Conference between teaching improvement specialist and faculty member for review and discussion of data and videotape excerpts. Development of improvement strategies.
5. Implementation of improvement strategies by the faculty member.
6. Evaluation of the effect of improvement strategies, through the re-use of the data-gathering devices.
7. Final review of data and evaluation of the teaching improvement process.

period is videotaped. The questionnaire requires approximately 15-20 minutes of class time and the videotape generally is made during the remainder of the class period.

The questionnaire presently used by the Project is an adaptation of the Teaching Analysis by Students (TABS), designed at the Clinic to Improve University Teaching. The TABS instrument includes statements describing a variety of teaching behaviors considered important across disciplines and instructional modes. These items were derived from the descriptions of teaching skills and behaviors extracted from the work of Hildebrand, Wilson and Dienst (1971), the Stanford microteaching literature and the teaching experience of the Clinic staff. For each item, students are asked to decide whether they think the instructor's performance is satisfactory or in need of improvement. Questionnaire results, in conjunction with the faculty member's self-assessment and predictions of student responses on the questionnaire, often cue the teaching improvement specialist and the instructor to appropriate areas upon which to focus during the next stage of the instructional improvement process.

After the results of the student questionnaire, the faculty self-assessment, and predictions of students' responses are processed by computer, the teaching improvement specialist summarizes and synthesizes all data for an independent review by the instructor. Next, the instructor and the teaching improvement specialist together evaluate the data and attempt to identify the instructor's specific strengths and weaknesses. They then decide which of these the instructor will

work toward improving. This data review, analysis and negotiation process will usually involve 60-90 minutes of the instructor's time.

The consultation session often leads to dramatic changes in teaching behavior, with little or no further help from the teaching improvement specialist. However, there is available an assortment of teaching improvement strategies which the teaching improvement specialist and the instructor may agree to work together to implement. Many of these strategies have been developed and tested at the Project, at the Clinic, and at McGill's Centre for Learning and Development. The Project's staff continues to work toward creating and testing additional ones.

Teaching improvement strategies are procedures for providing instructors with the expertise needed to change their teaching behavior. These range from simply asking an instructor to try out some easily undertaken teaching techniques which other teachers have found useful, to giving an instructor appropriate reading materials on the skill or behavior, to training through microteaching, to the repeated use of practice-observation-critique cycles within the classroom. Such training strategies are usually undertaken with the assistance of the teaching improvement specialist. The strategies may focus directly on teaching skills or behaviors which have been identified as problems, or on the development of compensatory skills.

Improvement strategies are nearly always used in conjunction with monitoring techniques--ways of collecting information from a number of sources about the effects of improvement efforts in the classroom.

Examples include various types of student questionnaires and tests of learning, collecting and reviewing classroom video or audio tapes, and classroom observation and feedback by a teaching improvement specialist. Improvement strategies vary substantially in the amounts of time which they demand of faculty members. The time spent is always negotiated, but usually will range from three to ten hours over a period of several weeks.

The implementation of teaching improvement strategies is followed by an evaluation of the efforts of the instructor and the teaching improvement specialist. This process involves a final videotaping of a classroom segment and the administration of a shortened version of the questionnaire. The questions used will depend on which skills and behaviors were isolated for improvement purposes. Then, during a final session between the teaching improvement specialist and the faculty member, the data collected is examined for evidence of improvement. At the close of this session, the instructor is asked to complete a questionnaire assessing the teaching improvement process, the improvement strategies, and the teaching improvement specialist. Arrangements may also be made then for further work on the instructor's teaching. This final data collection and analysis will ordinarily take up another 20 minutes of class time and 60-75 minutes of instructor time.

COURSE AND TEACHER EVALUATION: THE QUESTIONNAIRE ITEM BANK

The questionnaire item bank is a service offered to faculty who wish to receive feedback about their course and teaching, but without

the commitment of time required by the teaching improvement process. Basically, the service allows faculty members, with the assistance of a teaching improvement specialist, to develop a course and teacher questionnaire specifically tailored to their own situation and needs. The items are chosen from a large item pool, developed over several years by the Centre for Learning and Development.

During the first three years of existence, the CLD devoted some of its attention to developing student-response course questionnaires. Through the production of several dozen questionnaires for a variety of courses, the possibility of developing a single "universal" form was explored. Taking into account its own experiences and those of others, the Centre decided not to pursue the single form but instead to provide a bank of items from which individualized questionnaires could be constructed.

Beginning in 1973, as part of a project in evaluation of modularized courses, the Centre produced numerous specific questionnaires which served along with the earlier ones as the item resource for such a bank. In 1974, the substantial item file (numbering about 1,000 items by then) was organized, and a file was set up consisting of whole questionnaires collected from scores of other campuses. This file then was categorized and put into computer storage.

Concurrently, in 1974-1975 and 1975-1976, the CLD contracted for and experimented with the Purdue University Cafeteria System, another computerized course questionnaire. This system offered a bank of about 200 items and a number of adjunct programs for analyzing, comparing

and storing data.

The success of the Purdue program on the McGill campus (see the CLD report, entitled, "Purdue Course Evaluation Project") prompted the CLD and the IDSP in the late summer of 1976, jointly to edit and to re-categorize the 1000-item bank. This effort led to the establishment of McGill's own courses and teacher evaluation service. The responsibility for the day-to-day operation of the program was given to the IDSP as part of its efforts to assist faculty in improving classroom teaching.

To make use of this new service, faculty merely need to make contact with the IDSP. A teaching improvement specialist then will meet with the professor to design the questionnaire. The actual printing, administering and analyzing of results of the questionnaire will be handled by the teaching improvement specialist. Results will be forwarded to the professor. Finally, for those who wish to discuss the results, the teaching improvement specialist will be available for consultation and, if necessary, will make appropriate referrals to the IDSP, the CLD or the ICC.

LIAISON WITH THE CENTRE FOR LEARNING AND DEVELOPMENT

AND THE INSTRUCTIONAL COMMUNICATIONS CENTRE

One of the primary aims of the Instructional Development Service Project is the integration of its service with those of the Centre for Learning and Development and the Instructional Communications Centre.

The services which the CLD offer to faculty members include: general consulting in areas related to teaching and learning; advice regarding computer assisted instruction; assistance in designing and developing modular courses; the development of instructional modules for use by faculty members and teaching assistants; and the maintenance of a library of materials related to course design, development and evaluation.

The ICC provides communications resources to faculty, administrative units, and associates of the University. These resources include: equipment; facilities; consulting services; supplies; and technical assistance. Specific areas of activity include television and sound production, audiovisual services, media resources, photography, cinematography and graphics.

When several programs offer varied but similar services, confusion regarding these services often arises among members of the university community. Furthermore, overlap and confusion may develop within the programs to the extent that the effectiveness of the services declines. Hence, it is essential that efforts be made to coordinate the programs in a manner that is clear to others on campus and most effective in terms of services offered.

The CLD, the ICC, and the IDSP are cooperating in an effort to establish this integration and clarification of services. A booklet is available which briefly describes each of the services, the personnel, and the areas of activity. In addition, consulting services are being designed so as to facilitate inter-program referrals.

Finally, plans are being made to offer joint workshops, seminars and newsletters to inform faculty of the different services provided by the programs and to assist them in areas of concern related to teaching and learning.

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A P P E N D I X C

DEVELOPMENT OF A CATEGORY OBSERVATION SYSTEM FOR THE
ANALYSIS OF VIDEOTAPED CLASS SESSIONS

INSTRUCTIONAL DEVELOPMENT

SERVICE PROJECT

MCGILL UNIVERSITY

DEVELOPMENT OF A CATEGORY OBSERVATION SYSTEM FOR THE

ANALYSIS OF VIDEOTAPED CLASS SESSIONS*

August , 1975

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Introduction

A category observation system is an instrument designed for the systematic recording and analysis of events occurring in a classroom. A specific system for analyzing University teaching was developed in conjunction with the establishment of the McGill University Instructional Development Service Project.

Four potential uses for this system were identified:

1. Provision of additional data on classroom interaction for use by instructors and teaching improvement specialists in the identification of teaching patterns and specific strengths and weaknesses.
2. As an instrument for measuring specific changes in teaching over a period of time.
3. As a tool for routine self-analysis of teaching behaviors to be used by instructors who have gone through the teaching improvement process.
4. As an instrument for analyzing teaching patterns of a wide range of instructors, for the purpose of obtaining data on the relationship between various strategies of instruction and instructional effectiveness.

In the sections which follow, we will briefly describe the category observation process, the specific system developed at McGill and

how this system has been tested.

Description of the Category Observation System Process

Developing a category observation system involves grouping instructor or student behaviors into common categories and assigning a number to each. With a category system as a frame of reference, a trained observer can view a videotape of a classroom session and score a category number once every five seconds to record the interaction taking place on the tape. For example, if Category 1 included all instructor behaviors in which data was provided through lecturing, then the observer would score Category 1 every five seconds that lecturing was taking place.

The results of this observation process can be fed into a computer to analyze the interaction in the classroom. This data would then be available for the analysis of classroom process by a teaching improvement specialist and the instructor.

The development of the present system began in 1972 when Dr. Lawrence Shulman, working under a grant from the Educational Development Fund, designed a variation of an observation system first suggested by Dr. N. Flanders. Dr. Shulman's system was used in a research project which analyzed the classroom interaction of thirteen McGill Faculty Members participating in a study of the use of group method in classroom teaching.

The data resulting from this first effort was used by Dr. Shulman

and Dr. William Hillgartner in the drafting of a second version of the system incorporating a number of significant changes. This second version has been further refined and elaborated through ongoing discussions with staff members of the Instructional Development Service Project. Efforts have been made to shape the instrument into a useful tool for providing additional data for teaching improvement specialists.

In the present system, an instructor's class is videotaped by a teaching improvement specialist. A digital clock provides a time-reference on the tapes. A score sheet has been devised so that a trained rater can view the tape and, using the digital clock as a guide, enter the Category number reflecting the interaction taking place on the tape every five seconds. For example, as an instructor begins the class, he may spend some time on administrative tasks, handing out reading lists, or discussing examinations. Any of these behaviors would fall under Category 5 (Management) and, therefore, the observer would score a "5" every five seconds that this process continued.

If the instructor then moved into a period of time in which he attempted to set the stage for the particular class discussion by summarizing past discussions, or setting objectives for the particular class, the observer would switch to scoring Category 6 (Structuring). If structuring was followed by straight lecturing, Category 1 (Data Lecturing) would be scored. If a student asked a question, the observer would score Category 8 (Questions) in the appropriate box

for student behavior. Table One provides the key word used to describe each of fifteen categories. In the next section of this report, each category is described in more detail.

TABLE ONE

CATEGORY OBSERVATION SYSTEM

1. Data Lecturing
2. Data Audio-Visual
3. Data Illustration
4. Data Linking
5. Management
6. Structuring
7. Silence
8. Questions
9. Discussion
10. Elaborating
11. Crediting
12. Criticizing
13. Demand
14. Monitoring
15. Affect

DESCRIPTIONS OF CATEGORIES

1. Data Lecturing: Giving facts or opinions about content; expressing one's own ideas; asking rhetorical questions; includes problem solving.
2. Data A.V.: Presenting data with the aid of audio-visual materials. Includes using the blackboard.
3. Data Illustration: Illustrating data with personal anecdotes, real case presentations and role playing.
4. Data Linking: In presenting data, using the specific skills of generalizing (relating content to other academic disciplines and identifying connections between concepts) or summarizing (reviewing data) or providing connections between student interest and the data.
5. Management: Administrative tasks: statements or questions dealing with schedules, deadlines, reading lists, etc. Includes the act of handing out or collecting materials; giving quizzes or written exercises.
6. Structuring: Contracting and organizing the class in regard to content and procedure. Includes briefly summarizing past material and activities, setting objectives, and giving commands and directions to be followed.
7. Silence: Pauses, short periods of silence. Indicates confusion or laughter when scored simultaneously with another category.
8. Questions: Asking a question about content with the intent that someone answer.

9. Discussion: Encouraging or facilitating interaction and discussion between students. For example, asking class members to respond to a student's comment.
10. Clarifying: Statements and questions by the instructor designed to encourage a student to elaborate an idea or question initiated by the student. Includes paraphrasing which attempts to clarify another's point of view.
11. Crediting: Praising ideas, performance or work patterns.
12. Criticizing: Direct or indirect criticizing, in a destructive manner, of ideas, performance or work patterns.
13. Demand: Making a demand for work. Includes constructive criticism and insisting on focus.
14. Monitoring: Calling attention to process in order to identify and explore blocks or potential blocks to effective classroom work. Includes periodically checking for attention, comprehension, etc.
15. Affect: Clarifying the feeling of others in the classroom. Offering one's own feelings. Feelings may be positive or negative. Includes predicting or recalling feelings.

Summary of Scoring Rules and Conventions

While an effort has been made to precisely define each category, there is still some degree of inference involved and, therefore, possibilities of differing interpretation. The developers of the system and staff members of the I.D.S. project, through weekly meetings involving the viewing and discussing of a number of classroom videotapes, developed a set of scoring rules and conventions designed to increase inter-observer reliability and to facilitate the computer processing of observation data.

- (1) There will be times when two instructors or two student behaviors will occur in the same five-second period and the observer must choose one for scoring. Since some behaviors will be observed only rarely (for example, higher category numbers appear less often in most instruction), the general rule is that the rare event takes precedence in scoring; in a particular class session or for some instructor teaching styles, lower category numbers may also be considered rare events.
- (2) "Checking out behaviors" will be scored in the "14" category (Monitoring). These are behaviors through which an instructor tests the state of the interaction between himself and the students. For example, he may ask if they have understood a complex point or followed a transition from one concept to another. In those cases where they

represent an instructor's speech pattern rather than an actual reaching for feedback (e.g., an instructor who says, "O.K.?" often, but does not look for an answer), they should be ignored.

- (3) If you cannot hear the student, nor infer what has been said from the instructor's reactions, score the student a "1" (Data Lecturing).
- (4) An indication of the percentage of inter-student exchange during a class will be made on a summary face sheet. This general indication will give some idea of how much of the student participation was directed towards the instructor and how much was directed towards other students.
- (5) Category Number 2 (Data A.V.) is only used as a variation of Category 1 (Data Lecturing). If an instructor's behavior reflects a higher number category, that category would be scored instead of Category 2. For example, if an instructor is writing information on the blackboard which helps to structure the class, then Category 6 (Structuring) would be scored as opposed to Category 2.
- (6) There are times when it is difficult to distinguish a Category 3 behavior (Data Illustration) from a Category 2 or Category 1 behavior. For example, in an engineering course, when the instructor discussed how a formula for computing power factors is used in a hypothetical

power-house by an engineer, would this behavior be scored Category 3 (Data Illustration) or Category 1 (Data Lecturing)? It became clear that this category was extremely content related and therefore most open to differing interpretation and variance in scoring. It was agreed, therefore, to strictly limit Category 3 entries to personal (instructor or student) anecdotes, actual case presentations or role plays. In the engineering example described above, the instructor would be scored a "3" only if he described an illustration drawing upon his own professional experience. Case presentations which have directly involved either the instructor or students, role-play, or simulations would be scored as Category 3 (Data Illustration) with some indication in the summary data of the nature of these "3's".

- (7) For instructors, Category 10 (Clarifying) indicates behaviors which attempt to paraphrase or encourage the elaboration of an idea or question previously shared by a student. In this sense, an instructor "10" is always a responsive move. When an instructor moves into offering data which elaborates on a student notion, it would be scored in whichever Category is appropriate (for example, Data Lecturing, if the instructor continues to provide data building on the student's first ideas). For students, Category 10 (Clarifying) would be scored

when they attempt to paraphrase or to encourage the elaboration of the ideas of another student. If, however, a student asks the instructor for clarification, this would be scored as Category 8 (Questions).

- (8) The construct "mode" is used to describe a pattern of instructor behavior which continues over time. For example, early in the session an instructor may be a "structuring mode" (Category 6) in which he is attempting to set the stage for action, a form of developing a "cognitive set" or "cognitive map" for students. Generally, when in a mode, the rater will maintain the mode and only score rare behaviors or certain specific "moves" as described in the next rule. Another example of a mode would be a Data Illustration (Category 3) mode in which an instructor continues to give a personal anecdote for a period of time. When in a particular mode (for example, Structuring), if an instructor should happen to provide some data which might have been considered Data Lecturing, the rater will maintain the Structuring mode, unless there is a clear shift into Data Lecturing.
- (9) The construct "move" refers to a small segment of behavior which carries particular significance and should be scored even if it takes place within a mode of a different Category. For example, a structuring move within a lecturing mode may be designed to strengthen a mind-set,

- clarify a transition between ideas or reinforce certain key elements of data. This move would be scored. A Category 4 (Data Linking) move would also be scored as would any of the rare events such as crediting, criticizing or dealing with affect.
- (10) Rhetorical questions are usually recognized by intonation and timing. When such a question is used as a technique for imparting data, it would be scored as Category 1. If, however, the intent of the question is to create a mind set for data to follow, then Category 6 (Structuring) would be used.
- (11) Category 15 (Affect) refers only to the feelings of the instructor or the students present in the classroom. If feelings of others are discussed, this could be scored as part of Data Illustration or Data Lecturing. For example, the discussion of the feelings of a patient during a presentation by a nursing student would be scored Category 3.
- (12) Category 7, when scored by itself in the instructor's block, indicates a period of silence. If Category 7 is scored in the student's block, it indicates confusion or laughter. For example, if an a five-second period of time an instructor is giving a Data Illustration (Category 3) and the students respond with laughter, the scoring would be "3" for the instructor and "7" for the

- students in the same interval.
- (13) Two rules are followed to provide information required for computer processing of scoring data. A break in the taping of a session is indicated by leaving the instructor's and the student's block empty for one time interval. At the end of the scoring, the number "99" is placed in the instructor's block.

Rater Reliability and Training

The training of the original raters was carried out as part of the development of the system. This was achieved by viewing and discussing a number of classroom videotapes and by developing a set of scoring rules and conventions. At the end of this process, two raters were asked to independently score the same tape. Their entries were compared for inter-observer reliability, yielding 85.81 percentage agreement. Each rater also scored the same tape a week later, without reference to their first scores, in a test-retest procedure to determine stability of ratings. Percentage of agreement between the first and second scorings were 89.96 and 88.35.

Another rater was trained independently by one of the original raters. After fifteen hours of training over a period of one month, the third rater achieved an inter-observer reliability percentage of 86.57, and a test-retest reliability percentage of 94.45.

The results of the inter-observer and test-retest procedures

offer some evidence in support of the reliability of the system and the training procedure for raters.

Computer Printout and Data Analysis

A computer program for processing and displaying observation data (see Appendix A for a sample scoring sheet and summary comments and Appendix B for the computer program) has been developed by Dr. Hillgartner. The computer printout provides an interaction map (see Table Two) and summary data (see Table Three) of the observed class.

The interaction map is time referenced (first column, Table Two) according to a time code superimposed on the videotape. This sequential recording of classroom behaviors allows the instructor or the teaching improvement specialist to select specific segments of the videotape for viewing. The second column of the map provides the key word associated with the appropriate category of instructor behavior. The third column is reserved for recording student behaviors. Asterisks denote the absence of significant behaviors. When the instructor and the students are active in the same five-second period, key words appear in both columns.

The summary page (see Table Three) provides the following data:

- (1) Total time of the session;
- (2) The number of times each category was recorded for

- the instructor and for the students;
- (3) The percentage of total time that each category was recorded for the instructor and for the students;
 - (4) The total percentage of time of instructor activity and student activity. (Since both the instructor and the students may be active during the same five-second interval, the total of these two percentages may exceed 100.);
 - (5) The total percentage of instructor behaviors for five groupings of categories (Data [1-4], Organization [5-6], Interaction [7-10], Feedback [11-12], and Process [13-15]).

TABLE TWO--Continued

<u>ELAPSED TIME</u>	<u>TEACHER</u>	<u>STUDENT</u>
3 MIN. 0 SEC.	QUESTIONING (8)	OFFER DATA (1)
3 MIN. 5 SEC.	* * * * *	OFFER DATA (1)
3 MIN. 10 SEC.	LECTURING (1)	OFFER DATA (1)
3 MIN. 15 SEC.	MONITORING (14)	* * * * *
3 MIN. 20 SEC.	LECTURING (1)	* * * * *
3 MIN. 25 SEC.	LECTURING (1)	* * * * *
3 MIN. 30 SEC.	CREDITING (11)	* * * * *
3 MIN. 35 SEC.	LECTURING (1)	* * * * *
3 MIN. 40 SEC.	MONITORING (14)	* * * * *
3 MIN. 45 SEC.	MANAGEMENT (5)	MANAGEMENT (5)
3 MIN. 50 SEC.	MANAGEMENT (5)	OFFER DATA (1)
3 MIN. 55 SEC.	QUESTIONING (8)	* * * * *
4 MIN. 0 SEC.	* * * * *	OFFER DATA (1)
4 MIN. 5 SEC.	* * * * *	OFFER DATA (1)
4 MIN. 10 SEC.	LECTURING (1)	* * * * *
4 MIN. 15 SEC.	LECTURING (1)	OFFER DATA (1)
4 MIN. 20 SEC.	STRUCTURING (6)	OFFER DATA (1)
4 MIN. 25 SEC.	QUESTIONING (8)	OFFER DATA (1)

TABLE THREE

INSTRUCTOR X JUNE 19/75

TOTAL NUMBER OF BEHAVIORS AND % OF TIME (50 MIN. 30 SEC.)

<u>BEHAVIOR TEACHER</u>				<u>BEHAVIOR STUDENT</u>			
LECTURING	(1)	240	39.60%	OFFER DATA	(1)	314	51.82%
DATA A. V.	(2)	36	5.94%	DATA A. V.	(2)	0	0.00%
ILLUSTRATION	(3)	15	2.48%	ILLUSTRATION	(3)	0	0.00%
DATA LINKING	(4)	14	2.31%	DATA LINKING	(4)	0	0.00%
MANAGEMENT	(5)	14	2.31%	MANAGEMENT	(5)	5	0.83%
STRUCTURING	(6)	35	5.78%	STRUCTURING	(6)	0	0.00%
SILENCE	(7)	0	0.00%	NOISE	(7)	27	4.46%
QUESTIONING	(8)	45	7.43%	QUESTIONING	(8)	15	2.48%
DISCUSSION	(9)	1	0.17%	DISCUSSION	(9)	0	0.00%
CLARIFYING	(10)	13	2.15%	CLARIFYING	(10)	0	0.00%
CREDITING	(11)	2	0.33%	CREDITING	(11)	0	0.00%
CRITICIZING	(12)	0	0.00%	CRITICIZING	(12)	0	0.00%
DEMAND WORK	(13)	9	1.49%	DEMAND WORK	(13)	0	0.00%
MONITORING	(14)	8	1.32%	MONITORING	(14)	1	0.17%
AFFECT	(15)	7	1.16%	AFFECT	(15)	1	0.17%

* TOTAL TIME OF INSTRUCTOR ACTIVITY = 72.44%

* TOTAL TIME OF STUDENT ACTIVITY = 35.43%

DISTRIBUTION OF INSTRUCTOR ACTIVITY

* TOTAL TIME USED FOR DATA CATEGORIES (1-4) = 50.33

* TOTAL TIME USED FOR ORGANIZATION CATEGORIES (5-6) = 8.09%

* TOTAL TIME USED FOR INTERACTION CATEGORIES (7-10) = 9.74%

* TOTAL TIME USED FOR FEEDBACK CATEGORIES (11-12) = 0.33%

APPENDIX A

CLIENT

I.D.S. Coding Form

Page _____

MINUTE

T														
S														
	5	10	15	20	25	30	35	40	45	50	55	60		

MINUTE

T														
S														
	5	10	15	20	25	30	35	40	45	50	55	60		

MINUTE

T														
S														
	5	10	15	20	25	30	35	40	45	50	55	60		

T														
S														
	5	10	15	20	25	30	35	40	45	50	55	60		

T														
S														
	5	10	15	20	25	30	35	40	45	50	55	60		

T														
S														
	5	10	15	20	25	30	35	40	45	50	55	60		

T														
S														
	5	10	15	20	25	30	35	40	45	50	55	60		

SUMMARY COMMENTS

Instructor: _____ Date of Taping: _____

Course: _____ Date of Rating: _____

Instructor:

General Nature of Delivery:

Attentiveness (e.g., Reaction to Class, Non-Verbal Monitoring):

Students:

General Nature of Student Involvement:

Estimate of the Number of Different Students Participating: _____

What percentage of this participation was student/instructor exchange? _____%

What percentage of this participation was student/student exchange? _____%

Categories:

Description of Data A.V. (2) [e.g., Blackboard, Slides, Film]:

Description of Data Illustration (3) [e.g., Anecdotes, Role-Playing, Simulation]:

Additional Comments:

APPENDIX B

```

/LOAD FORTGI
/OPT NOSOURCE
  COMPLEX*16 TEACH(16),STUD(16)
  INTEGER*2 X(1500),T(16),S(16),TITLE(20)
  DO 10 I=1,16
10  READ(5,1)TEACH(I),STUD(I)
50  READ(5,8,END=60)NN,TITLE
    K=I+1
    KOUNT=0
    DO 51 L=1,16
      T(L)=0
51  S(L)=0
      DO 52 L=1,K
60  X(L)=0
      K=1
      NN=NN*24
      WRITE(6,3)TITLE
      DO 15 I=24,NN,24
      READ(5,2,END=110) (X(N),N=K,I)
15  K=I+1
100 I=I-1
110 IF(X(I).EQ.0)GO TO 100
      I=I-1
      DO 20 K=1,1
20  X(K)=X(K)+1
      MIN=0
      NSEC=0
      DO 30 K=1,I,2
      KOUNT=KOUNT+1
      NSEC=NSEC+5
      IF(NSEC.LT.60)GO TO 25
      NSEC=0
      MIN=MIN+1
25  T(X(K))=T(X(K))+1
      S(X(K+1))=S(X(K+1))+1
      IF(KOUNT.NE.54) GO TO 30
      KOUNT=0
      WRITE(6,3)TITLE
30  WRITE(6,4)MIN,NSEC,TEACH(X(K)),STUD(X(K+1))
      WRITE(6,5)TITLE,MIN,NSEC
      DO 40 K=2,16
      PT=((T(K)*1.0)/(I*0.5))*100.
      PS=((S(K)*1.0)/(I*0.5))*100.
40  WRITE(6,6)TEACH(K),T(K),PT,STUD(K),S(K),PS
      PTEACH=100.-(((T(L)*1.0)/(*0.5))*100.)

```

```

PSTUD=100.-((S(1)+S(8))/(I*0.5))*100.)
PTNEW=PTEACH*.005*I
PDATA=((T(2)+T(3)+T(4)+T(4))/PTNEW)*100.
PORGAN=((T(6)+T(7))/PTNEW)*100.
PINTER=((T(8)+T(9)+T(10)+T(11))/PTNEW)*100.
PFEDBK=((T(12)+T(13))/PTNEW)*100.
PROCES=((T(14)+T(15)+T(16))/PTNEW)*100.
WRITE(6,7)PTEACH,PSTUD,PDATA,PORGAN,PINTER,PFEDBK,PROCES
GO TO 50
60 CALL TIMOFF
STOP
1  FORMAT(2A8,2A8)
2  FORMAT(24I2)
3  FORMAT('1',1X/'0',20X/'BEHAVIOR MAP',20A2/'0',
*11X,'ELAPSED TIME',*X,'TEACHER',16X,'STUDENT'/)
4  FORMAT(' ',10X,I2,'MIN.',I2,'SEC.',2A8,6X,2A8)
5  FORMAT('1',1X/'0',30X,20A2/'0',
*10X,'TOTAL NUMBER OF BEHAVIORS AND % OF TIME (' ,13,
*'MIN.',13,"SEC.)/'0',16X,'BEHAVIOR TEACHER',16X,'BEHAVIOR',
*'STUDENT'/)
6  FORMAT('0',10X,2A8,I5,F6.2,'% ',4X,2A8,I5,F6.2,'%')
7  FORMAT(' ',1X/
*'0',10X/'* TOTAL TIME OF INSTRUCTOR ACTIVITY =',F6.2,'%'/
*'0',10X/'* TOTAL TIME OF STUDENT ACTIVITY -',F6.2,'%'/
*'0',15X, 'DISTRIBUTION OF INSTRUCTOR ACTIVITY'/
*'0',10X/'* TOTAL TIME USED',
*' FOR DATA CATEGORIES (1-4) =',F6.2,'%'/
*'0',10X/'* TOTAL TIME USED FOR ORGANIZATION CATEGORIES (5-6) =',
*F6.2,'%'/0',10X,
** TOTAL TIME USED FOR INTERACTION CATEGORIES (7-10) =',
*F6.2,'%'/0',10X,
** TOTAL TIME USED FOR FEEDBACK CATEGORIES (11-12) =',
*F6.2,'%'/0',10X,
** TOTAL TIME USED FOR PROCESS CATEGORIES (13-15) =',
*F6.2,'%'/1',1X)
8  FORMAT(13,20A2)
END

/DATA
* * * * *
LECTURING      (1)OFFER DATA      (1)
DATA A.V.      (2)DATA A.V.      (2)
ILLUSTRATION   (3)ILLUSTRATION   (3)
DATA LINKING   (4)DATA LINKING   (4)
MANAGEMENT     (5)MANAGEMENT     (5)
STRUCTURING    (6)STRUCTURING    (6)
SILENCE        (7)NOISE          (7)

```

QUESTIONING	(8)	QUESTIONING	(8)
DISCUSSION	(9)	DISCUSSION	(9)
CLARIFYING	(10)	CLARIFYING	(10)
CREDITING	(11)	CREDITING	(11)
CRITICIZING	(12)	CRITICIZING	(12)
DEMAND WORK	(13)	DEMAND WORK	(13)
MONITORING	(14)	MONITORING	(14)
AFFECT	(15)	AFFECT	(15)

A P P E N D I X D

QUESTIONNAIRE FOR ATTENDING PHYSICIANS

ATTENDING STAFFIdentificationGraduation:Year: Before 1950 1950-59 1960-69 After 1970 School: McGill Other Canadian U.S.A. Elsewhere

<u>Postgraduate Training</u>	<u>Location</u>	<u>Specialty</u>
------------------------------	-----------------	------------------

Year 1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____

Have you attended on a general ward at MCH since 1973? Yes No

IF NO, YOU NEED NOT COMPLETE THE QUESTIONNAIRE BUT PLEASE RETURN IT IN THE ENCLOSED SELF-ADDRESSED ENVELOPE.

Identify the ward, year and duration of last rotation.6A 6C 8C 9B 1973 1974 1975 Less Than 1 Month 1 Month 2 Months 3 Months

THE REMAINDER OF THIS QUESTIONNAIRE SHOULD BE ANSWERED WITH RESPECT TO YOUR LAST GENERAL WARD EXPERIENCE, WITH THE EXCEPTION OF QUESTIONS WHICH SEEK OPINIONS. THE TERM "WARD ROUNDS" REFERS ONLY TO THOSE ROUNDS ON THE WARD CONDUCTED BY THE ATTENDING STAFF EXCEPT WHERE OTHERWISE NOTED.

1. How many trainees were assigned to the ward?

MCH Senior MCH Junior Rotating Interns Clinical Clerks 2. Do you think this number is suitable? Yes No

3. If not, suggest a more appropriate complement:

MCH Senior MCH Junior Rotators Clinical Clerks

Why do you suggest this change? _____

4. What are the responsibilities of the Attending Staff assigned to a general ward?

Service: _____

Teaching: _____

Other: _____

5. How much time each week is devoted to these duties? _____ Hours
6. How many days each week did you participate in ward rounds? _____
 What was the average time spent on these rounds? _____ Hours
 Is this: Too Long _____ Sufficient Time _____ Too Short a Time _____
7. What proportion of that time was spent in:
- Patient Management: _____% Teaching: _____%
- Other Functions: _____%
 _____%
 _____%
8. What was the primary purpose of these rounds?
9. What was the usual format of these rounds? (e.g., Do you review all patients every-day? Only those of particular interest or difficulty? Are there sit-down sessions? etc.)

10. Our evaluation system asks us to assess the following skills. Can this be done by the attending physician on ward rounds?

	CAN BE ASSESSED ON WARD ROUNDS		HOW OFTEN DOES THE ATTENDING ASSESS THESE ON WARD ROUNDS?		
	YES	NO	FREQUENTLY	OCCASIONALLY	NOT AT ALL
a) Techniques of History Taking					
b) Confirmation of Historical Data					
c) Techniques of Physical Exam					
d) Confirmation of Physical Findings					
e) Delineation of Problems					
f) Knowledge of Pathophysiology					
g) Differential Diagnosis					
h) Planning of Further Investigations					
i) Therapy					
j) Continued Responsibility for Patient Management					
k) Ability to Talk to Parents of Patients					

11. Where you have answered NO in question 10, can you suggest alternatives?

<u>SKILL</u>	<u>BEST ASSESSED BY:</u>	<u>WHEN:</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

12. Our evaluation system asks us to assess the following attitudes, emotional reactions, and feelings. Can this be done by the attending physician on ward rounds?

	CAN BE ASSESSED ON WARD ROUNDS		HOW OFTEN DOES THE ATTENDING ASSESS THEMSE ON WARD ROUNDS?		
	YES	NO	FREQUENTLY	OCCASIONALLY	NOT AT ALL
a) Empathy With Terminally Ill Patients					
b) Uneasiness About One's Own Competence as a Medical Professional					
c) Frustration About the Uncooperative or Hostile Patient (or Parent)					
d) Uneasiness About the Service/Education Conflict					
e) Difficulties in Relationships With Other Health Professionals					
f) Frustration About the Organization of the Hospital and the Health System					

13. Where you have answered NO in question 12, can you suggest alternatives?

<u>EMOTIONAL REACTION</u>	<u>BEST ASSESSED BY:</u>	<u>WHEN:</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

14. Rank the following interactions in order of importance in learning, 1 being the highest.

- _____ Trainee-Attending Staff Interaction
- _____ Trainee-Senior Resident Interaction
- _____ Trainee-Trainee Interaction

- 3 -

15. Rank the following activities in order of importance in learning, 1 being the highest.

- Discussions centered on a patient
 Critique of a trainee's patient management
 Mini-lecture
 Literature search in relation to points made during ward rounds

PLEASE INDICATE WHETHER YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY CIRCLING THE APPROPRIATE NUMBER.

	<u>STRONGLY AGREE</u>			<u>STRONGLY DISAGREE</u>	
16. Discussions during ward rounds are most useful if every participant knows a lot about the patient	1	2	3	4	5
17. Extraneous matters causing frequent interruptions during ward rounds interfere with learning	1	2	3	4	5
18. Attending Staff usually check on the accuracy of a trainee's data base during ward rounds	1	2	3	4	5

If you have checked either 1 or 2 in question 18, please indicate how this is done.

- | | <u>YES</u> | <u>NO</u> |
|-----------------------------------|------------|-----------|
| a) by direct observation | ___ | ___ |
| b) by report | ___ | ___ |
| c) by inference from presentation | ___ | ___ |
| d) by questioning | ___ | ___ |
| e) other (please specify) | _____ | _____ |

19. Attending Staff should check on the accuracy of a trainee's data base <u>during</u> ward rounds	1	2	3	4	5
20. Attending Staff should check on the accuracy of a trainee's data base at some time <u>other</u> than ward rounds	1	2	3	4	5

If you have checked either 1 or 2 in question 20, please indicate when this should be done.

- 6 -

21. Patients and their parents are concerned about the nature and purpose of ward rounds. Indicate whether or not these concerns are discussed (by the staff, with patients, etc.) during ward rounds?

	<u>FREQUENTLY</u>	<u>OCCASIONALLY</u>	<u>NOT AT ALL</u>
Uneasiness about the large number of people participating in ward rounds	_____	_____	_____
Reservations about the competency level of the people involved	_____	_____	_____
Anxieties arising from discussions about the patient:			
a) which are overheard but not necessarily understood	_____	_____	_____
b) which are outside ear-shot but not sight	_____	_____	_____
c) which involve criticism of the care of the patient	_____	_____	_____
Anxieties and anger about unanswered questions	_____	_____	_____

22. Do you feel that ward rounds are the most appropriate activity through which attending staff can fulfill their service and teaching responsibilities on a general ward?

_____ YES _____ NO

If NO, how else might these responsibilities be better carried out?

23. How do you see the role of the attending physician in relation to the senior resident on ward rounds?

24. What is the role of the senior resident on the ward?

- 7 -

25. Please use this space to make any additional comments concerning any aspect of the role of the Attending Physician on hospital ward rounds.

A P P E N D I X E

QUESTIONNAIRE FOR CLINICAL CLERKS, INTERNS, AND
RESIDENT PHYSICIANS

RESIDENTS, INTERNS, CLINICAL CLERKS

Identification

Clinical Clerk

Intern Type of Intern _____

Resident Year of Residency Training _____

Graduation Year: _____

School:

McGill _____

Other Canadian _____

U.S.A. _____

Other _____

	<u>Location</u>	<u>Specialty</u>
Postgraduate Training Year 1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____

Please identify the present or last general ward you worked on, and answer subsequent questions, where relevant, with regard to that specific experience.

6A 6C 8C 9B

If you have not worked on any of the above wards:

Who are you?

Where have you been?

THE REMAINDER OF THIS QUESTIONNAIRE SHOULD BE ANSWERED WITH RESPECT TO YOUR GENERAL WARD EXPERIENCE, WITH THE EXCEPTION OF QUESTIONS WHICH SEEK YOUR OPINIONS. THE TERM "WARD ROUNDS" REFERS ONLY TO THOSE ROUNDS ON THE WARD CONDUCTED BY THE ATTENDING STAFF EXCEPT WHERE OTHERWISE NOTED.

1. How many trainees were assigned to the ward?

MCH Senior MCH Junior Rotating Interns Clinical Clerks

2. Do you think this number is suitable? Yes No

3. If not, suggest a more appropriate complement:

MCH Senior MCH Junior Rotators Clinical Clerks

Why do you suggest this change? _____

- 2 -

4. What are the responsibilities of the Attending Staff assigned to a general ward?

Service: _____

Teaching: _____

Other: _____

5. How much time each week is devoted to these duties? _____ Hours
6. How many days each week did the Attending participate in ward rounds? _____
 What was the average time spent on these rounds? _____ Hours
 Is this: Too Long _____ Sufficient Time _____ Too Short a Time _____
7. What proportion of that time was spent in:
- Patient Management: _____% Teaching: _____%
- Other Functions: _____%
 _____%
 _____%
8. What was the primary purpose of these rounds?
9. What was the usual format of these rounds? (e.g., Does the Attending review all patients everyday? Only those of particular interest or difficulty? Are there sit-down sessions? etc.)

10. Our evaluation system asks us to assess the following skills. Can this be done by the attending physician on ward rounds?

	CAN BE ASSESSED ON WARD ROUNDS		HOW OFTEN DOES THE ATTENDING ASSESS THESE ON WARD ROUNDS?		
	YES	NO	FREQUENTLY	OCCASIONALLY	NOT AT ALL
a) Techniques of History Taking					
b) Confirmation of Historical Data					
c) Techniques of Physical Exam					
d) Confirmation of Physical Findings					
e) Delineation of Problems					
f) Knowledge of Pathophysiology					
g) Differential Diagnosis					
h) Planning of Further Investigations					
i) Therapy					
j) Continued Responsibility for Patient Management					
k) Ability to Talk to Parents of Patients					

11. Where you have answered NO in question 10, can you suggest alternatives?

<u>SKILL</u>	<u>BEST ASSESSED BY:</u>	<u>WHEN:</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

12. Our evaluation system asks us to assess the following attitudes, emotional reactions, and feelings. Can this be done by the attending physician on ward rounds?

	CAN BE ASSESSED ON WARD ROUNDS		HOW OFTEN DOES THE ATTENDING ASSESS THESE ON WARD ROUNDS*		
	YES	NO	FREQUENTLY	OCCASIONALLY	NOT AT ALL
a) Empathy With Terminally Ill Patients					
b) Uneasiness About One's Own Competence as a Medical Professional					
c) Frustration About the Uncooperative or Hostile Patient (or Parent)					
d) Uneasiness About the Service/Education Conflict					
e) Difficulties in Relationships With Other Health Professionals					
f) Frustration About the Organization of the Hospital and the Health System					

13. Where you have answered NO in question 12, can you suggest alternatives?

<u>EMOTIONAL REACTION</u>	<u>BEST ASSESSED BY:</u>	<u>WHEN:</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

14. Rank the following interactions in order of importance in learning, 1 being the highest.

- _____ Trainee-Attending Staff Interaction
- _____ Trainee-Senior Resident Interaction
- _____ Trainee-Trainee Interaction

15. Rank the following activities in order of importance in learning, 1 being the highest.

- Discussions centered on a patient
- Critique of a trainee's patient management
- Mini-lecture
- Literature search in relation to points made during ward rounds

PLEASE INDICATE WHETHER YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY CIRCLING THE APPROPRIATE NUMBER.

	<u>STRONGLY AGREE</u>		<u>STRONGLY DISAGREE</u>		
16. Discussions during ward rounds are most useful if every participant knows a lot about the patient	1	2	3	4	5
17. Extraneous matters causing frequent interruptions during ward rounds interfere with learning	1	2	3	4	5
18. Attending Staff usually check on the accuracy of a trainee's data base during ward rounds	1	2	3	4	5

If you have checked either 1 or 2 in question 18, please indicate how this is done.

	<u>YES</u>	<u>NO</u>
a) by direct observation	___	___
b) by report	___	___
c) by inference from presentation	___	___
d) by questioning	___	___
e) other (please specify)	_____	

19. Attending Staff should check on the accuracy of a trainee's data base <u>during</u> ward rounds	1	2	3	4	5
20. Attending Staff should check on the accuracy of a trainee's data base at some time <u>other than</u> ward rounds	1	2	3	4	5

If you have checked either 1 or 2 in question 20, please indicate when this should be done.

- 6 -

21. Patients and their parents are concerned about the nature and purpose of ward rounds. Indicate whether or not these concerns are discussed (by the staff, with patients, etc.) during ward rounds?

	<u>FREQUENTLY</u>	<u>OCCASIONALLY</u>	<u>NOT AT ALL</u>
Uneasiness about the large number of people participating in ward rounds	_____	_____	_____
Reservations about the competency level of the people involved	_____	_____	_____
Anxieties arising from discussions about the patient:			
a) which are overheard but not necessarily understood	_____	_____	_____
b) which are outside ear-shot but not sight	_____	_____	_____
c) which involve criticism of the care of the patient	_____	_____	_____
Anxieties and anger about unanswered questions	_____	_____	_____

22. Do you feel that ward rounds are the most appropriate activity through which attending staff can fulfill their service and teaching responsibilities on a general ward?

_____ YES _____ NO

If NO, how else might these responsibilities be better carried out?

23. How do you see the role of the attending physician in relation to the senior resident on ward rounds?

24. What is the role of the senior resident on the ward?

- 7 -

25. Please use this space to make any additional comments concerning any aspect of the role of the Attending Physician on hospital ward rounds.

A P P E N D I X F

STANDARD QUESTIONNAIRE USED BY THE
INSTRUCTIONAL DEVELOPMENT SERVICE PROJECT

INSTRUCTIONAL DEVELOPMENT SERVICE PROJECT

Macdonald Chemistry Building

McGill University
Montreal, Quebec

STUDENT EVALUATION OF TEACHING

The Instructional Development Service Project is working with instructors to improve the quality of teaching which they offer to their students. The Project is designed to help instructors identify and effectively use their particular teaching strengths, to isolate their specific teaching problems, and to develop improvement strategies directed at these problems.

In order to identify these strengths and problems, we are collecting information about teaching in this course by discussing course objectives and teaching patterns with your instructor, by observing and video-taping some classes, and by asking for student opinions about performance on some specific teaching skills and behaviors. The information will be used to obtain a clearer understanding of specific teaching strengths and weaknesses so that your instructor can work toward improvement. Thus, your responses will be of most value to your instructor if they are thoughtful and honest. Your cooperation will be very much appreciated.

THE PRESENT QUESTIONNAIRE HAS BEEN PREPARED WITH THE HELP OF THE PROJECT STAFF FOR A SPECIFIC COURSE GIVEN BY PROFESSOR _____. NO PART OF IT MAY BE USED WITHOUT HIS OR HER PERMISSION. THIS PERMISSION MUST BE ENDORSED BY THE PROJECT.

This questionnaire is an adaptation of the Teaching Analysis by Students (TABS), designed and developed by the Clinic to Improve University Teaching at the School of Education of the University of Massachusetts at Amherst.

SECTION I

In this questionnaire, there are some statements concerning a variety of specific teaching skills and behaviors. Please read each statement carefully and then indicate the extent to which you feel your instructor needs improvement. Respond to each statement by selecting one of the following:

- (1) No improvement is needed (very good or excellent performance)
- (2) Little improvement is needed (generally good performance)
- (3) Improvement is needed (generally mediocre performance)
- (4) Considerable improvement is needed (generally poor performance)
- (5) Not a necessary skill or behavior for this course

Please make your decisions about the degree of improvement needed on the basis of what you think would be best for this particular course and your learning style. Try to consider each statement separately, rather than let your overall feelings about the instructor determine all the responses.

1. Explanation of course objectives.
2. Explanation of the objectives for each class session and learning activity.
3. Ability to arouse my interest when introducing an instructional activity.
4. Explanation of the work expected from each student.
5. Ability to maintain a clear relationship between the course content and the course objectives.
6. Skill in clarifying the relationships among the various topics treated in the course.
7. Skill in making clear the distinction between major and minor topics.

8. Skill in adjusting the rate at which new ideas are covered so that the material can be followed and understood.
9. Ability to clarify material which needs elaboration.
10. The instructor's speaking skills.
11. Ability to ask easily understood questions.
12. Ability to ask thought-provoking questions.
13. Ability to answer questions clearly and concisely.
14. Overall effectiveness as a discussion leader.
15. Ability to get students to participate in class discussions.
16. Skill in facilitating discussion among students as opposed to discussions only between the instructor and students.
17. Ability to wrap things up before moving on to a new topic.
18. Ability to tie things together at the end of a class.
19. Explanation of precisely how my performance is to be evaluated.
20. Ability to design evaluation procedures which are consistent with course objectives.
21. Performance in periodically informing me of my progress.
22. Selection of materials and activities which are thought-provoking.
23. Ability to select materials and activities which are not too difficult.
24. Provision of variety in materials and activities.
25. Ability to use a variety of teaching techniques.
26. Demonstration of creativity in teaching methods.
27. Management of day-to-day administrative details.
28. Responsiveness to the needs of individual students.
29. Ability to take appropriate action when students appear to be bored.

30. Availability for personal consultation.
31. Ability to relate to people to ways which promote mutual respect.
32. Maintenance of an atmosphere which actively encourages learning.
33. Ability to inspire excitement or interest in the content of the course.
34. Ability to relate the subject matter to other academic disciplines and real world situations.
35. Willingness to explore a variety of points of view in the field.
36. Ability to get students to challenge points of view raised in the course.
37. Performance in helping me to explore the relationship between my personal values and the course content.
38. Performance in making me aware of value issues within the subject matter.

SECTION II -- OTHER INFORMATION

Please mark the appropriate response for each of the following items beside the correct statement number of the computer card.

39. Class:

(1) U-1	(4) Graduate Student
(2) U-2	(5) Other
(3) U-3	
40. Sex:

(1) Male	(2) Female
----------	------------
41. What is your overall grade average?

(1) A/80-100%	(4) D/45-54%
(2) B/65-79%	(5) F/Less Than 45%
(3) C/55-64%	
42. In terms of the directions my life is taking, this course is:

(1) Relevant	(3) Irrelevant
(2) Somewhat Relevant	(4) I Am Unsure

43. In this course I am learning:
- | | |
|-------------------|-----------------|
| (1) A Great Deal | (3) Very Little |
| (2) A Fair Amount | (4) I Am Unsure |
44. As a result of this course, my attitude towards the instructor is:
- | | |
|----------------------------|-------------------------|
| (1) Becoming More Positive | (3) Unchanged, Positive |
| (2) Becoming More Negative | (4) Unchanged, Negative |
45. As a consequence of participating in this course, my attitude toward the subject matter is:
- | | |
|----------------------------|-------------------------|
| (1) Becoming More Positive | (3) Unchanged, Positive |
| (2) Becoming More Negative | (4) Unchanged, Negative |
46. I would prefer that this course:
- (1) Become More Structured or Organized
 - (2) Become Less Structured or Organized
 - (3) Maintain About the Present Level of Structure
47. Which of the following descriptions of student learning styles most nearly approximates your own? (Choose Only One)
- (1) I like to work independently, and focus on learning personally relevant content.
 - (2) I prefer highly structured courses and will focus on learning what is required.
 - (3) I like sharing my ideas with others and getting involved in class activities.
 - (4) I am competitive, and concerned about getting better grades than others.
 - (5) I am generally turned off as a student, and do not care to work with others.
48. About how much time and effort have you put into this course compared to other courses of equal credit?
- | | |
|---------------------------|-------------------|
| (1) Much More | (4) Somewhat Less |
| (2) Somewhat More | (5) Much Less |
| (3) About the Same Amount | |
49. Generally, how valuable have you found the assigned readings in terms of their contribution to your learning in this course?
- | | |
|---------------------|-----------------------|
| (1) Very Valuable | (3) Not Very Valuable |
| (2) Fairly Valuable | (4) Of No Value |
50. Overall, I would rate this course as:
- | | |
|---------------|--------------|
| (1) Excellent | (3) Mediocre |
| (2) Good | (4) Poor |

Please make any additional comments or suggestions which you feel might improve the instructor's teaching or the course.

A P P E N D I X G

SUGGESTED QUESTIONNAIRE AND TEACHING SKILLS AND BEHAVIORS
FOR USE IN A TEACHING IMPROVEMENT PROGRAM FOR ATTENDING PHYSICIANS

INSTRUCTIONAL DEVELOPMENT SERVICE PROJECT

Macdonald Chemistry Building

McGill University
Montreal, Quebec

TRAINEE EVALUATION OF TEACHING

The Instructional Development Service Project and the Centre for Medical Education jointly are working with attending physicians to improve the quality of teaching which they offer to trainees. The program is designed to help attending physicians identify and effectively use their particular teaching strengths, to isolate their specific teaching problems, and to develop improvement strategies directed at these problems.

In order to identify these strengths and problems, we are collecting information about teaching on this rotation by discussing learning objectives and teaching patterns with your attending physician, by observing and video-taping some ward rounds, and by asking for trainee opinions about performance on some specific teaching skills and behaviors. The information will be used to obtain a clearer understanding of specific teaching strengths and weaknesses so that your attending physician can work toward improvement. Thus, your responses will be of most value to your attending physician if they are thoughtful and honest. Your cooperation is very much appreciated.

THE PRESENT QUESTIONNAIRE HAS BEEN PREPARED WITH THE HELP OF THE PROJECT STAFF FOR SPECIFIC WARD ROUNDS CONDUCTED BY DR. _____ . NO PART OF IT MAY BE USED WITHOUT HIS OR HER PERMISSION. THIS PERMISSION MUST BE ENDORSED BY THE PROJECT.

This questionnaire is an adaptation of the Teaching Analysis by Students (TABS), designed and developed by the Clinic to Improve University Teaching at the School of Education of the University of Massachusetts at Amherst.

SECTION I

In this questionnaire, there are some statements concerning a variety of specific teaching skills and behaviors. Please read each statement carefully and then indicate the extent to which you feel your attending physician needs improvement. Respond to each statement by selecting one of the following:

- (1) No improvement is needed (very good or excellent performance)
- (2) Little improvement is needed (generally good performance)
- (3) Improvement is needed (generally mediocre performance)
- (4) Considerable improvement is needed (generally poor performance)
- (5) Not a necessary skill or behavior for ward rounds)

Please make your decisions about the degree of improvement needed on the basis of what you think would be best for this particular ward and your learning style. Try to consider each statement separately, rather than let your overall feelings about the attending physician determine all of the responses.

1. Explanation of overall learning objectives for the rotation.
2. Explanation of the objectives for each individual ward round.
3. Ability to arouse my interest when introducing a topic for discussion.
4. Explanation of the work expected from each trainee.
5. Ability to maintain a clear relationship between ward round activities and the overall learning objectives.
6. Skill in clarifying the relationships between previous classroom learning and various concerns discussed during ward rounds.
7. Skill in making clear the distinction between major and minor medical information.

8. Ability to clarify information or procedures which need elaboration.
9. Effectiveness in demonstrating competent patient care.
10. Ability to make clear the bases for his/her actions and decisions.
11. Ability to ask easily understood questions.
12. Ability to ask thought-provoking questions.
13. Ability to answer questions clearly and concisely.
14. Ability to get trainees to participate in discussions about patient care.
15. Ability to summarize a case before moving on to another patient discussion.
16. Explanation of precisely how my performance is to be evaluated.
17. Ability to design evaluation procedures which are consistent with stated learning objectives.
18. Performance in periodically informing me of my educational progress.
19. Selection of cases for discussion which are thought-provoking.
20. Ability to deal with difficult cases at a level appropriate to trainees.
21. Emphasis on conceptual comprehension rather than merely factual recall.
22. Ability to challenge students to constantly improve their clinical capabilities.
23. Provision of variety in cases for discussion.
24. Ability to use a variety of teaching techniques.
25. Responsiveness to the needs of individual trainees.
26. Ability to take appropriate action when trainees appear to be bored.
27. Availability for personal consultation.

28. Ability to relate to people in ways which promote mutual respect.
29. Maintenance of an atmosphere which actively encourages learning.
30. Ability to relate the cases presented to other patient-care situations.
31. Willingness to explore a variety of approaches to patient care.
32. Ability to get trainees to challenge points of view in patient care discussions.
33. Performance in helping me to explore the relationship between my personal values and various aspects of patient care.
34. Performance in making me aware of value issues in clinical practice.

SECTION II -- OTHER INFORMATION

Please mark the appropriate response for each of the following items beside the correct statement number on the computer card.

35. On this rotation, I am learning:

(1) A Great Deal	(3) Very Little
(2) A Fair Amount	(4) I Am Unsure
36. As a result of this rotation, my attitude toward the attending physician is:

(1) Becoming More Positive	(3) Unchanged, Positive
(2) Becoming More Negative	(4) Unchanged, Negative
37. As a consequence of participating in this rotation, my attitude toward clinical training is:

(1) Becoming More Positive	(3) Unchanged, Positive
(2) Becoming More Negative	(4) Unchanged, Negative
38. I would prefer that attending physician rounds:
 - (1) Become More Structured or Organized
 - (2) Become Less Structured or Organized
 - (3) Maintain About the Present Level of Structure
39. Overall, I would rate this rotation as:

(1) Excellent	(3) Mediocre
(2) Good	(4) Poor

40. What is your present level of training?
- (1) Clinical Clerk
 - (2) Rotating Intern
 - (3) Pediatric Resident - I
 - (4) Pediatric Resident - II
 - (5) Pediatric Resident - III

Instructional Development Service Project
Macdonald Chemistry Building
McGill University
Montreal, Quebec

TEACHING SKILLS AND BEHAVIORS:
DEFINITIONS AND QUESTIONNAIRE ITEMS

- I. ESTABLISHING A LEARNING SET: The instructor's ability to create in trainees a cognitive and effective predisposition to engage in a given learning activity (1-4).
- II. LOGICAL ORGANIZATION: The instructor's skill in arranging and presenting case content and learning activities so that trainees understand the relationships among the various topics, ideas, issues, activities, etc., covered during the rotation (5-7).
- III. ELABORATION: The instructor's skill in clarifying or developing an idea or topic (8).
- IV. ROLE MODEL: The instructor's ability to model and to make clear to trainees the patient-care process (9, 10).
- V. ASKING QUESTIONS: The instructor's skill in using various questioning techniques at appropriate times and for a variety of instructional purposes (11, 12).
- VI. RESPONDING TO QUESTIONS: The instructor's ability to answer questions clearly and concisely and with an appropriate emotional tone (13).
- VII. STUDENT PARTICIPATION: The instructor's skills in facilitating trainee participation in patient discussions and in leading those discussions in fruitful directions (14).
- VIII. CLOSURE: The instructor's abilities in integrating the major points of a discussion, to establish a cognitive link between the familiar and the new, and to provide trainees with a feeling of accomplishment (15).

- IX. EVALUATION: The instructor's skills in specifying the criteria for evaluation, in designing valid and reliable evaluation procedures, and in providing adequate feedback to trainees about their progress (16-18).
- X. LEVEL OF CHALLENGE: The instructor's skills in selecting ward round objectives, content, and activities which challenge trainees' conceptual abilities but which are not too difficult for trainees to master (19-22).
- XI. METHODS AND MATERIALS: The instructor's ability to use various teaching methods effectively and to provide variation in cognitive behaviors, ward round activities, and case materials (23, 24).
- XII. FLEXIBILITY/INDIVIDUALIZATION: The instructor's ability to deal with differing interests and abilities among trainees on his/her rotation and to respond constructively to trainees' suggestions, criticisms, comments about his/her teaching strategies (25-27).
- XIII. INTERPERSONAL RELATIONS: The instructor's ability to relate to people in ways which promote mutual respect and rapport (28).
- XIV. LEARNING ENVIRONMENT: The instructor's ability to create and maintain an atmosphere conducive to trainee involvement (overt and/or covert) and learning (29).
- XV. PERSPECTIVE: The instructor's ability to establish a frame of reference for concepts, issues, ideas, etc., and to expand that frame of reference to include an increasingly wider variety of viewpoints, implications, and relationships (30-32).
- XVI. VALUE CONTEXT: The instructor's abilities: (a) to identify explicitly his/her own values and to clarify the implications of those values in the selection and interpretation of case material; (b) to explore other values and their implications as they relate to the case material; and (c) to help trainees clarify their values and recognize the implications of those values for their personal and professional conduct (33, 34).
-

These skills and definitions are adaptations of a set of twenty such skills and definitions originally put together by the Clinic to Improve University Teaching at the School of Education of the University of Massachusetts at Amherst.

