THE PRESENT AND PROMISE OF FAMILY MEDICINE IN
UNDERGRADUATE EDUCATION:

GENERALIST FOUNDATIONS:

A DISCUSSION PAPER

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ON BEHALF OF THE SECTION OF TEACHERS

“Some see the world as it is and ask why,
I see the world as it could be and ask, why not?”
G.B. Shaw

(SEPTMBER 2000)
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<th>Description</th>
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<tr>
<td>ACMC</td>
<td>Association of Canadian Medical Colleges</td>
</tr>
<tr>
<td>CaRMS</td>
<td>Canadian Association of Residents and Medical Students</td>
</tr>
<tr>
<td>CFPC</td>
<td>College of Family Physicians of Canada</td>
</tr>
<tr>
<td>CME</td>
<td>Continuing Medical Education</td>
</tr>
<tr>
<td>EFPO</td>
<td>Educating Future Physicians for Ontario Project</td>
</tr>
<tr>
<td>GPEP</td>
<td>General Professional Education of the Physician and College Preparation for Medicine</td>
</tr>
<tr>
<td>MCC</td>
<td>Medical Council of Canada</td>
</tr>
<tr>
<td>MCQ</td>
<td>Multiple Choice Questions</td>
</tr>
<tr>
<td>NEMP</td>
<td>North Eastern Ontario Medical Program</td>
</tr>
<tr>
<td>NOMP</td>
<td>Northern Ontario Medical Program</td>
</tr>
<tr>
<td>OSCE</td>
<td>Observed Structured Clinical Exams</td>
</tr>
<tr>
<td>PBL</td>
<td>Problem-Based Learning</td>
</tr>
<tr>
<td>SAM</td>
<td>Short Answer Management</td>
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</table>
PREFACE

You hold in your hand a monograph reflective of the discipline it covers and the multiple tasks that it calls forth in its practitioners. It is both a summary of what is, and an outline of what might be; it is a philosophical perspective and a practical tool to assist those responsible for delivering undergraduate programs in Family Medicine. Its authors are directors of undergraduate programs in a number of the sixteen medical schools in Canada. They are working, thinking, and writing at a pivotal time in the development of Family Medicine in the undergraduate medical curricula in Canada.

It is at a time when both educators and the broader society are recognizing the limits imposed by medical instruction that is a disaggregated series of increasingly specialized dollops of knowledge. There is increasing recognition that learning from preselected, specialized in-patients does not provide a sufficient foundation for understanding health and disease in the communities in which most medicine is practiced. It is also a time of diminishing resources for much of both service and education. Insofar as the departments of Family Medicine have tended to be the least well-resourced departments in each of the medical schools, the increasing opportunities for Family Medicine involvement in the undergraduate medical curricula is a mixed blessing.

This monograph seeks to delineate the nature of the opportunities, outline the resources that will be required, and provide a framework in which the development of the discipline can be managed in a thoughtful and efficient manner.

We wish to thank the College of Family Physicians of Canada, and in particular, the Section of Teachers, for their support of this monograph and the development of the Undergraduate Program Directors Group. It builds upon the dedicated work of Dr. Gary Beasley and those who developed the previous (1989)* Report on Undergraduate Medical Education. It owes much to the skillful copy editing of Christine Evans. I wish to acknowledge the particular contributions of Dr. Wayne Weston to the development of this monograph – his thoughtful contributions are worthy of the first Ian McWhinney prizewinner. The authors also wish to extend their appreciation to their families—the foundation of our personal lives and raison d’être of our discipline.

Dr. Robert Woollard, Editor
University of British Columbia

The practice of medicine at the beginning of the twenty-first century reflects, as it always has, the intellectual currents and daily reality of the society in which it is embedded. It thus demonstrates a number of paradoxical themes and trends: an impressive technological hubris and the simultaneous, profound anxiety about its future survival; a global reach for common purpose and the simultaneous fracture into ever smaller groups of particular interests; a quest for tolerance and mutual understanding with a simultaneous desire to express those particular values deemed fundamental; a seeming institutional obsession with things economic and the simultaneous yearning for more meaningful motivations and goals; and finally a recognition of the profound interconnectedness of life with the simultaneous lack of confidence in the tractability of complex interrelated problems. Inherent in this series of paradoxes is the danger that like many social institutions and individuals we might concentrate on the particular as a refuge from a welter of conflicting winds of change. The difficulties are further aggravated if we set our minds to the task of educating new practitioners for an uncertain future.

It therefore behooves us to address the shared purposes and philosophical perspectives that attend the important entwined tasks of serving our patients and preparing undergraduate medical students for their own opportunities to learn and serve. Any serious attempt at outlining the particular responsibilities of the discipline of Family Medicine in the undergraduate realm must address the fundamental goal inherent in the training of all students to the level of the M.D. degree.

This overall goal is well articulated by Wayne Weston in the context of the Faculty of Medicine at the University of Western Ontario.
Our graduates must be knowledgeable in the biological, behavioral and population sciences basic to medicine; they must also begin a lifelong quest to understand the human condition, the unique responses of patients to their illnesses and the healing nature of the patient-physician relationship.

Since poets, philosophers and kings have, on numerous historical occasions, despaired of their ability to “understand the human condition”, let alone grasp the fundamentals of medical science, this may seem an intimidating task. It is not unlike the chosen work of the individual physician, which Weston describes as: “demanding, often difficult, sometimes impossible; but, for the most part, it is deeply rewarding.”

Central to the contributions that Family Medicine can make to the undergraduate curriculum is this striving for effective action in the face of inadequate knowledge and uncertain outcome. The interplay with the basic sciences and other clinical disciplines in enhancing the knowledge base of the profession is one aspect of this contribution. There are also skills in interpersonal relationships, and the doctor-patient relationship in particular, that the discipline is especially suited to foster in undergraduate medical students. As undergraduate education moves more forthrightly towards forming a basis for lifelong learning wherein problem-solving skills are placed in service to patient and community care, it is apparent that the discipline has a major contribution to make in fostering and sustaining attitudes among the undergraduate student population. Finally, there is the issue of values. Since the Family Practice venues are frequently the earliest opportunities in the curriculum for the students to be exposed directly to patients and clinical care in their community and/or home environment, the inherent ethos of service to those who suffer can be demonstrated and inculcated.

The Changing Environment

Why might the discipline of Family Medicine presume to have a central role in the development of knowledge, skills, attitudes, and values by undergraduate medical students? The answer resides in several parallel trends of evolution, all of which do, or should have, an impact on undergraduate education. First, there is the evolving nature of education and the increasing knowledge about principles of adult education and their application in the real world. Second, there is a rapidly evolving change in the fundamental epistemology surrounding health and disease – their origins and influences. Third, the place in which care is delivered is evolving away from the central focus on the acute hospital towards the community with an attendant cascade of increasing acuity of illness at every level. Fourth, the role of the physician in varying parts of society is evolving concomitant with the above changes. And finally, the preoccupations
of Canadian society are themselves evolving from mere survival to questions of desired futures. These trends, together with the virtual revolution in the realm of the basic sciences, affect all disciplines in medicine to varying degrees.

It is therefore clear that undergraduate education must reflect a cohesive, interdisciplinary response. This cohesion will exist in direct proportion to the degree of mutual respect and clarity of roles that the various disciplines can muster. This paper is an attempt to clarify the particular contributions that Family Medicine can make, while at the same time recognizing that it is in the nature of the generalist disciplines to share much of their “scopes of practice” with more specialized practitioners.

We are not alone during this first decade of the twenty-first century in reflecting on our nature, our past, and our future. While the last thorough going, broadly-based North American initiative specifically focused on undergraduate medical education (Physicians for the 21st Century, AAMC) reported in 1984, a number of reflective documents are helping to prepare the profession for changing roles in the next century. For over a decade, the College of Family Physicians of Canada has distilled, and sought to apply, the four principles of Family Medicine (see Table 1).

Table 1. Four Principles of Family Medicine
1. The doctor/patient relationship is central to the role of the family physician
2. The family physician must be a skilled clinician
3. Family Medicine is a community-based discipline
4. The family physician is a resource to a defined practice population

In an educational context, coincident with this, the medical schools in Ontario have undertaken and reported on the education of future physicians for Ontario (EFPO). Through public and professional consultation, the latter has articulated a number of roles for the profession (see Table 2).

Table 2. Role of the Future Physician
- Physician as Medical Expert / Clinical Decision Maker
- Physician as Communicator / Educator / Humanist / Healer
- Physician as Collaborator
- Physician as Gatekeeper / Resource Manager
- Physician as Health Advocate
- Physician as Learner
- Physician as Scientist / Scholar
- Physician as Person

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When the results of these two initiatives are placed on a grid (see Table 3), they provide a useful tool for the examination of the discipline of Family Medicine in the undergraduate education of physicians. This paper seeks to advance and facilitate the meeting of those responsibilities.

### Table 3. The Contribution of Family Medicine to Undergraduate Education

<table>
<thead>
<tr>
<th>Doctor / Patient Relationship</th>
<th>Skilled Clinician</th>
<th>Community Based</th>
<th>Resource to Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert/Clinician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicator</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Collaborator</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Gatekeeper</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Health Advocate</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Learner/Scholar</td>
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<td></td>
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<tr>
<td>Scientist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person</td>
<td></td>
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</tr>
</tbody>
</table>

The Role of the College of Family Physicians of Canada (CFPC)

In the confederation that is Canada, the governmental and regulatory responsibility for both education and health rests at the provincial level. Beyond this, curriculum development and delivery is the specific responsibility of the sixteen Canadian medical schools. One might therefore reasonably ask what role there could possibly be for a national college in a process that is characterized by local negotiations within an international framework of accreditation (CACMS/LCME), the results of which are tested by a national exam (LMCC).

The answer lies within the question itself. As addressed in other parts of this paper, the increasing involvement of academic departments of Family Medicine is taking place in an atmosphere of severe resource constraints. These are dictated in part by historical deficiencies, and in part by the added expense of community-based teaching. No institutions analogous to hospitals are present to assist in the infrastructure and funding of such teaching. The CACMS/LCME accreditation guidelines have lamentably little to say about the particular roles of (and necessary infrastructure for) the discipline of Family Medicine. The LMCC examination process, while engaging family practitioners, lacks a formal mechanism to ensure sufficient testing of the domain of Family Medicine, or to report (as it does with other disciplines) on either the overall or individual performance of students on discipline-specific questions. There is an
unfulfilled role for the College of Family Physicians of Canada in articulating, advocating, and supporting the important perspective of Family Medicine as we assist in the education of physicians for the new century.

How is this perspective different? It was well articulated by the College in its last publication on the matter (Family Medicine and Undergraduate Medical Education; Toward a National Vision, 1989). In that paper with reference to Gayle Stephens, the College stated:

The focus of Family Medicine is on the ordinary rather than the extraordinary, the common more than the rare, the problem more than the disease, the organism more than the self, the behavior of the organism more than its biochemistry, the environment of the individual more than the individual, and on understanding, more than the technique. The basis of its management decision lies more in probability than in certainty.³

This perspective gains added currency as the profession seeks to respond to the evolutionary trends that have been articulated above. It in no way replaces the commitment to the scientific rigour or evidence base required for both the practice of medicine and for the teaching of medical students. It is instead a co-equal part necessary for the effective application of science and evidence in service to the health of Canadians. At the present time, with the institutions of science, and indeed, science itself being under threat; “hard” science is often marginalized in policy and social responses to complex problems. If science, and in particular medical science, relinquishes this field in pursuit of an almost theological purity, a potentially golden opportunity will slip through society’s fingers. Coincident with this trend, the concept of “evidence based” sees practical expression more in service to saving money than serving patients. If it is inadequately expressed, the generalist perspective could be dismissed as shoddy science with little basis in evidence. This would indeed be tragic. The already massive turn of society to alternative practices with very doubtful efficacy and no scientific pretensions would likely continue to the detriment of both scientific medicine and the populace as a whole.

Not everyone has, nor should they have, an overriding commitment to the generalist perspective. No more so than should everyone have an overriding commitment to genetics as the discipline that explains the human condition. It is a balance of perspectives that undergraduate medical students must carry forward into their particular career paths. Their success in simultaneously shaping their commitment to both science and humanity will be a mark of the success of the medical school from which they receive their undergraduate education.
This brings us to the central offering of the Family Practice discipline to the education of future physicians. Sometimes captured under the rubric “patient-centredness” this offering is the opportunity not only to see patients in an ongoing way, but also to reflect on the meaning of “seeing” and develop the specific skills to actually serve those patients. Various chapters in this document articulate in some detail how the discipline of Family Medicine can assist in the development of core knowledge, skills, and attitudes which, in conjunction with knowledge, skills and attitudes gained in the other disciplines, assist in the production of the twenty-first century version of the compleat physician.
Introduction

Before the curriculum renewal efforts of the late 1980s, medical education had undergone little change since the Flexnerian model was established in the early part of the twentieth century. Flexner was commissioned to establish a specific benchmark against which all programs could be compared. He advocated early concentration on basic science and later introduction of practical clinical experience.1 The implementation of this model of medical education encouraged strong ownership of specific courses and course time by the large and well established departments in the medical schools. At most universities, these ownership issues were well entrenched by the time Family Medicine became a recognized discipline and very few universities were willing to challenge the status quo to allow for a meaningful teaching role for our discipline.

Medical educators began to look more closely at the theories and principles of adult education as they might apply to medical education during the last half of the twentieth century. This effort brought about many paradigm shifts in medical education. These changes included shifting from a teacher-centred to a student-centred approach, from lectures to small group and tutorial-based sessions, from discipline-based to problem-based curricula, from a disease-centered to a patient-centred focus, from an individual patient orientation to a community focused orientation, and from competitive learning to cooperative learning environments.2 Canadian medical educators at McMaster University were among the first to develop an undergraduate curriculum based on these principles. The first graduating class matriculated in 1968.
In 1984, the report of the Panel on the General Professional Education of the Physician and College Preparation for Medicine published by the Association of American Medical Colleges (The GPEP Report: Physicians for the Twenty-first Century) provided a framework for the implementation of these new concepts and initiated a global process of curriculum renewal in medical education.  

This curriculum renewal initiative provided a unique opportunity for Family Medicine to become more involved in the undergraduate education programs in medical schools across our country. The need to develop multidisciplinary courses, the introduction of earlier clinical exposure, and the recognition of primary care as an important part of health care allowed the role of the family physician to be greatly expanded. This increased presence has provided Family Medicine with many new opportunities to share our unique perspective and expertise with medical students. This expanded role however, has brought many new challenges to the departments of Family Medicine across the country.

In preparation for this report, the Canadian Undergraduate Family Medicine Program Directors embarked on a national survey to update the work of Beazley and to document our current involvement in undergraduate education programs in the sixteen Canadian medical schools in 1999. What follows is a brief review of our findings. Many medical schools continue to be actively engaged in curriculum renewal efforts and changes are ongoing.

Preclerkship

As a result of the GPEP report and international curriculum renewal initiatives, most Canadian medical schools have moved toward a “systems-based” or “problem-based” curriculum for their undergraduate medical program. A few schools have chosen to combine these and other approaches and call them a “hybrid” curriculum. In many instances, lectures have been replaced or supplemented with small group, tutorial-based learning opportunities.

As medical schools move away from traditional, pedagogical models of adult education, students are encouraged to become more self-directed and active in their learning activities. At the same time, faculty members are expected to become “facilitators” of this learning and reserve didactic teaching methods for appropriate settings. These extraordinary curriculum renewal efforts are successfully accomplishing the goals set out in the GPEP report. Additionally, students and faculty are generally pleased with the changes.
The curriculum changes outlined above have been accompanied by an expanded role for family physicians in most medical schools. We are now, in many cases for the first time, being asked to participate in the development, implementation, and teaching of many preclerkship courses.

In our cross-country survey, we determined that Canadian medical schools now offer from 8 to 20 preclerkship courses. The role of Family Medicine in teaching these courses varies widely from course to course and across universities. Many departments of Family Medicine now provide greater than 1000 hours of preclerkship teaching (Dalhousie University, Memorial University, Queens University and University of Laval) and a few surpass the 2000-4000 hour mark (McGill University, University of Sherbrooke, University of Toronto, and University of British Columbia). The highest contributions come from university departments involved in the delivery of “introduction to clinical medicine” courses, health and the community courses, and the provision of problem-based learning (PBL) tutors. Only nine of the medical schools surveyed noted that their faculty members receive funding for teaching these new preclerkship courses.

Family physicians have been instrumental in planning and providing administrative leadership to many of the new preclerkship courses. Where data are available, we have determined that 17 of the preclerkship course directors across the country are family physicians (ranging from none at some schools to as many as three at the University of Laval and five at the University of Western Ontario). Family Medicine representation on these course committees varies greatly from school to school; there is little or no involvement at some schools and more than three family physician members on committees at other sites. Where family physicians are involved, approximately half of our colleagues receive funding for these administrative activities.

The main advantage of these new preclerkship teaching opportunities is to provide family medicine faculty with an opportunity to meet medical students early in their training in order to share our perspective and serve as role models and mentors for them before the clerkship. Mentoring, an important student support mechanism, takes place in nine of the medical schools. In those schools, approximately 16% of the faculty mentors are family physicians (range 7-45%). The Family Physician is uniquely trained to listen to the concerns of the student and facilitate the activities and the support mechanism that the student may require. Any school not currently offering a mentoring program should consider adding one if possible.

One of the unexpected changes as a result of curriculum renewal across the country was a decrease in the opportunity for students to undertake an elective in Family Medicine during their
preclerkship years. At present, only eight of the medical schools offer preclerkship electives in Family Medicine; between 5 and 98% of students in those schools enjoy the opportunity to take these electives (the average across the country is 25%). Although medical students now have an expanded opportunity to meet and learn from Family Physicians early in their training, we believe that career sampling is an important component of the curriculum now missing in the preclerkship years in half of our medical schools. The students themselves have recognized this problem and have undertaken “unofficial” electives in many of the schools. It is expected that many of the schools will recognize this problem in the near future and reinstate these electives.

The contributions that Family Medicine has made to the preclerkship curriculum renewal and implementation process are significant and have been highly evaluated. The challenge in providing all of these curricular changes is the increased need for faculty development, faculty remuneration for teaching, and an allowance for faculty to be away from their clinical activities. These challenges are being met to a different level of success at the various institutions across the country. Family Medicine must continue to make contributions to the undergraduate education programs known to the administrators and the funding agencies by publishing our work and presenting at international educational symposia. In doing so, we strengthen our position at our medical school and lend validity to our request for the reallocation of teaching budgets to reflect more closely the current contributions of Family Medicine.

Clerkship

The average duration of the clerkship programs at medical schools in Canada is 61 weeks (ranging from 24-88 weeks). Fifteen of the sixteen schools offer a “core” or compulsory clerkship rotation in Family Medicine of four to eight weeks in duration. The sixteenth school, the University of Ottawa, labels the rotation an “ambulatory clerkship.” The inclusion of a core clerkship in Family Medicine at all medical schools marks a significant change in the role of Family Medicine in the medical school as a key provider of training in the clerkship years.

The education literature has clearly documented that early exposure of medical students to rural practice encourages them to consider rural opportunities upon graduation. Family Medicine clerkships are attempting to address the current rural physician shortage in Canada by providing students with many rural clerkship experiences. Many schools offer both university and rural-based core clerkship rotations in Family Medicine; four schools have even mandated a rural component. Approximately 60% of medical students engage in their core clerkship in Family Medicine in a rural setting and 40% in an urban or suburban setting (60% in hospital teaching units and 40% in community-based offices).
Clerkship teaching is both rewarding and time consuming. This teaching activity can take a busy clinician away from revenue generating activities. Fourteen of the sixteen medical schools recognize this contribution and provide a stipend for non-GFT supervisors. The average stipend across Canada is $200 per week for core clerkship teaching in Family Medicine. Some schools reimburse non-GFT teachers for their efforts with CME course vouchers.

The goals and objectives of the core clerkship in Family Medicine (only 13 out of 16 were collected) are explicitly structured around the “four principles of Family Medicine,” as outlined by the College of Family Physicians of Canada, in three of the medical schools. Additionally, five schools make reference to the “four principles” as guiding principles in their programs. There is a remarkable similarity in the goals and objectives outlined by the various schools; however, at this point, there is not a national curriculum for the core clerkship in Family Medicine. In 1999, the Medical Council of Canada added a list of primary care objectives to its “Objectives for the Qualifying Examination” monograph. While each school may offer a unique opportunity for its clerks, it is time to develop a national vision for a core clerkship in Family Medicine with universal goals and objectives structured around the four principles of Family Medicine.

The required components of the core Family Medicine clerkship vary from school to school. Most programs provide a list of “core content” subject areas (common presenting problems, issues of screening, or health promotion) and exposure to “out of office” work such as home visits, palliative care, emergency department work, after hours care, and the provision of primary care obstetrics (Table 1). Eleven of the Family Medicine clerkship programs use a log card to track the students’ exposure to common presenting problems. Exposing students to the complete portfolio of Family Medicine is extremely important to help them understand the diversity and complexity of care that family physicians provide. This exposure provides important information for students in their career selection and is equally important for the student who embarks on a Family Medicine residency and the student who enrolls in a Royal College residency program. All clinicians need to learn about the nature and complexity of providing care to patients in a primary care setting. We firmly believe that this “common exposure” will foster better interdisciplinary relationships and, ultimately, provide for more effective patient care.
Table 1: Non Office-Based Components of Family Medicine Clerkships in Canada (1999)

<table>
<thead>
<tr>
<th>Components</th>
<th>Offered (n= number of schools)</th>
<th>Mandatory (n= number of schools)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Visits</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Palliative Care</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Emergency Department</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>After-hours Care</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Primary Care Obstetrics</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Long-term, Chronic or Senior Care</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Inpatient Care</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

The academic medical literature has documented many new and effective summative evaluation techniques for clerkship teaching. Table 2 lists the evaluation initiatives currently employed by Family Medicine clerkship programs in Canadian medical schools.

Table 2: Methods of Evaluation in Family Medicine Clerkships in Canada (1999)

<table>
<thead>
<tr>
<th>Evaluation Method</th>
<th>Number of Family Medicine Clerkship Programs currently employing this method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Evaluation</td>
<td>13*</td>
</tr>
<tr>
<td>Objective Structured Clinical Examination (OSCE)</td>
<td>7</td>
</tr>
<tr>
<td>Short Answer Management (SAMs)</td>
<td>5</td>
</tr>
<tr>
<td>Multiple Choice Questions (MCQs)</td>
<td>4</td>
</tr>
<tr>
<td>Academic Project/Research Project</td>
<td>4</td>
</tr>
<tr>
<td>Key Features</td>
<td>2</td>
</tr>
<tr>
<td>Simulated Office Oral</td>
<td>1</td>
</tr>
<tr>
<td>Oral Examination</td>
<td>1</td>
</tr>
</tbody>
</table>

* While 13 of the medical schools incorporate a clinical evaluation as part of the evaluation process, 3 schools use this component for 100% of the final summation mark.
The teaching contribution to the delivery of a clerkship in Family Medicine is substantial. The number of teacher equivalents engaged in clerkship teaching ranges from 20 faculty members at the smaller medical schools to more than 200 at the larger schools. This teaching endeavour could not be successfully mounted without a significant faculty development initiative. Thirteen of the schools offer faculty development programs to Family Physicians.

In recent years, many disciplines have begun to use resident trainees to provide teaching to clerkship students. To date, only five medical schools have tapped into this source for teaching in the Family Medicine clerkship.

**Clerkship Electives**

Many students who apply to Family Medicine Residency programs believe that they must do an elective in Family Medicine in order to have a viable application. In fact, some postgraduate programs look for a clerkship elective as a prerequisite for the application. Fourteen of the schools offer a clerkship elective in Family Medicine. The number of students who undertake to do a clerkship elective in Family Medicine varies from 3% at one school to 60% at another. The reason for this wide range is unclear. On average, 30% of clerks take at least one elective in Family Medicine. Most of the students choose to do their elective in a community-based office setting (70%). The substantial teaching commitment from community-based physicians allowing for this activity is not remunerated in nine of the fourteen sites. Clearly, Family Physicians continue to offer this teaching because of non-financial rewards. For many physicians, the desire to “give back” to their alma mater or to help their future colleagues is enough compensation. For others, the reason for being involved in elective teaching relates to a desire to be involved in an academic activity.

We should not underestimate the influence that these contributions to undergraduate medical education have had on the quality of the applicant in residency programs. Meurer analyzed the evidence in 1995 and determined that:

> the evidence suggests that three types of curricular experiences may increase interest in primary care: third-year required family medicine clerkships (especially those that are six, rather than four, weeks long), continuity experiences in primary care settings, and primary care tracks.⁶

The undergraduate programs in Family Medicine have made great strides in these areas and we must continue to do so in the future.
University Administration

As our discipline matures, Family Physicians are becoming more involved in the central governance and administration of the medical schools. Table 3 outlines the current contributions of Family Medicine to the committees governing our medical schools.

Table 3: Faculty of Medicine Committee Membership by Family Physicians (1999)

<table>
<thead>
<tr>
<th>Name of Faculty Committee</th>
<th>Number of Schools with Family Medicine Representation (n=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum Planning</td>
<td>15</td>
</tr>
<tr>
<td>Admissions</td>
<td>12</td>
</tr>
<tr>
<td>Program Evaluation</td>
<td>7</td>
</tr>
<tr>
<td>Faculty Development</td>
<td>6</td>
</tr>
<tr>
<td>Promotions</td>
<td>3</td>
</tr>
</tbody>
</table>

Perhaps the most significant evidence of our maturation is the recent appointment of a Family Physician to the position of Dean of the Faculty of Medicine at two Canadian medical schools (University of Western Ontario and University of Manitoba), and the increasing role of Family Physicians as Associate Deans in many portfolios, as listed in Table 4.

Table 4: Associate Dean Portfolios held by Family Physicians in Canadian Medical Schools (1999)

<table>
<thead>
<tr>
<th>Associate Dean Portfolio</th>
<th>Number of Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Education</td>
<td>2 – Queens University, University of Laval</td>
</tr>
<tr>
<td>Faculty Development</td>
<td>2 – Memorial University, University of British Columbia</td>
</tr>
<tr>
<td>Continuing Medical Education</td>
<td>2 – University of Toronto, Memorial University</td>
</tr>
<tr>
<td>Postgraduate Medical Education</td>
<td>1 – Queens University</td>
</tr>
<tr>
<td>Executive Vice Dean</td>
<td>2 – University of Laval, University of Sherbrooke</td>
</tr>
</tbody>
</table>

All of the teaching and administrative activities of family physicians across Canada have contributed to the growth of the Family Medicine departments. Memberships now average 27 full-time (geographic full-time) (ranging from 2 to over 120) and 116 part-time faculty (ranging from 2 to over 300). Almost all of these teachers have faculty appointments at their university.
The Role of the Undergraduate Education Program Director

The undergraduate education programs in Family Medicine have assumed a place of importance in both the departments of Family Medicine and the medical schools. The provision of excellent academic programs has led to this recognition. Leading the initiative at every school is a program director for undergraduate education whose job is to administer all of the programs offered. On average, program directors devote two half-days per week to this activity and all have administrative support for their work. Some of the program directors are salaried and others receive a stipend for their efforts. All of the program directors today owe a debt of gratitude to those who led the way as pioneers for these programs, especially Dr. Gary Beazley who served as the National Chair of the Undergraduate Program Directors Group. His tireless efforts paved the way for the successes that we are now enjoying.

Conclusion

As a discipline, Family Medicine has matured and developed an important relationship with the medical schools in Canada. The goals of the World Health Organization report of 1983, “to strike a balance between the specialist and the primary care dimensions” taught in medical school have been considered and incorporated into most undergraduate programs.  

We have reached the “bright future” in undergraduate medical education that Haight wrote about in 1987. His advice to “continue quietly to propose, foster and propagate the recognition of the complementary balance between specialist and primary-care contributions to undergraduate medical education” was heeded by our predecessors. The international efforts toward curriculum renewal provided us with the impetus and opportunity to make significant contributions to the undergraduate medical programs, and we are now responsible for the delivery of large portions of curriculum time.

There are a number of challenges as we embark on the new millennium. Many organizations have agreed that to meet the medical and health care needs of our society, there must be more emphasis on generalist education and the production of generalist physicians. There will be an increasing demand on Family Medicine to provide even more faculty hours to teach and supervise students. We will be asked to participate in, and, in many cases, coordinate the acquisition of knowledge (problem-based tutorials, small group seminars, and traditional lecture formats), clinical skills (affective, communication, physical examination), and appropriate attitudes for the practice of medicine (professionalism, mentoring programs, community outreach, advocacy).
Family physicians will be asked to provide more supervision in the community (both in the urban and rural settings) as the medical schools try to decrease faculty to students ratios and decentralize their teaching activities in accordance with the GPEP report. We will be asked to provide more members of our departments for the planning and implementation of new courses and to provide leadership at all levels of the medical school. All of this provides Family Medicine with a unique opportunity to continue to share our perspective with medical students. However, it will also continue to tax already underfunded departments of Family Medicine. Full-time and part-time faculty members are increasingly being asked to provide more for the medical schools with no commensurate increase in their salaries. Community-based clinicians are, by and large, donating their services to the schools with little more than a library card or CME vouchers and a faculty appointment as recognition of their efforts. As noted by Beazley in 1987, considerable differences still exist in the financial support to and the use of resources for the various departments in Canadian universities, and steps must be taken to remedy this situation.

The other major focus for our consideration is the need to develop a national standard for program requirements in undergraduate Family Medicine education. The time has come for us to look at the goals and objectives of the programs across the country and set standards to ensure that all Canadian medical students receive a strong undergraduate educational experience in Family Medicine.
CHAPTER 3

RESOURCES TO SUPPORT THE ROLE

CATHY MACLEAN

Departments of Family Medicine must identify their specific needs and attain the resources to provide the academic and administrative activities required for undergraduate medical education. This chapter outlines, in general terms, the constellation of resources needed to deliver on the promise afforded by teaching undergraduate medical students the discipline of Family Medicine. It is not meant to be exhaustive, but rather to underscore the concern that committed resources must accompany expansion of the discipline’s role in the curriculum or the entire enterprise can be placed at risk. These resources include clinical teachers, administrative support, faculty development, and program development, implementation, and evaluation.

Teachers

Family Medicine departments continue to rely on three groups for undergraduate teaching: “geographic” full-time salaried faculty (GFT), part-time faculty working in the community, and allied health professionals working on teams with family physicians. In some programs, in reality distressingly few, Family Medicine residents are also playing a role in teaching undergraduate medical students.

Family Physicians

GFT’s have undertaken various teaching activities at the undergraduate level; however, their limited numbers, teaching practice, patient volumes, and competition with other learners in this environment restrict the amount of teaching they can do. This teaching can compete with their postgraduate mandate, research, and administrative responsibilities.

Part-time faculty can be attached to academic Family Medicine centres, or, more likely, are in practice in the community. This provides students with excellent learning opportunities in rural and remote locations away from tertiary care centres as well as in the community adjacent to the medical schools themselves. These family physicians teach in their offices, community hospitals and emergency departments, nursing homes, and in patients’ homes--settings that afford the best opportunity for the teaching and learning of clinical principles and concepts of Family Medicine.¹
With shrinking pools of family doctors in some locations and increases in workload and concerns about income, part-time, community-based family physicians are finding the challenges of taking medical students into their practices increasing. The need for faculty development is often unmet for this group. These trends are leading some family doctors to restrict their teaching. If not addressed, this has major implications for the sustainability of Family Medicine teaching and underscores the importance of effective organization, support, and resources.2

Allied Health Professionals

Other caregivers, such as family practice and public health nurses, home care workers, social workers, psychologists, pharmacists, and nutritionists currently work in teams with family physicians. Their professional training encourages students to look at patients and their problems in a broader context. Their involvement in teaching provides a role model for a team approach to patient care and teaches students about community resources and collaboration. Allied health professionals can also contribute to teaching topics such as communication skills and counseling. Cutbacks in hospital budgets can place limitations on the availability of these professionals for teaching. Students can be exposed to a variety of practice situations in order to gain a balanced view of the many ways in which physicians can work with other professions to best serve their patients.

Residents

Family Medicine residents can play a role in undergraduate medical education. Residents work closely with other medical students in a number of settings, and their role in teaching students should be explored and supported. This may also encourage residents who are interested in academic careers. At the same time, it reinforces aspects of patient-centred care, which parallels learner-centred care skills. The learning-by-doing practice of care focussed on the needs of the patient being shared with an active junior learner can be a powerful experience for both. Most other specialties rely very heavily on residents to teach their undergraduate objectives. Residents involved in teaching should have the appropriate orientation and faculty support.

Patients

Family practice patients can be a resource in teaching undergraduate medical students. Teaching practices should be identified and patients acknowledged and thanked for their involvement in allowing students to see them in the office and hospital. Patients can also be included in lectures and Observed Structured Clinical Exams (OCSE’s), and can be asked for
feedback on student performance. Simulated patient programs are now available in most medical schools and this is another excellent way to involve patients in the education of medical students. These patients can be trained to assist students in developing numerous skills such as breast and pelvic exams, history taking, and communication skills. They are also very valuable as a standardized method of evaluation and in medical education research. A robust partnership that demonstrates the respectful, patient-centred nature of the doctor-patient relationship must underpin any developments in this area.

Selection of Teachers

Each department of Family Medicine must define specific criteria for the selection of teachers. Standards set may include membership or certification in the College of Family Physicians of Canada, minimum attendance at continuing medical education courses, participation in programs, such as the practice-based small group learning project, on-site visits, and practice audits and assessments. Many departments request that part-time faculty attend annual preceptors’ workshops on a regular basis.

Physical Resources and Support Staff

Each teaching site must be individually assessed for its appropriateness in meeting the needs of students. Criteria and standards should be set and monitored. There must be adequate space for the student to see patients with the family physician in an office setting and the student should have workspace and access to appropriate resources in a learning environment. The students’ learning objectives, their degree of autonomy, and stage of training should dictate the most appropriate placement. Placements can be in Family Medicine teaching units, community-based practice in urban, rural, and remote areas, and may or may not be affiliated with a hospital or other facility. Departments of Family Medicine have expertise placing students in remote communities away from the university and tertiary care centres. Placements can range from small communities throughout a province to remote regions or territories.

Accommodation and Equipment

Students sent on distant placements require accommodations as well as some financial assistance for both travel and their living expenses while on these distant rotations. Library resources, computer/internet access, and audiovisual and videoconferencing services should also be provided when possible. In some settings, a local coordinator may be needed to ensure appropriate supervision of accommodations, resources, and timetables for students. This may

SECTION II – THE PRESENT
include regional organizations that facilitate student placements in underserviced areas, hospitals, or group practices. A strong liaison should be developed between these coordinators and the central department of Family Medicine undergraduate office.

Financial and Other Support

All teachers who devote significant time and effort to teaching must be adequately rewarded. Central funding from the medical school should follow the student as the recruitment and retention of good family physician teachers in the community depends in part on this. Each department of Family Medicine has a responsibility to ensure that its undergraduate preceptors are adequately remunerated for their teaching.

While postgraduate educational programs have allowed good will to be supplemented by residents’ ability to generate income, undergraduates have no such potential. Indeed, undergraduate teaching time diminishes the teacher’s earning capacity. With the current stresses on family doctors, these financial considerations can deter a physician from teaching. Compensation for this lost income must be provided. Other incentives for teaching can also be offered, such as library access, continuing medical education vouchers, faculty development programs, software discounts, and e-mail access.

Apart from the financial rewards, teachers can also be acknowledged through appropriate university appointments. Each appointment should be based on the quality level of the teacher’s involvement and should be reviewed on a regular basis. Part-time teachers should be made aware of the potential for academic promotion and assisted in this as much as possible by the undergraduate office.

Funding Sources

Finding money to finance undergraduate Family Medicine teaching can be difficult. Each medical school should allocate funds to ensure that equal value for teaching is expressed across departments. Money should follow the student in order to pay the teachers in the community where the teaching is occurring. Each department of Family Medicine should review the funding for undergraduate activities and ensure that they are budgeting appropriately to meet these obligations. Other sources of funding include government programs that promote rural or remote placements, such as the Northern Ontario Medical Program (NOMP) or the North Eastern Ontario Medical Program (NEMP). Hospital regional boards can provide funding and coordinator support, particularly if they are interested in attracting students to underserviced
areas. Hospitals can also offer space and accommodations for students and teachers. Private funding through foundations and industry could also be considered. More urban areas are becoming underserviced and this may raise some challenges in funding placements and providing compensation for teaching in rural areas.

All Family Medicine departments should devote some portion of their resources to undergraduate education. This should include faculty time, secretarial, administrative, and computer support, as well as the educational and financial resources required to run the program.

Faculty Development

Many Canadian medical schools and Family Medicine departments have recognized the need for well planned faculty development programs. Often these are organized for both undergraduate and postgraduate teachers, but may not be readily available to community-based teachers. An effort should be made to make faculty development programs accessible to community-based teachers by providing funding for travel, taking programs “on the road,” supporting part-time faculty to attend the Section of Teachers meeting, and promoting problem-based small group learning (PBSGL) programs locally. In some cases, these can be added to existing continuing medical education courses using available resources and faculty.

Through the Section of Teachers, the College of Family Physicians of Canada supports and organizes national faculty development activities and workshops. Departments of Family Medicine are encouraged to fund participants who teach at any level. Departments should also explore fellowships as a way for family physicians to develop the extra skills needed to practice and teach in the community setting. Fellowship training weekends are available and participation should be encouraged.

Conclusion

The involvement of Family Medicine in undergraduate medical education should not occur haphazardly; it should be coupled with the efficient development of resources. All departments should set and follow criteria and standards for choosing, developing, awarding, using, and monitoring these resources. Universities must provide the necessary financial and administrative support to ensure that departments of Family Medicine fulfill their role adequately. National collaboration among Family Medicine departments is occurring and will be useful in meeting these goals.
Un choix éclairé

Toutes les facultés de médecine canadiennes offrent maintenant un stage obligatoire en médecine familiale à leurs étudiants prégradués. A mon université, ce stage se fait au cours de l’année où nous devons faire notre choix de résidence. Est-ce un luxe ? Non, c’est le minimum que nous devons recevoir lors de notre formation. Surtout quand on sait que près de 50 % des étudiants désirent se diriger dans cette spécialité. Comment pouvons-nous leur demander de faire un choix éclairé sur leur pratique future sans qu’ils aient le droit à une vision juste et réaliste de celle-ci ?

La médecine familiale offre une grande diversité tant au niveau de sa clientèle que de sa pratique. Quel défi que d’intégrer tout cela au cours du stage. Malgré tout, je crois que les étudiants, grâce à ce stage, peuvent réussir à avoir une idée juste des multiples facettes de la pratique qu’elles soient au bureau, à l’hôpital ou à domicile. Quel autre stage peut nous offrir une telle diversité ? Parfois, c’en est un peu étourdissant, mais extrêmement enrichissant. De plus, ça nous démontre l’importance d’avoir une bonne capacité d’adaptation.

Tout stage, lors de notre externat, implique une quantité importante de lecture. Les sujets d’étude en médecine familiale n’en font pas exception et c’est difficile de tout assimiler. Par contre, cette difficulté nous conscientise sur la quantité et la variété de connaissances qu’un médecin de famille doit maîtriser au cours de sa formation et tout au long de sa carrière professionnelle.

Cette réalité est angoissante, mais quel défi passionnant !

De plus, grâce à ce stage, on a enfin la chance de percevoir concrettement ce qu’est l’approche bio-psycho-sociale. Au cours de notre formation en pré-clinique, nous avons été bien renseigné sur celle-ci. Par contre, tout au long de notre externat, nous avons été peu exposé à cette approche. Personnellement, j’ai toujours souhaité devenir médecin de famille. Lors de mes stages en spécialité, malgré une grande satisfaction, j’avais l’impression qu’un élément manquait
sans toutefois être en mesure de l’identifier, jusqu’au jour où j’ai fait mon stage en médecine familiale. Ce fût le coup de cœur. J’avais enfin trouvé l’approche qui me convenait. Le défi intellectuel de maîtriser des connaissances très variées et la possibilité d’établir des liens à long terme avec des patients de tout âge.

Décider de notre profession future est un choix extrêmement difficile, car c’est le choix d’une vie, d’un style de vie. Donc, à juste titre, il se doit d’être bien éclairé grâce à cet outil… qu’est le stage en médecine familiale.

An enlightened choice

All Canadian faculties of medicine now have a compulsory rotation in Family Medicine. At the University of Montreal, we do a one-month rotation in our third year, just before we make a career choice. Is that the appropriate time? Absolutely! Is one month enough? I’m not sure. Since about 50% of the medical students at our university choose a family medicine residency, adequate exposure to the discipline is essential.

Family medicine is so diverse, both in terms of the people we see and the problems we treat, that it may be difficult to grasp these complexities in just one month. Nevertheless, I think most students do come to understand the many facets of family medicine, as it is practised in the office, hospital and home. They also come to realise that this diversity requires great adaptability on their part.

Every rotation during medical school involves a lot of reading. Family medicine is no exception and the vastness of the knowledge base can be somewhat frightening. On the other hand, learning about so many different aspects of the human body and mind helps us to understand what the Family Medicine residency is all about. It is anxiety-producing and exhilarating at the same time.

This rotation gives us a chance to experience first-hand what it means to treat the whole person, integrating body, mind and spirit. We heard a lot of theory about this in our pre-clinical years, but not so much during the clerkship and I was disappointed. During my specialty rotations, it seemed as if something were missing, though I couldn’t say what it was until I started my Family Medicine rotation. I think I fell in love with the discipline, especially its patient-centred approach. The intellectual challenge seemed so much more interesting because of
the variety. The possibility of building long-term relationships with my patients was what clinched it for me.

Choosing a future career is a difficult decision because there is a certain lifestyle that goes along with it. This decision must be an informed one, and the family medicine rotation makes it a lot easier.

**STUDENT LIFE**

*FRANCOIS LEHMANN*

Family physicians are now very present in all medical schools. In most faculties, family doctors encounter students in their first months of medical school, and these contacts persist throughout the four years of medical education. It is, therefore, logical that family physicians have become more aware of student life and of the stress that accompanies being a medical student.

The vast majority of students succeed academically, and many are brilliant scholars. Most prosper without any major emotional problems that require professional help. Yet there are clearly stresses inherent in being a medical student, some of which are not conducive to growth and some of which the university can influence. The university as a whole, and the faculty of medicine in particular, should concern itself with the quality of life offered to its students.

One stress facing medical students is that each individual has been accustomed to being in the top of the class, and now has a peer group with the same experience and expectations. Family physicians can influence faculty to promote a balanced life less dependent on competitive exercises in testing. Exam performance does not guarantee being a good doctor, or bring happiness, or success. Every day family physicians are in contact with people who are “first” in some aspect of their life, and yet are so unhappy they feel the need to get professional help.

Another stress facing students is the debt incurred by many, if not most, students by the end of medical school. While faculty members can acknowledge financial stress, they can also have an impact in the following areas mentioned by students:

♦ ensuring that tuition fees are equitable
♦ improving work schedules, especially in the clinical rotations
♦ addressing safety issues, especially in large urban areas when students work late
modifying the matching process, which encourages students to make untruthful claims about their interests when they apply for a residency

- promoting and participating in student mentoring programs

- decreasing the stress incurred when making a career choice by making available student advisers and promoting appropriate degrees of flexibility in the system

- ensuring that each medical student has a family physician for their personal care

- organizing clerkships so that the work schedule is respectful of basic human needs

Family physicians, along with other faculty members, have a strong role to play in acknowledging the needs of medical students. This includes becoming more aware of the stresses on which faculty can have a positive impact, actively participating in changing the structure and rules when appropriate, and being available to students for advice and support

STUDENT TRANSFORMATION

WAYNE WESTON

Personal and Professional Issues

If medical school is about education and not just training, then it should embrace a philosophy of liberal education and include the humanities in the curriculum. In his lecture at Johns Hopkins, Robertson Davies argued that the greatest malaise of mankind is not cancer or AIDs or tobacco smoking – it is stupidity. He challenges physicians “to assure complete inoculation against the plague by massive daily applications of art, music and literature.”¹ In his James Mackenzie lecture, Sweeney² describes the place of the humanities in the education of a doctor – to enhance our understanding of our patients’ suffering by expanding our conceptual framework. He offers a rich survey of writings about the arts, the importance of patients’ narratives and the power of the humanities to deepen empathy and insight.

McWhinney challenges us to make medical education self-reflective:

We can only attend to a patient’s feelings and emotions if we know our own, but self-knowledge is neglected in medical education, perhaps because the path to this knowledge is so long and hard. Egoistic emotions often come disguised as virtues and we all have a great capacity for self-deception. But there are pathways to this knowledge and medical education could find a place for them. Could medicine become a self-reflective discipline? The idea may seem preposterous. Yet I think it must, if we are to be healers as well as competent technologists.³
Developmental issues are important in medical education. The learning environment and teachers’ expectations change dramatically when students enter the clerkship. The focus of their learning moves from basic sciences and “book learning” to experiential learning from their work with patients on the wards and in the clinics. During this year they are transformed from students to physicians – a remarkable, exhilarating and sometimes frightening experience.

The first two years of medical school focus on the basic sciences and their application to patient care. The content of the curriculum is well structured and the students’ primary responsibility is to learn the material in courses and demonstrate that learning on the exams. But all this changes in the clerkship – suddenly they are members of a clinical team caring for seriously ill patients and the “curriculum” is messy and indeterminate. Sometimes it seems there is no limit to what must be learned. Table 1 outlines many of the ways in which students are changing and developing as they progress through their professional education.⁴,⁵

### Table 1. Progression of Learning in Medical School

<table>
<thead>
<tr>
<th>Focus of Learning</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facts</td>
<td>Knowledge</td>
<td>Principles</td>
</tr>
<tr>
<td>Practical value</td>
<td></td>
<td>Wisdom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Creativity and deeper values</td>
</tr>
<tr>
<td>Approach to Learning</td>
<td>Passive recipient</td>
<td>Active agent</td>
</tr>
<tr>
<td>Errors are to be avoided, denied, punished</td>
<td>Errors are raw material for learning</td>
<td></td>
</tr>
<tr>
<td>Dependence</td>
<td>Independence, interdependence</td>
<td></td>
</tr>
<tr>
<td>Need for certainty</td>
<td>Tolerance of ambiguity</td>
<td></td>
</tr>
<tr>
<td>Imitation</td>
<td>Originality</td>
<td></td>
</tr>
<tr>
<td>Narrow interests</td>
<td>Broad interests</td>
<td></td>
</tr>
<tr>
<td>Superficial concerns</td>
<td>Deep concerns</td>
<td></td>
</tr>
<tr>
<td>Amalgamate</td>
<td>Integrate</td>
<td></td>
</tr>
<tr>
<td>Cognitive Style</td>
<td>Dualistic search for the “right” answer</td>
<td>Evolving commitments to better answers</td>
</tr>
<tr>
<td>Receiver of meaning</td>
<td>Maker of meaning</td>
<td></td>
</tr>
<tr>
<td>Personal Development</td>
<td>Identity formation</td>
<td>Intimacy, early generativity</td>
</tr>
<tr>
<td>Selfishness</td>
<td>Altruism</td>
<td></td>
</tr>
<tr>
<td>Boundary maintenance – rigid or vague compartments</td>
<td>Boundary maintenance – comfortable and flexible</td>
<td></td>
</tr>
<tr>
<td>Professionalization</td>
<td>Sense of self as student</td>
<td>Comfortable in role of doctor</td>
</tr>
<tr>
<td>Needing to prove self</td>
<td>Comfortable with strengths and limits</td>
<td></td>
</tr>
<tr>
<td>Few responsibilities</td>
<td>Many responsibilities</td>
<td></td>
</tr>
<tr>
<td>Rescue fantasy</td>
<td>Good enough</td>
<td></td>
</tr>
<tr>
<td>Rugged individual</td>
<td>Team member</td>
<td></td>
</tr>
<tr>
<td>Concept of</td>
<td>A “trade”</td>
<td>A “craft”</td>
</tr>
</tbody>
</table>
The clerkship shapes the students into doctors who closely resemble the other physicians on the teaching teams. This process of socialization is extremely powerful and students sometimes are horrified to realize that they have become just like the doctors they previously criticized. This has many parallels with parenting – note how many of us become parents just like our own parents – mimicking behaviours that used to drive us to distraction. These behaviours seem to be more “caught” than taught. Students quickly forget everything they learned in the first two years if they do not see their role models valuing the same key concepts.

It is important to keep these developmental issues in mind when teaching medical students. Their stage of development will have profound effects on how they see the world and what they can learn easily and what will be difficult for some of them. For example, students who are still at the stage of dualism will be very uncomfortable with the uncertainties of clinical practice; students who are still in the stage of identity formation will have trouble forming close relationships with patients.

Teachers need to be sensitive to the struggles of their students and provide timely assistance when they recognize early signs of distress. All students should have access to a mentor – a faculty member with whom they can discuss any concern and who will have empathy for their plight. A mentor should not be in a position to grade the student and should be aware of the multitude of resources which might be needed – family doctors, psychiatrists, social workers, financial counsellors – and have quick access to these services. Jean Vanier speaks of the mentor as an “accompanier” and describes the importance of his own accompanier:

He was always there when I needed him, especially when I began l’Arche. He never judged me but always accepted me and brought out the best in me. Because I was well accompanied, I was able to open up my heart. I did not keep things hidden within, where they could rot and decay. I was able to name my weaknesses and fears…The one who accompanies is like a midwife, helping us to come to life, to live more fully. But the accompanier receives life also, and as people open up to each other, a communion of hearts develops between them. They do not clutch on to each other but give life to one another and call each other to greater freedom. So it was easy for me, in turn, to accompany other people, to trust in them, to remove some of the guilt that weighed on their...
shoulders, and to help them discover their value...We human beings need to walk together, encouraging each other to continue the journey of growth and the struggle for liberation, and to break through the shell of egotism that engulfs us and prevents us from realizing our full humanity.\textsuperscript{6}

Stress is ubiquitous in medicine and in medical education. There is no value in bemoaning this fact and hoping it will disappear. In fact, it may help young physicians to understand their patients better by looking at their own struggles. What must change, however, is the tendency to ignore the stress and act as if it did not exist – such denial is unhelpful and unhealthy. Students need to learn more about the stresses of physicianhood and develop effective and healthy coping mechanisms. Coombs book \textit{Surviving Medical School}\textsuperscript{7} should be read by all students and teachers; students should have opportunities to discuss these issues with each other and with their faculty. Other useful texts include Myers’ \textit{Doctors’ Marriages},\textsuperscript{8} Myers’ \textit{Intimate Relationships in Medical School – How to Make Them Work},\textsuperscript{9} Kelman and Straker’s \textit{Study Without Stress – Mastering Medical Sciences},\textsuperscript{10} Ways, Engel and Finkelstein’s \textit{Clinical Clerkships – The Heart of Professional Development},\textsuperscript{11} and Hilfiker’s \textit{Healing the Wounds}.\textsuperscript{12} A recent comprehensive review of stress management programs in medical training provides empirical data on the effectiveness of various approaches.\textsuperscript{13}

Medical education is not just about expanding one’s knowledge base and developing skills; medical education changes students into doctors. It is an exciting and satisfying journey for most students but, for some, it is a frightening and difficult transition. We must not underestimate the impact of this transformation on the participants.
Kinds of Contributions

This chapter outlines how family medicine can fill important gaps in the curriculum and enhance other aspects of undergraduate education. In the 1960s, when family medicine was accepted into academe, the curriculum of most medical schools concentrated on hospital medicine and tended to ignore the larger number of sick people in the community. Students’ first exposure to primary care was often a shock – they could handle acute pulmonary edema with great skill but were at a loss about how to approach common skin rashes or mild depression. A

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**Figure 1. The Demography of Illness in the Community**
classic study by Kerr White demonstrated how common it is for people to suffer from illness, how often they handle it on their own, and how rarely they end up in a university teaching hospital. Of the 750 people who report one or more illnesses each month, only one ends up in a teaching hospital where most medical education occurs.

The Need for Family Medicine Contributions

As a generalist discipline in an ambulatory setting, family medicine is uniquely suited to teach the clinical method – interviewing, history taking, physical examination, and use of the laboratory. Although the hospital is an ideal location to learn specialized skills and to see the serious conditions that are rare in a community setting, patients in hospital settings are often too sick to have students practice their skills on them. In an ambulatory setting, patients can be seen in context – the impact of their illnesses on their day-to-day functioning and on their families is more obvious. Ambulatory patients are also able to have a greater say in the management of their illnesses than are seriously ill patients in the hospital. Consequently, learning how to find common ground with patients can best be learned in the ambulatory setting.

Family physicians can bring a balanced perspective to the curriculum and help students handle the tremendous volume of learning in the first two years by linking knowledge from different sciences into a clinical context, hence reducing the need for rote learning. Family Medicine also provides an integrating function in the clerkship where students need an opportunity to “put it all together.”

Defining Curriculum Content: Why Primary Care Teaching?

The Association for Medical Education in Europe\(^1\) has identified three categories for the contribution of primary care to basic medical education: areas not achievable in inpatient settings; areas difficult to do in inpatient environments; and areas that primary care can reinforce. A more recent study\(^2\) of the contribution of family medicine to undergraduate teaching in Canada, Australia, and the United Kingdom, came to similar conclusions.
Table 1. Contribution of Primary Care Education to Medical Curriculum

<table>
<thead>
<tr>
<th>Aspects Not Achievable in Inpatient Learning Environments</th>
<th>Aspects Difficult to Do in Inpatient Learning Environments</th>
<th>Aspects Primary Care Can Reinforce</th>
</tr>
</thead>
</table>
| • Managing self-limiting disease and common undifferentiated illness.  
  • Detecting the early stages of disease.  
  • Experiencing the continuity of care and developing a deep knowledge of the patient in order to observe the natural history of disease.  
  • Observing the patient as part of an ecosystem including family, neighbourhood, and culture.  
  • Preventing illness, working on health enhancement, risk avoidance, risk reduction, early identification of disease, and complication reduction.  
  • Caring for relatively healthy old people. Almost all the old people in the hospital are very ill and often demented and unlikely to ever be able to live independently.  
  • Deciding when you need a referral and how to do it.  
  • Deciding when to admit a patient to hospital.  
  • Understanding the importance of teamwork.  
  • Conducting house calls. McWhinney provides a powerful argument for the importance of home visiting. | • Practising interviewing skills. Many hospitalized patients are too sick to practice interviewing skills with them.  
  • Viewing the contribution of epidemiology to clinical decision-making.  
  • Applying behavioural science knowledge.  
  • Engaging in end of life care and the challenge of deciding when and how to “switch gears” from curative care to palliative care and when to overlap.  
  • Understanding family influences on health – both positive and negative. | • Reviewing the knowledge base and integration of knowledge from several disciplines.  
  • Providing advanced interviewing skills e.g. dealing with difficult or troubling encounters with patients.  
  • Stressing the importance of the gatekeeper role and balancing the advocate and gatekeeper roles.  
  • Applying evidence-based medicine, especially with regard to screening and prevention where the best possible evidence is needed to intervene with an otherwise healthy person.  
  • Engaging in self-directed learning e.g. the development of a reprint system, creation of Critically Appraised Topics (CATs), and literature searching. |

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i Note that the gatekeeper is the person who opens the gates to all of the health care resources available, but also the one who limits access when that is appropriate.
### Aspects Not Achievable in Inpatient Learning Environments
- Experiencing “the hospital in the home.”
- Understanding aboriginal health issues.
- Dealing with patients’ personal experiences of their illnesses.
- Dealing with ambiguity and uncertainty.
- Understanding and managing the “worried well.”
- Observing disease categories rarely seen in the hospital – common skin diseases, common musculoskeletal problems, and allergies among others.

### Aspects Difficult to Do in Inpatient Learning Environments
- Engaging in patient education.
- Discharge planning.
- Understanding the role of home care.
- Learning about complementary and alternative medicine.
- Working with common emotional problems: anxiety, depression, substance abuse, and violence in the family.
- Understanding the role of the “physician as person” – having balance in one’s life.

### Aspects Primary Care Can Reinforce
- Building skills in health enhancement and prevention, including motivational interviewing and the theoretical basis of this approach (stages of change theory).
- Learning record keeping skills e.g. problem-oriented medical records.
- Gaining computer skills for literature searching and decision aids e.g., drug interaction programs and electronic medical records.
- Creating cost consciousness.
- Understanding ethical issues in medicine.
- Gaining problem-solving and decision-making skills.

### Aspects of the Undergraduate Curriculum Particularly Suited to Family Practice

#### Communication Skills

Because family medicine has placed great importance on the relationship between patients and physicians, it has played a leading role in the development of communication skills training throughout the world. The Patient-Centred Clinical Method\(^ {14}\) is a useful framework for teaching about communication skills in the context of the clinical method – it integrates the task of making a diagnosis with the responsibility for understanding each patient’s unique experience of illness. In addition, it addresses other important aspects of clinical work – the need to understand the whole person and their life context, the importance of finding common ground regarding management, the overarching imperative to focus on the patient-physician relationship, the importance of prevention and health promotion, and the necessity to be realistic about time

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\(^{ii}\) Most textbooks of family medicine provide excellent overviews of the demography of practice and should be consulted for more details.\(^ {11,12,13}\)
and energy. This is not just a model of communication, it is a transformed model of the clinical method. It has been adopted as the framework for assessing candidates in the certification examination for family medicine and is the framework for the clinical methods course and the entire first two years of the curriculum at the University of Western Ontario.

The ambulatory setting is much more appropriate for learning a variety of skills and can be more easily structured to permit unobtrusive viewing of student-patient interactions by teachers. One-way mirrors and TV monitors can be set up to permit viewing, taping, and reviewing. Because ambulatory patients’ illnesses pose less immediate danger, students are less likely to be preoccupied with their biomedical needs and more likely to recognize the importance of effective communication. It is also an ideal setting for students to integrate the skills they have learned on various specialty services because patients in primary care present with problems in all systems. In a family practice setting, relationship issues are more dominant as patients are seen repeatedly over months or years and their family and social issues are more obvious. Ambulatory patients are more autonomous and may pose a greater challenge for finding common ground regarding management.

The Social and Community Context of Illness

Family practices tend to be located in the midst of the communities that they serve. This is not always true for those full-time university teaching practices located inside tertiary care hospitals because of hospital funding for the units. Whenever possible, it is preferable to locate teaching practices outside the walls of the hospital. Being a part of the community makes the community problems more apparent to the physician. For example, inadequate public transit, poor air quality, high crime rates and drug trafficking will all be obvious to a physician who practices or lives in the same neighbourhood as his or her patients.

Waitzkin shows how physicians’ focus on physical complaints often fails to address patients’ underlying concerns and also reinforces the societal problems that cause or aggravate these maladies. He argues that, “through messages of ideology and social control, and through lack of contextual criticism, health professionals subtly direct patients’ actions to conform with society’s dominant expectations about appropriate behaviour.” He goes on to argue that physicians have a responsibility to analyze the social origins of personal suffering and refer to a labour union, women’s organization, cultural centre, community group, or other organizations for assistance.
Several features of family practice make the community and social context of illness more prominent:

♦ At least one-third of patients presenting to a family physician have significant emotional problems, which are usually the result of relationship difficulties, unemployment, or poverty.
♦ For patients with chronic illness, visits to the doctor are more likely to be triggered by a change in their social situation than a change in the disease.
♦ The social network for care has become incredibly complex including numerous conventional and unconventional care providers, publicly funded community agencies, private agencies, volunteer organizations as well as family and friends. Sorting out where to get help for each problem is difficult enough for a professional; for a patient, beaten down by disease, it may be overwhelming. The family physician and his or her staff are important advocates for their patients.
♦ Home care and long-term care are important services that require input from family physicians on behalf of their patients.
♦ Home visiting is a rich source of information about the impact of illness on patients and their families. It is harder to ignore the needs and the suffering of the identified patient’s caretaker when you see firsthand what is happening in the home.
♦ The home-hospital is fast becoming a reality in many communities and much sicker patients are now being cared for in the home by their family physicians. This is an excellent opportunity to hone the skills of clinical assessment without the immediate availability of x-rays and laboratory investigation.
♦ The Health, Illness and Community Course, developed by the University of Toronto, and the Health, Illness and Society Course at the University of Western Ontario, are model courses for the preclinical years as they introduce students to the important roles of community agencies in health care.16

Health Protection and Enhancement

Every encounter with a patient is an opportunity to promote health as well as to prevent disease. Helping patients change unhealthy practices or develop new health promoting behaviours is one of the most difficult but potentially most rewarding challenges in medicine. Family practice is the ideal setting to learn about prevention. Most patients see their family physician at least every year or two thus providing regular opportunities to discuss health enhancement activities as well as approaches to avoid or reduce risky

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behaviours. Early identification of disease permits early intervention and complication reduction. Prenatal care and well-baby care are two other occasions to focus on prevention. By the time patients end up in the hospital, the potential for prevention is considerably reduced. Also, hospitalized patients are often seriously ill and demand so much attention to their immediate needs that little or no time is left to think about prevention.

Motivational interviewing,\textsuperscript{17, 18, 19, 20} based on the theory of stages of change, is an important skill for helping patients change unhealthy behaviours. The College of Family Physicians has promoted this approach regarding smoking and excessive alcohol consumption with two programs – “Guide Your Patients to a Smoke Free Future” and “Project ARAI” (Alcohol Risk Assessment and Intervention).

Prevention should be seen as a range of activities along a spectrum. At one end is health promotion – activities that can help patients to live a vigorous healthy life free of disease. At the other end is complication reduction – even after disease has developed, there usually are things that can reduce harm and prolong enjoyable life.

There are a number of challenges involved in practising preventive medicine:

- It is not exciting – in fact, it's boring for many doctors! The teacher’s challenge is to help students to recognize the challenge and value of prevention in all its stages.
- Much of the evidence is confusing and contradictory; critical appraisal skills are needed. Harken to the evidence, not the special interest groups (including subspecialists).
- It is time consuming, especially if you are patient-centred.
- It requires special skill to condense a lot of technical information and present it clearly to a patient at his or her level of understanding without oversimplifying or distorting it.
- Many preventive strategies require special motor skills e.g. performing an adequate breast exam or Pap smear.
- It requires effective use of the chart and other reminder systems to go beyond good intentions.

Does it really make any difference? It is difficult but important to strike a reasonable balance between being evangelistic and unrealistic, on the one hand, and nihilistic or overly sceptical on the other hand. We need to be enthusiastic about those few strategies for which we have good evidence of value and constructively critical about what is still unproven. Attitudes determine whether or not the physician will engage in preventive strategies. For example, the doctor who says, “It's really the patient's responsibility!” is unlikely to bother. It is important that the doctor sees the practice as a “population at risk in perpetual follow-up.”
There are a number of ways to encourage health promotion and prevention:

♦ Build effective outreach and organization skills. The physician must set realistic practice goals and organize and train staff to implement these goals. The physician needs to be able to assess the effectiveness of the program and modify the goals and/or the program based on performance appraisal or changing evidence about what makes a difference.

♦ Model effective behaviours. Teachers need to demonstrate appropriate attitudes, a sound knowledge base, and skills in implementing an effective program of prevention in the practice.

♦ Encourage patient involvement. There are important skills needed to involve patients in meaningful ways in the process so that it really is the patient's decision. This may mean giving up control, but does not mean simply catering to patients' desires. If patients' choices are clearly not in their best interests, this needs to be discussed directly and clearly without bullying or applying undue influence. In ethical jargon, physicians should attend to patient welfare without violating their autonomy.

♦ Respond appropriately to ethnocultural differences. There are enormous cultural differences in attitudes about prevention.

♦ Learn effective strategies to help patients change undesirable behaviour. Insight alone is usually not enough to produce behaviour change.

♦ Collaborate effectively with other health professionals, community agencies, and self-help groups.

♦ Develop knowledge and skills to access appropriate community resources.

♦ Develop skill in practice audit. There is evidence that practice audit improves physician compliance with prevention manoeuvres.

♦ Learn the skills to identify (diagnose) community problems and to mobilize the appropriate community resources needed to remedy or contain the problem.

Antonovsky, a professor of sociology, explored the psychological, social, and cultural resources that people use to resist illness and developed the concept of a “sense of coherence” – a general orientation that life is meaningful and manageable – as an important factor in maintaining health.\(^\text{21}\) He defined a sense of coherence as:

>a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic, feeling of confidence that one’s internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected.\(^\text{22}\)
If he is right that a sense of coherence can protect against the ravages of stress, this has major implications for health enhancement and prevention as well as childrearing practices and childhood education.

Seedhouse provides an interesting analysis of the health promotion movement and challenges us to rethink our roles. As an ethicist he argues that health promotion is prejudiced – every plan and every project stems first from human values. “Each type of health promotion is based on a point of view about the ways people should and should not behave, and ultimately therefore on some notion of the good society.”23 Raeburn and Rootman express concern about the typical population approach to health promotion and argue that it should become people-centred. “Our contention is that health promotion, above all other endeavours, is an intensely personal and human area, and should begin from a perspective of people’s experience, in the context of their everyday lives.”24 In Why Are Some People Healthy and Others are Not, Evans and colleagues examine the determinants of health of populations with a critical eye and challenge the conventional way in which we think about health and health care. They argue that:

the simplistic model of disease causation that is currently prevalent in our culture puts us at risk of foolish and precipitate action. . . . There is a chain that runs from the behaviour of cells and molecules, to the health of populations, and back again, a chain in which the past and present social environments of individuals, and their perceptions of those environments, constitute a key set of links.25

Finally, Wilkinson looks at why some societies are healthier than others and argues that it is not the richest societies that have the best health, but those that have the smallest differences between rich and poor.26

Evidence-Based Medicine

“Evidence-based medicine (EBM) is the integration of best research evidence with clinical expertise and patient values.”27 This recent definition emphasizes the integration of evidence into the clinical method making it congruent with a patient-centred approach to care. Earlier definitions emphasized the priority of evidence, which raised concerns about a potential conflict between EBM and patient-centred medicine. The new definition recognizes the importance of integrating non-evidentiary knowledge of the patient, gained from clinical assessment, and the unique preferences and expectations of individual patients.
Medical knowledge is expanding so quickly that it is no longer possible (if it ever was) to keep up to date by regularly reading journals and textbooks and participating in other continuing education activities. What is needed is a “just-in-time” approach to new knowledge – finding trustworthy answers to questions as they arise in the day-to-day care of patients. Typically, primary care physicians ask themselves two questions for every three patients they see. Often, because of time limitations, lack of access or lack of skill in searching the literature, these questions go unanswered. Sackett and colleagues were able to demonstrate that it is possible to find answers to questions on a busy inpatient general medicine ward (200 admissions per month) in 10 – 25 seconds. This was made possible by using preappraised reviews such as:

- Critically Appraised Topics, which are published monthly in the *Canadian Family Physician*. These can be torn from the journal and placed in a three-ring binder for rapid retrieval and are also available online at [http://www.cfpc.ca/CFP/cfpcritindex.htm](http://www.cfpc.ca/CFP/cfpcritindex.htm).
- A review of pertinent guidelines is published by the Canadian Medical Association and many others. The Canadian Library of Family Medicine keeps a current list of guideline sites at [http://www.uwo.ca/fammed/elfm/sites.html#Guides](http://www.uwo.ca/fammed/elfm/sites.html#Guides).
- Best Evidence reviews, available on CD-ROM, are updated annually.
- POEMS (Patient-Oriented Evidence that Matters) is published by the *Journal of Family Practice* and is available online at [http://www.infopoems.com/](http://www.infopoems.com/).
- The Department of Family Medicine at Haifa Israel has a valuable website (updated twice weekly) with links to guidelines and other helpful sites at [http://www.goldenhour.co.il/](http://www.goldenhour.co.il/).
- Personally developed summaries of evidence can be organized into a CAT (Critically Appraised Topic) for future reference.

There is a set of essential skills for using this “just-in-time” approach:

- Translating “raw” questions into searchable questions;
- Determining which sources are most likely to provide trustworthy answers in the time available;
- Searching the database(s) selected;
- Critically appraising the information obtained;
- Discussing the information with the patient in language that the patient can understand and which assists the patient to participate knowledgeably in discussions about options in investigation and treatment.
More and more physicians are using handheld computers as a rapid source of information at the point of care. Programs such as InfoRetriever at http://www.infopoems.com/IR95_Home.htm provide abstracts from systematic reviews, clinical prediction rules (such as the Ottawa ankle rules), summaries of evidence-based guidelines, information on diagnostic tests and physical examination manoeuvres, etc. Griffith’s Five-Minute Clinical Consult, several pharmacopoeias and countless other free and proprietary programs are also available. Electronic medical records will incorporate many of the features of these programs to enhance their value.

Skill in finding reliable answers to questions arising in practice is essential for good quality care. These skills need to be demonstrated by faculty in all disciplines and students must have opportunities to practice these skills on all services during their clerkship. This whole area is exploding so quickly that it is hard for the average physician to find time to keep up with it. Each department in the medical school needs to find at least one person to champion the development of these tools in practice. The rest of the faculty needs to be kept abreast of these developments through regular faculty development activities.
Clinical Judgment and the Application of Evidence

Doctors need to develop skills in assessing patients’ concerns and developing a management plan based on the best evidence available and consistent with patients’ values. In the hospital setting, most patients have already been worked up and the diagnosis is already established. The main challenge is to formulate an effective management plan and to discharge the patient as quickly as possible to make room for the next patient. In the ambulatory setting, the tasks are much different. Patients present with undifferentiated problems and, about half of the time, they have no clear diagnosis to explain their symptoms. The average patient presenting to a family doctor has two or three different problems and, at least 30% of the time, one of these problems is a personal or emotional problem. Frequently the patient presents a complex mixture of physical, emotional, and social problems. The biomedical model is often woefully inadequate for the traditional agenda of diagnosis and treatment. Labelling some problems biological and others psychosocial is a false dichotomy; all problems are biopsychosocial.

The physician’s challenge is to make some sense of the patient’s predicaments, while avoiding unnecessary medicalization of the problems, to come up with some useful ideas that have a reasonable chance of improving the patient’s symptoms as well as the patient’s situation. This is a tall order in the short time allotted to most visits in primary care. It is no wonder that students are sometimes baffled by family practice. Without a clear framework to organize the task, they may feel overwhelmed. When they observe a skilled family doctor in action, it may look either like magic or incompetence depending on their understanding of the doctor’s task.

*The hypothetico-deductive process*

McWhinney\(^1\) provides a useful description of the hypothetico-deductive process that physicians use to assess patients’ problems (see Figure 1). In this process, physicians respond to cues (items of meaningful information) in the patient’s story, physical signs, behaviour, or context by generating one or more hypotheses about what is wrong with the patient. An example of a contextual cue is both parents presenting with a young child – this often indicates considerable anxiety about the child’s condition. Hypotheses are generated very early in the process. Even seeing the patient’s name on the day sheet may generate a hypothesis.
In the past, students were admonished to avoid thinking of hypotheses until all the information was collected – this is the inductive method based on outmoded ideas about the scientific method. This approach encourages the physician to remain neutral and detached while collecting a huge amount of data in a routinized fashion, and only then considering what might be wrong with the patient. Not only is this a very time-consuming and costly approach that keeps the doctor at an uncomfortable distance from the patient, it is not the way our brains work. Clinicians simply do not think this way.

Figure 1. A Model of the Diagnostic Process based on McWhinney¹
Hypotheses are generated about possible diagnoses, reasons the patient has come, the patient’s expectations, and their understanding and feelings about their problem. Next, the clinician seeks out additional information to confirm or refute each of the hypotheses. This includes information from history, physical examination, and laboratory investigation. The patient-centred approach encourages physicians to search for common ground with patients about the nature of the problem, the goals of management, and the respective roles of patient and doctor. Then a joint decision is made about management and plans are made for follow-up. In the process, unexpected cues are discovered and the hypotheses may need to be revised. Sometimes the problem is so common and has been seen so many times before that the physician recognizes it immediately without needing to consider several hypotheses. One risk of this approach is premature closure on a diagnosis. But the highly skilled physician will recognize when the pattern does not quite fit and will revert to the hypothetico-deductive approach.

One very important difference between hospital and family practice is in the prevalence of various diseases. Since prevalence has a major effect on predictive value, tests that are useful in a highly selected population in the hospital may be useless in a family practice setting where the prevalence is much lower. This highlights the importance of knowing the prevalence rates of conditions likely to be seen in the community. Prior knowledge of patients will influence how they are managed. For example, knowing a patient for a number of years and knowing that he rarely consults unless he is seriously ill will result in a prompt assessment if he calls the doctor. Another important tool for diagnosis in primary care is time – when the diagnosis is unclear, it may be best to see the patient again in a few hours or days when the natural history may make the diagnosis clear. Note that the hypothetico-deductive model has no box for diagnosis. A decision must be made and management decided even if no diagnosis can be made. The decision might be: “I don’t know for sure what this is but I know it is unlikely to be serious.” Or, it could be: “I am uncomfortable with the picture of this patient’s illness and suggest we get another opinion.” In both cases there is uncertainty and no definitive diagnosis but the physician was able to make an important decision about the appropriate next steps.

It is important to recognize that the hypothetico-deductive method not only applies to the search for a diagnosis, but also to the search for an explanation of why the patient has come to see the doctor “now” rather than some other time, what the patient is most concerned about, and the nature of the patient’s experience of illness.

Table 1 lists common errors in each step of the hypothetico-deductive process. For example, students will tend to ignore cues of diseases they have never heard of, or that do not fit the biomedical “mental set” which concentrates on finding a disease for every complaint. It is
important to remember that, up to half the time, patient’s presenting in an ambulatory setting will have complaints that cannot be assigned to a disease category.\(^2,3,4,5,6,7,8\) This is a common reason for over investigation and for frustration with family medicine as a career. Some students cannot tolerate the ambiguities and uncertainties inherent in primary care.

McWhinney\(^9\) lists five reasons that definitive diagnosis is often difficult in family practice:

1. The illness may be transient and self-limiting, leaving little opportunity or need for diagnosis.
2. An illness may be treated so early that it is aborted before it reaches the stage of definitive diagnosis, e.g. early mild pneumonia.
3. Every disease category has borderline or atypical forms that are difficult or impossible to classify.
4. Some conditions are so subtle in the early stages that they defy diagnosis. For example, it may take years before transient blurring of vision becomes manifest as multiple sclerosis.
5. The condition may be so much a part of the patient’s personality or lifestyle that it is impossible to classify e.g. patients with chronic pain.

A sixth reason that could be added to the list is that patients often present to their family physician with symptoms that reflect their problems of living. Patients, worn down by their everyday struggles, will often experience various aches and pains and other bodily sensations related to fatigue, lack of sleep, deconditioning, or chronic worry.

### Table 1 - Common Errors in Clinical Reasoning

**Cue blindness:**
- Fatigue, personal problems
- Mental set – excessive focus on one type of problem e.g. biological or psychological
- Unfamiliarity with the problem
- System problems e.g. not enough time or resources

**Errors in generating hypotheses:**
- Focusing on zebras rather than horses (the probability issue)
- Ignoring rare but treatable and serious disorders (the “payoff” issue)
- Focusing on the wrong kind of problem e.g. ignoring non-disease hypotheses
- Concentrating on one diagnosis too soon → cue blindness or failure to search

**Errors in the search:**
- Lack of skill in collecting accurate data (interviewing and physical exam skills)
- Over-investigation – seeking unnecessary precision e.g. continuing to test when the pre-test probability is <10% or >90%
- Inadequate testing
- Focus on “ruling-in” rather than “ruling out”
- Over-reliance on a test of low sensitivity
- Reliance on a test that is often negative early in the illness
- Pressure from a third-party e.g. family, insurance company, institutional policy

**Management errors:**
- Thinking only of the disease and ignoring the patient's experience of illness and their unique predicament
- Ignoring important variables e.g. ethical issues, risks of treatment, effects on other family members
- Ignoring patient wishes or expectations
It is important to avoid the “blame trap” by recognizing the many causes of error in medicine, not just the fallibility of individuals. Error is more often the result of systemic problems that place unrealistic demands on the members of the health care team leading to excessive stress, fatigue, cutting corners or distraction. A well-designed system should anticipate human error and have built-in methods to detect and correct it before there are adverse consequences. For example, pilot error in transatlantic flights is common but the system has sufficient “redundancy” to prevent disaster most of the time.\textsuperscript{10, 11} We can learn much from the analysis of error in industry where “nearly all accidents have organizational and systemic root causes, and that these latent factors are more amenable to diagnosis and remediation than are the ephemeral error tendencies of those at the sharp end.”\textsuperscript{12}

Unlike the culture of medicine, which finds most errors blameworthy and encourages silence or denial, airline pilots openly discuss their errors as part of their strategy for continuing improvement. In an analysis of errors in the practice of surgery, Bosk describes the ways in which surgeons recognize and punish medical mistakes. Technical errors are the focus of additional training and are forgiven; moral error is considered repugnant and is treated harshly. Bosk argues that the patient’s only protection is the surgeon’s conscience and that better protection is needed from the whole profession: “The collectivity needs to promote the structural changes that will build stronger accounting mechanisms into everyday practice.”\textsuperscript{13}

**Pattern recognition**

The hypothetico-deductive method is only one method of clinical reasoning used in medicine. By far the commonest approach to diagnosis used by expert clinicians is pattern recognition. After many years of experience, clinicians will have seen most of the conditions they will ever encounter. When a patient presents with a familiar pattern of symptoms and signs it is relatively easy for the expert to recognize the correct diagnostic category. It is when the cluster of signs and symptoms do not fit a familiar pattern that the clinician must use the hypothetico-deductive approach. Because family medicine is such a broad field of study, and because disease presents at a stage earlier than most textbook descriptions, pattern recognition will be used less often. This makes the diagnostic challenge greater, but also makes family practice an ideal setting to learn the hypothetico-deductive method.
Stage theory of clinical reasoning

A growing body of research on cognitive psychology provides valuable insights into the nature of clinical reasoning and how it might be taught. It is clear that expertise is the result of long years of hard work – it typically requires 10 years of intense study in an area to become an expert. Expert problem solvers do not have superior reasoning skills that they can apply to any problem that presents. Rather, expertise is quite narrow in scope and is greatly dependent on domain specific knowledge. Physicians build up their knowledge of disease as “illness scripts.”14,15 These scripts describe the features of prototypical or real patients and include a wealth of clinically relevant information about disease, its consequences, and the context in which the disease develops. There is surprisingly little pathophysiology included in these scripts.

Bordage16 describes a stage theory of clinical reasoning. In stage one, students build up huge propositional networks related to their basic science courses – e.g. statements about the connections between symptoms, signs, and pathophysiology. But they have had little experience with the diversity of real patients, so their perspective on disease is rather prototypical. They usually have no knowledge of what is common and what is not; therefore their reasoning ignores the impact of prevalence on the predictive value of various findings. Their explanations are often complex but unrealistic.

Stage two begins when students are exposed to real patients. They quickly learn to take shortcuts – only the knowledge needed to explain the case will be used. The original elaborate knowledge is simplified and contains only the higher-level concepts from the original pathophysiology.

Stage three, the knowledge is organized into illness scripts that consist of a scenario of events that typically occur in a certain order. The “enabling conditions” are the conditions that make the occurrence of the disease more likely (genetic makeup, compromised host factors, and environmental conditions). The
“fault” is a description of the malfunction – this is the diagnostic label, or a simplified description of the pathophysiology. The “consequences” are the signs and symptoms that arise from the fault.

Finally, in stage four, students use their illness scripts as templates for pattern recognition. In most cases, diagnosis is simply a matter of script search, script selection, and script verification. One important implication of this research is that students need a lot of contact with patients in the early stages of their illnesses so that students will be challenged to sort out their problems. Too often, hospitalised patients have already been worked up and have a diagnosis before the student sees them. For this reason, the ambulatory setting is preferred for learning clinical reasoning. Another important implication is that heuristics and shortcuts, which formerly were discouraged, should be taught explicitly. 17

**Clinical reasoning approaches by Mattingly and Fleming**

Mattingly and Fleming outline a variety of approaches to clinical reasoning particularly pertinent to family medicine. Although they write from the point of view of occupational therapy, their approach has many parallels with the patient-centred clinical method. They discuss four modes of thinking:
1. Procedural reasoning, based on the hypothetico-deductive approach, focuses on diagnosis and management.
2. Interactive reasoning, with the patient as a social being, focuses on understanding the patient’s unique personal situation.
3. Conditional reasoning takes account of the patient’s disease, their unique illness experience and the context and tries to tie them all together to match the management plan with the individual patient.
4. Narrative reasoning places events within a temporal context and story that gives meaning to the patient’s experience.

“Narrative thinking is central in providing therapists with a way to consider disability in the phenomenological terms of injured lives. Narrative thinking, especially, guides therapists when they treat the phenomenological body: that is, when they are concerned with their patients’ illness experience and how the disability is affecting their lives.” 18

**Lessons from Schön – Medicine is more than applied basic science**

Schön 19, 20 provides valuable insights into the nature of clinical problem solving. Learning to be a physician is learning to recognize, analyze and manage clinical problems. The nature of these problems should influence the nature of medical education.
Clinical problems are often not well-formed problems, but rather messy, indeterminate situations. This is particularly true of problems in primary care. Once the patient is admitted to hospital, their problems are much clearer. The clinician's first task is to determine the nature of the problem. In framing the problem, practitioners decide what they will notice and pay attention to and what they will ignore. For example, when a patient presents after a fight with his wife, with vague chest pains of several years' duration, particular questions are raised. Is the problem “atypical angina” or “chest wall pain” or “marital discord”, or is it somehow related to the stress of coping with a retarded daughter in the family, or is it a combination of these?

Problematic situations arise that are not “in the textbook.” To deal with such a situation, practitioners must improvise, invent, and test unique strategies. There is a core of professional artistry required of practitioners.

Conflict of values is common. There are often competing views of the problem and of the recommended solutions and no clear-cut answers.

Uncertainty is rife. Situations are often problematic in several ways at once, for example:
- the problem has no textbook answer;
- the resources are inadequate to investigate or treat the problem properly;
- the patient will not co-operate.

Schön uses the analogy of “the high ground” and “the swamp.” In the high ground, patients present with problems at least partially defined and the basic sciences are helpful for understanding the problem. The clinician's task is to rule in or rule out a few clearly defined disease entities. If disease is identified, the standard therapy is prescribed; if no disease is found, the patient is reassured with the expectation that he or she will be satisfied. In the swamp, where most clinicians work, the job is not as clear-cut. The traditional basic sciences are often not helpful for understanding the problem. Much of the time no disease can be identified to explain the patient's suffering and even when disease is found, there is often no effective treatment. It may be more helpful to explore the patient’s worries, listen to the patient’s story and establish an empathic connection. Often the physician's most important task is to provide emotional support and care rather than cure. In a similar vein, Fish and Coles provide a valuable description of how professionals develop the artistry of practice through deep reflection on their own experiences.21

If Schön is right, then our curricula need to address the complexity of clinical work – it is much more than applied basic science. Students need to be exposed to the “messiness” of clinical medicine early in their education so that they can learn the limits of the biomedical model, learn how to tolerate the ambiguities and uncertainties of medicine, and develop the artistry of clinical
practice. Mathers and Rowland argue that general practice is a post-modern specialty. The ‘modern’ view of the world holds that we can know the world ‘out there’ using the scientific method and assumes that this knowledge is uncontaminated by the mind of the knower. A modern approach to curriculum design focuses on aims and objectives, content, teaching process and assessment and evaluation. It is a linear, mechanistic process akin to the biomedical model. A post-modern approach is more fluid and complex. In this approach, teachers and students create a dialogue focused on critical incidents in the curriculum as experienced. In the process of trying to understand and trying to change the problematic aspects of the curriculum they find the right questions to ask and reach a deeper understanding of the learning process and how it needs to change.

The educational values of a curriculum based on such a reflective or critical model of professional practice would be practical, active and pragmatic, and could encompass all the current models of general practice. The implied teaching methods of this model, such as practical attachments (‘apprenticeship’) and small group teaching, would be more appropriate than didactic lectures. Methods of assessment would be mainly by portfolios, projects, continual assessment, competencies and peer review rather than MCQs and OSCEs...In addition, the curriculum would have ‘street credibility’ with the majority of GPs, since it would be based in the ‘real world’ – the ‘swampy lowlands’ of everyday practice where chaos and uncertainty are ever present!  

While the above theories can prove invaluable in designing our curricula, we need to remain flexible – curriculum planning is too complex to be embraced adequately by one theory alone.
Overview

Just as the unexamined life is hardly worth living, the unexamined curriculum is not worthy of the massive time and effort that is involved in a modern medical school. This chapter provides a framework for such reflection in the context of the offerings in the discipline of Family Medicine.

Assessment and evaluation are important components in the development of Family Medicine Undergraduate Medical Curricula. Absence of these components can result in a sense of reduced relevance and importance in the minds of medical students and family medicine educators. For the sake of clarity, evaluation will be used here in reference to teachers and programs, while assessment will be used in reference to students.

The principles of good evaluation and assessment in a Family Medicine clerkship must include clear objectives and expectations, both midpoint and endpoint assessment, effective bidirectional feedback, the use of multiple measures or tools for the assessment blueprint, and effective evaluation of the program and its teachers. Critical components of the curriculum include assessments of the student and evaluations of the teacher and the course. Some assessment of Family Medicine specific skills, including proper ambulatory management of clinical problems; assessment of student values, attitudes, and abilities to communicate and educate patients; and assessment of community resource knowledge should be included. Teacher evaluation is important to the honesty of the program and it provides teachers (faculty) with an important tool for their own improvement, advancement, and promotion. Finally, in the area of remediation, Family Medicine departments must have adequate resources to provide a meaningful remediation and reassessment of the student in trouble.

Context and Theory

In the last decade, the regionalization of, and reduced funding for, health care have combined to put more medical education into an ambulatory setting. This is where Family Medicine has always been. How is it that learning medicine, and evaluating that learning in what
is often Schon’s “swamp,” can occur? Two learning theories, experiential learning and cognitive learning, show us how learning occurs and suggest methods of evaluation.\textsuperscript{1,2}

Family Medicine is experiential by nature, as it is largely taught in the community--in family doctor’s offices, hospital emergency departments, nursing homes, and patient’s homes. Learning from experience involves a cycle, as depicted in Figure 1.

![Figure 1. Experiential Learning Cycle (Kolb)\textsuperscript{3}](image)

Successful teaching and assessment of students involves moving the learner through the cycle by carefully planning the experience. The instructor should then facilitate reflective observation by focusing on the learning, which will encourage conceptual thinking and inquiry. Asking questions (informal assessment) that stimulate thinking and focus observations helps learners develop conceptual frameworks, which can then be tested by seeing more patients with similar concerns.

Family Medicine provides continuity of care and direct feedback, which provokes further reflection, and may lead to important learning. Smith and Irby feel that in order to provide useful feedback, preceptors need to observe learners with patients.\textsuperscript{1} Irby’s model for the “one minute preceptor” is a particularly effective form of faculty development to assist clinical teachers in enhancing these teaching opportunities. Selective observation of interviews and physical examinations can offer opportunities in a busy clinical setting. Case presentations and discussions, as well as simulations, allow learners to test insights and gain direct feedback on their performance.

When Gruppen applies the concepts of cognitive learning theory to the ambulatory setting, he believes that the context of the learning must mirror the contexts of practice.\textsuperscript{2} All contexts, therefore, are not equal and again, careful planning is important. Assessment by observation in a supervised practice is important--features of the context should be specifically
pointed out. In addition to context, cognitive learning theory holds that knowledge is most transferable when the conditions of learning and application are similar. Family Medicine provides a high transfer of knowledge through numerous opportunities for repeated practice. Facilitating discussions that promote generalizations also brings high transfer of knowledge. Regular assessment of knowledge through questioning allows assessment of the depth and breadth of the learner’s knowledge base.

Family doctors require a substantial breadth of knowledge. The concepts of the reduced, dispersed, elaborated or compiled learners form part of cognitive learning theory; assessment of the learner’s stage of understanding will help to guide further teaching and assessment. Gruppen’s final concept reminds us that “problems are in the eye of the beholder.” The nature of a patient’s illness, or even whether or not the illness is understood to represent a problem, changes with the problem-solver’s knowledge. One implication of this concept for Family Medicine faculty is that “a patient case that appears easy to them may constitute an insurmountable problem for students.” Faculty need assessment and teaching skills that include: the ability to give detailed and explicit instructions about what they have in mind when teaching problem solving, well-developed skills in questioning learners about the nature of the problem, ease in elaborating on their reasoning about the problem, and the ability to compare and contrast potentially different approaches to the same problem.

Learning Objectives

The nature and role of learning objectives in the teaching of medicine provides an ongoing tension (sometimes creative and sometimes not) in the faculties of medicine in North America. Two pithy statements of the poles of this debate are worthy of reflection:

Compared with schools with modest or no objectives, they (schools that have elaborated specific institutional and course/clerkship objectives) were more likely to have centralized the management of the curriculum, engaged in substantial curriculum reform, and adopted problem-based learning as a significant component of pedagogy. Schools with strong institutional learning objectives were more likely to have robust basic science courses and clinical clerkship objectives, and to engage in the structured assessment of students’ clinical abilities to verify their accomplishment....We would argue, as others have before us, that explication of the objectives of education – in all of the dimensions of learning – is the only sure basis for establishing that students have learned the knowledge and the skills and behaviours that ought to be the outcomes of
teaching. Educators also will have a better chance to tailor the methods of instruction to achieve greater effectiveness when the desired outcomes are more specific and measurable.\textsuperscript{4}

Behavioural objectives produce actors not doctors or thinkers. There may be important aspects of training that lend themselves to such shrunken language: teaching how to examine a joint, or to read an ECG, or to observe the retina, for example. Limiting the expression of our educational intentions in this way means that we are required only to employ directly observable verbs – like “list”, “classify”, “display”. Verbs like “compare and contrast” escape the reductionist constraints of such assessments. And it becomes impossible to use words like “understand” or “imagine”. In the name of what myth about rigour do we disenfranchise other crucial components of a medical education – those concerned with clinical thinking and judgement, with personal sensitivity, the aesthetics of the consultation, and social values? The pedagogic reductionism, this deconstruction of language, has corrupted us.\textsuperscript{5}

Notwithstanding, assessment of a learner clearly requires some sense of what should be known by that learner. In his book on educational objectives, Mager admonishes us to be clear about where we are going with our teaching and learning activities, or we may end up somewhere else. The importance of objectives has been hammered into the heads of educators for decades. Why do we spend so much time carefully crafting our educational intentions and end up filing them on a shelf, never to be used?

McLeod and colleagues discuss the problems with the way objectives are used at McGill University and present an overview of the issues and potential solutions.\textsuperscript{6} Sometimes, our educational objectives are obvious, other times they are unclear, and often the lists are too long, boring, and impractical. One dilemma for authors of objectives is that it is difficult to put complex objectives into words that will be understood by a novice. A foolproof list of objectives would be so long and detailed that no one would have time to read it. On the other hand, a short, crisp list of learning goals might make sense only to a student who had already mastered them. A cynic might argue that we would be better off spending the time teaching students rather than writing long lists of objectives.

Despite these problems, teachers and learners would be in a worse position without educational objectives for the following reasons:
♦ Students would be unsure about what they should learn and would spend too much time trying to answer the age-old question: "Is this on the exam?" Old examination questions would become a surrogate list of objectives. Sometimes this happens even when there is a list of objectives if there is a discrepancy between the stated objectives and the real objectives contained on the exam.

♦ Teachers would each have their own internal list of objectives that may be quite different from each other. As a result, there would be no consistent learning experience for students in different sites. Without course objectives, teachers may teach what interests them rather than what the course committee intended.

♦ Overall planning of a whole curriculum would become impossible if the planners have no list of educational intentions from each course.

Objectives can be used to set priorities for learning, to sequence learning from one year to the next, and to integrate one course with another. An effective curriculum is more than a loose collection of courses with a long list of objectives; it must be "of a piece" with a clear organizing framework in which each course has a clear focus. This will minimize needless repetition and eliminate gaps in essential content.

There is, however, an important caveat in using objectives. It is easier to write and assess objectives in the cognitive and skills domains than in the domain of attitudes and personal growth and development. We must resist the temptation to take the easy road; we must strive to help our students with the important developmental steps they must traverse in their growth from being a student to being a physician. This is a remarkable and sometimes frightening transformation (see Chapter 4) and our students need our support and guidance.

There are several approaches to defining course content and objectives:

♦ "Wisdom of the elders" approach. Convene a group of senior faculty members and ask them to come up with a list of objectives based on their years of experience. One danger of this approach is that it may institutionalize tradition and make change more difficult.

♦ Survey of recent graduates. Ask graduates to report on what they well prepared for or were over- or under-prepared for.

♦ Analysis of practice. Research on the nature of practice will give a picture of the problems that physicians will need to be able to manage. There are several methods of analysis that can be used. 1) Critical incident studies: qualified individuals describe medical incidents that they observed which reflected particularly good or bad practices. 2) Studies of star
performers: identify the knowledge and skills needed for exemplary performance. 3) Task analysis: involves observing, recording, and analyzing the work carried out by a doctor. The nature of practice is changing faster now than ever before and, therefore, a single measure will be inadequate for planning. The curriculum must forecast what problems may become common when the students graduate six to eight years later.

- Studies of error in practice. This is a way to uncover needs not met by the existing curriculum. Because human error and system problems, not lack of knowledge, are the source of most errors in medicine, this approach should not be used to justify adding more factual content to the overcrowded curriculum.
- Survey of population needs. The Educating Future Physicians for Ontario (EFPO) Project mentioned above, is an example of a comprehensive needs assessment; however, it was very expensive and not feasible to replicate on an ongoing basis.
- Research by health intelligence units. Population studies of the incidence and prevalence of disease, death, and disability provide invaluable information for planning a curriculum.
- Analysis of textbooks. Textbooks provide the authors' opinions about the common problems currently facing practitioners, but this approach does not anticipate future trends very well.
- Analysis of existing curricula. Looking at what other schools are teaching is a good place to start in order to avoid "re-inventing the wheel," but each school should develop its own curriculum to suit its own unique culture and the needs of the local population.
- Community representation. Include community representatives in any of the above approaches. Lay members help the committee to stay focused on the needs of patients.
- Committees with broad representation. Having committees in which basic scientists interact with clinicians helps both groups to understand the needs of students and increases collaboration and integration among courses.
Table 1. General guidelines for writing objectives

1. Keep the list reasonably short and avoid jargon--objectives need to be understood by a novice.
2. Describe what a student will be able to do at the end of the course. Sometimes it helps to think about how you will assess the achievement of the objective--what you will be able to measure that demonstrates that the student has mastered the objective.
3. Avoid using vague terms, such as "understand," that are impossible to observe or measure. Terms such as "discuss," "list," "define" and "describe" are more specific.
4. Include higher order objectives--application, analysis, and synthesis of knowledge--and not just memorization of facts.
5. Include objectives regarding skills, e.g. communication skills and procedural skills.
6. Include objectives regarding attitudes, values, and professional growth e.g., demonstrating respect for patients.
7. Make sure that all of the teachers are familiar with the objectives.
8. Make sure that student assessment is based on the objectives.
9. Leave room for student-generated objectives. Motivation is enhanced and learning is improved if students play an active role in defining their own objectives.
10. Discuss the objectives at the start of a course, the learning opportunities available for achieving them, and how the evaluation process will assess student achievement.

The fluid and complex post-modern approach to medical education, described earlier, requires a complementary approach to assessment and evaluation. The evaluation methods for the implied teaching method “would be mainly by portfolios, projects, continual assessment, competencies and peer review rather than MCQs and OSCEs”. Mathers and Rowland believe it is possible to improve the “street credibility” of curriculum and assessment with community teachers since it is based in Schon’s “swampy lowlands” of everyday practice “where chaos and uncertainty are ever present.”

Gruppen writes that knowledge of cognitive theory is “one arrow in the quiver” of assessment and teaching in the ambulatory setting. Other “arrows” include use of the two-minute observation, the one-minute microskills model of Neher, et al., and use of the anthropological technique of field notes advocated by Donoff and others. The movement
between educating and assessing learners is a fluid transition back and forth that occurs regularly, if not constantly. To support fair, just assessment, feedback must be given at the midpoint of a learner’s time in the setting. Well-structured assessment based on the above principles would allow for the assessment of the whole student. It is not sufficient to only consider clinical acumen-- we must also assess behaviours, values, and attitudes.

**Feedback**

All faculty involved in assessment should be trained to provide effective feedback. Our clinical faculty, in particular, must be supported to be critical in their assessments. This requires training. Kurtz *et al.* seek to improve on the conventional rules of feedback, developed by Pendleton and others, and describe new concepts. They developed these rules after watching medical training and noting the destructive nature of feedback, which emphasized errors, and omitted support and constructive advice. Feedback, according to the new rules, was to have a specific order (see Table 2).

<table>
<thead>
<tr>
<th>Table 2. Conventional Rules for Feedback based on Pendleton</th>
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<tbody>
<tr>
<td>♦ the instructor briefly clarifies matters of fact</td>
</tr>
<tr>
<td>♦ the learner being observed first says what was done well and how</td>
</tr>
<tr>
<td>♦ the rest of the group, or the facilitator alone in one-to-one work, then comments on what was done well and how</td>
</tr>
<tr>
<td>♦ the learner then says what could be done differently, and the rest of the group, or the facilitator in one-to-one work, then says what could be done differently and how.</td>
</tr>
<tr>
<td>♦ finally, the learner summarizes all of the feedback into a ‘take home’ message.</td>
</tr>
</tbody>
</table>

Positive first for safety, self-assessment first, and recommendations not criticisms are the sound educational principles behind these rules. Kurtz *et al.*, suggest several potential problems with these conventional rules. First, there can be an artificial separation of good points and problem areas. Next, the evaluative phrasing of the feedback can still come across as judgmental. Third, the learner’s agenda is discovered late, if at all, in the feedback process. Finally, the rules can lead to inefficiency if not enough time is given to constructive help. In an attempt to make feedback even better, Kurtz *et al.* describe a new format for feedback, what they call agenda-led, outcome-based analysis. They describe it in relation to teaching small-group communication skills, something many Family Medicine educators do; however, the principles are easily applied to other learning settings (see Table 3).

To these new principles some old adages about feedback still apply. Feedback should be given clearly and regularly, and it should be specific and owned by the person presenting it.
Assessment

The many methods of assessment presently used by Family Medicine departments in Canada include OSCE, MCQ, SAMP, project presentation, and critical appraisal reviews. Each method has merit and fits the individual department’s capabilities and resources. Critical analyses of each method can be found in the literature and it serves no purpose to repeat it here. A department must look at the methods of evaluation that fit the overall goals of the course and the medical school, and are achievable within the department’s abilities. Assessment of the student’s performance by the preceptor is somewhat subjective, but often assisted by the use of a Likert scale applied to a list of identified student characteristics. The use of descriptive anchors on the scale is often helpful.

Teacher Evaluation

The value of teacher performance evaluation by the student seems self-evident. There are literally thousands of references from the education and medical education literature available for review; however, much of the work is summarized by the work of David Irby. This very complete, validated form with 8 categories and 54 items was refined by Guyatt et al. They reduced the Irby material to fourteen "domains of performance" (see Table 4). Each domain had a set of response options that were designed to provide specific feedback to the teacher. Concrete examples of the behaviour that fit the response option for each level of performance were provided. This technique of providing a descriptor to the level of performance is applicable to student assessment forms as well.

Table 3. Agenda-Led, Outcome-Based Analysis of Learner Performance

1. Start with the learner’s agenda. The best kind of feedback is that which is asked for rather than imposed.
2. Look at the outcomes learner and patient are trying to achieve.
4. Involve the whole group in problem solving.
5. Use descriptive feedback to encourage a non-judgmental approach, describing carefully what was said and what was done.
6. Provide balanced specific feedback.
7. Make offers and suggestions; generate alternatives not prescriptions.
8. Rehearse suggestions.
9. Be well intentioned and supportive. Focus on a learner’s behaviour not personality.
10. Value the interview as a gift of raw material for the group.
11. Opportunistically introduce concepts, principles, research evidence, and wider discussion.
12. Structure and summarize learning so that a constructive end-point is reached.
It is difficult to measure the amount of material learned by a student before and after a learning experience as a means of evaluating a teacher's effectiveness. The use of a rating form is an attempt to provide some measure of teacher performance. This has several purposes, as outlined by Harry Murray, an educational psychologist at the University of Western Ontario:

1. To provide feedback to the instructor (formative feedback)
2. To provide input on administrative decisions regarding faculty salary, promotion, tenure, and retention (summative feedback)
3. To give students information to use in selecting courses
4. To provide a measure of perceived teaching effectiveness for research on teaching and institutional program evaluation.

There are certain characteristics students should not comment on, such as the teacher’s depth of knowledge or curriculum development. Students should comment on issues that are within the realm of the teacher’s control and that are applicable to the form of the teaching and contribute positively to student learning. Although it is commonly done, student evaluation should not be the only method of teacher evaluation. In keeping with other aspects of professional development, peer assessment and feedback should provide the solid basis on which continuous improvement and professional recognition are built.

### Table 4. Domains of Performance Included in the Evaluation of Attending Physicians in the Internal Medicine Residency Training Program at McMaster University, Hamilton, Ont.

| 1. | Role model of conscientious care |
| 2. | Role model of compassionate care |
| 3. | Support for house staff |
| 4. | Role model of practice of evidence-based medicine |
| 5. | Teaching of evidence-based medicine |
| 6. | Teaching of clinical skills |
| 7. | Teaching of biophysiology |
| 8. | Appropriate delegation of responsibility |
| 9. | Provision of feedback |
| 10. | Openness to feedback |
| 11. | Punctuality |
| 12. | Role model of respectful, cooperative, productive interaction with health care team |
| 13. | Appropriate use of consultants |
| 14. | Teaching directed at all house staff, junior and senior |
CONCLUSION

Those who have persisted this far will have had an opportunity to consider the broad historical and intellectual threads that weave the present canvas of generalist education in the undergraduate curricula of Canada’s sixteen medical schools. They will also be positioned to see the possible future that can be painted on that canvas. Some will be reflecting on these matters for the first time as new teachers. Others will be program directors who, we hope, have received both validation for their heavy commitment and new ideas that can enhance their work or make it easier. Still others will be senior teachers and administrators who will be aided in their decisions regarding resource allocation in this important element in the creation of effective future practitioners—whatever their discipline.

If it serves as a workbook to some, a reference for others, and perhaps to some few an inspiration, it will have fulfilled its purpose. As a statement from the College of Family Physicians of Canada, it is an attempt to provide an effective national focus on the contributions our discipline makes to the creation of effective practitioners to care for patients in a new century characterized by both massive change and a search for foundations on which to manage that change. The foundations we can provide extend far beyond the confines of our own discipline and future family physicians. They contribute equally importantly to the creation of future specialist colleagues and other members of the health care team.

This brief monograph can hardly encompass the hundreds of thousands of hours of dedicated teaching provided by thousands of family physicians across this country— but it is dedicated with appreciation to making those hours better recognized and more fulfilling.
NOTES

Section I: Chapter 1


Section II: Chapter 2


2. Freeman R. Tiberius R. *Resource Materials for Faculty Development Workshops*, Faculty of Medicine, University of Toronto, 1992.


**Section II: Chapter 3**


**Section II: Chapter 4**


Section III: Chapter 5

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1. Metcalfe DHH. The Proper Emphasis on Primary Care and Basic Medical Education. *Medical Education*. 1984;18:147-150.


Section III: Chapter 6


Section III – Chapter 7


