Demand-side medical education: educating future physicians for Ontario

Victor R. Neufeld,* MD; Robert F. Maudsley,† MD; Richard J. Pickering,* MD; Beverly C. Walters,‡ MD; Jeffrey M. Turnbull,§ MD; Robert A. Spasoff,§ MD; David J. Hollomby,¶ MD; Karen J. LaVigne,* BA

Initiated by Associated Medical Services (AMS), Educating Future Physicians for Ontario is a 5-year collaborative project whose overall goal is to make medical education in Ontario more responsive to that province's evolving health needs. It is supported by AMS, the five universities with medical schools or academic health sciences centres and the Ontario Ministry of Health. The project's five objectives are to (a) define the health needs and expectations of the public as they relate to the training of physicians, (b) prepare the educators of future physicians, (c) assess medical students' competencies, (d) support related curricular innovations and (e) develop ongoing leadership in medical education. There are several distinctive features: a focus on "demand-side" considerations in the design of curricula, collaboration within a geopolitical jurisdiction (Ontario), implementation rather than recommendation, a systematic project-evaluation plan and agreement as to defined project outcomes, in particular the development of institutional mechanisms of curriculum renewal as health needs and expectations evolve.

Initiative de l'Associated Medical Services (AMS), le programme de Formation des futurs médecins de l'Ontario est un projet coopératif de 5 ans dont l'objectif global est de faire en sorte que la formation médicale en Ontario soit plus réceptive à l'évolution des besoins de la province en matière de santé. Le projet est subventionné par l'AMS, les cinq universités dotées d'une faculté de médecine ou d'un centre universitaire des sciences de la santé et par le ministère de la Santé de l'Ontario. Voici les cinq objectifs du projet : (a) définir les besoins et attentes de santé de la population et leurs incidences sur la formation des médecins, (b) préparer ceux qui formeront les futurs médecins, (c) évaluer la compétence des étudiants en médecine, (d) appuyer les innovations afférentes dans les programmes d'études et (e) susciter un leadership permanent en formation médicale. Plusieurs caractéristiques particulières sont à mentionner : le ciblage sur la demande dans la conception des programmes d'études, la collaboration à l'intérieur d'une région géopolitique (Ontario), la mise en oeuvre, plutôt que la simple recommandation, un plan d'évaluation systématique du projet et une entente sur les résultats précis de celui-ci, notamment la mise au point de mécanismes institutionnels de renouvellement des programmes d'études au fil de l'évolution des besoins et des attentes en matière de santé.

*From *McMaster University, Hamilton, Ont., †Queen's University, Kingston, Ont., ‡the University of Toronto, Toronto, Ont., §the University of Ottawa, Ottawa, Ont., and ¶the University of Western Ontario, London, Ont.*

The Educating Future Physicians for Ontario project is funded by a consortium that includes Associated Medical Services, the Ontario Ministry of Health and the five medical schools or academic health sciences centres of Ontario.

Reprint requests to: Coordinating Centre, Educating Future Physicians for Ontario project, McMaster University, 1200 Main St. W, HSC-3N51A, Hamilton, ON L8N 3Z5

The 1990s began in a climate of substantial societal change; economic uncertainty, concern about the environment, demographic shifts and acquired immunodeficiency syndrome (AIDS) are but a few of the problems likely to continue throughout the decade. Many of these have important implications for health care systems and for the institutions responsible for educating and training health care professionals. Medical educators have attempted to respond by producing analytic reports with recommendations for change,[1] by making declarations[2] and by suggesting curricular change.[3]

We describe a recent initiative in medical education in one province — Ontario. This initiative, Educating Future Physicians for Ontario, has become known as the EFPO project. We describe the Ontario context of the project, summarize the evolution, objectives and activities of EFPO and highlight its key features, some of which may be distinctive in current medical education.

The Ontario context

Ontario's 9.7 million citizens constitute about 36% of Canada's population. By the year 2006 the provincial population will be an estimated 10.5 million, of whom those aged 65 years and over will make up 14.4%, as compared with the 1985 figure of 10.6%.[4] Well over 7 million Ontario citizens live in cities. Their patterns of health are not substantially different from those of Canadians generally: needy Ontarians, particularly men, have a shorter life expectancy and a higher probability of prolonged disability.[5] In a 1986 province-wide survey of children aged 4 to 16 years, those from families receiving welfare showed more psychiatric disorders, more long-term health problems and poorer school performance than did those from families not receiving welfare.[6] The isolated northern areas of Ontario have higher rates of infant death and of preventable infectious disease. Thirty percent of Ontarians smoke. There is increasing concern about AIDS in Ontario: 431 cases were reported in 1990, of which 265 were in Metropolitan Toronto (Ontario Ministry of Health, Toronto: unpublished data).

In 1985 $14.5 billion — more than $1600 per person — was spent on health care in Ontario. By 1989 the figure had increased to $20 billion, of which about 65% was accounted for by the provincial government's health budget, 30% was private spending and the remaining 5% was direct federal-government spending.[7] In the last few years there has been considerable pressure for reform in the health care system because of changing public expectations, constraints on public resources and the frustrations of health care providers trapped between expectations and resources. This pressure has resulted in several reports commissioned by the government of Ontario.[7-9]

There are five undergraduate medical education programs in Ontario: at the University of Western Ontario, London; McMaster University, Hamilton; the University of Toronto; Queen's University, Kingston; and the University of Ottawa. Together they graduate about 600 students annually. The deans of the five institutions meet as the Council of Ontario Faculties of Medicine (COFM), which addresses problems and opportunities of common interest and presents a concerted voice in communicating with government and professional groups. In 1988 an undergraduate education committee was formed, whose members are the leaders of the five undergraduate medical education programs.

Overview of the EFPO project

Evolution

The EFPO project was initiated by a charitable organization, Associated Medical Services (AMS). In 1987 the AMS Board of Directors decided to promote a new endeavour in the field of medical education, prompted in part by a concern that the relationship between the medical profession and the Ontario public was showing signs of stress.

The five medical schools or academic health sciences centres in Ontario were invited to develop a proposal for a collaborative project to address these problems through medical education. The project was presented at an invitational conference in June 1989, and shortly afterwards the AMS board agreed to support the EFPO project for 5 years. Several months later the five universities made specific contributions of faculty time to the project, and in 1990 the Government of Ontario agreed to contribute an equivalent amount of money. With a development phase completed by the end of 1989 the main project began on Jan. 1, 1990.

Organization of the project

The AMS Education Advisory Committee reports to the project's funding consortium. The committee represents major organizations concerned with medical education and health services in Ontario and includes representatives from two consultative subcommittees, one providing a community perspective and the other the perspective of health care professionals other than physicians. The project's Steering Committee has representatives from the five medical schools and is responsible for all aspects of the project. It reports twice yearly, through the COFM, to the Education Advisory

Committee. On behalf of the funding consortium the AMS board accounts for all project resources. The financial management of the project is done at Queen's University.

Objectives

The overall goal of the project as originally stated by the AMS Board of Directors is "to modify the character of medical education in Ontario to make it more responsive to the evolving needs of Ontario society." Five project objectives were developed (Table 1). Three working groups, called "components," were each assigned to undertake one of the first three objectives.

Objective 1 — Defining health requirements and expectations: Assigned to the Component 1 Working Group the first objective involves active consultation with educational planners, the public, health care professionals and medical students. Three subgroups have been formed. The Public Expectations Group is assisted by a Community Advisory Committee, which is representative of a cross-section of health care consumers. Requests for written responses to specific questions have been sent to interested parties, such as groups for disabled and chronically ill people and multicultural groups. Structured interviews with experts and key informants, both individually and in small groups, have also been used. The Health Professions' Expectations Group examines from different perspectives the roles of physicians. From this analysis a preliminary description of role expectations has been derived. The sources of information for this work include a review of the scientific literature and other relevant reports, interviews with health care professionals and subanalyses of other recent studies. The Health Data/Indicators Group looks at health data from various Ontario-based sources and identifies important health problems and issues of particular relevance to future physicians. The data collated from all sources are being synthesized in collaboration with the five medical schools and will be used directly by the other component groups. The information will also be made available for other purposes, such as the planning of manuals, workshops and curricular materials. The document being developed is a description of the new roles and areas of competence required of future physicians. It will serve as a guide to the development of specific objectives by each of the participating institutions; some of the objectives will likely be common to all schools.

Table 1: Goal and objectives of Educating Future Physicians for Ontario

Goal
To modify the character of medical education in Ontario to make it more responsive to the evolving needs of Ontario society.
Objectives
1. To define the health requirements of Ontario society as they relate to the training of physicians.
2. To foster faculty development to meet the expanded needs of medical education, including curriculum change, problem solving, clinical epidemiology and continuing medical education.
3. To develop a mechanism for the evaluation of medical students that will assess both knowledge and competence.
4. To support the development of educational programs for medical students in Ontario that are based on meeting defined societal needs.
5. To generate a mechanism and process for the development of leadership in medical education that will be able to sustain changes initiated by the project.

Objective 2 — Preparing the educators: The Component 2 Working Group examines the instructional systems that will help medical students acquire the new competencies expected of future physicians. The focus is on faculty educators and the abilities they will need as educational planners, teachers, evaluators and managers. The main activity to date is a pilot project at the University of Toronto. Anticipating that Ontarians will expect future physicians to know how to evaluate new scientific knowledge and apply it to clinical practice, this pilot project deals with the process of clinical decision making. In 1990 two groups of faculty members were identified: a "core" group with expertise in applying the rules of evidence used in decision making and a "target" group, whose members were interested in obtaining additional skills in the science of clinical decision making and would, in turn, pass these skills on to medical students. As part of the pilot project a specific model of faculty development is evolving that may be useful whenever curricular change is undertaken. The model includes faculty-to-faculty teaching (through a "progressive diffusion" process), an emphasis on relevance (clinicians identify questions from their own clinical work), the creation of small learning groups sustained over a long period, integration by clinicians of new skills into their own teaching and the systematic evaluation of the pilot project. This model of faculty development will be studied and used, when appropriate, by the other four schools to cultivate other competencies. For example, work is in progress on identifying the skills required to make appropriate ethical decisions in complex clinical situations. In mid-1991 an interschool faculty development liaison group was initiated to share ideas and resources, collaborate on specific activities, and design strategies related to the physician roles being identified in the component-1 analysis.

Objective 3 — Assessing student competencies: As the desirable competencies of physicians become more clearly understood there is a need to design new methods of assessing them in undergraduate medical education. The Component 3 Working Group is focusing on this. Guided by the Component 1 Working Group's preliminary analysis the assessment group's initial efforts are directed to those competencies related to physician–patient communication, the analysis of ethical dilemmas and the critical evaluation of evidence to be used in making clinical decisions. After a thorough analysis of the scientific literature, optimum assessment formats have been developed for pilot testing in the five institutions. As a structure for designing, testing and using the new assessment methods a multicentre assessment system was instituted. In addition, this system can serve as a framework for other province-wide studies of the competencies of medical students. Such studies will provide specific guidance for curriculum revision and renewal. There are subgroups developing specific tests: in the spring of 1992 pilot examinations in critical appraisal, communication and ethics were held at the University of Western Ontario, Queen's University and the University of Ottawa. Links have been established with professional organizations such as the Medical Council of Canada and the National Board of Medical Examiners in the United States with a view to collaborative activities. The EFPO's contributions to the development of new assessment tools and systems is intended to complement the assessments done by the institutions and organizations.

Objective 4 — Supporting related curriculum innovations: Support for curriculum innovations is achieved through direct and sustained collaborative action with the curriculum leaders in the five institutions. This support takes several forms. Responsibility for the project has been assumed directly by the COFM, of which the five deans are the key members. The project Steering Committee is charged with implementing the project and reporting regularly to the COFM. Remarkably, all five undergraduate programs are in the process of curriculum review and renewal. The University of Western Ontario and Queen's University have implemented major changes in their undergraduate medical programs, and the universities of Toronto and Ottawa launched revamped curricula in the autumn of 1992. McMaster University continues to make incremental changes in its medical program. The first annual EFPO conference, in 1990, was devoted largely to determining ways in which the project could support curriculum development. Collaborative activities between the EFPO project and individual schools are planned for each academic year and include such elements as an EFPO liaison committee in each school, institution-specific workshops with EFPO component groups and an annual 3-day seminar, in December, for curriculum teams from the five medical programs. A liaison committee of medical students from the five institutions is assisting with some of the activities, and the project has gained considerable support when presented each year at the annual Ontario Medical Students' Weekend.

Objective 5 — Developing ongoing leadership: To be successful the EFPO must not only influence the direction of medical education during its 5-year mandate but also strengthen the human resources necessary for continuing renewal and change in medical education. The main strategy is a fellowship program that provides opportunities for the training of clinicians and researchers whose desired academic focus is medical education; the aim is to establish a cadre of leaders interested and skilled in the continuing development of medical education. Potential EFPO fellows are recommended by their institutions. They are selected from faculty members, senior postgraduate trainees and educators with doctorates according to the merit of the proposed activity, its relevance to the objectives of the EFPO and the candidate's potential for assuming a leadership role in medical education in one of Ontario's five medical schools. The first fellowships were awarded in late 1990. Currently there are 10 fellows, and all five medical programs are represented.

Activities

The main project activities are directly related to the five objectives. The Steering Committee includes the directors of the three component working groups. A project manager and the coordinating centre are based at McMaster University. Each year newsletters are distributed to all medical students and faculty members in the five participating institutions and to many other interested individuals and groups. There is an annual conference involving all project participants. The May 1990 conference, in Toronto, focused on the interaction between the project and the five curricula. The theme of the 1991 conference, held in London, was "Preparing the educators: obstacles and opportunities." The 1992 conference, in Ottawa, was about "Evaluation, integration and collaboration."

Key features of the project

As the EFPO has evolved, several central concepts have emerged.

Demand-side medical education

The project's fundamental concept is that med-

ical education should respond to societal needs and expectations; this is "demand-side thinking" (a term suggested by Kerr White[10]) as contrasted with "supply-side thinking."

Typically, medical education is strongly influenced by the availability of new knowledge and technology and is characterized by phenomena such as the information "explosion," the progressive trend to increasing specialization and the development of multiple technologies — investigative, diagnostic and therapeutic.

This supply-side approach has resulted in highly scheduled and crowded curricula with relatively little time for independent thinking and learning by students, in battles among specialty groups and departments for curriculum hours and in excessive dependence on fact-oriented lectures as the predominant method of teaching. Lectures, even in a single course, are often given by many different people, all speaking only about their own areas of expertise.[11] Some have referred to this phenomenon as the "parade of stars."

In contrast, the demand-side approach begins with an analysis of needs, expectations and trends. The kinds of questions that inform this perspective are: What is the health status of a given population or jurisdiction? What are the health problems that need to be addressed? Which are the most important? What are their causes? Which interventions (preventive, therapeutic, rehabilitative or palliative) have been scientifically shown to do more good than harm and are available at reasonable cost? What are the distinctive roles for physicians in administering these interventions? Which interventions are better performed by other health care workers? The sources of information available to address these questions are many and varied and include policy documents and reports, health-data analyses and other quantitative studies of health and its determinants (and of the health care system), and consumer surveys. The curriculum tools necessary to demand-side analysis include a systematic listing of urgent health problems according to predefined criteria,[12,13] educational modules that focus on specific medical conditions and the cost-effectiveness of interventions, and the definition of roles and competencies that directly reflect societal needs and expectations.

It is important to avoid using this supply–demand model in an either–or fashion. Both types of thinking have important contributions to make to the design of medical education and the understanding of the health care system. However, we believe that the balance of thinking in medical education has been skewed to the supply side and needs to be redressed (Fig. 1). The EFPO project focuses primarily on the demand-side design and implementation of medical education.

Collaboration within a geopolitical jurisdiction

In Canada, both health and education are responsibilities of the provinces. The EFPO project has the potential to influence the education of medical students at all five Ontario centres. Through the COFM the project can make recommendations directly to the Ministry of Health and, in particular, can influence the future directions for health and health care currently being defined by the Council on Health, Well-being and Social Justice. Although the province's five medical schools have in place a coordinated effort in postgraduate education the EFPO project represents the first sustained collaborative effort in undergraduate medical education. Indeed, this collaboration was a condition specified at the outset of the project by the AMS board. There is also coordination of effort among the funding bodies, led by the AMS board, and between these bodies and the implementers of the project. Finally, linkages are being established with a wide range of other provincial organizations and groups, such as the Ontario Federation of Medical Students, the College of Physicians and Surgeons of Ontario and the provincial chapters of national professional organizations (e.g., the College of Family Physicians of Canada).

Implementation more than recommendation

The EFPO project is primarily an implementa-

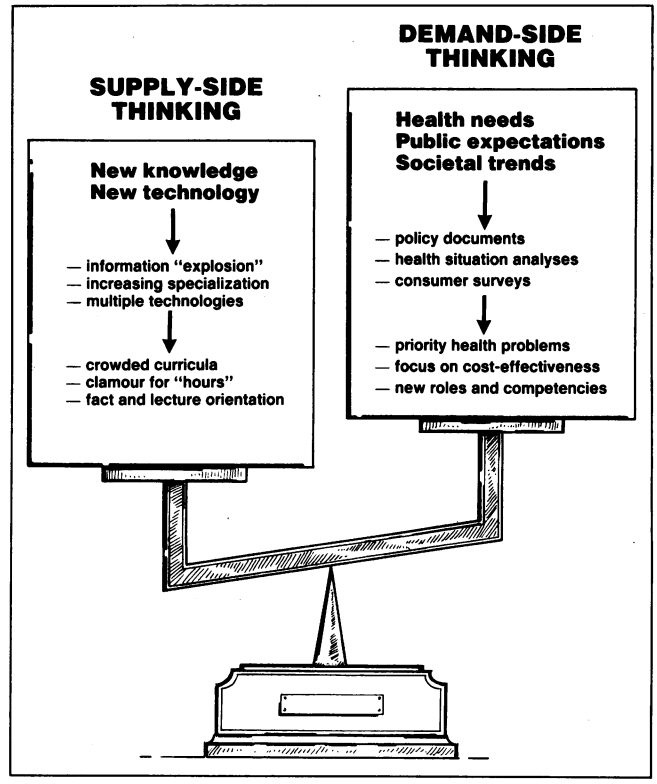

Fig. 1: The supply–demand balance in medical education.

tion project specifically designed to support and complement changes already under way in the five participating institutions and to facilitate further change in response to the evolving health needs of Ontario citizens.

Virtually everyone associated with the project is also involved in the educational programs of the five medical schools. Thus, the ideas and activities of the EFPO project are closely integrated with the curriculum activities of these institutions, in particular with curriculum renewal and change. The project results in discussions, workshops, access by curriculum planners to external experts or facilitators, funded subprojects, focused reports and working papers, faculty development and assessment models, and training opportunities for faculty members, all having the common goal of determining the roles and competencies of future physicians and accommodating them in the medical curriculum.

Systematic project evaluation

The project evaluation plan has several elements. Each working group has developed for the first 3 years of the project a detailed work plan with both process and product indicators. These plans were approved by the EFPO Steering Committee and presented at the first meeting of the AMS Education Advisory Committee, in November 1989. The progress of the project is reviewed by the AMS Education Advisory Committee at semiannual meetings. The committee's suggestions are noted, reviewed by the EFPO Steering Committee and implemented as appropriate. The annual EFPO conference serves as another sounding board and source of guidance to the Steering Committee. A formal, external review took place in the autumn of 1992.

It appears that there may be some results not originally expected, including links with complementary innovations in postgraduate and continuing medical education and specific mechanisms for collaboration with programs, agencies and professional groups in other parts of Canada and in the United States.

Project outcomes: institutional mechanisms for curriculum renewal

Having agreed on the general objectives and strategies of this 5-year project all participants have also addressed the issue of intended outcomes. There is now agreement that each of the five medical schools will aim to have in place sustainable, flexible and ongoing mechanisms for the following outcomes.

- A continuing analysis of the status of health and health care in the region served by the institution (as well as in Ontario generally) with respect to societal needs and expectations.
- A system of faculty-leadership development to prepare educators to translate the analysis of the health situation into the objectives, learning materials and events to be included in the medical curriculum.
- Systems and tools for assessing student competencies related to these objectives.

Thus, the focus of the project is less on short-term curriculum change and more on the development of systems designed to monitor the need for continuing change and on the strategies for effective ways of making those changes.

Conclusions

In general, the project is on target with respect to its stated objectives. A number of important issues and questions that require further debate and investigation have been raised.

What is the relative contribution of major changes in the undergraduate medical curriculum to the eventual performance of practising physicians? Is it likely that other factors are more important and more deserving of attention, such as the medical-student selection system, the nature of postgraduate education and continuing medical education, and a number of practice variables (e.g., patient numbers and mix, location, the reward system and personal health and motivation)?

Why should the university be concerned with the needs and expectations of society? What are the social responsibilities of the medical school?

Are there differences between needs and expectations? When substantial differences exist, what is the appropriate role of future physicians in patient care both for individuals and for populations (i.e., groups who seek care as well as those who do not or cannot seek care)?

How can a medical school interact with the surrounding community in a way that will be genuine and useful for revising the programs that train physicians?

The project has received remarkable support to date, and there has been gratifyingly active involvement by the funding bodies, by the deans, faculty members and students at the participating institutions, and by interested citizens, professionals, agencies and professional organizations. The project leaders intend to provide regular public reports as this adventure unfolds.

References

1. Physicians for the twenty-first century: report of the Project Panel on the General Professional Education of the Physician

and College Preparation for Medicine. *J Med Educ* 1984; 59 (11 pt 2): 1-208
2. Warren K: World Conference on Medical Education, Edinburgh. *Lancet* 1988; 2: 462
3. Office of Educational Development, Harvard Medical School: The new pathway to general medical education at Harvard University. *Teach Learn Med* 1989; 1: 42-46
4. *Ontario Statistics, 1986*, Ont Min of Treasury and Economics, Toronto, 1986
5. Chambers LW: *Health Profiles of the Citizens of Ontario*, Can Public Health Assoc, Ottawa, 1987
6. Offord DR, Boyle MH: *Morbidity among Welfare Children in Ontario*, McMaster U, Hamilton, Ont, 1986
7. Ontario Health Review Panel: *Toward a Shared Direction for Health in Ontario*, Ont Min of Health, Toronto, 1987
8. Panel on Health Goals for Ontario: *Health for All Ontario*, Ont Min of Health, Toronto, 1987
9. Minister's Advisory Group on Health Promotion: *Health Promotion Matters in Ontario*, Ont Min of Health, Toronto, 1987
10. Kerr White L: *The Task of Medicine: Dialogue at Wickenburg*, Henry J Kaiser Family Foundation, Menlo Park, Calif, 1988: 61-62
11. Swanson AG: Medical education in the United States and Canada. *J Med Educ* 1984; 59 (11 pt 2): 35-36
12. Neufeld VR, Bearpark S, Winterton C: Optimal outcomes of clinical education. In Gastel B, Rogers DE (eds): *Clinical Education and the Doctor of Tomorrow*, NY Acad Med, New York, 1989: 11-23
13. McDonald PJ, Chong JP, Chongtrakuls P et al: Setting educational priorities for learning the concepts of population health. *Med Educ* 1989; 23: 429-439

Conferences
continued from page 1454

May 13-14, 1993: Ontario Gerontology Association 12th Annual Conference — the Year 2000: Are We Ready?
Toronto
Debby Vigoda, Ontario Gerontology Association, 7777 Keele St., 2nd flr., Concord, ON L4K 1Y7; tel (416) 660-1056, fax (416) 660-7450

May 14, 1993: Medical Clinic Day — a Geriatric Saga
North York, Ont.
Sybil Gilinsky, Continuing Education Department, Baycrest Centre for Geriatric Care, 3560 Bathurst St., North York, ON M6A 2E1; tel (416) 789-5131, ext. 2365

May 14-15, 1993: Atlantic Provinces Ophthalmological Society Annual Meeting
Halifax
Dr. Paul A. Price, Department of Ophthalmology, St. Martha's Regional Hospital, Antigonish, NS B2G 2G5; tel (902) 863-6411, fax (902) 863-6006

May 14-15, 1993: Ischemic Heart Disease, Exercise and Related Topics — 5th International Symposium
Toronto
Study credits available.
Symposium coordinator, Toronto Rehabilitation Centre, 347 Rumsey Rd., Toronto, ON M4G 1R7; tel (416) 425-1117, fax (416) 425-0301

May 15, 1993: Education in Occupational Medicine
Hamilton, Ont.
Dr. David Muir, McMaster University Medical Centre, Rm. 3H50, 1200 Main St. W, Hamilton, ON L8N 3Z5; tel (416) 525-9140, ext. 2332, fax (416) 528-8860

May 15-16, 1993: 6th Annual GP Psychotherapy Conference — Bringing Psychotherapy to Life by Bridging the Gap Between Medicine and Psychotherapy
Toronto
Dr. Dianne McGibbon, 3 Gardenvale Rd., Toronto, ON M8Z 4B8; tel (416) 239-4644

May 15-18, 1993: Power of Partnership — Annual Convention of the Catholic Health Association of Canada
Ottawa
Freda Fraser, director of communications, Catholic Health Association of Canada, 1247 Kilborn Pl., Ottawa, ON K1H 6K9; tel (613) 731-7148, fax (613) 731-7797

May 18-21, 1993: 5th International Conference on Cerebral Vasospasm
Edmonton and Jasper, Alta.
Canadian Congress of Neurological Sciences, Ste. 810, 906-12 Ave. SW, Calgary, AB T2R 1K7; tel (403) 229-9544; fax (403) 229-1661

May 19, 1993: Balancing Physician Accountabilities — Dr. Jekyll and Mr. Hyde? (cosponsored by the Ontario Medical Association and the Centre for Health Economics and Policy Analysis [CHEPA] and in conjunction with CHEPA's 6th Annual Health Policy Conference)
Hamilton
Ms. Lynda Marsh, conference administrator, CHEPA, McMaster University, Rm. 3H26, 1200 Main St. W, Hamilton, ON L8N 3Z5; tel (416) 525-9140, ext. 2135, fax (416) 546-5211

May 19-21, 1993: CHEPA's 6th Annual Health Policy Conference — the Buck Stops Where? Accountabilities in Health and Health Care (preceded by the seminar "Balancing Physician Accountabilities: Dr. Jekyll and Mr. Hyde?")
Hamilton
Ms. Lynda Marsh, conference administrator, Centre for Health Economics and Policy Analysis, McMaster University, Rm. 3H26, 1200 Main St. W, Hamilton, ON L8N 3Z5; tel (416) 525-9140, ext. 2135, fax (416) 546-5211

continued on page 1508