Allocation of health care resources: a challenge for the medical profession

David Naylor, MD, DPhil
Adam L. Linton, MB, ChB, FRCP, FRCPC

If current limitations on health care funding continue, medical practitioners will face increasing pressure to conserve scarce resources and to participate in the allocation of funds. This article discusses the ethical and economic aspects of the physician's role and briefly reviews some efficiency measures that might mitigate the effects of rationing of health care services.

Si les restrictions actuelles dans le financement des services sanitaires persistent, le praticien se verra de plus en plus obligé d'économiser des ressources qui ne sont pas illimitées et d'intervenir dans la distribution des fonds. On discute ici des aspects déontologiques et économiques de ce rôle du médecin et passe brièvement en revue quelques moyens d'augmenter l'efficacité des services sanitaires afin de parer aux méfaits d'un éventuel rationnement.

Recent articles in medical journals have reflected the general concern that the potentially limitless demand for health care may lead to severe rationing of services.[1-4] Even now physicians and other health care providers are facing new political, economic and ethical challenges imposed by various measures to contain costs and improve efficiency. Although many of these issues have already been addressed at length by the CMA's Task Force on the Allocation of Health Care Resources,[5] in this article we aim to give clinicians a brief review of problems related to the allocation of health care resources with special reference to the position of the medical profession.

From the Department of Medicine, Victoria Hospital Corporation, London

Reprint requests to: Dr. Adam L. Linton, Department of Medicine, Victoria Hospital Corporation, Box 5375, Terminal A, London, Ont. N6A 4G5

Scarcity and rationing in the health services sector

General considerations

Except for universally available natural resources, such as the atmosphere, access to all goods, services and facilities is restricted by various mechanisms. In a situation of absolute scarcity, access is limited simply by availability. Relative scarcity, on the other hand, is associated with two basic allocation mechanisms: the ability or willingness of consumers to bear the costs of goods and services (i.e., price rationing) and nonprice mechanisms or administrative measures.

The ethical problems of price rationing in medical care are obvious and account for the promises of free care for the poor that have been written into most doctors' codes ever since the Hippocratic oath. None the less, until recently there was a considerable amount of price rationing of health care services in Europe and Canada. With improvements in the effectiveness of medical care during the 20th century universal prepayment for health care was introduced by most industrialized nations so that need rather than income would play a more dominant role in determining the use of services. Britain's National Health Service (NHS), perhaps the prototypical universal system, was founded on the dubious assumption that need was finite; once the NHS cleared the backlog of problems among those who had hitherto been restrained by financial impediments, more general application of preventive and promotive measures would supposedly reduce the annual demand on the state. However, with limited resources and mounting demand the NHS was forced to depend on non-price-rationing measures,[6] with the result that waiting lists lengthened and modern medical care could not be provided to all who might

← For prescribing information see page 449

benefit. A clear example of this rationing, independent of price, is the very small number of patients treated by dialysis in Britain, even in relation to the number of such patients in more impoverished European countries.[7]

The Canadian context

The implementation of Medicare in Canada appears to have reduced some of the inequities caused by price rationing in our health care system.[8,9] However, for several years doctors, nurses, hospital workers and hospital administrators have expressed concern that the system is underfunded. Such assessments are invariably contentious and coloured by the priorities of those concerned. How long a waiting list is acceptable for hip replacement surgery? The answer will differ depending on whether one is an economist, an internist, an orthopedic surgeon or, *a fortiori*, a person disabled by avascular necrosis of the femoral head.[10]

It is important to distinguish between overall funding of health care and the restricted use of providers' incomes. Many may believe further expenditure on health care is warranted, but not to increase providers' incomes or salary. Our primary concern in this article is, accordingly, with the provision of services rather than provider incomes.

Regardless of how one assesses current funding levels, future costs will probably be forced up by the continued growth of medical technology. In many areas of medicine new drugs and devices are available that increase the cost of care enormously. For example, dialysis, coronary artery bypass grafting and transplantation procedures are all of value in extending life or relieving symptoms, or both, and the potential demand for these techniques in an advanced industrial society such as ours is almost limitless. The use of expensive diagnostic technology, in particular, is stimulated by "defensive medicine", since, as emphasized by recent changes in premiums of the Canadian Medical Protective Association, the threat of litigation has been growing. Also, the ongoing increase in the proportion of the population over 60 years of age will play a small but definite role in boosting average per-capita expenditures.[11]

Despite general recognition of the trend to increased costs and the fact that Canadians view their health care services as an important part of the nation's social fabric, funds for health care are limited in no small part by political perceptions of the public's reluctance to pay higher taxes and health insurance premiums. These perceptions are probably accurate; since most Canadians are relatively healthy most of the time, financial problems in the hospital sector are remote from their everyday concerns.

Most Canadians can afford to pay additional out-of-pocket sums and would almost certainly be willing to pay these sums if structural changes in Medicare were to create a situation whereby better-quality health care could be purchased with extra payments. The recrudescence of private insurance in Britain, with some trade unions purchasing group plans,[12-14] emphasizes that financial stringency in public systems can ultimately prove self-defeating. However, supplementary private insurance and other direct-pay arrangements have been widely criticized as representing both a return to the price rationing that Medicare was designed to eliminate and an invitation to the even faster development of a two-tiered system than might be the case if the public sector were starved to the point that a fully private sector grew alongside it to meet unmet demands. Evidence from the popular press suggests that most Canadians oppose any moves to alter Medicare in a way that would expand extra-billing or similar direct-payment modes (*The Globe and Mail*, Toronto, Nov. 5, 1984: 4), and the Canada Health Act further constrains the growth of direct-payment modes within the current national health insurance framework.

Additional funding might prove to be only a partial solution. Currently Canada spends about 8.4% of its gross national product on health care. As in many things we fall between Britain, with its average health care expense of $400 (US) per capita, and the United States, where the 1984 expenditure was about $1500 (US) per capita.[15] Yet, despite its high per-capita expenses, the American system not only has problems with persisting price rationing but also faces allocation dilemmas no less acute than those in Britain because of higher public expectations and structural inefficiency; accordingly, leaders of American medicine are calling attention to a looming crisis in medical ethics because of economic constraints that force clinicians to become silent partners in the rationing process.[16] Whatever the level of funding or the mix of public and private revenue, problems of efficient use and allocation of health care resources must be faced.

The physician's role

Economic aspects

The physician's role in the health care system is pivotal as far as the use of resources is concerned. Because of the wide gap in information between doctor and patient and the emotional connotations of serious illness, doctors are expected to serve both as suppliers of services and as purchasing agents on their patients' behalf for services such as hospital days, drugs, diagnostic tests and consultations with other physicians. Full insurance — or "first-dollar coverage" without prices or deductibles — is often cited as a contributing factor in demands on the system initiated by consumers; however, it is at least as important to recognize that universal first-dollar insurance also creates a zero price market in which doctors use expensive facilities and technologies without much idea as to the precise costs of what has been

"purchased" for the benefit of their patients.

This situation is aggravated by the departure of the medical marketplace from usual supply–demand equilibria. Although incomes per physician theoretically should fall in proportion to an increase in the number of doctors per capita, this expected market movement is blunted to some extent by increases in the use of medical services. Reasons advanced for the increase in use vary. Supplier-induced demand, or target-income behaviour, is cited by some economists, the implication being that doctors respond to the incentives of the fee-for-service system by providing more services per patient if the consumer-initiated demand sags. Other economists refer to latent demand: if a doctor is close at hand and if patients become aware that he or she is not busy they will lower their threshold for contacting that doctor. Sociologists allude to the uncertainties and anxieties of medical practice, in essence absolving everyone on the grounds that doctors often wish they could spend more time with each patient, and patients, in turn, are pleased with the closer attention.[17-21]

These theories are not mutually exclusive and do not alter the empirical finding that a larger number of doctors means not only increased expenditures for doctors' services but also increased use of other resources because of the doctor's function as a purchasing agent.

Clinical autonomy and rationing

It has been argued that when price mechanisms are not used "implicit rationing" allows greater latitude for professional autonomy and clinical responsibility.[22] Implicit rationing hinges on the premise that when total budgets for hospitals or other health care facilities are tightly capped, doctors and administrators will eliminate waste and accept the burden of making more difficult decisions about allocation of funds to individual units, particular services and, ultimately, individual patients. Although some implicit rationing has occurred in every health care system, greater reliance on this approach may divert resources to high-profile clinical units and services and favour aggressive clinicians by virtue of the "squeaky-wheel" rule. Implicit rationing also tends to conceal real funding shortfalls, since the units that lose the initial battle for financial support will tend to be the same units that are least adroit at publicizing the damage done by cutbacks. Finally, although it preserves greater scope for professional autonomy, implicit rationing may at times make the clinician a scapegoat for externally imposed funding limits.

In contrast to implicit rationing "explicit rationing" hinges on administrative decisions that directly and openly control the allocation of resources at diverse levels of the health care system. As Mechanic has noted,[22] any explicit guidelines for rationing might place doctors in the invidious position of trying to use cumbersome and rigid criteria for highly complex and individualized problems. On the other hand, this approach at least implies that society takes responsibility for certain ethical decisions that clinicians would otherwise be forced to make if resources were strained.

Ethical concerns

Cost containment by clinicians is sometimes seen to conflict with the traditional Hippocratic ethic of attention first and foremost to the individual patient,[23] but ideally efficiency measures should either not affect outcomes at all or actually improve the results of medical care. In fact, there is an ethical imperative for physicians to be involved in these endeavours. Hardin's classic article "The tragedy of the commons"[24] highlights the need for individual self-restraint to ensure that limited resources are conserved for the ultimate greater good of all community members. Any waste in the system simply aggravates the difficulties already created by government budgetary limitations by further reducing the pool of funds available for patient care, hospital maintenance, research and payments to health care personnel. Moreover, unless the profession plays an active role in shaping policies directed at efficient operation of the health care system, doctors could face ethical dilemmas inherent in cost-containment endeavours that are designed without regard to the clinician's primary responsibilities as patient advocate.[25] At both an individual and an aggregate level it is likely that a difficult balance will have to be struck between ruthlessly utilitarian rationing on the one hand and impractical insistence on expenditures, without regard to marginal returns, on the other.

Efficiency and cost-containment options

Space constraints prevent detailed consideration of the various policy options aimed at promoting efficient use of available health care resources. Most are clearly outlined in the report of the CMA's Task Force on the Allocation of Health Care Resources.[5]

Prevention and promotion

The repeated calls for a shift in the medical paradigm from curative and palliative endeavours to prevention have often been supported with generalizations about the economic superiority of the latter over the former.[26] Obviously a vaccine model of prevention has limited applicability when the main causes of death in Canada have a multifactorial etiology that includes strong behavioural elements. Changes in lifestyle in the past 20 years

have helped to alter some morbidity and mortality statistics, but further radical change and more knowledge of human biology are needed if this trend is to have a greater effect on the public's health.

Many clinicians are already involved with preventive medicine, be it routine prenatal care, antismoking and dietary counselling, strict control of hypertension or diabetes, or collective pressure through medical associations for seatbelt legislation and changes in the legal drinking age. However, a systematic case-oriented approach to prevention through lifestyle counselling by physicians would probably be a poor use of medical manpower; use of paramedics with special training in risk assessment and behavioural modification has been proposed,[27] but the cost-effectiveness of this approach is uncertain. Other potentially useful preventive measures, ranging from better health education to changes in the occupational safety laws, do not hinge on a modification of the physician's daily working paradigm, although organized medicine can press for legislation and initiatives in these areas.

The umbrella economic arguments for preventive measures are misleading on two scores. First, some preventive programs might lead to larger palliative expenditures. Second, if the desired effect is to prolong life or enhance its quality, then certain preventive measures could indeed be more cost-effective than later palliative interventions. But that which is more cost-effective is not always less costly: a prevention program might be highly effective and moderately expensive, whereas later palliative care might be much less expensive but so ineffective that we choose the prevention program as more in keeping with the goals of medicine.[28] In sum, each preventive or promotive program will have to be evaluated in the same way that other technologies must be assessed — with regard to actual cost as well as relative cost-effectiveness.

Scientific advance

Lewis Thomas[29,30] has popularized the concept that ongoing scientific advances will sweep away the "halfway technologies" that account for some of the current spiralling of health care costs. Continuing scientific research is obviously vital, and certain basic advances in science have had clinical applications that represent an enormous saving in health care expenditures — for example, polio vaccines, antituberculous drugs and even antipsychotic medications. Currently, however, as one halfway technology is replaced by a less expensive and more definitive intervention another expensive palliative technique is introduced to deal with diseases of civilization and senescence. Investments in science will pay off in improvements in the quality and length of life for Canadians; however, laboratories cannot be expected to produce economic panaceas along with sound results.

Avoidance of a physician surplus

Medical manpower planning in Canada has been handicapped by the lack of an adequate database.[31] Even the crudest estimates of, say, the national ratio of active physicians to population vary from around 1:600 to 1:520 depending on how one defines a physician in "active practice". All such ratios are confounded by many factors, such as changes in the average number of hours worked, altered disease profiles of the population, the distribution and actual practice patterns of clinicians, and the emergence of new subspecialties in response to technical innovations. None the less, a recent federal–provincial study has reportedly warned that a physician "oversupply" is developing in certain specialties and regions, and it has recommended, among other measures, an immediate 20% decrease in the intake of Canada's medical schools (*The Globe and Mail*, Toronto, Mar. 5, 1985: 1). Although the validity of this report has yet to be assessed, concern about physician oversupply is understandable and is predicated on the known link between per-capita health care costs and the number of physicians in practice. This relation presumably occurs because a greater number of practitioners means an increase in both supplier-induced and consumer-initiated demands. A surplus of physicians also imposes risks of overservicing[32] and strains already limited resources without necessarily improving the consumer's position, since persisting problems of medical availability have more to do with distribution (by specialty and region) and practice organization than with absolute numbers of clinicians.

Another effect of a physician surplus is the promotion of overspecialization in the periphery. Academic centres continue to produce highly trained subspecialists who are increasingly forced to move to smaller towns where there is neither an adequate volume of cases to maintain special expertise nor the necessary backup personnel and equipment to permit the highest quality of care. As noted by Petersdorf,[33] this phenomenon has already had adverse effects for academic medical centres in the United States. On the one hand, with the increasing number of specialists being pushed to the periphery by the manpower boom specialty programs are in competition with their own recent graduates in surrounding smaller centres. On the other hand, any medical faculty or specialty program that does not maintain its numbers of trainees loses the funding necessary to support research and teaching. Inflexibility in the funding of medical schools and specialty programs makes it difficult for educators to adjust their "output" in a way that reflects community needs.

Experience in British Columbia and Quebec has underlined the willingness of provincial governments to intervene in this field. The medical profession's responses to the problems of oversupply — and undersupply — in certain areas and specialties might involve manpower planning that

is devoted to correcting maldistribution as well as giving further attention to the always contentious issue of guidelines for the appropriate number of physicians in special areas.

Alternative practice modes

Historical evidence indicates that a nationalized medical service with all doctors on salary has always been strongly rejected by Canadian practitioners.[34] Although a rigid salaried system is politically and economically problematic, further experimentation with alternative modes of organizing private practice has been advocated on the grounds that the current fee-for-service system encourages physicians to use their office and working hours efficiently but provides no incentive for efficiency in the use of other expensive resources, such as hospital beds and diagnostic tests.

Health maintenance organizations in the United States are criticized by some analysts because they pay doctors by salary and implicitly restrict the patient's choice of practitioner.[35] However, these organizations do give doctors financial incentives to use tests, consultations and hospital resources sparingly. The resulting savings are shared with subscribers, since premium rates can be contained if the organization runs efficiently; subscribers can choose another unit if they believe treatment is in any way inadequate. A recent controlled trial has confirmed that the health-maintenance-organization model is associated with a marked reduction in the use of hospitals.[36]

Health service organizations in Ontario, with their capitation funding of group general practice, provide a useful model for alternative payment of physicians within the framework of private practice. However, these organizations provide only limited financial incentives for cost containment and have yet to be systematically extended to the hospital sector. Any alternative mechanism that permits both doctors and patients to be rewarded for intelligent use of health care resources without fostering blatant undertreatment deserves attention.

Efficiency in hospitals

Utilization committees are now well established in many major hospitals and provide a useful opportunity for senior medical staff and administrators to cooperate in ensuring that purchasing and staffing decisions are made in a fiscally and clinically appropriate manner. Medical audits have become increasingly sophisticated, and the use of external reviews is often touted as an important means of ensuring objective assessments.

Audits and utilization reviews, however, will increasingly depend on an adequate data base for historical and interinstitutional comparisons. The introduction of case mix groupings by the Hospital Medical Records Institute in Ontario and other provinces should increase the information on work patterns available to hospitals. In the United States a similar scheme, with diagnosis-related groups (DRGs), has already been used to determine the payments to hospitals for services provided to patients insured under Medicare and Medicaid. The DRG funding mechanism rests on cost averages derived for patients in similar hospitals and thereby penalizes or rewards institutions that deliver health care more or less expensively than the average in their category. In essence, the DRG system combines elements of explicit and implicit rationing with a view to eliminating waste rather than actually constraining the availability of care.[37,38] The data collected have been valuable, but the system is fast becoming a nightmare for clinicians in major hospitals and teaching centres and may also have its own perverse incentives.

DRG funding methods have the potential to encourage closer teamwork between administrators and clinicians since the hospital will face financial problems if practitioners are irresponsible in their use of shared resources. Ultimately, more efficient use of hospital resources is also in the interests of all of the attending physicians, since hospitals that are in debt are unlikely to supply the up-to-date equipment, staff and support services necessary for good medical practice. In the current climate of hospital budget capping in Canada a similar philosophy of partnership between hospital administrators and physicians seems sensible.

Rationalization

The concept of rationalization, which is popular with governments and many policy analysts, refers to centralization of specialist services in designated regional referral centres. In theory use of this concept avoids wasteful duplication of facilities and provides the case volume necessary to maintain special expertise.[39] Rationalization has obvious merit in highly specialized services such as transplantation, but the magnitude of savings to be realized by regional planning is uncertain, particularly in more routine areas of care.[40] Some of the expenses are simply transferred to consumers who must travel longer distances for medical attention. Careful local assessment of the results of rationalization is essential.

Education of clinicians

Few physicians are formally trained in health care policy or economics. Hence, in an era when health care has become a multi-billion-dollar industry, doctors function as small businessmen in their offices and as *de facto* middle managers in hospitals but are seldom trained to take on the high-level planning and executive roles that are,

unfortunately, filled by individuals who do not appreciate the clinician's perspective and problems.

Clinicians are seldom given information about the economic implications of their practice patterns. The costs of many commonplace laboratory and radiologic investigations are not widely known, even though much of the increase in costs in modern medicine comes from so-called little-ticket technologies, such as routine blood tests.[41] A greater emphasis on the cost effectiveness of health care practices is necessary at all levels of undergraduate and postgraduate medical education; chart audit by mentors and peers has been touted as the single most effective tool in the educational process.[42]

Health practice evaluation

Many established medical practices have not been subjected to controlled clinical evaluation, let alone evaluation with cost considerations in mind.[43] Legal and ethical concerns may now prevent more rigorous assessments of these accepted practices. Unfortunately, new techniques continue to be widely introduced without regard to their efficacy and costs.[44]

In the past cost–effectiveness and cost–benefit ratios of new technologies have ostensibly been secondary to a straightforward determination of clinical efficacy, but, in fact, the clinical applications of innovations has always been limited by prohibitive costs. The increased use of third-party payment has released the brake on the marketability of new technology. Hence, the current generation of physicians is in some ways forced to do consciously what was done implicitly through price rationing before first-dollar health care insurance became widespread: weighing costs, benefits and effectiveness of techniques to determine what will give the greatest benefit for the least cost. Cost–effectiveness and cost–benefit analyses are alien to most physicians and raise serious ethical questions.[45] At the very least, however, rigorous evaluation should lead to use of equally effective but less expensive practices and elimination of very low- or no-yield practices.

Investments for longer-term savings

Short-term capital expenditures or increments in operating expenses could conceivably yield longer-term savings in parts of the system. For example, to avoid excessively long waiting lists, outpatients needing computerized tomography are sometimes admitted to hospital. Similarly, lack of day-surgery facilities may force brief admissions, with their attendant high costs. Budget capping thus tends to lock doctors and administrators into seeking the "least worst" temporary solution rather than allowing them to make investments for longer-term maximization of efficiency. However, those who fund health care are unlikely to be impressed by legitimate pleas for capital renewal as long as there are many identifiable areas of waste in the system.

Return to price rationing

An alternative approach is to reintroduce price elements and eliminate first-dollar coverage in the hope of both reducing consumer-initiated demand and augmenting funds through private channels. This could be done with user fees for hospital or medical care, or both, deductibles of $200 to $500 or supplementary private insurance.

User fees have been advocated to force consumers to exercise greater discretion in using medical services for minor ailments. They would, in effect, encourage consumers to ration their own demands to conserve disposable income. Those with incomes below a given level would presumably be exempt from direct payments. If user fees were implemented they would ideally reduce not only overall costs but also payment to doctors by decreasing the volume of patient-initiated visits.

A detailed debate on the merits and demerits of user fees can be found in the Canadian literature on health economics.[46–52] It is clear that user fees are opposed by many planners as well as most consumer groups because of the difficulties in designing a program of direct charges that will be equitable and efficient. Whether this view will change in the future remains unknown. For now public opinion and the provisions of the Canada Health Act serve as a definite deterrent to the expansion of direct charges within the medical care system.

The introduction of deductibles to eliminate the current first-dollar coverage provisions of the provincial Medicare programs could combine any advantages of user fees with an administrative saving by eliminating governmental processing of many of the accounts tendered by physicians. However, this saving would be obtained by passing most of the collection expenses back to practitioners and then probably to consumers. Data from the Rand health insurance experiment in the United States suggest that the short-term impact of coinsurance on health status is much less severe than is often assumed,[53,54] but longer follow-up studies are needed.[55,56]

Consumer self-rationing on the basis of price considerations could actually prove more capricious than a system of severe rationing by waiting list, since in the latter doctors tend to function as reluctant triage agents, ensuring that patients with the most pressing need move to the head of the queue. One way to ameliorate this difficulty would be to delineate essential services that are exempt from price-rationing provisions and stay covered on a first-dollar basis; all other services would be subject to direct charges. Much cosmetic surgery is

already excluded from Medicare coverage, and recently the general practice section of the British Columbia Medical Association suggested that lifestyle counselling is often not an appropriate claim on the public purse (*The Globe and Mail*, Toronto, Oct. 15, 1984: 3). Beyond a few minor billing categories, however, obvious difficulties arise in designating services as nonessential.

The issue of supplementary private insurance or a separate private health care sector is complex. When a public system is financially squeezed to the point that a significant fraction of the population insists on better or faster care, the number of direct-pay office services will increase; more important, the lack of public capital will encourage the intervention of for-profit corporations to create a private hospital sector. Experience in Britain reveals not only this trend but also the difficulties inherent when entrepreneurship creates a two-tiered health care system.[12] The United States, on the other hand, accepted a two-tiered system from the outset by grafting public insurance for the aged and poor onto a predominantly private system. Now, with the growing influence of profit-oriented corporations in the main health services market, some doctors in the United States are fearful that existing inequities will be magnified as the traditional ethics of medicine are modified by commercial exigencies (*Toronto Star*, Mar. 31, 1985: F1).[57] Both alternatives are inferior to a properly supported unitary public system in which need, not income, determines priorities in care. But the British experience could foreshadow the long-term fate of the Canadian health care system if waiting lists grow and services deteriorate.

Conclusions

In the past decade the health care system in Canada has been relatively successful in restraining costs, largely by imposing global budgeting that amounted to an implicit rationing mechanism.[58] Our health care system remains one of the best in the world, but this period of restraint has taken its toll. There has been a failure to upgrade existing facilities and to build necessary acute- and chronic-care institutions, along with a lack of imaginative investment in alternative health care arrangements that could yield long-term savings. As well, the slower climb in health care costs in Canada compared with that in the United States may well have generated a false sense of security about the need for more coherent cost-containment policies.

Currently, physicians face a political, ethical and economic challenge that stems from strains on available health care resources due to burgeoning technology, an ageing population and ongoing budgetary stringency. Even if an economic upturn leads to more generous public funding of the health care system, professional cooperation and leadership in efficiency measures will be needed. Otherwise implicit rationing will become increasingly severe.

The most important questions about allocation of health care resources will remain unanswered as long as the goals of the Canadian Medicare system are ambiguous. A dialogue with administrators, other health care workers, government and the general public may help clarify expectations and assist the medical profession in deciding what its role should be. The creation of a Canadian health council as a forum for discussion would be helpful.[59]

References

1. High technology medicine: A luxury we can afford? [E]. *Lancet* 1984; 2: 77–78
2. Thurow LC: Learning to say "no" [E]. *N Engl J Med* 1984; 311: 1569–1572
3. Fuchs VR: The "rationing" of medical care. Ibid: 1572–1573
4. Levinsky NG: The doctors' master. Ibid: 1573–1575
5. Task Force on the Allocation of Health Care Resources: *Health: a Need for Redirection*, Can Med Assoc, Ottawa, 1984
6. Schwartz WB, Aaron HJ: Rationing hospital care: lessons from Britain. *N Engl J Med* 1984; 310: 52–56
7. Berlyne GM: Over 50 and uremic = death. The failure of the British National Health Service to provide adequate dialysis facilities. *Nephron* 1982; 31: 189–190
8. Enterline PE, Salter V, McDonald AD et al: The distribution of medical services before and after "free" medical care — the Quebec experience. *N Engl J Med* 1973; 289: 1174–1178
9. McDonald AD, McDonald JC, Salter V et al: Effects of Quebec Medicare on physician consultation for selected symptoms. *N Engl J Med* 1974; 291: 649–652
10. Task Force on the Allocation of Health Care Resources: *Health: a Need for Redirection*, Can Med Assoc, Ottawa, 1984: 104–115
11. Ibid: 7–38
12. Seldon A (ed): The NHS is inadequate for industry and trade unions. In *The Litmus Papers: a National Health Dis-Service*, Centre for Policy Studies, London, 1980: 89–94
13. Lister J: By the London post. Private medicine for trade unionists. *N Engl J Med* 1979; 301: 984–986
14. *Private Hospitals and Their Owners* (memo no 1), NHS Unlimited, London, Feb 1983: 1–8
15. Blendon RJ, Altman D: Public attitudes about health-care costs. A lesson in national schizophrenia. *N Engl J Med* 1984; 311: 613–616
16. Farber SJ: On medical ethics and the prospect of rationing. *Am Coll Physicians Obs* 1985; Feb 3
17. Roemer MI, Roemer JE: The social consequences of free trade in health care: a public health response to orthodox economics. *Int J Health Serv* 1982; 12: 111–129
18. Migue JL, Belanger G: *The Price of Health*, Macmillan, Toronto, 1974: 1–19, 121–123
19. Evans RG: *Price Formation in the Market for Physician Services in Canada*, 1957–1969, Information Canada, Ottawa, 1972: 17–38, 111–114
20. Idem: Supplier-induced demand: some empirical evidence and implications. In Perlman M: *The Economics of Health and Medical Care*, Macmillan, London, 1974: 162–173
21. Baltzan MA: Medical care costs ∝ physican manpower: a new economic theory. *Can Med Assoc J* 1973; 108: 101–103, 106
22. Mechanic D: Approaches to controlling the costs of medical care: short-range and long-range alternatives. *N Engl J Med* 1978; 298: 249–254
23. Johnson DE: Life, death, and the dollar sign. Medical ethics

and cost containment. *JAMA* 1984; 252: 223–224
24. Hardin G: The tragedy of the commons. *Science* 1968; 162: 1243–1248
25. Oreopoulos DG: Should we let them die? The moral dilemmas of economic restraints on life-support treatments [E]. *Can Med Assoc J* 1982; 126: 745–746
26. Somers AR: Why not try preventing illness as a way of controlling Medicare costs? *N Engl J Med* 1984; 311: 853–856
27. Naylor CD: The role of medicine: an appraisal. *Am Coll Physicians Forum Med* 1980; 3: 727–730
28. Preventing illness to control Medicare costs [C]. *N Engl J Med* 1985; 312: 319–320
29. Thomas L: On magic in medicine. *N Engl J Med* 1978; 299: 461–463
30. Idem: On the science and technology of medicine. In Knowles JH: *Doing Better and Feeling Worse*, Norton, New York, 1977: 35–46
31. Lomas J, Stoddart GL: *Planning or Simply Supply Projections? A Critical Review of Physician Manpower Forecasting in Canada*, Council of Ontario Universities, Toronto, 1982
32. Vayda E: A comparison of surgical rates in Canada and in England and Wales. *N Engl J Med* 1973; 289: 1224–1229
33. Petersdorf RG: Is the establishment defensible? *N Engl J Med* 1983; 309: 1053–1057
34. Naylor CD: *The Canadian Medical Profession and State Medical Care Insurance — Key Developments, 1911–1966*, DPhil dissertation, Oxford U, Oxford, 1983: 340–342
35. Schwartz H: Conflicts of interest in fee for service and in HMO's. *N Engl J Med* 1979; 299: 1071–1073
36. Manning WG, Leibowitz A, Goldberg GA et al: A controlled trial of the effect of a prepaid group practice on the use of services. *N Engl J Med* 1984; 310: 1505–1510
37. Vladek BC: Medicare hospital payment by diagnosis-related groups. *Ann Intern Med* 1984; 100: 576–591
38. Linton AL: CMG system in hospitals: Should physicians care? *Ont Med Rev* 1984; 51: 273–275
39. Luft HS, Bunker JP, Enthoven AC: Should operations be regionalized? *N Engl J Med* 1979; 301: 1364–1369
40. Schwartz WB, Joskow PL: Duplicated hospital facilities: How much can we save by consolidating them? *N Engl J Med* 1980; 303: 1449–1457
41. Moloney TW, Rogers DE: Medical technology — a different view of the contentious debate over costs. *N Engl J Med* 1979; 301: 1413–1419
42. Everett GD, Deblois S, Chang PF et al: Effect of cost education, cost audits, and faculty chart review on the use of laboratory services. *Arch Intern Med* 1983; 143: 942–944
43. Cochrane AL: *Effectiveness and Efficiency: Random Reflections on Health Care*, Nuffield Provincial Hospitals Trust, London, 1972
44. Hiatt HH: Lessons of the coronary-bypass debate [E]. *N Engl J Med* 1977; 297: 1462–1464
45. Schwartz WB, Joskow PL: Medical efficacy versus economic efficiency: a conflict in values. *N Engl J Med* 1978; 299: 1462–1464
46. Badgley RF, Smith RD: *User Charges for Health Services*, Ontario Council of Health, Toronto, 1979
47. Beck RG: The effects of co-payment on the poor. *J Hum Resour* 1974; 9: 129–142
48. Idem: Economic class and access to physicians' services under public medical care insurance. *Int J Health Serv* 1973; 2: 341–355
49. Barer ML, Evans RG, Stoddart GL: *Controlling Health Care Costs by Direct Charges to Patients: Snare or Delusion?* Ontario Economic Council, Toronto, 1979
50. Bird RM, Fraser RD: *Commentaries on the Hall Report*, Ontario Economic Council, Toronto, 1981: 69–73
51. Wolfson AD, Tuohy CJ: *Opting Out of Medicare*, Ontario Economic Council, Toronto, 1980: 19–36
52. Horne J: Charging the sick: an idea that will not go away. In *Proceedings of the Conference on Medicare: the Decisive Year (Nov. 12–13, 1982)*, Canadian Centre for Policy Alternatives, Ottawa, 1984: 66–83
53. O'Grady KF, Manning WG, Newhouse JP et al: The impact of cost sharing on emergency department use. *N Engl J Med* 1985; 313: 484–490
54. Brook RH, Ware JE, Rogers WH et al: Does free care improve adults' health: results from a randomized controlled trial. *N Engl J Med* 1983; 309: 1426–1434
55. Fein R: Effects of cost sharing in health insurance. A call for caution [E]. *N Engl J Med* 1981; 305: 1526–1528
56. Relman AS: The Rand health insurance study: Is cost sharing dangerous to your health? [E]. *N Engl J Med* 1983; 309: 1453
57. Levey S, Hesse DD: Bottom-line health care? *N Engl J Med* 1985; 312: 644–647
58. Detsky AS, Stacey SR, Bombardier C: Effectiveness of a regulatory strategy in containing hospital costs: the Ontario experience, 1967–1981. *N Engl J Med* 1983; 309: 151–159
59. Task Force on the Allocation of Health Care Resources: *Health: a Need for Redirection*, Can Med Assoc, Ottawa, 1984: 86–90

Meetings

continued from page 320

Apr. 7–8, 1986

1986 Kellogg Nutrition Symposium
Hilton Harbour Castle Hotel, Toronto
Ms. Christine L. Lowry, Manager, Nutrition Communications, Kellogg Salada Canada Inc., 6700 Finch Ave. W, Rexdale, Ont. M9W 5P2; (416) 675-5200

Apr. 9, 1986

Wellesley Hospital's Clinical Day
Inn on the Park, Toronto
Public Relations Department, The Wellesley Hospital, 160 Wellesley St. E, Toronto, Ont. M4Y 1J3; (416) 926-7614

Apr. 16, 1986

Current Management of Breast Cancer
Ritz Carlton Hotel, Montreal
St. Mary's Hospital Centre, Surgical teaching office, Rm. 2302, 3830 Lacombe Ave., Montreal, PQ H3T 1M5; (514) 344-3282 or 344-3395

Apr. 19, 1986

Allergy Update 1986
Four Seasons Hotel, Toronto
Dr. A. Sussman, 202 St. Clair Ave. W, Toronto, Ont. M4V 1R2; (416) 923-4348

Apr. 27–29, 1986

Fundamental Problems in Breast Cancer
Banff Springs Hotel
Secretary, Breast Unit, Cross Cancer Institute, 11560 University Ave., Edmonton, Alta. T6G 1Z2

continued on page 372