Conclusions

There is a definite need for continuing surveillance and analysis of trends in surgical rates and other medical treatments. Had cholecystectomy or hysterectomy rates been examined at 10-year intervals, for instance, the study would have shown only small changes, and the great fluctuations would have been missed. Differences between regions and changes with the passage of time have important implications for health and policy planners. Policies, publicity and consumer interest can influence the rates for discretionary operations, although the nondiscretionary ones are less likely to respond to such forces.

The question of too much or too little surgery in different times and places is not to be resolved by this analysis. An answer for that is to be sought by comparing the results of surgery and of alternative treatments. The efficacy of different treatments must be established before the "best" surgical rate for a given population can be determined.

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References

1. BUNKER JP: Surgical manpower: a comparison of operations and surgeons in the United States and England and Wales. *N Engl J Med* 1970; 282: 135–144
2. VAYDA E: A comparison of surgical rates in Canada and in England and Wales. *N Engl J Med* 1973; 289: 1224–1229
3. PEARSON RJC, SMEDBY B, BERFENSTAM R, LOGAN RFL, BURGESS AM JR, PETERSON OL: Hospital caseloads in Liverpool, New England and Uppsala. An international comparison. *Lancet* 1968; 2: 559–566
4. VAYDA E, ANDERSON GD: Comparison of provincial surgical rates in 1968. *Can J Surg* 1975; 18: 18–26
5. VAYDA E, MORISON M, ANDERSON GD: Surgical rates in the Canadian provinces, 1968 to 1972. *Can J Surg* 1976; 19: 235–242
6. SCHACHT PJ: *A Study of the Incidence of Selected Surgical Procedures in Queensland, 1973–75*, report to the Queensland (Australia) Department of Health, 1979
7. SHAH CP, CARR LM: Tonsillectomies: in dollars and cents. *Can Med Assoc J* 1974; 110: 301–303
8. WENNBERG J, GITTELSOHN A: Small area variations in health care delivery. *Science* 1973; 182: 1102–1108
9. STOCKWELL H, VAYDA E: Variations in surgery in Ontario. *Med Care* 1979; 17: 390–396
10. ROOS NP, ROOS LL JR, HENTELEFF PD: Elective surgical rates — do high rates mean lower standards? Tonsillectomy and adenoidectomy in Manitoba. *N Engl J Med* 1977; 297: 360–365
11. RUTKOW IM, GITTELSOHN AM, ZUIDEMA GD: Surgical decision making. The reliability of clinical judgement. *Ann Surg* 1979; 190: 409–417
12. *International Classification of Diseases*, 7th rev, WHO, Geneva, 1955
13. *International Classification of Diseases, Adapted*, 8th rev, PHS publ no 1693, US Dept of Health, Education, and Welfare, National Center for Health Statistics, Washington, 1967
14. *Statistics on Supply and Distribution of Active Physicians in Canada, 1969–1972*, Department of National Health and Welfare, medicosocial statistics office, Ottawa, 1972
15. HILL AB: *The Principles of Medical Statistics*, 9th ed, Oxford U Pr, New York, 1971: 203–210
16. *Hospital Morbidity, 1971*, cat no 82–206, Statistics Canada, Ottawa, 1974
17. BOTTOMS SF, ROSEN MG, SOKOL RJ: The increase in the cesarean birth rate. *N Engl J Med* 1980; 302: 559–563
18. RUTKOW IM, ZUIDEMA GD: Surgical rates in the United States: 1966 to 1978. *Surgery* 1981; 89: 151–162
19. VAYDA E, MINDELL WR, RUTKOW IM: A decade of surgery in Canada, England and Wales and the United States. *Arch Surg* (in press)
20. BAINTON D, DAVIES GT, EVANS KT, GRAVELLE IH: Gallbladder disease. Prevalence in a South Wales industrial town. *N Engl J Med* 1976; 294: 1147–1149
21. VAYDA E, MINDELL WR, MUELLER CB: Use of hypothetical cases to investigate indications for surgery. *Can J Surg* 1981; 24: 19–21
22. DYCK FJ, MURPHY FA, MURPHY JK, ROAD DA, BOYD MS, OSBORNE E, DE VLIEGER D, KORCHINSKI B, RIPLEY C, BROMLEY AT, INNES PB: Effect of surveillance on the number of hysterectomies in the province of Saskatchewan. *N Engl J Med* 1977; 296: 1326–1328

Expanding the nurse's role to improve preventive service in an outpatient clinic

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To help resolve the conflicting demands of primary and secondary care in hospital medical clinics, a program was developed whereby, with the physicians' agreement, nurses would select and vaccinate clinic patients eligible for influenza vaccination. In a controlled trial the nurses offered vaccination to half of the eligible patients attending morning sessions and vaccinated 35% of them. In contrast, physicians in the afternoon sessions, who were unaware of the program, vaccinated only 2% of similar patients. These results show that, although these physicians agree with guidelines for influenza vaccination, they are not currently providing the service. The use of nursing personnel to provide this and other types of primary medical care for clinic patients is a reasonable alternative.

Afin de satisfaire les exigences contradictoires des soins de première et deuxième ligne dans les cliniques médicales en milieu hospitalier un programme a été mis au point, avec l'accord des médecins, permettant aux infirmières de choisir et de vacciner les patients admissibles à la vaccination antigrippale. Dans un essai contrôlé les infirmières ont offert le vaccin à la moitié des patients admissibles qui se sont présentés aux séances de l'avant-midi et ont vacciné 35% d'entre-eux. En comparaison, au cours des séances de l'après-midi les médecins, qui n'étaient pas informés de ce programme, ont vacciné seulement 2% de patients semblables. Ces résultats démontrent que bien que ces médecins acceptent les directives de la vaccination antigrippale ils n'offrent pas présentement ce service. L'utilisation du personnel infirmier à cette fin, ou pour offrir d'autres types de soins de première ligne aux patients des cliniques, constitue un choix raisonnable.

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Patients who attend hospital clinics often regard them as their principal source of primary and secondary medical care.[1,2] Even after Quebec introduced universal health insurance in 1970 outpatient clinic use continued to increase.[3] However, in this setting the need for primary care, which includes basic preventive services, has to compete with the demand for secondary care.[1,4]

We report on a controlled trial designed to test the use of nurses to improve the delivery of influenza vaccination to patients in a university hospital clinic. This procedure is included in the guidelines for preventive services set out by the Canadian Task Force on the Periodic Health Examination.[5]

Methods

The Royal Victoria Hospital is a major teaching hospital of McGill University in downtown Montreal. A polyclinic was established there in 1973, replacing 13 subspecialty and 4 general medical clinics.[2,4,5] Over 120 physicians (attending and house staff) deal with about 30 000 patient visits per year in one of two adjacent but separate clinic areas. Patients have appointments with individual physicians. The various subspecialties of internal medicine are represented in almost all clinic sessions. Most clinic patients are elderly (66% are over 50 years of age) and chronically ill, with an average of 3.9 medical problems on each visit.[4,6] Continued sampling of 1 in every 100 visits has revealed that 44% of patients meet eligibility requirements[7] for influenza vaccination.

Physicians are reimbursed on a fee-for-service basis by the universal health insurance program, but there are no financial incentives for any preventive health services. Each of the clinic areas is staffed by two clerks and two nurses. The nurses ordinarily function in a traditional role, processing patients as they arrive at the clinic and drawing blood for laboratory tests.

Like many other institutions, the Royal Victoria has been experiencing severe fiscal restraint. Over several years there have been reductions in personnel, and new programs must be handled by existing staff.

Permission for a systematic program of influenza vaccination by nurses was obtained from 96% of the physicians working in the morning clinics and from appropriate department heads and committees of the hospital. The physicians in the afternoon clinics were unaware of the trial; their practices were monitored for control data. However, all physicians were notified at the start of the trial that the vaccine was available, and in the afternoon nurses did administer it upon a physician's request. The nurses reviewed the charts of morning patients for indications for vaccination, inquired about egg allergies, administered the vaccine and checked the injection site 20 minutes later.

Results

The program began Nov. 3, 1980, when influenza vaccine first became available in Quebec, and lasted 6 weeks. Although more physicians attended morning than afternoon clinic sessions (56 v. 39), the distribution of subspecialties and of house staff was similar in the two parts of the day. A total of 1788 patient visits were recorded during the study period, 993 in the mornings and 795 in the afternoons. Nurses offered the vaccine to 52% of the 435 eligible morning patients and vaccinated 152 of them (35%). Seventy-six (17%) of the eligible morning patients refused vaccination. In the afternoons physicians requested that 8 (2%) of their 348 eligible patients be vaccinated.

Discussion

The participation of physicians in the program was excellent. All those in morning sessions agreed that selected individuals be vaccinated, and only two were unwilling to delegate this activity to nurses.

The nurses were able to offer the vaccine to only half of the eligible patients, and they vaccinated only 35%. The major reason for this was a lack of time. Because of budget restrictions, nurses were required to carry out the vaccinations in addition to their usual duties.

None the less, the afternoon physicians managed to have only 2% of their eligible patients vaccinated. We conclude that although these physicians in internal medicine consider influenza vaccination to be desirable they are not currently providing the service in clinics. They willingly assign this responsibility to nurses, though, and without extra help the clinic nurses are able to vaccinate a substantial proportion of eligible patients. A modest and temporary increase in support staff would have increased the effectiveness of our program.

It would be well to consider other preventive measures to determine the extent to which they are offered by the physicians of university medical clinics and whether nursing personnel can assume the responsibility for them. Nurses at our hospital are eager to undertake such additional tasks, and we are studying an expanded program involving vaccination against tetanus and rubella and systematic searches for breast, cervical and large bowel cancer.

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References

1. RUBIN AL, DAVID DS, STENZEL KH: Effective primary care by the subspecialty center. *N Engl J Med* 1975; 293: 607–609

2. FLETCHER RH, FLETCHER SW: The medical polyclinic: an approach to conflicting needs in a teaching hospital. *J Med Educ* 1976; 51: 634–643

3. STEINMETZ N, HOEY JR: Hospital emergency room utilization in Montreal before and after Medicare: the Quebec experience. *Med Care* 1978; 16: 133–139

4. FLETCHER SW, FLETCHER RH, PAPPIUS EM, RUDD R: A teaching hospital medical clinic: secondary rather than primary care. *J Med Educ* 1979; 54: 384–391

5. Canadian Task Force on the Periodic Health Examination: The periodic health examination. *Can Med Assoc J* 1979; 121: 1193–1254

6. RUDD P, CARRIER AC: Patients of internists in hospital outpatient departments and in private practice. *Can Med Assoc J* 1978; 119: 891–895

7. National Advisory Committee on Immunization, 1979: *A Guide to Immunization for Canadians*, cat no H49-8/1980, Dept of National Health and Welfare, Ottawa, 1980