Adult Cancer Prevention in Primary Care: Patterns of Practice in Québec

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Abstract: We conducted a survey of a representative sample of all primary care physicians in the province of Québec to ascertain their patterns of preventive practice with respect to cancer in four anatomical sites: breast, colon-rectum, cervix, and lung. A stratified random sample of 430 physicians in general practice was interviewed individually and weighted population estimates derived. Physicians report teaching breast self-examination to their patients (96 per cent), performing breast examination (99 per cent), taking pap tests routinely (91 per cent), and pursuing anti-smoking counseling (98 per cent). Very few of them report submitting their patients over 50 years of age to annual mammography (8 per cent) or checking for occult blood in stools in patients over 45 years of age (15 per cent). Many still use routine chest X-rays as an early detection measure of cancer of the lung (77 per cent); an estimated 41 per cent use sputum cytology for the same purpose. Preventive practices, when in-use, are carried out mainly in the context of major encounters with patients such as general check-ups. Less than 28 per cent of the population is estimated to be reached by this strategy for prevention. The unrealized potential for prevention through capitalizing on all encounters with primary care physicians is important, and should stimulate creative efforts to enhance preventive activities in medical practice. (*Am J Public Health* 1983; 73:1036–1039.)

Introduction

The importance of cancer in breast, cervix, colon and rectum, and lung in terms of morbidity and mortality has been amply documented in the Canadian Task Force Report on the Periodic Health Examination.[1]

The approach to prevention within the framework of primary care proposed by the Canadian Task Force on the Periodic Health Examination[1] and by Breslow and Somers[2] is based on the use of a set of age- and sex-related health protection packages. Case-finding and preventive activities undertaken by health workers in relation to patients who are consulting for unrelated symptoms lie at the heart of this strategy for prevention. Any health worker-patient contact can be made an occasion for prevention and the privileged position of primary care physicians in prevention has been recognized by many.[3–5] Studies in Canada and elsewhere, as documented in the Canadian Task Force Report,[1] have indicated that 70 per cent of the clientele in the average practice see their doctor at least once in a 12-month period and 90 per cent do so in a 5-year period.[6,7]

The focus of this study is on general practitioners who constitute half of all practicing physicians in Québec. They are the main deliverers of primary care and practice in widely diverse settings. Most are paid on a fee-for-service basis (97 per cent) and deliver primary care services mainly in private offices. Others are salaried (less than 2 per cent) and practice in Community Health Centers (Centres locaux de services communautaires (CLSCs)), publicly-owned institutions with a multidisciplinary approach to health care integrating preventive activities, primary care, and social services.

Even fewer physicians (less than 1 per cent) are in Family Medicine Centers (FMCs), academic settings devoted to the teaching of family medicine. They are generally paid on a sessional basis.

In this paper we report overall population estimates of physician's preventive activities. Contrasts among the various practice settings will be presented in a separate paper.

Methods

Preventive activities carried out by physicians were compared to a set of best available practice criteria as suggested by the Canadian Task Force on the Periodic Health Examination (Appendix A). Practice encounters most conducive to preventive activities were examined and an upper limit approximation of the population reached in one year by this strategy for prevention was calculated using data made available by the provincial billing agency (Régie de l'assurance maladie du Québec [RAMQ]).

Trained professional interviewers conducted face-to-face interviews of a random sample of primary care physicians drawn from a pool of 5,312 general practitioners as listed by the Fédération des médecins omnipraticiens du Québec (FMOQ). The following predetermined exclusion criteria were adopted: physicians who changed stratum, physicians who moved out of the province, physicians who enrolled for postgraduate study, and physicians who were registered with the FMOQ but were engaged in a restricted or specialized practice. The average interviewing time was 45 minutes.

Our approach was validated by comparing physicians' answers to selected questions with billing data of the provincial billing agency (RAMQ). False-positive or overreporting rates in response to survey questions were calculated for a subsample of 43 physicians for questions dealing with the use of proctoscopy and sigmoidoscopy in early detection of colorectal cancer. These procedures were chosen because they are reimbursed to physicians by the billing agency independently of the visit. An estimated 10 per cent of physicians who reported using these procedures as early detection tools were not registered as having billed the agency accordingly. Additional information on questionnaire development, validation strategy, sample size calculations, sampling procedures, and field work is included in the longer monograph of the study.*

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*Battista RN: Adult Cancer Prevention in Primary Care: The Québec Study. Scientific Monograph. Montréal 1982, (unpublished departmental document, McGill University, available on request from the author).

TABLE 1—Physicians Compliance with Practice Recommendations (n = 430)

Practice Recommendations (Canadian Task Force on the Periodic Health Examination)	Weighted Estimates % Physicians	(S.E. in %)
Cancer of the breast		
Teaching of breast self-examination (neutral)	96.0	(0.9)
Breast examination (recommended)	99.0	(0.4)
Annual mammography for women aged 50 to 59 years (recommended)	8.0	(1.3)
Cancer of the cervix		
Papanicolaou test (recommended)	91.0	(1.4)
Colorectal cancer		
Testing for occult blood in stools in patients aged 45 years and over (recommended)	15.0	(1.7)
Cancer of the lung		
Anti-smoking counseling (recommended)	98.0	(0.6)
Chest X-ray (not recommended)	77.0	(2.0)
Sputum cytology (not recommended)	41.0	(2.4)

Results

The survey was conducted in five weeks of field work, spread over late 1981 and early 1982. Thirty-eight physicians were considered non-eligible and excluded from the original sample of 480 physicians. Of the 442 physicians remaining in the sample, 10 declined, one could not be contacted, and one did not complete the interview: the latter two were classified with the 10 as refusals, giving an overall response rate of 97.3 per cent. Our analysis deals with the 430 completed interviews.

Non-eligible physicians and those who refused were compared to the general sample in terms of the following variables: age, sex, language, and certification with the College of Family Physicians of Canada. No statistically significant differences were found.

Cancer of the Breast

An estimated 96 per cent of physicians report teaching breast self-examination (BSE) to their patients (Table 1): 94 per cent give instruction personally while 6 per cent share the responsibility with a nurse. The procedure is taught *mainly* in the context of a general checkup or during a first visit for a gynecologic problem but much less frequently during other types of encounters as shown in Table 2.

An estimated 99 per cent of physicians report doing breast examinations on their patients (Table 1): 98 per cent claim they perform it themselves. Ninety-seven per cent of physicians perceive that some women are at higher risk than others for breast cancer and risk assessment determines the frequency of breast examination by 72 per cent of physicians. The examination is performed mainly during general checkups or during gynecologic visits.

An estimated 8 per cent of physicians report sending patients who are 50 to 59 years of age for annual mammography even if the physical breast examination is normal (Table 1). Reasons for not complying with this recommended practice are detailed in Table 3. They include perceived ineffectiveness of the procedure, radiation risk, non-accessibility to the service, cost to patients and government, patient compliance, and unnecessary worry for patients.

Cancer of the Colon and Rectum

Testing for occult blood in stools of patients aged 45 years and over and presenting no gastrointestinal symptoms is reported as done by an estimated 15 per cent of physicians. The procedure is carried out mainly in the context of a general examination. Reasons for not complying with this practice recommendation are given in Table 4.

Cancer of the Cervix

The Papanicolaou test is reported as used by an estimated 91 per cent of physicians (Table 1), 85 per cent of whom take the smear themselves. Ninety-seven per cent of physicians feel that some women are at increased risk of developing cancer of the cervix.

Risk factors determine the frequency of administration of the test for 68 per cent of physicians. Of these physicians, 98 per cent use it once a year or more often in high-risk patients but 64 per cent follow the same schedule in low-risk patients. Among physicians not influenced by risk factors, 87 per cent use it once a year or more often in their patients. The procedure is administered mostly during general checkups or first visits for gynecologic problems (Table 2).

Among those who report doing Pap tests, 21 per cent have a formal recall system, 64 per cent treat it as the patient's responsibility, and 15 per cent have some system for ensuring follow-up of the patients.

Cancer of the Lung

In the high-risk patients with no respiratory symptoms, an estimated 77 per cent of physicians report using chest X-ray as an early detection procedure for cancer of the lung (Table 1), and 66 per cent yearly or more often in such

TABLE 2—Estimated Percentage of Physicians Carrying Out Preventive Activities by Types of Encounter (n = 430)

	Teaching of BSE		Pap Smears		Anti-smoking counseling	
	%	(S.E. in %)	% (S.E. in %)		%	(S.E. in %)
General examination	91.0	(1.4)	97.0	(0.8)	86.0	(1.7)
First visit for a medical problem related to the object of prevention	80.0	(1.9)	97.0	(0.8)	99.0	(0.4)
First visit for a medical problem unrelated to the object of prevention	29.0	(2.2)	52.0	(2.5)	52.0	(2.4)
Visit for a minor problem	2.0	(0.6)	6.0	(1.2)	11.0	(1.5)

TABLE 3—Reasons for Not Sending Patients Aged 50 to 59 Years for Annual Mammography (n = 430)

	Percentage of Physician Answers
Perceived ineffectiveness of the procedure	51.3
Radiation risk	28.2
Non-accessibility to the service	10.4
Cost to patients and government	6.2
Patient compliance	1.9
Unnecessary worry for patients	0.8
No particular reason	1.2

TABLE 4—Reasons for Not Checking for Occult Blood of Patients Aged 45 Years and Over and Presenting No Symptoms (n = 430)

	Percentage of Physician Answers
Perceived ineffectiveness of the procedure	51.2
Non-availability of the test	11.8
Lack of information	11.1
Cost of the test	9.0
Patient compliance	6.8
Risk to patients	1.6
Other reasons	8.5

patients. The procedure is said to be used mainly in association with a major medical encounter.

Sputum cytology is reported used by an estimated 41 per cent of physicians in high-risk patients as an early detection measure for cancer of the lung (Table 1).

An estimated 98 per cent of physicians report advising patients who smoke to stop. The different methods used include: disclosure of information, nicorette gum, group therapy, acupuncture, hypnotism, tranquilizers, and threatening to terminate the therapeutic relationship.

Counseling is said to take place mostly during general checkups or during visits for respiratory problems, much less often during visits for major medical problems such as diabetes, and even less often during visits for minor problems (Table 2). Less than half of the physicians (45 per cent) claim some success in getting patients who smoke to stop.

Discussion

Overall findings summarized in Table 1 reflect patterns of preventive practice of primary care physicians occurring in contexts they judge appropriate for the pursuit of these activities; the findings do not address the issue of intensity of preventive activities carried out by physicians, the crucial issue from a public health perspective. Moreover, these data suggest that preventive activities, when performed, are carried out primarily during general checkups, and far less frequently during visits for either medical problems unrelated to the object of prevention or for minor problems. Overreporting, established at 10 per cent for colorectal cancer in the validation exercise, puts the data in some perspective.

In order to estimate the approximate size of the population reached by this strategy of prevention, the proportions of medical visits per year devoted to general examinations and to major and minor problems were determined using data from the Régie de l'assurance maladie du Québec (RAMQ). Three types of examination are billed by fee-for-service physicians to RAMQ:

- *ordinary examination*—examination for a minor problem;
- *complete examination*—examination for a major problem; and
- *major complete examination*—the conventional general check-up.

Fees of increasing amounts are associated with these examinations. RAMQ reports that, in 1980, 60 per cent of all medical encounters in private offices, emergency rooms, and outpatient departments were for minor problems, and only 40 per cent for major medical problems or general checkups.[8]

An upper limit approximation of the population reached in one year by such a strategy of prevention can be estimated by multiplying the percentage of the population seeing a physician in one year (70 per cent[6,7]) by the proportion of visits done for other than minor problems (40 per cent), i.e., 28 per cent. This estimation is based on three assumptions: 1) preventive activities are always carried out during complete and major complete examinations; 2) billing profile is a valid reflection of practice profile; and 3) no follow-up visits for prevention are scheduled for patients seen in a context where preventive activities were not or could not be carried out. The first and second assumptions would tend to inflate our estimation. Indeed, our data show that preventive activities were far from being always carried out during visits for major medical problems unrelated to the object of prevention. Furthermore, in recent years, RAMQ has noted the tendency of fee-for-service physicians to shift their billing profile toward more expensive visits in order to maintain or adjust their target income (RAMQ, 1980); it follows that some visits billed as major visits could in fact be minor. The third assumption would deflate our estimation if physicians suggest follow-up visits including more thorough examination and preventive activities to patients consulting them for minor problems. Although these biases have not been quantified precisely, it seems reasonable to believe that our calculation of the population reached by this strategy for prevention overestimates what actually happens.

Aiming for a better integration of preventive activities at all levels of practice encounters is deemed necessary to increase the public health impact of this strategy for prevention, otherwise alternative and complementary strategies for prevention targeted to populations, such as mass screening, would need to be reconsidered. The unrealized potential for prevention through all encounters of the primary care physician is important, and should stimulate creative efforts to enhance preventive activities in the context of medical practice.

Imaginative strategies in continuing education need to be devised and evaluated as to their effectiveness in initiating lasting changes in patterns of preventive practice. The difficulty of translating knowledge into behavior has been recognized by several investigators.[9,10] Mere transmission of information is not sufficient to acquire skills and to reach a significant change in behavior.

Operational strategies to enhance the pursuit of preventive activities should be explored and evaluated. Some strategies could be aimed at providers such as the use of a prevention flow sheet in the medical records; in a recent study, Cohen, *et al,* suggest this approach as useful.[11] Others could be aimed at consumers, for example, a health passport carried by patients. Underlying ideologies of provider and

consumer-triggered approaches may be different. In our view, however, participation of providers to preventive efforts and greater responsibility of consumers for their health are far from being mutually exclusive. In fact, they are essential complements in the pursuit of a common goal. Combined implementation tactics should thus be examined and tested.

Appropriate economic incentives for prevention do not exist in the fee-for-service schedule under which 97 per cent of Québec primary care physicians operate. If government wishes to pursue prevention through a greater integration of preventive activities to medical practice, it should consider the possibility of introducing such incentives into the fee schedule.

Another area of possible investigation is the reassessment of the role of other health professionals with respect to prevention and better coordination of their activities with those of physicians.

The focus of this study has been cancer. However, we believe that trends in preventive practice elicited in this study could be generalized to many other entities, insofar as we would have elucidated circumstances of medical practice conducive to preventive activities. Other areas of potential benefits exist with respect to prevention. They need to be explored and critically assessed. Primary prevention of childhood diseases (immunizations), secondary prevention of hypertension, and tertiary prevention aimed at the enhancement and protection of functional status in the elderly are among the most noteworthy examples amenable to future research contributions.

The Periodic Health Examination translated into encounters with primary care physicians for whatever reason is a lifetime health-monitoring strategy that can contribute to better health. In conjunction with better understanding and control of biologic determinants and other important factors shaping our environment and lifestyles, it could prove to be the "voie royale" to health.

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APPENDIX

Criteria of Practice

(Canadian Task Force on the Periodic Health Examination)

Cancer of the Breast (Early detection)—For women aged 50 to 59 years, annual mammography and physicial examination of the breast.

Cancer of the Cervix (Early detection)—Women in high-risk groups (early age of sexual activity and multiplicity of sexual partners), annual Papanicolaou smear.

Women not in high risk groups, initial smear soon after initiation of sexual activity, another one year later, then every three years until about 15 years after first intercourse, then every five years until age 60.

Colorectal Cancer (Early detection)—Persons 45 years and over should be tested for occult blood in their stools not more frequently than once a year.

Cancer of the Lung (Primary prevention)—Abstinence from smoking.

No test (lung X-ray, sputum cytology) for early detection.