Do our patients receive maximum benefit from preventive care? A North American perspective

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SUMMARY. Politicians, their constituents and family physicians believe that preventive medicine is essential if health care is to be improved. Family physicians believe that the majority of their patients are well cared for with preventive health care services but in reality preventive services are provided to less than half the population and some to fewer than 10%.

Barriers to providing preventive care include the selection of procedures of unproven effectiveness, public unawareness of the benefits of the procedure and practical obstacles for physicians providing the services. Assessment of each of these barriers indicates how preventive care can be improved.

Narrowing the gap between what we believe about preventive care and the level of preventive services we are providing could improve the health of our nations. However, the concept of primum non nocere *must dominate the assessment of currently advocated preventive procedures and the consideration of new procedures.*

Introduction

THIS paper assesses what family physicians in North America believe about prevention, what preventive services they feel they provide and what services they actually do provide. Barriers to the provision of preventive care and ways of improving the delivery of preventive health services before the year 2000 are discussed.

Although discussion about prevention should cover infectious diseases, nutrition and genetic abnormalities, this paper focusses on health problems related to lifestyle and influenza immunization.

Beliefs about prevention

Using Canadian experience as a model, numerous reports have identified preventive strategies as important weapons against diseases associated with certain risky lifestyles. In 1974 the Lalonde report called for a preventive approach in medical care and the task force on the periodic health examination report, first published in 1979 and updated annually, delineated appropriate procedures for preventive care.[1-3] The Epp report on health promotion and prevention, published in 1987, was followed in 1988 by three reports from the province of Ontario all expounding the benefits of prevention as a way to control costs and improve the quality of life of the residents of Ontario and Canada.[4-7] This Canadian enthusiasm for prevention has been paralleled in the United States of America, notably by the surgeon general.[8] In many countries political leaders are demanding more preventive health care for their populations because their constituents believe in its virtues. Most North Americans believe that they can enjoy a longer life of better quality as the result of preventive health initiatives. People tend to accept this premise as long as there are no significant personal sacrifices required and no obstacles to obtaining preventive services in the health care system.

Through numerous publications and statements at the international level, most notably when supporting the Alma Alta declaration,[9] and through many national and local medical organizations, physicians promote prevention as a central part of primary care. Our journals contain editorials and articles presenting our collective belief in the merits of prevention.

How well do physicians think they are delivering preventive services?

Several surveys have asked family physicians how well they think they are achieving specific goals in providing preventive care to their patients. Physicians' perceive that they are functioning well in this respect — 95% of physicians in one Canadian survey reported that they were providing breast examinations, cervical smears and smoking counselling to a high percentage of their practice population.[10] However, 70% of these physicians also stated that they were using chest x-rays for early detection of lung cancer, a procedure that is not justified.[11,12] American surveys have found high percentages of physicians reporting preventive activity as a routine part of their practice[13,14] and surveys in the United Kingdom, Israel and other countries also indicate that physicians perceive that high levels of preventive care are provided.[15,16]

How well are preventive services being provided?

The management of illness can be assessed by a number of outcome measurement tools[17] but the outcome of a preventive procedure is a non-event 10 to 25 years after the intervention. The usefulness of preventive interventions can only be assessed by monitoring the incidence or prevalence of the targeted problem over a long period of time.[18] Pragmatically, the number of preventive procedures delivered to a population is used to estimate the effectiveness of the programme.[19]

Only a few North American studies compatible with the requirements formulated by Wilson and Jungner[20] have evaluated the effectiveness of screening in populations (Table 1) and in general the uptake rates were low. Another American study and British and Australian studies of rates of immunization, cervical smears, influenza immunization and breast screening report similar low uptake rates.[30-32] It is reasonable to conclude that there is a considerable gap between perception and reality in the provision of preventive services and a similar gap has been observed in prescribing in family practice. It is difficult for a practising family physician to perceive the impact on the practice population of a service provided to individual patients when they attend the practice.[33]

Not only does the delivery of preventive services fall below our expectations but attempts at changing patients' lifestyle have

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Table 1. Levels of provision of preventive services in family medicine.

Location and reference	Measurement	% of population receiving procedure
McMaster university (family practice)[21]	Annual influenza immunization (65+ years)	17
University of Ottawa (family practice)[22-25]	Annual influenza immunization (65+ years)	16
	Annual cervical smears	26
	Annual blood pressure screening	53
	Tetanus immunization once in 10 years[a]	5
	Annual smoking status	50
University of Western Ontario (family practice)[26]	Annual influenza immunization (65+ years)	19
American national survey[27]	Annual influenza immunization (65+ years)	12
London, Ontario (family practice)[28]	Blood pressure screening (5 yearly)	90
Guelph, Ontario (community)[29]	Blood pressure screening (3 yearly)	87

[a]Rosser WW, unpublished results.

proven very difficult and even when successful have only a modest impact on practice populations. An example of this difficulty can be found in two Canadian studies conducted in one practice to determine an effective role for family physicians in promoting smoking cessation.[34,35] After one year of follow up the studies found no statistically significant difference between the control group, a group receiving simple advice against smoking from the physician, and two groups enrolled in different types of intensive group smoking cessation programmes.[34,35] These studies were unable to replicate British findings that simple advice about smoking cessation given by general practitioners to smokers on any visit was effective.[36]

In the most effective intervention by family physicians reported so far, the smoking cessation rate in the study group was 7.5% after one year compared with 3.5% in the control group.[37] An extension of this study has found that asking patients to return to see the physician two weeks after the patient makes a commitment to stop smoking produces a success rate of 17% (Gilbert JR, personal communication). Studies of the use of nicotine chewing gum as an adjunct to other smoking cessation strategies have shown insignificant benefit.[38]

Successful practice based programmes targeted at the prevention of diseases of lifestyle usually involve a dedicated group of family physicians who are enthusiastic about the prevention project, and tend to focus on organization of the practice, imaginative use of nursing or other staff, and use of computers.[21,22,24,26-28,39-41] The programmes involve support from the community and usually a wide range of resources including community health workers, the media, employers and occasionally, academic support from sociologists, anthropologists or psychologists whose input is used to target the specific population.[42-45] These varied characteristics mean that the findings from studies cannot be generalized.

Barriers to achieving appropriate preventive services

Why is the implementation of preventive services not more successful given the importance attached to this activity? This question is becoming increasingly important as research provides the possibility of controlling or modifying cancer, cardiovascular disease and infectious diseases such as the acquired immune deficiency syndrome.

A successful programme for prevention is unlikely unless there is assessment of the effectiveness of the preventive procedure; a good understanding of the cultural context in which the programme takes place; and enthusiasm on the part of the medical profession for the procedure.

Effectiveness of preventive procedures

Canadian and American task forces have developed criteria for assessing the effectiveness of preventive procedures and have classifed each procedure by balancing benefits and risks involved in widespread administration.[2,46,47] The criteria include: evidence of benefit from at least one randomized clinical trial, a high positive predictive value for the test, the availability of the resources required for administering the service and of an effective intervention that will alter the natural history of the target illness if detected in a screening programme, and the acceptability of the procedure to the population. Only a few procedures have been recommended as beneficial enough to justify primary screening of the entire population.[2,46,47]

Recently, consensus conferences have been used to develop recommendations for preventive procedures when the supporting scientific evidence is unavailable or unclear. Problems with the consensus conference approach can be illustrated by considering the recommendations for screening the population for serum cholesterol levels. The American and Canadian consensus conferences have recommended that everyone over the age of 25 or 18 years, respectively, should have their serum cholesterol level tested.[48,49] This recommendation is based on one diet study showing marginal benefit[50] and three studies that claim that drugs lower the incidence of myocardial infarction by 7–10%.[51-53] The consensus conferences overlooked the fact that in all three drug studies the benefits of lower mortality from myocardial infarction were cancelled by increased mortality from other causes.[54]

The Canadian consensus conference recommendations were the more conservative of the two but even so, in Ontario with a population of 9.3 million, the recommendations could result in 25% of adult men and 10% of adult women being placed on lifetime pharmacotherapy. This massive pharmacological intervention would occur in the absence of any demonstrated benefit in women or men under the age of 35 years or over 60 years. In addition, 55% of adult men would be required to undergo intensive diet therapy with six monthly monitoring of their serum cholesterol level.[54] If the Canadian consensus conference recommendations could be implemented, more than half of the adult men who currently feel in good health would be labelled as ill and the implications of such labelling have been well delineated.[55]

Why should a programme with major psychological and financial implications and of such questionable value be recommended? The panel of both the Canadian and American conferences consisted of lipid experts, biochemists and laboratory researchers but no generalists who would have assessed the impact of recommendations at a community level. If the recommended programmes were presented to an ethics review committee, it is unlikely that they would be found to be ethically sound.

Cultural context in which the programme takes place

If a population is health conscious and places a high value on good health, then it will be much more receptive to preventive medicine programmes than populations which value spiritual matters such as tranquillity of mind or in which the cultural norm is to have a good time now and not worry about the future. The value that each population places on health combined with its religious and cultural beliefs and values, will have a major impact on acceptance of health promotion or preventive medicine programmes. Apart from these considerations, financial barriers exist in many countries making access to preventive programmes impossible for the lowest socioeconomic groups.

In Canada the reduction in the percentage of adults smoking from 46% to 27% between 1970 and 1989 provides an example of the impact of changing social values on health related behaviour. Since the 1970s Canadian physicians have participated in education programmes which have informed the population about the risks of smoking. In the early 1980s the widespread acceptance of the dangers of passive smoking made smoking socially unacceptable. National legislation was passed in November 1988 restricting tobacco advertising and banning smoking from most public buildings. Changes in public opinion about smoking have resulted in dramatic tax increases on cigarettes and it is likely that the level of smoking in Canada will decline still further.

Family physicians' support for preventive programmes

Unless physicians and health care providers believe in the benefits of a specific screening procedure they will make little effort to perform the procedure on appropriate patients. In addition, physicians must overcome a number of practical barriers before performing procedures, such as, the complexity of the procedure, the inconvenience of the procedure to the patient or physician, and the presence or absence of incentives for the physician to carry out the procedure.[42]

Aspects of family medicine of importance in preventive care

The family physician is well placed to understand the patient's values so that the patient may be assisted in making the appropriate decision about preventive care. In addition, the setting of general practice allows screening and preventive interventions during consultations with patients who had attended for other reasons. The appropriate application of computer technology in primary care should enhance the physician's ability to provide optimum screening.[56-59]

Promotion of preventive care runs the risk of an increasing degree of inappropriate labelling and the generation of unnecessary anxiety. However, the family physician's knowledge of individuals and their social context minimizes this risk and the continuing physician–patient relationship provides the climate for appropriate follow up that will maximize the benefits of prevention and minimize the problems.[60,61] The physician–patient relationship also provides a confidential situation where policies targeted at the entire population can be appropriately interpreted by individuals in the context of their lives.[62]

Improving the impact of preventive programmes

The opportunity to narrow the gap between the level of preventive services that family physicians believe is provided and what actually is provided presents a challenge to general practice.

Assessment of the three elements required for a successful preventive programme indicates where effort to improve the impact of a programme can be most effectively expended. For example, there is firm evidence in support of providing all people aged 65 years and over with annual influenza immunization.[2] However, since the 1970s when widespread publicity about adverse reaction to influenza immunization made the elderly skeptical about the procedure there has been no public campaign to support the immunization programme. Physicians meet patient resistance and are themselves unconvinced of the value of the procedure. Four studies in different areas found that only 12–19% of this age group receive the immunization in the recommended way.[21,22,26,27]

On the other hand hypertension screening has been widely accepted by the public and physicians as having a beneficial outcome. Over the past 20 years the population of North America has been repeatedly sensitized to the risks of high blood pressure and physicians are convinced of the benefits of early detection and control of elevated blood pressure. With the three elements strongly supported, about 90% of the population have their blood pressure measured every three to five years.[28,29] Recently, however, there has been concern about inappropriate labelling of people as hypertensive and about over treatment, thus illustrating the balance required to provide optimum preventive care.[62]

Serum cholesterol measurement has been widely promoted to the public in North America, the UK and many other countries as an important test despite a lack of good evidence supporting mass screening programmes. Physicians are confused over who should undergo cholesterol screening and this situation is likely to result in cholesterol screening in North America reaching less than half the population. This example illustrates that public campaigns combined with confusion among physicians can lead to inappropriate screening.

These examples of assessment of the strength or weakness of each of the three elements of a prevention programme illustrate a way of identifying where increased effort will produce improved outcomes. A similar concept called the community diagnosis model was developed in Sweden in the 1970s.[63]

Conclusions

Practising physicians, especially those involved in general practice, must be more active in critically appraising recommendations made by consensus conferences and must provide a better assessment of the overall risks and benefits of the recommendations. The concept of *primum non nocere* must dominate any assessment of currently advocated preventive procedures and the consideration of new procedures. Physicians must work more closely with social scientists to understand better how to communicate with the public on important issues. Screening procedures that benefit most members of society need to be translated into the context of individual patients and methods of doing this must be developed so that all patients receive the maximum benefits possible from preventive procedures.

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