Public Investment in Providing Information for Chronic Disease Prevention for Adults in Alberta

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ABSTRACT

Background: The World Health Organization in 2000 cited specific chronic diseases (chronic obstructive pulmonary disease, heart disease, diabetes and certain cancers) as major and preventable health hazards. There have subsequently been calls for increased investment in prevention activities. Currently there is no information on the economic magnitude of these promotion activities. In this study, we present an estimate of the investment in Alberta, by public organization, for chronic disease prevention activities which provide information that promotes behaviour changes in adults at risk.

Methods: We surveyed board members of the Alberta Healthy Living Network (AHLN) to obtain economic data and information on activities related to chronic disease (primary) prevention. We also asked for further contacts on programs in other agencies. We continued the ("snowball") process until no new agencies were identified. Agencies provided the information on a survey form.

Results: In 2003 in Alberta, the cost of publicly provided information to change risk behaviours related to chronic diseases for persons over 20 was \$24.9 million. This investment was diffused over a large number of bodies. Anti-smoking programs used the largest proportion of the money. The total cost per person at risk was about \$15. Regional Health Authorities spend about 1/10th of 1% of their budget on these activities.

Discussion: There are difficulties in collecting and organizing society-level data on chronic disease prevention. Nevertheless, all indications are that the amount of resources devoted in this area is small, and much smaller than has been suggested.

MeSH terms: Health promotion; chronic disease prevention and control; economics, medical; health care costs

La traduction du résumé se trouve à la fin de l'article.

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The burden of chronic diseases is a large and growing problem in developed countries.¹ Two recent studies have identified a substantial economic burden in Nova Scotia² and Alberta.³ Several chronic diseases – heart disease, diabetes, chronic obstructive lung disease (COPD), and lung cancer – have been linked to the following modifiable risk factors: smoking, physical inactivity, and unhealthy eating habits. In light of these linkages, the World Health Organization (WHO) recommended a combined inter-sector approach to risk modification.⁴

There is a wide variety of chronic disease prevention strategies to modify these risk factors.⁵ Information, provided both personally (through counselling) and perhaps more importantly, through media mechanisms (thereby building enabling environments), is a key resource that is used in these strategies.⁶ Currently, estimates of overall disease prevention costs focus exclusively on immunizations⁷ and there are almost no data on the cost of providing health promotion information. We address this gap by estimating the dollar value of investment in chronic disease prevention information for the abovementioned diseases in Alberta.

METHODS

We conducted an analysis of expenditures on providing chronic disease prevention information that was undertaken by community and public bodies.

We focussed on those "primary prevention" activities⁸ that resulted from the provision of *information in a public setting* to any adult >20 years who engages, or might potentially engage, in the targeted risk behaviours. Cohen⁵ has devised a classification of health-influencing activities that include: 1) the availability of protective or harmful consumer goods and services; 2) physical characteristics of products; 3) social structures and policies; and 4) media and cultural messages. In terms of this classification, our focus is on direct person-to-person (or -group) information (e.g., counselling) which falls in category 1 and general information in category 4. We excluded those programs that target persons with existing chronic disease, such as cardiac and COPD rehabilitation and diabetes education, as these are secondary or tertiary prevention programs. We also exclude the following activities: surveillance,

planning, capacity building (e.g., training dietitians and physical trainers), monitoring patients (e.g., blood pressure or cholesterol tests), legislation and regulation of behaviour, taxation and administrative capacity building.⁹ We excluded school programs (due to the project's scope) and workplace programs (because our project budget and timelines would not allow us to canvass employers). Finally, the scope of our study was on the public (including voluntary) sector. There is a varied private market in areas such as weight loss and smoking cessation. We found that costing information on this market is largely proprietary and unavailable.

Sample

Our initial sample consisted of board members of the Alberta Healthy Living Network (AHLN), a province-wide umbrella organization that was developed to coordinate the diverse forms of prevention activities.⁹ In early 2004, we contacted the board members and asked them to identify primary prevention programs. Using a snowball sampling technique, we asked each member for the names of other organizations that might be involved in chronic disease prevention in Alberta, and we solicited all of these additional organizations. We also contacted all provincial and federal agencies that provided grants to smaller community organizations, so we could include this information.

Persons contacted

For each of the solicited organizations, we contacted the program manager to explain the purpose of the study. We requested information by program, on all chronic disease prevention programs.

Data collected

We presented them with a structured questionnaire requesting the required information. We asked for the program name, the risk or population group that was addressed (healthy persons, high-risk persons, Aboriginal group, specific disease group, or other), the behaviour addressed (smoking, diet, physical activity), the mode(s) of information delivery (one-on-one counselling, call lines, mobile units, club or support group, group lectures, internet website, media campaign, producing and disseminating published materials, and other). Our approach was a spending

TABLE I

Alberta Baseline Statistics for Comparison with Spending on Chronic Disease Prevention, Thousands of Dollars

Statistic	Amount
Total Regional Health Authority spending by regions included in the analysis 2002/3 ¹	\$3,488,622
Physician billings ²	
All physicians	\$784,844
Family physicians	\$474,076
Total provincial spending on health, 2000-1 ³	\$10,101,900
Provincial per capita cost, all health care services ³	\$2,290
Total population over age 20 ⁴	2,133,000
Number with at least 1 of 4 chronic diseases	186,000
Number without chronic diseases	1,947,000

Data sources:

1. Alberta Health and Wellness. 2003 / 2004 Regional Health Authority Global Funding. Methodology and Funding Manual. Edmonton, Alberta: Health Funding and Costing, Alberta Health and Wellness, April 8, 2003.
2. Alberta Ministry of Health and Wellness. Alberta Health Care Insurance Plan. Statistical Supplement 2001/2002. Edmonton: Alberta Health and Wellness.
3. Health Canada. Health Expenditures in Canada by Age and Sex, 1980-81 to 2000-01. Ottawa, Ontario: Health Canada.
4. Statistics Canada. Canadian Community Health Survey. 2000. Weighted estimates from Public use Data File.

analysis¹⁰ for the fiscal year 2002/3 for each organization.

For prevention activities of medical practitioners, we estimated the numbers of visits for smoking and nutrition counselling based on a study¹¹ that measured the proportion of family practice patients in Alberta to whom such counselling was provided. A typical fee, obtained from the Alberta Health Care Insurance Plan, was applied to these visits.

We included all relevant programs (non-profit and federal government) that were national in scope and administered elsewhere (usually Ontario) but that impact on Alberta; we allocated a share of the national cost of these programs to Alberta according to Alberta's percentage of the national population (roughly 10%).

We reported all costs according to the sector in which the resources were used, not where the money originated. For example, a grant from the federal government to a community organization would be recorded as the cost incurred by the community organization. Data from smaller non-governmental organizations were obtained from the provincial and federal government lists of allocations to these organizations.

Data interpretation

The analysis consisted of the summation of expenditures by sector and purpose. We interpreted our expenditures in two different ways. First, we estimated total health promotion expenditures as a percentage of several benchmark expenditure measures, including total expenditures of responding

RHAs, and total provincial spending on health, which represents all health care expenditures made by the province in 2002/3. The data sources and expenditure calculations are presented in Table I. Second, we conducted a similar analysis in per capita terms. The target population of primary preventive expenditures is people at-risk (i.e., who have not been diagnosed with the conditions). Canadian Community Health Survey (CCHS) population weights were used to estimate this statistic.

RESULTS

We approached directors in the federal government (national and regional offices), the provincial government, eight Regional Health Authorities (RHA), and five national voluntary organizations. All those who were approached responded except for two of the eight Regional Health Authorities, whose populations comprised 8.9% of the Alberta population. The following types of organizations engaged in some health promotion activities and provided responses: a publicly funded health promotion foundation set up by private industry; medical practitioners; Regional Health Authorities (RHAs) (whose mandate includes population health functions); national voluntary organizations with both nationwide and regional operations; local community organizations; and federal, provincial and regional levels of government.

In total, 92 separate programs were identified by the respondents. Thirty-three (35.9%) were located in RHAs, 22 (23.9%) in national voluntary agencies, 20 (21.7%)

TABLE II

Investment in Health Promotion Information Oriented Towards Adults, Alberta, 2003 According to Risk Behaviour Addressed or High-risk Group and Sector Where Spending Occurred, Thousands of Dollars

	Smoking	Nutrition	Physical Activity	General Healthy Behaviour / Combined Factors	Aboriginal	Sector Totals
Publicly funded industry trade association ¹	Not available	\$120	Not available	Not available	Not available	\$120
Health system						
Physicians ²	\$2,236	\$961			Not available	\$3,197
RHAs ³	\$521	\$350	0	\$2,403	\$115	\$3,390
Provincial voluntary organizations ⁴						
National programs		\$149		\$616		\$765
Provincial programs	\$79	\$70	\$505	\$1,668	\$250	\$2,573
Community organizations ⁵	\$401	0	0	\$480	\$175	\$697
Government						
Federal ⁶	\$3,640	\$320	\$120	0	\$3,300	\$7,380
Provincial ⁷	\$3,800	0	\$18	\$2,500	\$200	\$6,518
Local ⁸	0	0	\$295	0	0	\$295
Total amount	\$10,678	\$1,970	\$938	\$7,308	\$4,040	\$24,933

Notes

1. Expenses of nutrition program sponsored by industry foundation, obtained from Alberta Milk. This was obtained from public funds.
2. Estimate of ratio of family doctor patients who receive smoking counselling, 15.3%¹¹ applied to number of smokers who had at least one family doctor visit (561,000, CCHS 2000). Visits valued as a family doctor visit (\$26, Alberta Health Care Insurance Plan Schedule of Benefits, 2000). Estimate of ratio of eligible family doctor patients age >30 who receive dietary counselling (6.9%)¹¹ applied to number of males age >30 who had at least one family doctor visit (536,000, CCHS 2000).
3. Based on responses of Regional Health Authorities and Alberta Cancer Board. Grants from Alberta Alcohol and Drug Abuse Commission (AADAC) to RHAs included in totals. RHA spending may include AHW Action for Health dollars distributed via global funds. This program incorporates elements beyond those included in the study, such as injury and schools programs. Seven RHAs constituting 89.9% of the population responded; totals were projected to estimate the entire population.
4. Based on responses of Alberta Lung Association, Canadian Cancer Society, Canadian Diabetes Association (Alberta and Northwest Territories), Chronic Disease Prevention Alliance of Canada, and Heart and Stroke Foundation of Canada to questionnaire. Totals include 100% province-wide programs and 10% of national programs.
5. Smoking: Grants to community organizations from AADAC and Healthy Environments and Consumer Safety Branch, Health Canada Alberta / NWT Region. General Healthy Behavior Combined Factors: Grants to community organizations from Population and Public Health Branch, Health Canada, Alberta/NWT Region; and Métis, Off-Reserve Aboriginal and Urban Inuit Prevention and Promotion Program, First Nations and Inuit Health Branch, Health Canada.
6. Smoking: Health Canada national expenditures on information components of national-level tobacco reduction program. Amount reported represents Alberta percentage.
7. Nutrition: Health Canada national expenditures on information components of national nutrition program. Amount represents Alberta percentage (10% of total national level).
8. Physical activity: Health Canada national expenditures on information components of national physical activity promotional program; amount represents Alberta percentage (10% of national level). Also includes federal contribution to Alberta summer activity program.
9. First Nations program data obtained from Health Canada / FNIHB, Alberta /NWT Branch.
10. Smoking: AADAC tobacco reduction program, including promotion and counselling components. Physical activity: Data from Alberta Sport, Recreation, Parks and Wildlife Foundation. General healthy behaviour / combined factors: Alberta Health and Wellness Healthy U program.
11. Also see note 3.

8. Local government physical activity promotion program.

in community voluntary agencies, and the remainder in federal, provincial, and local government. Of the 92 programs, 72 could be placed in specific disease categories. The largest number of programs were those that targeted "high-risk" groups; there were 24 of these. Sixteen programs were dedicated to diabetes prevention, 11 to heart disease prevention and 7 to COPD prevention (there was some overlap among these in the general population). Fifteen were dedicated to Aboriginal groups.

Regarding the mode of program delivery, all 92 programs used media, 25 (27.2%) used counselling, 21 (22.8%) used support clubs or groups, 18 (19.6%) developed websites, 12 (13%) had telephone call-in lines, and 8 (8.7%) had travelling units. Six (6.5%) provided only literature, in addition to media.

Total expenditures by category are shown in Table II, along with details on sources of

information. In total, \$24.9 million was spent in the province on chronic disease prevention activities. The highest spending sector was the government sector (\$14.1 million or 57% of the total) with the federal government spending the most, primarily on tobacco reduction activities and programs for the First Nations population. Much of the funding was not sustained, but rather short-term allocations. Most of the provincial direct spending was for tobacco reduction activities. The health care system used a total of \$6.5 million, with the largest portion of spending on tobacco counselling by family doctors and health promotion programs by the regions. Most of the regional programs were focussed on a combination of risk factors. The province-wide voluntary organizations focussed most of their attention on combined risk factors.

The methods of program delivery were diverse and defied clear summary. Media

advertising programs alone used \$4.5 million, while toll-free telephone lines combined with counselling incurred \$2.4 million in expenses. Counselling programs alone, outside of family doctors' offices, incurred \$1 million and media and web programs combined incurred expenses of \$2 million.

On a per capita basis, investment in chronic disease prevention for non-First Nations persons amounted to \$15 per person over the age of 20 who did not have one of the three chronic diseases. Costs incurred for First Nations persons (population 31,000) amounted to \$147 per person over 20. In comparison, in Alberta, per capita health care spending was \$2,290.

In terms of total resources used, expenditures on chronic disease prevention amounted to about 0.23% of total provincial health expenditures. RHA spending for chronic disease prevention amounted

to about 0.1% of all RHA spending, and billings by family doctors for chronic disease prevention amounted to about 0.7% of all family doctor billings. Based on a question-of-order paper to the House of Commons (37th Parliament, 2nd session, Edit Hansard Number 115, Tuesday, June 10, 2003), total promotional expenditures in Canada on tobacco was \$304 million in 2001. Alberta's "fair share" would be \$30.4 million, which is about 20% more than our spending figure.

DISCUSSION

We conducted a province-wide survey of health expenditures on chronic disease prevention information oriented towards persons over age 20. Our results show that \$24.9 million was spent in fiscal year 2002/3 on these activities.

We should emphasize that this statistic by itself cannot tell us whether these expenditures had a cost-effective result.¹⁰ However, spending on these functions is far less than other investigators have indicated. A report by Alberta Premier's Advisory Committee on Health⁷ estimated that health regions spent 3% of their total expenditures on health promotion, an amount they considered to be low. Excluding immunizations and accident prevention, chronic disease prevention expenses account for about 0.1% of regional expenditures.

The range of activities that make up "chronic disease prevention information" is wide, and includes radio, television and other types of advertising, web pages, public talks, group sessions and one-on-one counselling. As a result of this diversity, it is difficult to define and measure such activities. We also found that the boundaries defining chronic disease prevention are not always clear. Some of these activities are undertaken by dedicated staff, while others are undertaken jointly with active treatment. It is impossible to measure the latter in any unambiguous way. The organizations that undertake these activities are also diverse, as seen in the analysis. These agencies engage in other prevention activities as well, including lobbying and networking. If final outputs were better defined, we could have allocated some of these costs to health promotion information. However, the financial

records of these agencies were also diverse, and agencies had difficulties in reporting information on a program level. In addition, there are several types of activities that are donated. These include volunteer time and donated media advertising. These were excluded from our analysis because no agency kept records of them by program.

There are limitations of this analysis. We excluded persons under the age of 20, as well as programs for school-aged children and workplace programs: the time and budget limitations of this analysis precluded us from including them. As well, we have focussed only on informational costs, to the exclusion of such activities as taxation, behavioural regulation, fund-raising and advocacy. Some of these other activities will also influence risky behaviours.

Several recent government reports have stated that the public sector in Canada devotes too few resources to health promotion, but these statements did not base their opinions on how much is actually devoted to these activities. We measured the actual investment in chronic disease prevention activities in Alberta, and we found it to be about \$25 million, which is much lower than is suggested in these reports. Using our methods, policy-makers can obtain sound economic evidence so that they can more objectively formulate disease prevention strategies.

RÉSUMÉ

Contexte : En 2000, l'Organisation mondiale de la santé déclarait que certaines maladies chroniques (la bronchopneumopathie chronique obstructive, les cardiopathies, le diabète et certains cancers) représentent des menaces importantes, mais évitables, pour la santé. Depuis, on réclame des investissements accrus dans les activités de prévention de ces maladies. Nous n'avons pas encore d'information sur l'envergure économique de ces activités de promotion. Dans cette étude, nous présentons une estimation des investissements consacrés par les organismes publics de l'Alberta à des activités de prévention des maladies chroniques visant à fournir de l'information pour favoriser les changements de comportements chez les adultes à risque.

Méthode : Nous avons sondé les membres du conseil d'administration du réseau AHLN (Alberta Healthy Living Network) pour recueillir des données économiques et de l'information sur leurs activités de prévention (primaire) des maladies chroniques. Nous leur avons aussi demandé les coordonnées des responsables de programmes dans d'autres organismes. Nous avons poursuivi ce processus d'accumulation jusqu'à ce qu'aucun nouvel organisme ne nous soit mentionné. Les organismes ont ensuite rempli un questionnaire.

Résultats : En 2003 en Alberta, les organismes publics ont consacré 24,9 millions de dollars à fournir de l'information pour encourager les personnes de plus de 20 ans à changer les comportements qui les rendent vulnérables aux maladies chroniques. Ces investissements ont été répartis entre de nombreux organismes. Les programmes antitabac en ont utilisé la plus grande partie. Le coût total par personne à risque était d'environ 15 \$. Les offices régionaux de la santé ont consacré environ un dixième de 1 % de leur budget à de telles activités.

Discussion : Il est difficile de recueillir et de structurer des données sociétales sur la prévention des maladies chroniques. Néanmoins, tout semble indiquer que les sommes qui y sont consacrées sont petites – et très inférieures à ce que l'on pensait.

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