National High Blood Pressure Prevention and Control Strategy

Summary Report of the Expert Working Group

Health Canada
&
The Canadian Coalition for High Blood Pressure Prevention and Control

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ACKNOWLEDGEMENTS

Despite the establishment of the Canadian Coalition for High Blood Pressure Prevention and Control (Coalition) by Health Canada, in 1984, by the participation of all stakeholders concerned with hypertension (or high blood pressure), the control of this silent killer is very small. The situation analysis, in 1996, warranted a critical appraisal.

This led to the development of a national high blood pressure prevention and control strategy, which was readily embraced by the Coalition. An Expert Working Group was established in Fall 1996, and its members took on the challenge of compiling this strategy. Every one of the members listed in the Expert Working Group worked very hard to shape the strategy, based on scientific evidence, through substantial contributions to its content and through participation in numerous revisions.

We are very grateful to the Dr. Paula Stewart for synthesizing the information from the Expert Working Group's deliberations to formulate the final strategy paper. We appreciate her patience and continuous interaction with members of the Working Group to capture the ideas and nuances to make this as a workable strategy. The support of Ms. Jackie Kierulf by providing background research is gratefully acknowledged.

The development of this strategy was a partnership between Health Canada (through Adult Health Division, Health Promotion and Programs Branch and Laboratory Centre for Disease Control, Health Protection Branch) and the Coalition. The financial support provided by the Population Health Fund from the Health Promotion and Programs Branch, Health Canada was a significant contribution to develop and complete this strategy on time.

The Strategy has been reviewed by the Coalition's 34 member organizations. The Strategy is currently under review by the Council of Chief Medical Officers of Health (CCMOH).

While the Strategy is now ready, its full potential will be realized only if we can implement the steps outlined. The work has just begun and it requires the input of every one concerned.

Overall, though a challenging mission, the production of this Strategy was a most satisfying and pleasant experience. On a personal note, I appreciate the opportunity to Chair the Working Group. I thank each and every member of the Working Group, Dr. Paula Stewart and Ms. Jackie Kierulf for their contribution to the completion of this Strategy.

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NATIONAL HIGH BLOOD PRESSURE PREVENTION AND CONTROL

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INTRODUCTION

High blood pressure is one of the most common and important health problems facing Canadians. It is one of the main risk factors for heart disease, stroke and kidney failure. Heart disease and stroke account for 37% of all deaths[1].

The mortality rates of heart disease and stroke have decreased in the past several years[2]. This is probably due to a combination of factors including a decrease in smoking and salt consumption, and improved treatment. The aging of the population will lead to an increase in deaths due to these two diseases unless further prevention efforts are undertaken now.

The prevention and control of high blood pressure would have a major impact on health, quality of life, disability and death among Canadians. It would also reduce the need for health care expenditures for these diseases.

This report outlines a strategy to prevent and control high blood pressure. It is directed at policy makers at the local, provincial/territorial, and national level in both the health and non-health sectors. The strategy is based on current research and expertise. A multifaceted, comprehensive approach is proposed because there is no one intervention that will accomplish the goal of improving the health of Canadians through high blood pressure prevention and control.

This report focuses on the general population. It does not address the unique needs of children, pregnant women or aboriginal peoples. Each of these groups need to be studied in their own right and, in particular, with the involvement of aboriginal people themselves.

[1] Heart and Stroke Foundation of Canada. Heart and Stroke in Canada. Ottawa, Canada, 1997.
[2] ibid

SUMMARY OF LITERATURE

General

Blood pressure is distributed normally in the population with no real definition between people who are normotensive and those that are hypertensive[3]. In general, the higher the blood pressure the greater the risk of health problems. It is difficult to identify an absolute value over which risk increases because the risk is continuous. The presence of other risk for factors for heart disease, such as smoking, is associated with risk of disease at lower levels of blood pressure than if these factors are not present[4].

The broad, normal distribution of blood pressure in the population has major implications for the prevention and control of high blood pressure in the population. First, it is important to reduce the blood pressure of the whole population in addition to the individuals with the highest levels. Although the risk is higher among this latter group, there are many more people in the population in the lower risk categories. Therefore, most of disease associated with high blood pressure occurs among people with borderline or mildly elevated blood pressure[5]. Second, whatever cut-off points are used to diagnose, there will be some people with levels below this that are at increased risk for heart disease. If the whole population is targeted to reduce the risk factors for elevated blood pressure then these people will not be missed.

Based on the 1985-90 Heart Health surveys[6], it is estimated that 22% of adult Canadian – 26% of men and 18% of women are hypertensive. Only 13% of the population had been diagnosed with high blood pressure. Of these, 28% were treated and controlled, 40% were being treated but were not controlled, and 33% were not treated and not controlled.

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[3] World Health Organization. Hypertension Control – Report of a WHO Expert Committee. WHO Technical Report Series No. 862. Geneva, 1996. p. 2

[4] Ibid p. 3.

[5] Cook N, Cohen J, Hebert P, Taylor J, Henekens C. Implications of small reductions in diastolic pressure for primary prevention. Arch Intern Med 1995;155-701-9.

More recent surveys suggest that this picture may not have changed since 1990. The National Population Health Surveys (NPHS) conducted by Statistics Canada in 1994 and 1996 found that 9% and 10% of the population age 12 and up reported that they had been diagnosed with high blood pressure (age range -18 to 74). This is similar to eh 13% reported in 1985-90. The proportion of the population with diagnosed high blood pressure increases with age (Table 1).

Table 1 – Proportion of men and women reporting diagnosis of high blood pressure by physician by age and sex, National Population Health Survey, 1994 –96.

Age group	1994	1996
Overall	9%	10%
25 – 44 years	3% Men, 3% Women	3% Men, 3% Women
45 – 64 years	13% Men, 16% Women	15% Men, 18% Women
65 plus years	23% Men, 33% Women	28% Men, 36% Women

Prevention of High Blood Pressure

Given only a small proportion of high blood pressure (1 to 5%) is associated with underlying disease[7], there is great scope for the prevention of the onset of high blood pressure Research has identified several factors that are associated with an increased risk of high blood pressure[8],[9]. Cigarette smoking is not specifically associated with high blood pressure but the combination of high blood pressure and smoking puts an individual at high risk for heart disease and stroke.

Modifiable factors/conditions

- Excess weight (BMI > 25)
- Central obesity (waist/hip circumference
- Lack of regular physical activity
- Heavy alcohol use ($\geq$ 14 drinks per week for men, and $\geq$9 /week for women)
- Excessive salt intake
- Inadequate dietary intake of calcium and potassium
- Lack of diet with high fibre, fruit, vegetables and low saturated fat
- Stress and coping with stress
- Low socio-economic status
- Low birthweight

Non-modifiable factors

- Family history
- Age
- Ethnicity – black, South East Asians

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[6] Joffres MR et al. Amer J Hypertension 1997:1097-1102.
[7] World Health Organization. Hypertension Control – Report of a WHO Expert Committee. WHO Technical Report Series No. 862. Geneva, 1996. p. 22.
[8] Canadian Coalition for High Blood pressure Prevention and Control. Non-pharmacological Therapy to Prevent and Control High blood pressure. An Overview of Canadian Recommendations. Heart and stroke Foundation of Canada, 1997.
[9] World Health Organization. Hypertension Control – Report of a WHO Expert Committee. WHO Technical Report Series No. 862. Geneva, 1996. p. 3. p. 13 – 20.

According to the 1996 National Population Heath Survey, almost half the adult population (48%) has some excess weight (BMI $\geq$ 25) or is over weight BMI $\geq$ 27). Fifty-seven percent of the population is physically inactive. Five percent of the population consumes alcohol at a level that increases their risk of high blood pressure.

Present programs provide a good base for prevention, but there is a need for expanded activity to have a significant impact on the prevention of high blood pressure.

- Community-based heart health programs need to be expanded in workplace, school and community settings. They should be provided in a collaborative way with public health, community health centers, voluntary organizations, schools, workplaces, food industry, community members and others,. There needs to be a specific link made between the promotion healthy behaviors and the prevention of the onset of hypertension.

- All health care providers need to provide education on healthy behaviours as part of regular primary care. Guidelines for clinical practice and education resources need to be provided to facilitate this practice. The education of health care professionals needs to include prevention knowledge, attitudes and skills. The newer models of primary care need to consider how to facilitate a more prominent role for a variety of prevention activities in primary care.

- Additional resources should be allocated to prevention programs at the community level. Less than 2% of the health care budget is allocated to prevention and health promotion activities. This limits the impact of prevention programs.

- The non-health sector (for example, recreation, industry, transportation) needs to be actively involved in creating legislation, policies, and supportive environments for physical activity, healthy eating, avoidance of heavy alcohol, avoidance of excessive salt, and stress reduction.

- More research is needed to assist in the development and implementation of effective programs. Program evaluation should be included in all health promotion and prevention programs. This will require allocation of funding for this activity and the linkage of evaluators with program planners and managers. University researchers need to work in concert with service providers to add to the knowledge base of the need for and effectiveness of programs.

Early detection of high blood pressure

The effective lowering of high blood pressure results in a decreased risk for heart disease and stroke[10]. In Canada, there is a major problem with undetected high blood pressure that likely contributes to morbidity and mortality from heart disease and stroke. According to the Heart Health surveys in 1985 to 1990 – about 9% of adults aged 18 to 74 were unaware they have high blood pressure[11]. Of those with undetected high blood pressure, 12% were aged18 to 34, 61% were aged 35 to 64, and 27% were aged 65 to 74. Men had higher rates of undetected high blood pressure than did women for all age-groups.

Clinical guidelines recommend that all adults should be screened for high blood pressure every two years or more often if there is a borderline reading on one occasion[12]. This will ensure that high blood pressure is identified early. According to the 1996 National Population Health Survey, many adults (84%) have had their blood

[10] Hennekens, CH. Lessons learned from Hypertension Trials. Amer J Med. 1998;104:50S-53S.
[11] Joffres MR et al. Amer J Hypertension 1997:1097-1102.
[12] Canadian Task Force on the Periodic Health Examination. The Canadian Guide to Clinical Preventive Health Care. Canada Communication Group – Publishing, Ottawa, Canada 1994.

pressure assessed in the past two years. Young men (aged 25 to 44) had the lowest rate (78%) and men and women over age 65 had the highest rate (over 90%).

Even if people have their blood pressure assessed, this does not necessarily lead to a diagnosis and treatment among those who do have high blood pressure. Those with high measurements at the time of screening must be followed-up by a physician with repeated measures with properly calibrated equipment to make the diagnosis. The high rate of undetected high blood pressure in spite of the fact that many people are being screened may be because the physician does not recognize the need for further assessment. In other cases it may be that the individual has had their blood pressure assessed outside the physician's office and does not go for follow-up.

The following strategies would likely improve the early detection of individuals with high blood pressure in the community

- awareness campaign for the general public of the need for and the benefits of regular blood pressure assessment

- education campaign for primary care providers of screening guidelines and the need to do screening as part of visits for other health problems in addition to periodic health exams

- providing accessible opportunities for blood pressure assessment that are linked to a physician for follow-up

Control of high blood pressure

The control of high blood pressure is dependent on involving the individual and family in a management plan that includes first, lifestyle changes (healthy weight, physical

activity, healthy diet, and avoiding heavy alcohol use) and then the addition of medication as needed[13]. Education, close monitoring and follow-up, using self blood pressure assessment and pill monitoring can improve the chances that the individual will make the necessary lifestyle adjustments and take prescribed medication[14]. Workplace programs that combine education and monitoring with a reward system can improve control.

Less than one-third of adults (25% of men and 31% of women aged 18 to 74) with diagnosed high blood pressure are treated and controlled[15]. The following problems have been identified in Canada

- According to the 1996 National Population Health survey, many people, young men in particular (46%), are not being treated once high blood pressure is diagnosed.

- Many individuals with high blood pressure are being treated with medication alone rather than a combination of medication and lifestyle changes[16].

- There are high rates of stopping medication in the first six months to one year[17]. The cost of medication is a barrier to taking blood pressure lowering medication for some individuals.

- Because of funding arrangements, the primary care setting is limited in its ability to provide interdisciplinary service that involves the individual and family in the blood pressure management program with education, self-monitoring of

[13] Hennekens, CH. Lessons learned from Hypertension Trials. Amer J Med. 1998;104:50S-53S
[14] Feldman R et al. Adherence to pharmacological management of hypertension. A Literature Review. Department of Medicine, University of Western Ontario, 1998.
[15] Joffres MR et al. Amer J Hypertension 1997:1097-1102.
[16] Statistics Canada. National Population Health Survey 1996.
[17] Feldman R et al. Adherence to pharmacological management of hypertension. A Literature Review. Department of Medicine, University of Western Ontario, 1998.

medication and blood pressure. There need to be greater links among other care providers such as pharmacists and occupational health nurses.

- There is concern that physicians may not be prescribing medication to have the maximum impact on lowering blood pressure. Clinical practice guidelines on diagnosis, and lifestyle and pharmacologic management of high blood pressure are produced based on formal review of research evidence but they are not widely disseminated.

- Workplace and community environments could be more supportive to assist individuals to make healthy lifestyle changes, for example, walking and bike trials, accessible and affordable weight loss programs. Public policy and legislation could also support healthy lifestyles such as by lowering the salt content of prepared foods.

- There is a need for further research on effective medications, and programs to increase lifestyle change and adherence to medication recommendations.

System Support

There are many organizations, health care providers, and community groups in both the health and non-health sector that can be involved in the prevention and control of high blood pressure. It is important to consider what support is required to enable these groups and individuals to function as effectively as possible as part of an overall system to address this important health problem.

An effective system can be supported with

- **collaborative planning and evaluation** at the national, provincial/territorial and local level to ensure the system is functioning effectively in the most efficient way;

- **surveillance** of the incidence and prevalence of high blood pressure, prevalence of risk factors in the population, use of prevention and therapeutic interventions, and health to monitor progress. This information needs to be disseminated to policy makers and program managers to encourage its use in policy and program planning.

- **research and evaluation** and its dissemination to managers and clinicians to aid evidence-based decision-making;

- on-going **education of service providers** about high blood pressure prevention and control including the use of evidence-based clinical practice guidelines and how to effectively provide education on high blood pressure prevention and control.

NATIONAL HIGH BLOOD PRESSURE PREVENTION AND CONTROL STRATEGY

Health Goals

The identification of health goals is a critical component of a high blood pressure prevention and control strategy. They clearly outline what changes are needed in the population to improve health. The baseline values for the specific targets for each goals are based on the results of the Heart Health surveys in the early 1990's[18].

Health Goal	***Target***
To reduce the prevalence of uncontrolled high blood pressure in Canada.	• by 10% by the year 2005 (current estimate is 19%)
<u>Sub-goals</u>	
a) To reduce the incidence of high blood pressure among Canadians.	• by 10% by the year 2005 (current estimate is 22% of population aged 18 – 74)
a) To reduce the proportion of Canadians who are unaware they have high blood pressure.	• by 10% by the year 2005 (current estimate is 9.2% of population or 42% of people with high blood pressure)
b) To reduce the prevalence of uncontrolled high blood pressure among those who have been diagnosed with high blood pressure.	• by 10% by the year 2005 (current estimate is 9.3% of population or 43% of individuals with diagnosed high blood pressure)

[18] Jofres

Program Outcomes

The High Blood Pressure Prevention and Control goals will be achieved by programs, policies and services that are directed at achieving the following changes in the population.

Longterm Program Outcome	***Target group***
1. Increase in a healthy lifestyle for all Canadians – healthy weight, healthy nutrition, regular physical activity, low risk alcohol use, and stress management - to prevent the onset of high blood pressure.	• Whole population • Public health • Health service providers • Community organizations • Governments • Voluntary sector • Workplace, schools • Non-health sector
2. Increase in Canadians having regular blood pressure measurements taken and interpreted correctly to increase the early detection of high blood pressure.	• All adults • Primary care providers
3. Increase in high blood pressure investigation, diagnosis, and treatment with lifestyle changes, medication and follow-up according to evidence-based clinical practice guidelines to increase high blood pressure control and underlying medical conditions treated appropriately	• Primary care providers • Specialist care providers • Pharmacists • Health professional organizations • Universities • Health service managers
4. Increase in individuals with high blood pressure adopting healthy behaviours and taking prescribed medication appropriately	• Individuals with diagnosed high blood pressure • Families of individuals with diagnosed high blood pressure • Health service providers • Social service providers • Same organizations as in number 1 above associated with the promotion of a healthy lifestyle

These long-term program outcomes will be achieved through changes in the following short-term program outcomes.

Short Term Program Outcome	***Target Group***
1. Increase in knowledge, attitudes and skills of the general public about healthy behaviours and the need to have regular blood pressure measurements.	• Whole population
2. Increase in knowledge, attitudes and skills of the individuals with high blood pressure about healthy behaviours and control of blood pressure.	• Individuals with high blood pressure and their family members
3. Increase in knowledge, skills and attitudes of health service providers about healthy behaviours, and high blood pressure detection and treatment.	• Health service providers
4. Increase in supportive community, workplace and school environments for the adoption and maintenance of healthy behaviours.	• Public health • Health service providers • Community organizations • Governments • Voluntary sector • Workplace, schools • Non-health sector
5. Increase in supportive health care environments for health care providers and individuals with high blood pressure that support high blood pressure control.	• Health planners • Health service managers • Health service providers • Government • Universities • Health professional organizations
6. Decrease in salt added to prepared packaged food and in restaurants	• Food industry • Restaurants, cafeterias and fast food outlets
7. Increase in research knowledge about the effectiveness of high blood pressure prevention and control interventions.	• Researchers in universities, health service organizations, voluntary organizations, government
8. Increase in research knowledge about the prevalence of risk factors, high blood pressure, and the control of high blood pressure in the population.	• Researchers in universities, public health, health service organizations, voluntary organizations, government
9. Increase in collaboration among organizations and the community in the provision of interventions for the prevention and control of high blood pressure.	• Consumers • Public health • Health service providers • Health planners • Health service managers • Academics and researchers • Community organizations • Governments • Voluntary sector • Workplace, schools • Non-health sector – restaurants, recreation, food industry etc.

Program Strategies

The program short and long-term outcomes will be achieved through the development and implementation of strategies involving both health and other sectors. These strategies will address the factors that influence the behaviors and environment associated with high blood pressure prevention and control.

Community Health Promotion

- Advocating for ***healthy public policy*** in both the health and non-health sectors to support healthy lifestyles.

- Encouraging ***community action*** for the adoption of healthy lifestyles and the regular assessment of blood pressure.

- Creating ***supportive environments*** in schools, the workplace and the community for the adoption of healthy lifestyles and the regular assessment of blood pressure.

- Provide ***information and education*** on the adoption of healthy lifestyles, the regular assessment of blood pressure, and the taking of prescribed medication appropriately.

- Involve ***the non-health sector*** in creating healthy policies, programs and services to support healthy lifestyles and high blood pressure detection and control.

Health Services

- Provide ***education about healthy lifestyle and high blood pressure prevention and screening*** using a variety of methods as part of primary care for everyone of all ages.

- ***Screen all adults (over age 20) for high blood pressure*** at least once every two years, or more often if indicated, in the primary care setting, or in the workplace or community if part of an organized program of follow-up.

- ***Assess individuals*** with a high blood pressure reading at the time of screening on repeated occasions over a three to six month period to make the diagnosis of high blood pressure.

- ***Search for underlying medical causes*** of high blood pressure according to clinical practice guidelines.

- Provide ***intensive lifestyle education for individuals with high blood pressure*** as an essential part of high blood pressure management control.

- Recommend the ***addition of medication*** to control high blood pressure according to clinical practice guidelines.

- Encourage the individual with high blood pressure and their family to be ***active participants*** in their management plan, and provide ***monitoring and follow-up*** to support health behaviour changes and taking medications appropriately.

- Organize the ***delivery of health services*** to ensure they are accessible, effective and efficient including the use of interdisciplinary teams for service delivery, a primary care team as first response and specialist assistance as needed.

System Support

- Advocate for sufficient resources to implement the high blood pressure prevention and control initiative.

- Develop and provide ***education resources*** on healthy behaviours and prevention and treatment of high blood pressure for individuals, families and health service providers.

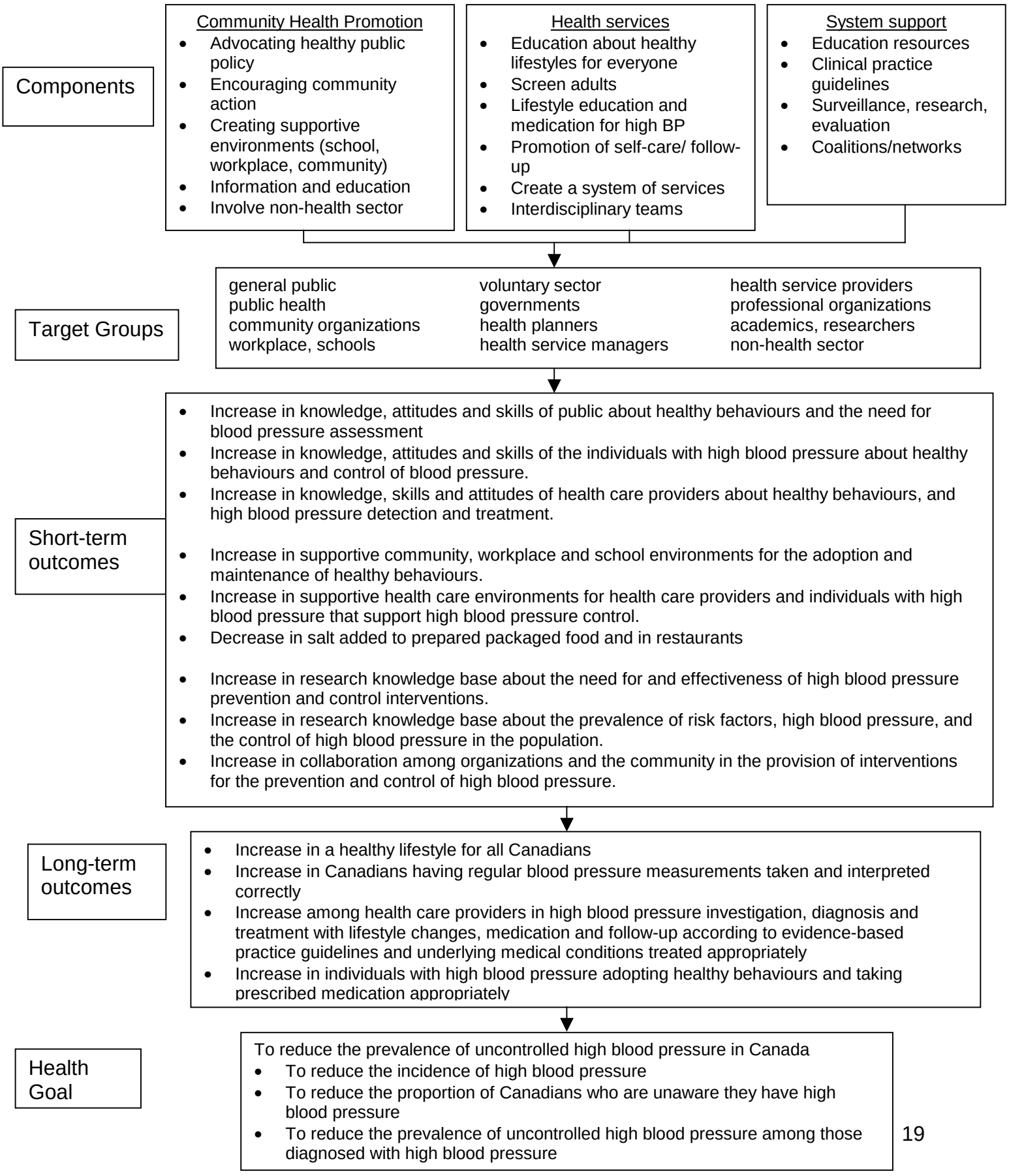
- Develop and disseminate ***clinical practice guidelines*** to health care providers including undergraduate and postgraduate students and practicing professionals.

- Conduct ***surveillance, research and program evaluation*** to provide the evidence base for the high blood pressure prevention and control program.

- Maintain or develop ***coalitions or networks*** at the local/regional, provincial/territorial, and national levels to facilitate effective planning, collaboration and communication and use of resources within the health and non-health sector.

A summary of the proposed National High Blood Pressure Prevention and Control Program is outlined in Figure 1. Appendix A includes a description of possible activities within each of the strategies for the three sub-goals – prevention, early detection, and control of high blood pressure.

Figure 1 - Canadian High Blood pressure Prevention and Control Program



Toward Implementation: Recommendations

The Canadian Coalition for High Blood Pressure Prevention and Control recommends the following next steps to decrease morbidity and mortality associated with high blood pressure in Canada.

1. Make high blood pressure prevention and control a priority for federal, provincial, territorial governments.

2. Provide dedicated funding to support a national coalition involving health professionals, government, industry, voluntary organizations, and all stakeholders to coordinate the Canadian Prevention and Control of High Blood Pressure Strategy.

3. Implement a public awareness campaign on the risk factors for, screening of, and benefits of the control of high blood pressure.

4. Develop and implement interdisciplinary models of primary care that support effective preventive practices including risk factor reduction, screening and blood pressure control programs

5. Provide on-going education to health service providers through professional associations on clinical practice guidelines for high blood pressure prevention and control.

6. Negotiation by the Health Protection Branch with the food industry to decrease salt in prepared food and to use a salt substitute with a lower sodium concentration.

7. Promote physical activity and healthy nutrition for all age groups in the population to prevent obesity.

8. Continue research on the causes of high blood pressure and effective treatments, and the evaluation of prevention and control programs.

9. Conduct on-going surveillance of high blood pressure using existing sources of data on health problems and conducting periodic population surveys using methodology developed in the provincial heart health surveys.

Appendix A

Description of Activities for the Prevention and Control of High Blood Pressure in Canada

Examples of activities to promote a healthy lifestyle to prevent the onset of high blood pressure.

Strategy	Possible Activities	Targeted to:	Responsibility
Community Health Promotion			
Healthy public policy	• Physical activity – bike lanes, walking trails • Adequate affordable housing • Financial support for families • Reduction in sodium added to packaged, prepared food and restaurants	General public	Local government Food Industry Restaurants, Cafeterias
Encouraging community action	• Community group to promote cycling • Self-help groups for stress management	General public	Public Health, voluntary organizations, workplace
Creating supportive environments	• Labeling of heart healthy foods in supermarkets • Availability of healthy foods in workplaces and schools	General public	Food industry Workplace, schools
Encouraging personal skill development (knowledge, attitudes, skills)	• social marketing campaigns • school health education curriculum • community workshops • workplace education	General public	Public health, health care providers, occupational health nurses
Health Services			
Prevention education	• discussion of healthy lifestyle during physician/nurse visits • referral to community programs • provide interdisciplinary primary health care programs for individual counseling	General public	Health care providers (physicians, nurse, nutritionists, etc)
System Support			
Continuing education of health care providers and development of clinical practice guidelines and education resources	• develop clinical practice guidelines about lifestyle counseling • conferences, workshops • provision of resources for use in the office setting • internet information distribution • undergraduate and postgraduate education	Health care providers Academics Students	Universities, professional organizations
Surveillance, research and program evaluation	• monitor prevalence of high blood pressure in community • program evaluation • research effective interventions	Health care providers Managers, government	Universities, researchers, service providers
Creating a system	• Heart Health Coalitions	organizations	e.g Public Health, voluntary, food industry, workplace

Activities to increase the early detection of high blood pressure in the general population.

Strategy	Activity	Targeted to:	Responsibility
Community Health Promotion			
Healthy public policy	• Professional organizations adopt a formal policy about high blood pressure screening and communicate it to their members and the public • Government adopts a policy on a health goal to	Health care providers General public	Health professional organizations Federal, provincial/territorial government
Encouraging community action	• Seniors organizations encourage their members to have blood pressure screening • Neighbourhood organizations encourage screening	General public	Community groups
Creating supportive environments	• Screening for high blood pressure in workplaces with a referral process and follow-up to primary care providers	General public	Workplace
Encouraging personal skill development (knowledge, attitudes, skills)	• Social marketing campaign on blood pressure awareness and need for screening	General public	Voluntary organizations, professional organizations, public health, government ,
Health Services			
Prevention education	• education on importance of high blood pressure and need for screening using posters, pamphlets, counseling etc.	General public	Primary care providers, specialists, hospitals
Screening by primary care providers	• set up a tracking system for individuals in the practice • identify screening as one person's responsibility in the office • conduct screening as part of regular office procedures for all visits • set up a system to flag high results on screening and have a formal system for education and follow-up	Individuals in practice	Primary care providers
System Support			
Continuing education of health care providers and development of clinical practice guidelines and resources	• disseminate existing guidelines • develop and disseminate clinical practice guidelines for implementation of a screening program	Health care providers	Health professional organizations Coalitions
Surveillance, research and program evaluation	• evaluate the effectiveness of awareness raising and screening programs • monitor the awareness levels in the population and screening	Health care providers, manger, government	researchers
Network /coalitions	• add the early identification of high blood pressure to the work of community Heart Health coalitions	All those involved in program	Heart Health Coalitions NCPCHP

Activities to promote the appropriate diagnosis and optimum treatment and follow-up of individuals with high blood pressure

Strategy	Activity	Targeted to:	Responsibility
Community Health Promotion			
Healthy public policy	• Advocate for legislation for reduced salt in prepared foods • Advocate for public policy for adequate funding for medication for those who need financial support	Federal government Provincial government	Health professional associations, community groups, public health, heart health coalitions
Encouraging community action	• Self-help weight control programs	Individuals with high blood pressure who are overweight	Health care providers
Creating supportive environments	• create bike and walking trails	Individuals with high blood pressure	Local government
Encouraging personal skill development (knowledge, attitudes, skills)	• group education programs on high blood pressure • workplace education programs • pharmacy education at time of filling prescriptions	Individuals with high blood pressure	Local health care providers Occupational health nurses pharmacists
Health Services			
Primary care	• multidisciplinary team with nutritionists, psychologists, nurses • formal follow-up system with reminders by phone and letter • education via vide tape, pamphlets, internet etc.	Individuals with high blood pressure	Primary care providers Provincial governments
Specialist care	• interdisciplinary clinics • formal follow-up system with reminders by phone and letter • education via vide tape, pamphlets, internet etc.	Individuals with high blood pressure who cannot be controlled in primary care	Specialists, hospitals, provincial governments
System Support			
Continuing education of health care providers and development of clinical practice guidelines and resources	• continue to update clinical practice guidelines • local professional groups can meet to discuss how to implement guidelines in their community	Health care providers	Health professional assoc. Local health care provider group
Surveillance, research and program evaluation	• on-going surveys of prevalence of treated and controlled high blood pressure • research on effectiveness of interventions	Managers, voluntary/ professional assoc, government, researchers	Local public health, provincial and federal gov.
Network /coalitions	• local network of all providers meet to ensure continuity between primary care site, pharmacy, specialist, lifestyle support organizations	Those involved providing service	Heath care providers, gov., voluntary org., pharm industry