Hypertension: A Call to Action

A “Train the Trainer” Guide

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Statement of Intent

*Hypertension: A Call to Action* is a web-based multimedia learning tool. This document is a “train the trainer” manual that guides learners through a small group session, with digital videos and a game available for download from [http://www.hypertensiontalk.com/training/](http://www.hypertensiontalk.com/training/). This tool focuses on a critical examination of the hypertension epidemic: an understanding of the causes or the social determinants of health, growing disparities in health equity, and a call for action. The ultimate purpose of this tool is to galvanize learners’ interests in advocacy and to foster an understanding of how their profession can be part of championing public policies that are committed to health promotion.

The intended participants for this learning tool are learners from the health care professions; this includes but is not limited to students of medicine, nursing, pharmacy, nutrition, occupational therapy, physiotherapy, and public health. Currently, Canadian universities do not emphasize a public health approach to the common clinical problem of hypertension. This tool is a timely step forward in addressing this gap. As hypertension is now a global epidemic and a leading risk factor for global disease burden, the rising generation of health care professionals needs to be trained to meet this nationwide and worldwide epidemic with large-scale, population-based solutions. Canadian healthcare professionals (HCPs), when faced with a patient suffering in the confines of a clinic, will do what they can to make things better. With 36,524 people dying each year in this country from complications of hypertension, a public health approach is critical (1).
**Introduction**

High blood pressure or hypertension is a ‘silent-killer’ with no symptoms, affecting more people worldwide than HIV/AIDS. It is the unseen force behind the broader global problem of non-communicable diseases (NCDs), and a leading risk factor for global disease burden. Hypertension damages the arterial system, potentially impacting nearly all bodily functions. It affects 4 in 10 adults over age 25 on this planet (1), increasing their risk of non-communicable, chronic diseases such as stroke, dementia, heart attack, heart failure, kidney failure, and blindness. Hypertension causes approximately 51% of deaths from stroke, 45% of deaths from coronary artery disease, and in 2010 was the cause of 9.4 million deaths or about 18% of total global deaths (1). High blood pressure is on the rise, with 1.56 billion people expected to have hypertension by 2025 (2). Hypertension is the major culprit of cardiovascular death, and has an additive affect with other major global risk factors such as tobacco use, high blood glucose levels, physical inactivity, overweight/obesity, and high cholesterol levels (3). Although these risk factors are largely preventable, they are creating a global epidemic of chronic disease.

Canada is a high-income country potentially well equipped to combat diseases of lifestyle. Nonetheless, national statistics paint a picture of overwhelming and unnecessary suffering. 7.4 million adults were living with diagnosed hypertension and close to half a million had a new diagnosis in 2007/8 (4). All cause mortality was higher among Canadians diagnosed with hypertension compared to those without the diagnosis (4). Nearly half of all people over the age of 60 are taking antihypertensive medications (5). “In 2003, antihypertensive drugs alone cost more than $1.7 billion, and each subsequent year medication use has gone up”, totalling $3 billion in 2010 (5, ii). These trends highlight the inadequacy of using medical treatments to palliate a preventable problem. The numbers are telling: hypertension not only harms individuals and their families, it puts communities and our nation at risk.
Rudolf Virchow, one of the principle architects of scientific medicine, famously declared that “If disease is an expression of individual life under unfavourable conditions, then epidemics must be indicative of mass disturbances of mass life” (cited by 6, p525). As a statesman and leader of social medicine, Virchow understood that advancing the health of the public required addressing both the pathophysiology of disease as well as its social underpinnings. The hypertension epidemic similarly has its roots in social pathology, an understanding of which requires an examination of health determinants. The social determinants of health are commonly referred to as the causes of causes and are powerful drivers of disease, including hypertension.

The ensuing discussion will help connect the dots, delineating how a series of troubling but ostensibly unrelated determinants are actually interwoven with public policy to drive disease. Solutions to championing a public health approach to hypertension will be offered, including this manual’s central aim of building a national advocacy network of healthcare professional learners committed to ending hypertension.
Social Determinants of Health and Health Equity

The World Health Organization (WHO) defines the social determinants of health as the conditions in which people are born, grow, live, work, and age; conditions which are shaped by the distribution of money, power, and resources (7). These factors transform into health-related resources that drive patterns of morbidity and mortality. In Canada, “the key determinants of health are known but are not applied to our communities and populations” (8, p2). Instead of preventing disease we wait for disease, making high blood pressure an almost inevitable prospect with advancing age (5).

Canada is one of the wealthiest nations in the world, yet not everyone within our borders has benefited from this prosperity. Disadvantaged groups experience poorer health and shorter life spans. Morbidity and mortality follow a socioeconomic gradient, with those at the bottom suffering the most (9).
In Canada, the most glaring sources of health inequity are socio-economic status and Aboriginal identity (10). Yet health disparities are also mirrored in gradients of education, occupation, across neighbourhoods, as well as across certain ethnic groups (10). Health inequities are “unfair, avoidable and remediable” (11, p3). The health inequities observed in hypertension are not a natural phenomenon but are the result of policy failure (11). The “unnecessary disease and suffering of disadvantaged people” from the consequences of hypertension “is a result of the way we organize our affairs in society” (9, p2081).

Hypertension is a disease that preferentially seeks out the most vulnerable. High blood pressure affects the poorest Canadians, with the highest prevalence found in the lowest income quintiles (12). One starting point in understanding how the determinants of health influence hypertension is through their connection to the behavioural risk factors for hypertension. Obesity, a western diet, a lack of fruits and vegetables, and alcohol consumption all follow the socioeconomic gradient. For example, adolescents with higher socio-economic status (SES) are more physically active, eat more nutritious food, and have a lower risk of smoking compared to peers with lower SES (13-17). Among school-
age children, obesity is more prevalent among those whose families have a lower income and lower social status (13-17).

Stress is another pathway through which lower SES can drive unhealthy behaviours leading to hypertension (9). The stress of negative life experiences that come with having less compared to others increases a person’s risk of experiencing risk factors, morbidity, and mortality from coronary vascular disease (CVD) (13-17). Early exposure to low SES is associated with increased CVD and stroke as an adult (13-17). In a growing recognition amongst clinicians of poverty as a major driver of NCDs, the Ontario College of Family Physicians has developed a poverty screening tool, including this health determinant as a clinical risk factor for several NCDs including CVD (18).

Lower socioeconomic status is not simply an issue of lack of money. Instead, a lack of income can be conceptualized as a lack of opportunity. In the case of hypertension, a lack of income translates into a lack of opportunity to exercise safely or gain access to nutritious foods. In the Whitehall II study, which examined a cohort of British male and female civil servants, a lack of control was found to be a greater contributor to the socioeconomic gradient of coronary heart disease above and beyond classic risk factors (19). Canadians of lower SES can have little or no control over their local built environments or over certain life circumstances. A lack of control makes achieving and sustaining a healthy lifestyle a daily challenge, with lower SES leading to deterioration in health and the advent of high blood pressure.
Power, Politics, and Policy Failure

Lower socioeconomic status signals a greater structural problem where people are denied full participation in society. This disempowerment implicates larger social structures in the ill health of the disadvantaged. “Power relations in society, as they operate through social institutions and the opportunities afforded to those in relatively disadvantaged positions, are the social causes of degrees of empowerment” (9, p2091). While the concept of power may seem amorphous and abstract, it has concrete manifestations in how society is organized, including the public institutions and laws people depend on to live out their daily lives.

Healthy public policies are an important strategy in mitigating the harmful effects of unequal distributions of money, power, and resources. The WHO has repeatedly emphasized the role of health promotion policy in mending health inequities such as hypertension’s disproportionate burden on the socio-economically disadvantaged (11, 20). Both the WHO and Canada’s Healthy Blood Pressure Framework have called for healthy food policies such as reducing the salt content of processed foods (5, 20), which the Canadian government to date has rejected. On May 8 2013, recommendations by Canada’s Sodium Working Group, a unique and unprecedented multisector collaboration with overwhelming support from civil groups and the Canadian public was defeated by 146 Conservative government MPs and one other nay vote (21).

The failure of the Canadian government to act on a sodium reduction strategy is part of a larger problem of public policy failure on hypertension. The HSFC CIHR Chair for Hypertension Prevention and Control has questioned the inconsistency in the government’s approach to food policy:
Governments indicate preventing obesity in children is a priority but allow widespread advertising of unhealthy foods targeting children, allow unhealthy eating establishments to locate beside schools, allow schools to make money by selling unhealthy foods to children, and label foods in a fashion that no one can understand whether they are healthy or not - if they are labeled at all (22).

Although the Government of Canada has stated that it is committed to making food as safe as possible for consumers (23), the federal government has declined to monitor or enforce accurate food labelling. Despite the public disclosure that food labelling is inaccurate, the Canadian government’s 2012 budget recommends that the public utilize the internet to communicate directly with the food industry on misleading or deceptive information (24). This position has been adopted despite the public’s difficulty interpreting food labels, limited individual capacity to test industry label claims, or ensure any regulatory enforcement.

There is growing concern amongst health advocates and researchers that the financial interests of the food industry may be linked to the government’s inaction on establishing and maintaining healthy food policies (25-27). In Canada, individuals and organizations with financial interests in the food and beverage industry are represented on federal food policy committees with few effective conflict of interest safeguards in place (21). Furthermore, policy decisions are not monitored for their health impact, despite WHO recommendations, and therefore remain unaccountable to the public.

Any meaningful approach to curbing the hypertension epidemic will require healthy food policy initiatives, as well as health promotion policies that address socio-economic inequities. Despite the socioeconomic gradient being the primary driver of hypertension prevalence and the greatest threat to health (10, 12), the federal government does not have a comprehensive national strategy to address poverty. Evidence shows that greater income equality is associated with a happier, healthier, and more successful population; a population that has lower levels of violence, social problems, and higher levels of trust...
and community cohesion (28). Addressing income inequality in Canada is an issue that would thus benefit all Canadians.

The Canadian Medical Association has called on all levels of government to develop an action plan to eliminate poverty in Canada (29). The WHO has emphasized that empowering the poorest and most vulnerable people requires comprehensive health promotion policies that protect and safeguard the interests of the most disadvantaged people (11). Social mobilization and the leadership of healthcare professionals are instrumental in furthering the redistribution of power, money, and resources towards health equity (11).
A Public Health Approach to Hypertension: The Myths

One of the first steps in social mobilization on hypertension is education. Healthcare professionals, as well as patients, must understand why a public health approach is required. Popular discourse including media coverage on chronic diseases is often constrained by several myths. These myths effectively endorse an environment of limited regulation and attempt to mask the greater need for concerted action by society and government. Unpacking these myths lends momentum to social mobilization on hypertension.

MYTH #1: Individual Responsibility

One of the most commonly invoked concepts in discussions of chronic diseases is the idea of individual responsibility. At the heart of the matter is the assumption that we are our own worst enemies, an idea which is pushed by the popular press and food industry. The CEO of Coca-Cola, a beverage corporation with more than 42 billion in annual sales, wrote in *The Wall Street Journal* that “Americans need to be more active and take greater responsibility for their diets” (30). In an article by *Maclean’s* magazine titled “Patient, Help Thyself”, the author suggests “discouraging bad behaviour” by citing Arizona Gov. Jan Brewer’s now-abandoned proposal of instituting a “fat tax” on childless Medicare recipients who smoke or are obese (31).

FACT: Lifestyle modification is a huge challenge for most people, successful only in a limited number of highly motivated individuals. Evidence shows that counselling patients to make changes in their lifestyle has only a modest impact, and less effect in the long term (32). Individuals with low socioeconomic status, who are more vulnerable to chronic diseases and more likely to die from them, have been difficult to reach through education interventions (33).

Implementing and sustaining positive lifestyle changes require a supportive community. There are elements in the built environment (over which individuals have little or no control) that have negative effects on health including blood pressure. For example, most
adults spend at least 60% of their waking hours at work in sedentary jobs, surrounded by foods that have minimal nutritional value (34). Workplace cafeterias, vending machines and tuck shops sell foods that have been designated “Foods to Limit” by the Canadian Food Guide. Yet despite these national recommendations, pathogenic foods are everywhere, including in our hospitals and schools. Unhealthy foods and beverages are easy to access, fast, inexpensive and are effectively encouraged. Furthermore, nearly all of the communities in which we live encourage driving, rather than an alternative mode of transport that involves some degree of physical activity. These environmental factors “can override individual physical and psychological regulatory systems that might otherwise stand in the way of weight gain and obesity” (35, p.378).

**BOTTOM LINE:** The concept of personal responsibility is often part of a blame-game, labelling people with chronic diseases as weak, stupid, lazy, or having other character flaws that cast their chronic diseases as personal failures. If the social determinants of health are acknowledged in discussions of individual responsibility, they are often downplayed as “mere reflections of socioeconomic differences in health behaviours” (33, p.1199). This attitude reduces the burden of morbidity and mortality on the poor as the fault of the individual, whose flaws are responsible both for their poverty and for their ill health. Dismissing national trends in health inequity as ultimately the fault of individual health behaviours reinforces the status quo, allowing the continuation of a food policy environment that favours industry and perpetuates widening disparities in health equity. Individual responsibility is a tactic employed by the food industry to distract from systematic problems such as inadequate government regulations and failed public policy. Ironically, a policy environment that favours unhealthy choices which make us sick actually undermines personal responsibility and erodes personal freedoms.

**MYTH#2: The Nanny State**

The myth of NCDs such as hypertension as the fault of individuals, and not corporate behaviour or weak or counterproductive government policies, is closely linked to a second argument: the myth of the nanny state. The nanny state myth casts government interventions as unfairly demonizing industry and forcing individuals into dependency on
Attempts are made to thwart the efforts of health advocates and policy changes by government by bemoaning government intrusion and the constraints it places on individual freedoms.

**FACT:** The spectre of a nanny state that denies individuals their personal freedoms was one of the tobacco industry’s first lines of defence against regulation (35). When harmful exposures are shared, and not under individual control, they require collective action and government regulation. As previously discussed, a healthy society depends on robust public institutions and policy that protect the welfare of the public. Elected officials act as representatives of their constituents, and have a responsibility to protect them from an irresponsible food industry. The WHO has explicitly stated that health promotion legislation such as restricting marketing to children is required, and that governments are the best resource to ensure implementation (36). Furthermore, most Canadians welcome government intervention to establish public policies that benefit their health, especially the health of children (37). The right to health is a fundamental and widely recognized aspect of human rights. The public has a right to live in supportive communities that provide them the freedom to make healthy choices.

**BOTTOM LINE:** The conflict between individual responsibility versus government intervention can be easily reconciled. A public health approach to hypertension actually combines both domains. The *Ottawa Charter for Health Promotion* emphasizes that people cannot realize their true health potential unless they have control over the conditions that determine their health (38). This includes multisector health promotion strategies that build healthy public policies and create supportive environments in which people can take control. In this way, government intervention actually empowers people to exercise individual responsibility in their health by providing the freedom of access to healthy choices and opportunities.

The Charter specifies that food policy should include initiatives to provide equitable prices of the most nutritious foods, and suggests taxation and subsidies that favour easy access for all to healthy food and a nutritious diet.
MYTH #3 Prevention is Too Expensive

Another myth is that any government intervention would be too expensive for a health care system already burdened by the healthcare costs of an aging population. This myth casts health promotion as fighting for another piece of the pie; a fight over scarce national resources already inundated with competing claims from health interest groups. The emphasis on cost in discussions of chronic disease, or “chronic spending disease” as it is referred to in the Canadian press (31), misunderstands the facts of health promotion.

FACT: According to the United Nations (UN), the failure to effectively deal with hypertension and other chronic diseases at the population level will threaten the economies of many Member States, and may lead to increasing inequalities between countries and populations. The UN considers the global burden of hypertension and other NCDs as a major challenge for the twenty-first century, undermining global social and economic development throughout the world (39). The World Economic Forum’s 2009 report echoes this cautionary refrain, forecasting NCDs as among the most severe threats to global economic development (40).

Hypertension and its associated chronic diseases is a worldwide epidemic, and in global health a wide complement of chronic disease interventions had been judged to be very cost-effective for all regions of the world (20). Many upstream interventions are cost saving on analysis. Cost-effective public health strategies include comprehensive bans on advertising tobacco products, mandatory salt reduction by the food industry, prohibition of trans-fats in New York city restaurants, and the restriction of marketing unhealthy foods and beverages to kids (41). Table 1 details other cost-effective measures recommended by the WHO to combat hypertension (20).
Table 1: Cost-effective, Evidence-based Strategies to Combat Hypertension (20, p. 27).

| Unhealthy Diet and Physical Inactivity | • Salt reduction through mass-media campaigns and reduced salt content in processed foods  
• Replacement of trans-fats with polyunsaturated fats  
• Public awareness programme about diet and physical activity |
| Tobacco Use | • Excise tax increases  
• Smoke-free indoor workplaces and public places  
• Health information and warnings about tobacco  
• Bans on advertising and promotion |
| Alcohol Use | • Excise tax increases on alcoholic beverages  
• Comprehensive restrictions and bans on alcohol marketing  
• Restrictions on the availability of retailed alcohol |

A focus on healthy food policy not only has the potential to reduce hypertension in the population, but has the added benefit of reducing a large number of chronic diseases such as stroke, heart attack, renal failure, blindness, diabetes, and cancer. In this way, a public health intervention that has even a modest impact on many diseases becomes transformative for the health of a whole population.

Graph 2: Reductions in Blood Pressure on Mortality (42)
Even small reductions in systolic blood pressure can have a significant reduction in the burden of hypertension-related illness and save lives, as illustrated above (Graph 2). Healthy food policy, including sodium regulation, provides a practical and cost-effective starting point. There is a growing movement worldwide recognizing the critical role of government in establishing and enforcing healthy food policy. In 2010 the Institute of Medicine concluded that voluntary approaches to the reduction of salt by the globalized, industrialized food system were ineffective and that mandatory national standards and regulatory strategies were required (43). Advocating for healthy food policy also provides the opportunity for partnership across health disciplines and different sectors, bolstering the social movement for health promotion.

By focusing on poor diet and lack of physical activity, action for healthy blood pressure joins other initiatives underway or being advocated in Canada at federal, provincial, and territorial levels – for health promotion/healthy living, heart health, the prevention of cancer, diabetes and renal disease. All have the same message – intervene upstream and in the environments where people live (5, p.iii).

**BOTTOM LINE:** The Institute of Medicine (IOM) has stated that a public health approach to hypertension directed at interventions in policy, systems, and the environment is the most practical, “realistic and effective in the current resource-constrained environment” (44, p.193). There are a number of cost-effective, upstream public health interventions that can have a significant and rapid impact on the health of Canadians. In the case of hypertension, even small reductions in blood pressure can make a big difference. The benefits of small reductions in blood pressure benefit not just hypertensive individuals, but normotensive people also by lowering both the stroke and ischaemic heart disease death (IHD) rates as well as stroke and IHD events (45, 46). In this way, a public health approach, including healthy food policy such as sodium regulation, benefits everyone in Canada. A public health approach has the capacity to radically alter the natural history of hypertension, decreasing the prevalence and complications of the disease, and saving lives worldwide.
Advocacy Starts With You

Canadian healthcare professionals, when faced with a patient suffering in the confines of a clinic, will do what they can to make things better. With 36,524 people dying each year in this country from complications of hypertension, a public health approach is critical (1). Hypertension does not have to be an inevitable part of our future. With close to half a million cases diagnosed annually, the rising generation of health care professionals can be trained to meet this nationwide and worldwide epidemic with large-scale, population-based solutions.

The health of our nation is tied to the health of our democracy. In Canada, the 2008 federal election was notorious for marking the lowest rate of voter turnout in history at 53.8%, with Elections Canada attributing the ongoing downward drag to a lack of engagement by young people (47). A healthy democracy depends on engagement by its citizens, including a responsibility to be informed, understand the issues debated, and advocate and lobby government to remain accountable to the public good. A failure of civic engagement and grassroots advocacy runs the risk of a democracy succumbing to a plutocracy.

In 1986 the WHO gathered in Ottawa, and along with the support of Health and Welfare Canada and the Canadian Public Health Association, created the Ottawa Charter for Health Promotion. This landmark declaration called for advocacy amongst health professionals and organizations, expressed a political commitment to building healthy public policy emphasizing equity in all sectors, and prioritized the need to create supportive environments and empower communities in health promotion interventions (38).

Physicians, nurses, and other allied health professionals have the capacity to revolutionize the landscape of hypertension in Canada. HCPs have a voice of authority and expertise that strategically positions them to be effective advocates for policies that will reduce hypertension, as well as speak out against policies that exacerbate the problem. Clinicians are both the front lines and the foundation of hypertension prevention
and management in Canada. As health advocates, healthcare professionals have the capacity to promote health on a number of fronts. This includes exercising leadership in one’s personal life to make informed choices about diet and activity, educating patients and implementing programs to improve the lifestyles of Canadians, advocating for a healthy food environment in their own workplace, as well as lobbying for more rigorous health promotion policies at the community, provincial, and national level. To echo the words of Rudolf Virchow, one of the fathers of modern medicine and public health, “Medicine is a social science, and politics nothing but medicine on a grand scale” (cited in 6, p.525).

HCP learners are an important resource in advocating for change. For learners, patient advocacy in the domain of public health and policy is an inextricable part of clinical work. Health care professionals and public health organizations have a good record of researching and describing the best practices required to facilitate health choices, but have failed in many cases to see recommendations implemented as policy. Healthcare professionals have repeatedly “sat on the sidelines, waiting for some other group or person to act” (48, p.152). The lack of political action in the domain of hypertension prevention and control is arguably a failure of healthcare professionals and their representative organizations to engage public opinion. A new generation of HCPs can learn from the failed policies and lack of political will defining the past. Advocacy is the bridge that translates knowledge into practice and is a critical and often forgotten responsibility of being a healthcare professional. Although advocacy is rarely formally taught in the faculties of the health sciences, it is an intrinsic part of the healthcare professions, and an essential core competency of the CanMEDs framework used in the training of specialist physicians by the Royal College of Physicians and Surgeons of Canada (49).

Advocacy also has a rich history within the health professions. Virchow famously wrote, “medical instruction does not exist to provide individuals with an opportunity of learning how to earn a living but in order to make possible the protection of the public” (cited in 6, p529). Learners of the healthcare professions must acknowledge the legacy of advocacy
intrinsic to their field. This ethical imperative transforms the clinical study of hypertension and the daily provision of care to those afflicted with hypertension into a call to action on a grand scale. In educating ourselves on a public health approach to hypertension, and training and initiating work as advocates, we can begin to rise up against the organization of so much unnecessary suffering.
**Overcoming Barriers**

Healthcare professionals may not be aware that their role as advocates can extend to transforming local environments or national policy. Advocacy and public health approaches to common clinical problems are not emphasized in training. The Association of Faculties of Medicine of Canada (AFMC) have initiated a program to promote an awareness of public health concepts in the curricula of health care professionals, with this module being part of a larger agenda to promote advocacy.

HCPs and learners’ lack of awareness of their capacity as advocates can be further compounded by a sense of complacency or even cynicism. Healthcare professionals will rarely deny that a problem exists, but may have a “weary reluctance” when examining the evidence on the social determinants of health (50, p. 3), “desire to escape responsibility even when [they] recognize the problem” or may succumb to “cynicism about the possibility of ever remedying the problem” (51, p.111). HCPs spend long hours consumed in the care of patients with chronic diseases, and despite their best efforts, patients continue to deteriorate or new patients present with the same old problems. Bearing witness to a growing number of people suffering from conditions that are largely preventable but increasingly prevalent may make some clinicians feel defeated. HCPs and public health organizations often fall prey to “failures of imagination”, constraining what they think is politically possible. Such thinking runs the risk of deferring to the status quo, denying even the possibility of change. The CMA has cited a failure of imagination as one reason why HCPs have not applied their expertise and leadership to addressing poverty nationwide (29).

Yet healthcare professionals can make a difference on a grand scale. The Canadian Institutes of Health Research (CIHR) Chair for Hypertension Prevention and Control has repeatedly stated:

> If healthcare professionals and their organizations were effective advocates for what is required to promote health and prevent disease in our communities and populations, then Canadians would be lean, fit, have longer and healthier lives largely free of CVD, common infections and many cancers (22, p.2).
This vision invites healthcare professionals to imagine a nation free from a great deal of unnecessary suffering and premature death; a vision with the possibility of becoming a reality through the concerted action and partnership of HCPs and their affiliates.

Although the complexity of decision makers and influences on public health policy may seem daunting, there are two simple tenets through which HCPs can have impact: partnership and leadership. True partnership requires leadership across disciplines, with HCPs collaborating on a common message.
**Taking Action: Building The 140/90 Movement**

140/90 is the common threshold above which hypertension is diagnosed in most adults, numbers recognized worldwide as a signifier of the leading driver of global disease burden.

The 140/90 movement is an emerging national advocacy network across university campuses calling for health promotion policies to end the hypertension epidemic. The movement envisions a nation where most Canadians have a blood pressure below 140/90, are free to be lean and fit and live longer, healthier lives.

The 140/90 movement is grounded in a partnership across disciplines, faculties and provinces to create a national community of advocates that hold our elected leaders accountable to how their decisions impact the health of our nation. This is a student-driven, grassroots movement to support a variety of health policy efforts, specifically healthy food policy at all levels of government. We are creating an online classroom, supported by leading Canadian hypertension authorities, where collaborative tools, resources and campaigns can be developed to facilitate strategic offline action.

This briefing paper is the anticipated first step in this student-driven effort, available online at [http://www.hypertensiontalk.com/training/](http://www.hypertensiontalk.com/training/). The proposed architecture of a 140/90 national advocacy network is anticipated to be built through several phases, in part by the anticipated dissemination of this tool through the AFMC. The initial efforts to launch a student-led public health campaign have been possible through support and mentorship by one of Canada’s leading hypertension authorities, the HSFC CIHR Chair in Hypertension Prevention and Control. It is anticipated that championing a public health approach to hypertension will be part of a larger arc spanning several generations of committed advocacy by healthcare professionals.
**Conclusion**

Social movements for change are not confined to historic revolutionaries or the works of great statesmen. Instead, the greatest potential for change comes from committed advocacy and widespread, committed participation at a grassroots level.

Hypertension is preventable and bringing the hypertension epidemic to a halt is possible. In educating ourselves on a public health approach to hypertension, and training and initiating work as advocates, we can call for change on a grand scale.

Universities worldwide have historically been centers for critical inquiry and student activism that challenges conventional assumptions about science, society, culture and politics. Campus life provides rich opportunities for interdisciplinary partnership and “enormous untapped potential exists for closer collaboration and joint action” (11, p.8). HCPs partnering with their organizations, centers of higher learning, and various levels of government on a common policy agenda can revolutionize the landscape of hypertension in Canada.

On November 21 1986 Health and Welfare Canada, the federal departmental precursor to Health Canada, signed the *Ottawa Charter of Health Promotion*. The principles of this charter outlined a public health approach that echoes the strategies outlined in this briefing paper. The federal government supported the Charter’s declaration that “The overall guiding principle for the world, nations, regions and communities alike, is the need…to take care of each other” (38, p.3). Nearly 30 years later, our generation of health care professionals must take action to hold the government to this shared promise.
Leading a Small Group Session

The following section is an activity guide for leading a small group session. A “Jeopardy”-style powerpoint game is available for download at http://www.hypertensiontalk.com/training/, with the questions and answers listed below for reference. Small groups can be divided into teams of two, with each answer having to be phrased in the form of a question. The tutor will be responsible for navigating the powerpoint game, as well as keeping track of each team’s winnings. If teams get stuck, a hint is provided for some questions, which the tutor can read out loud. The answers are displayed on a subsequent slide, as well as an additional fact.

(Note: In order to move smoothly and jump around between slides of the Jeopardy game, it is important to always click on the hyperlink, if one is displayed. The hyperlinks will usually be underlined. You may wish to practice the powerpoint on yourself prior to the session, so that you are able to troubleshoot how to move from one question and answer back to the game board’s mainframe.)

Three digital videos are available to watch prior to playing the game, at the link provided above. After the round of final jeopardy small groups can move on to organizing their 140/90 chapter.

SMALL GROUP AGENDA
(1.5 hour session)

1. **Introductions**: Participants can state their names and one reason why hypertension matters to them (5 mins).

2. **Screen the Digital Shorts**: (allot about 3 minutes for each video).
   - Video 1: Hypertension: An Introduction
   - Video 2: Social Determinants of Health & Health Equity
   - Video 3: Power, Politics, and Policy Failure

3. **Jeopardy Game**: One Round and Final Jeopardy (30-40 minutes).

4. **140/90 Campus Chapter Activity** (30-40 minutes).

5. **Group Closing Comments** (5 mins).
Small Groups Jeopardy Game

Round 1 Categories:
1. Hypertension
2. Social Determinants of Health
3. Health Equity
4. Politics & Policy
5. Prevention
6. Nourishing Change

Final Jeopardy Round

Round One:

HYPERTENSION

$100: It means an increase in the number of new cases of a disease beyond the norm.

Hint: It’s an epidemiological term.

Answer: What is an epidemic?

Fact: Hypertension has become a global epidemic, disproportionately affecting low and middle income countries. Globally, it kills more than 9.4 million people each year, and 36,524 annually in Canada (1). In Canada 95% of people will eventually have hypertension if they live a normal lifespan (5).

$200: It is the greatest lifestyle risk factor for hypertension, rivalled closely by obesity and western diet.

Hint: Found in high quantities in processed foods.

Answer: What is high salt/sodium intake?
### Attributable Risk of Lifestyle to Hypertension (52).

**Fact:** The globalization of unhealthy lifestyles is contributing to the global epidemic of hypertension (20). Research shows dietary factors to be the highest among risk factors for both death and disability in Canada and throughout the world (1).

<table>
<thead>
<tr>
<th>Lifestyle-risk factor</th>
<th>Attributable risk</th>
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<tbody>
<tr>
<td>Obesity (overweight)</td>
<td>32 (17-52)%</td>
</tr>
<tr>
<td>High Dietary Sodium</td>
<td>32%</td>
</tr>
<tr>
<td>Low Dietary Potassium</td>
<td>17%</td>
</tr>
<tr>
<td>Western Diet</td>
<td>31%</td>
</tr>
<tr>
<td>Excess Alcohol Intake</td>
<td>3%</td>
</tr>
<tr>
<td>Lack of Physical Activity</td>
<td>17%</td>
</tr>
</tbody>
</table>

**$300:** Hypertension causes 45% of deaths from coronary artery disease, and 51% of deaths from this.

**Hint:** Think head to toe.

**Answer:** What is stroke? (Variations such as cerebrovascular accident etc. accepted.)

**Fact:** Stroke is the third leading cause of death in Canada, and the second leading cause of death in the world (1).

**$400:** It is a downstream intervention for hypertension, an example of the inadequacy of using a medical treatment to palliate a preventable problem, costing $1.7 billion in 2003, and $3 billion in 2010 (5).

**Hint:** Doctors and nurse practitioners order them.

**Answer:** What are antihypertensives? (“What are drugs?” or other variations acceptable.)

**Fact:** Solely focusing on downstream strategies like drugs to control hypertension are unsustainable in a country where nearly 95% of Canadians will inevitably be diagnosed with high blood pressure if they live a normal lifespan (5). More cost-effective, upstream approaches are required, such as a population-wide salt reduction strategy (5, 20, 43).

**Additional Info:** Downstream interventions refer to strategies targeting individual risk factors or treatments. Upstream interventions focus on the social determinants of health, or conditions of daily life that can give rise to a disease process.
$500: As of 2014, the United Nations has only ever held two meetings with heads of state on a health-related issue. The first high-level meeting was in 2001, on HIV/AIDS. In 2011 the second meeting with heads of state was held on the prevention and control of this.

**Answer:** What are noncommunicable diseases (NCDs)?

**Fact:** NCDs include but are not limited to cardiovascular disease, chronic respiratory disease, cancers and diabetes as the world’s biggest killers, accounting for 63% of total global deaths (1).

**SOCIAL DETERMINANTS OF HEALTH**

$100: In Canada, the highest prevalence of hypertension is found amongst this demographic.

**Hint:** It relates to the most influential health determinant in Canada.

**Answer:** What is the lowest income quintile (12)? (Variations such as low socio-economic status, poverty, etc. accepted.)

**Fact:** Despite the socioeconomic gradient being the primary driver of hypertension prevalence and the greatest threat to health (10, 12), the federal government does not have a comprehensive national strategy to address poverty.

$200: Lifestyle risk factors for hypertension, including obesity, a western diet, lack of fruits and vegetables, and alcohol consumption all follow this gradient.

**Answer:** What is the socioeconomic gradient?

**Fact:** Poorer Canadians have more limited access to nutritious food and safe spaces to exercise. Lower SES signals a larger structural problem of lack of control, where people are denied the opportunity to participate fully in society. In this way, ill health amongst the disadvantaged signals a larger pathology in social organization.

$300: Related to everyday coping, it magnifies feelings of inadequacy, shame and failure and is another pathway through which lower SES can drive unhealthy behaviors leading to hypertension (9).

**Answer:** What is stress?

**Fact:** The stress of negative life experiences that come with having lower SES increases a person’s risk of experiencing risk factors, morbidity, and mortality from coronary vascular disease (13-17). Human and animal studies have shown that those lower down
the hierarchy have higher levels of stress hormones and a more rapid development of atherosclerosis (53).

$400: The World Health Organization (WHO) defines the social determinants of health as the conditions in which people are born, grow, live, work, and age; conditions which are shaped by the distribution of money, resources, and this (7).

**Answer: What is power?**

**Fact:** Healthy public policies and public institutions exist to protect the public and help mitigate the potential health inequities and harms caused by the unequal distribution of money, resources, and power.

$500

These words were among the most popular answers to the World Bank survey of 60,000 people on what relief from poverty meant to them.

**Answer: What are opportunity, empowerment, security, and dignity (54)?**

*(A team gets full points if they can guess even one word correctly, or a word that is synonymous with those listed in the answer).*

**Fact:** In low resource and high resource countries alike, poverty means a lack of opportunity and lack of capability to participate fully in society (9). The WHO’s *Ottawa Charter for Health Promotion* calls for greater health equity by centralizing equity in all policy decision making (38).

**HEALTH EQUITY**

$100: They are “unfair, avoidable and remediable differences in health status between countries and between different groups of people within the same country” (11, p.3).

**Answer: What are health inequities?**

**Fact:** Health inequities are not natural phenomena and do not arise by chance. They are the result of how we organize our affairs as a society; a product of failed public policy (11).

$200: In Canada, the most glaring sources of health inequity are socio-economic status and this.
Answer: What is Aboriginal identity?

Hint: This population has endured a long history of social exclusion as a result of colonialism.

Fact: There is little data on hypertension in the First Nations population, however findings from the 2002/03 First Nations Regional Longitudinal Health Survey suggest that the prevalence of hypertension is much higher compared to non-Aboriginal Canadians (55).

$300: This Charter was co-sponsored by Health and Welfare Canada as well as the Canadian Public Health Agency, when our country hosted the WHO's first conference on health promotion, in November 1986.

Answer: What is the Ottawa Charter for Health Promotion?

Fact: This landmark declaration called for advocacy amongst health professionals and organizations, expressed a political commitment to building healthy public policy emphasizing equity in all sectors, and prioritized the need to create supportive environments and empower communities in health promotion interventions (38).

$400: Countries with more of this have happier, healthier and more successful populations with lower levels of violence, social problems, and higher levels of trust and community cohesion (28).

Answer: What is income equality?

Fact: Greater income equality makes life better for everyone by reducing health and social problems and enhancing a culture of interdependence. This interdependence translates into more socially responsible policies on a broad number of fronts, including higher proportions of Gross National Income donated as aid to developing countries, better performance on the Global Peace Index, and possibly greater leadership in reducing carbon emissions (28).

$500 This Scotsman and father of modern economics famously stated: "How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it” (56, p.4).

Answer: Who is Adam Smith?
Fact: Adam Smith, author of the Wealth of Nations, also wrote the Theory of Moral Sentiments. He argued that a free market could not stand alone, and advocated for the role of public institutions in preventing inequity and poverty (57). His endorsement of public institutions as instrumental in addressing inequality is in stark contrast to contemporary economics.

POLITICS & POLICY

$100 Found everywhere at the grocery store, they have been publicly exposed as inaccurate and misleading. The Government of Canada has declined to monitor or enforce their accuracy, and the public has difficulty interpreting them.

Answer: What are food labels?

Fact: The Government to date refuses to enforce accurate labelling of food. The 2012 budget states that the public should directly report inaccurate or deceptive food labels to the corporation responsible.

$200: In 1989, this judicial branch deemed that “advertising directed at young children is per se manipulative”.

Answer: What is the Supreme Court of Canada?

Fact: Evidence suggests that television advertising of disease promoting foods that are high in fat, sugar, or sodium is linked to the phenomenon of childhood overweight and obesity (58,59). Quebec is an international leader in restricting all commercial advertising to children for the past 33 years (60). However, the federal government continues to allow widespread advertising of disease promoting foods to children.

$300: The spectre of a nanny state that denies individuals their personal freedoms was one of this industry's first lines of defence against regulation (35).

Answer: What is the tobacco industry?

Fact: The nanny state myth casts government interventions as unfairly demonizing industry and forcing individuals into dependency on the state. However, government intervention actually empowers people to exercise individual responsibility in their health by providing the freedom of access to healthy choices and opportunities. Furthermore, the right to health is a fundamental and widely recognized aspect of human rights. The public has a right to live in supportive communities that provide them with the freedom to make healthy choices.
$400: One of the largest industries in Canada, it has more than $100 billion in annual sales, and has representatives participating in multiple committees for Health Canada (61).

**Answer: What is the food sector or food industry? (Variations accepted.)**

**Fact:** In Canada, individuals and organizations with financial interests in the food and beverage industry are represented on federal food policy committees with no effective conflict of interest safeguards in place (21).

$500 On May 8, 2013 this proposed act was rejected by the Minister of Health and her party as “tough on potato chips”, although the act represented the recommendations of her own expert Sodium Working Group (SWG).

**Answer: What is the Sodium Reduction Strategy for Canada Act?**

**Fact:** The WHO recommends regulation of sodium in foods as a cost-effective, upstream intervention to reduce hypertension (20). According to the SWG, an average sodium intake of about 1,800 mg/day would prevent 23,500 deaths/year from cardiovascular disease, and save about $2 billion/year –based on 1993 figures (61).

**PREVENTION**

$100: Screening for hypertension in a patient with no known history of high blood pressure, and no history of heart disease or stroke, is an example of this.

**Answer: What is secondary prevention?**

**Fact:** Screening for hypertension in order to treat it early and prevent its progression to cardiovascular disease is an example of secondary prevention. In North America, evidence suggests that the optimal control of systolic blood pressure in hypertensive patients could prevent nearly half of all atherosclerotic cardiovascular events (62).

$200 Finland’s mandatory use of warning labels on high-salt foods since 1993 is an example of going beyond primary prevention to this (63).

**Answer: What is primordial prevention?**

**Fact:** There are varying definitions for primary prevention versus primordial prevention. Primordial prevention is distinguished for improving health by targeting health
determinants through the modification of policy.

$300$: Screening for hypertension in a patient who’s recently had a heart attack is an example of this.

**Answer: What is tertiary prevention?**

**Fact:** Tertiary prevention includes modifying risk factors in order to minimizing the impact and complications caused by an established disease. Screening for hypertension as a risk factor in someone who has already had a myocardial infarction helps to minimize the risk of another infarction, as well as minimize the risk of complications such as heart failure.

$400$: This term refers to the progression and consequences of when a disease is untreated.

**Answer: What is the natural history?**

**Fact:** The natural history of untreated hypertension extends from normal health to cardiovascular disease.

$500$: This term goes beyond the concept of primary prevention, encapsulating the opportunity for individuals to take control of their health in collaboration with a supportive environment.

**Hint:** This term is included in the title of a WHO charter, alongside the name of our nation’s capitol.

**Answer: What is health promotion?**

**Fact:** Building healthy public policy, creating supportive environments, strengthening community action, developing personal skills, and re-orienting health services are central tenants of health promotion (38).

**NOURISHING CHANGE**

$100$: Canada’s most populous province, its government is currently considering restricting the marketing of high-calorie, low nutrient foods, beverages and snacks to children under age 12.

**Answer: What is Ontario?**

**Fact:** Ontario has launched a Healthy Kids Strategy, which is also considering the requirement that all large chain restaurants, including fast food outlets and retail grocery stores selling prepared foods, list the calories in each item on their menus and to make this information visible on menu boards (64).
$200: Employed Canadians spend 60% of their time and consume at least one meal/day here, within easy access of foods that have been deemed “Foods to Limit” by the Canada’s Food Guide (34).

**Answer: What is the workplace?**

**Fact:** The Ontario Society of Nutrition Professionals in Public Health have engaged in a multi-sector campaign to transform workplaces into supportive nutrition environments, encouraging access to more nutritious, affordable foods (34).

$300 The WHO has launched a campaign to reduce premature mortality from NCDs by 25% by 2025, including a 25% reduction in this.

**Answer: What is hypertension?**

**Fact:** Hypertension is the leading risk factor for global disease burden and is now a core component of the global health policy agenda on NCDs (65).

$400 Hailed as a first for Africa by the *Lancet* medical journal, on March 18, 2013 this Sub-Saharan country signed into law mandatory salt restrictions on processed foods; a key strategy in fighting hypertension.

**Answer: What is South Africa?**

**Fact:** 40% of the South African population aged 35-44 years is hypertensive. Salt consumption in South Africa is almost double the recommended WHO maximum of 5mg/day, with bread as significant source of intake (66).

$500 This international research fund, dedicated to "stopping cancer before it starts" has developed a Nourishing Framework of comprehensive global policy initiatives designed to promote healthy eating and prevent obesity and NCDs.

**Answer: What is the World Cancer Research Fund (WCRF)?**

**Fact:** The WCRF International Food Policy Framework for Healthy Diets or Nourishing Framework includes ten policy areas for promoting health through food environments, food systems, and education to help individuals and communities demand change (63).
FINAL JEOPARDY:

This project, launched in the 1970s when Finland had the highest mortality rate from CVD in the world, is a worldwide standard bearer for a multisector public health approach to NCDs.

Answer: What is the North Karelia Project?

Fact: This was a pilot program aimed at reducing CVD mortality through public health interventions to modify smoking, cholesterol, and elevated blood pressure. Results included a dramatic reduction in CHD mortality rate by 73% in North Karelia and 65% in all Finland (among 30-64 year old male population) (67).

140/90 CAMPUS CHAPTERS: SMALL GROUP SESSION ACTIVITY

Advancing your skills as a health professional advocate begins now, by establishing a 140/90 advocacy group on your campus. The following exercises are part of a larger toolkit to help lay the groundwork for building an effective, inclusive team.

Trainers for small group sessions will come prepared with knowledge of the basic criteria required to register a 140/90 student chapter with their campus’ student union.

Trainers can also go to the AFMC website and print out the guide, “Suggestions for Creating a Public Health Interest Group” at https://www.afmc.ca/pdf/Suggestions%20for%20creating%20Public%20Health%20Interest%20Group%20Eng.pdf. Trainers also have the option of visiting http://workshops.350.org/toolkit/start/ prior to leading their session for advanced training on building an effective team. All team members should be encouraged, at the conclusion of the session, to visit the workshop page for further training.

1. Establish your team’s purpose. (10mins)
2. Assigning roles for each team member. (10mins)
3. Lay out the ground rules for a successful team. (15 mins)
4. Go to http://www.hypertensiontalk.com/training/ now to sign-up and become part of the 140/90 community. Signing up will allow you to become part of an online
community of advocates. (5 mins)

5. Brainstorm a list of mentors who can offer expertise or support for your project.
(Suggested directories within which to start looking would be departments of medicine and public health.)
References:


33. Dunn, James R. Health Behaviour vs. the Stress of Low Socioeconomic Status and Health Outcomes. JAMA. 2010 March; 303:1159 -1166.


