**Urgent need to increase the rates of diagnosing, treating and controlling hypertension in older women. A call for all levels of government, health professional associations, health charities and clinicians to reengage and to take action.**

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Increased blood pressure is a leading reversible risk for death and disability in Canada and around the world(1). About one half of cardiovascular disease is caused by increased blood pressure(2). Reducing blood pressure with antihypertensive therapy is one of the most effective clinical interventions to prevent death and disability(2). The risk from hypertension increases with other risk factors, the most prominent one being age, so particular care must be taken to control hypertension in the elderly.

Between 2000 and 2010, Canada gained a reputation of having the highest national rate of controlling hypertension, with reductions in cardiovascular death strongly associated with the increased treatment of hypertension(3). In the last decade, the rates of diagnosing, treating and controlling hypertension in older women (age > 60 years) have been decreasing, while hypertension control in men remained high and stable (Figure 1)(4). Several countries now have higher rates of hypertension control in women than Canada (5). In 90% of Canadian women with uncontrolled blood pressure, the systolic blood pressure is high (6). Unfortunately, rates of cardiovascular disease in Canada have also started to increase since about 2010, after more than a half century of consistent reductions (figure 2a). Age standardizing the data (figure 2b) show some of the increases in cardiovascular deaths are related to increasing age of the population. The rest of the increase in cardiovascular disease deaths is undoubtedly attributable to the well established, mostly modifiable causes of cardiovascular disease not being effectively prevented and controlled in Canadians (hypertension, dyslipidemia, high glucose, diet, tobacco, lack of physical activity and obesity). Figure 2c shows the trends in disability adjusted life years (DALYS) from cardiovascular disease. The marked increases in DALYS after 2010 are particularly concerning as it reflects largely preventable declines in the quality of life for large numbers of Canadians. Declining rates of hypertension control in older women are likely an explanation for some of the increase in cardiovascular deaths and DALYS but the death rate and DALYS is also increasing in men, highlighting the need to control hypertension and other vascular risk factors (diet, lack of activity, smoking, high blood glucose, high risk alcohol consumption, lipids etc.) in both sexes .

Older women are often at moderate to high risk from cardiovascular disease and should at a minimum have blood pressure assessed at all routine clinical visits and those with hypertension (BP> 140/90 mmHg) should be treated and controlled as a core standard of care (table) (7)\*. Many if not most people with hypertension will require two or more drugs(7). In those at high cardiovascular risk (e.g., Framingham risk score of > 15%, or aged 75 years or higher), to optimize reduction in death and disability, consider initiating treatment at a systolic blood pressure of > 130 mmHg and lowering the systolic blood pressure to < 120 mm Hg(7). Persons with diabetes should have a blood pressure treatment threshold of 130/80 mmHg and a target of < 130/80 mm Hg(7). It is recognized that the lower blood pressure targets can be difficult to achieve, especially in older patients with complex comorbidity, and that therapeutic targets require individualization based on informed patient preferences. Some patients may not tolerate intensive management of blood pressure or decline treatment even with adequate education.  Efforts should be considered to find the most tolerable and preferred interventions to reduce risk, when possible.

Using a simple diagnostic and treatment algorithm has been shown to achieve hypertension control rates as high as 90%, when paired with a hypertension registry with performance reporting(8)\*\*. Using both a simple hypertension management algorithm and a registry with performance reporting have become an international standard of practice for hypertension management but has not yet become a common practice in Canada (9). Samples of simple algorithms and implementation resources can be found at in the resource section. A free stand-alone smart phone-based hypertension registry is also available in the resource section (<https://www.simple.org/>). We also advocate for the use of electronic medical records that provide registry reporting functions\*\*.

It is critical for the federal, provincial and territorial governments to take a well planned strategic public health approach to the prevention and control of hypertension and to collaborate with the health and scientific sector on monitoring and evaluation and implementation.

\* A low proportion of women aged 60 and above will be at low cardiovascular risk (<10% risk of a cardiovascular event in 10 years) where lifestyle management would be a primary therapy.

\*\* regular performance reporting is recommended to include the number of people diagnosed with hypertension as a % of the number estimated to have hypertension in the clinical practice, the % treated with antihypertensive therapy and the % controlled. Other important features can include identification and recall for those missing appointments and those without a recent blood pressure assessment.

**Table: Critical steps to control hypertension.**

1. Correctly measure blood pressure routinely in all adults and especially older women.

2. Treat people with hypertension with antihypertensive drugs to achieve control\*.

3. Consider initiating treatment at a systolic blood pressure of > 130 mmHg and lowering the systolic blood pressure to < 120 mm Hg in those at high cardiovascular risk (e.g., Framingham risk score of > 15%, or men or women aged 75 years or higher), to optimize risk reduction. Persons with diabetes should have a blood pressure treatment threshold of 130/80 mm Hg and target of < 130/80 mm Hg.

4. Use validated automated blood pressure devices, where feasible home blood pressure measurement and 24 hr ambulatory blood pressure measurement. For a systolic target <120 mmHg consider automated devices that operate without an observer present and that take and average multiple readings.

5. Use standardized treatment protocols

6. Use registries with performance reporting to enhances hypertension control\*\*.

**RESOURCE SECTION**

**Hypertension management algorithms**

<https://apps.who.int/iris/bitstream/handle/10665/260421/WHO-NMH-NVI-18.2-eng.pdf;jsessionid=E7A246F106189858327839F6F472271E?sequence=1>

<https://linkscommunity.org/toolkit/hypertension-control>

Implementation guide for a hypertension control program

<https://www.who.int/cardiovascular_diseases/hearts/8_GUIDANCE_WORKSHOP_HEARTS_April12HR_dp.pdf?ua=1>

<https://linkscommunity.org/toolkit/hypertension-control>

**Developing a hypertension management algorithm**

<https://apps.who.int/iris/bitstream/handle/10665/275728/WHO-NMH-NVI-18.14-eng.pdf?ua=1>

**Simple Hypertension registry**

<https://www.simple.org/>

**References**

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6. Wilkins K, Gee M, Campbell N**.** The difference in hypertension control between older men and women. Health Reports. 2012;23:3-10.

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8. Jaffe MG, Young JD**.** The Kaiser Permanente Northern California Story: Improving Hypertension Control From 44% to 90% in 13 Years (2000 to 2013). J Clin Hypertens (Greenwich). 2016;18(4):260-1.

9. World Health Organization**.** HEARTS Technical package for cardiovascular disease management in primary health care: Implementation guide. Geneva, Switzerland; 2018 (WHO/NMH/NVI/18.14). Licence: CC BY-NC-SA 3.0 IGO.:1-30.

Figure 1. Hypertension awareness, treatment and control rates in Canadian women from 2007 to 2017

The data are from the Canadian Health Measures Surveys (4).

Figure 2a: Cardiovascular (total, ischemic heart disease and stroke) death rate per 100,000 population in Canada 1990-2017.

The data show changes in the rate of cardiovascular disease (total, ischemic heart disease and stroke) deaths per 100,000 in Canada from 1990 to 2017 using data from the Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018. Available from http://vizhub.healthdata.org/gbd-compare/.

Figure 2b: Age standardized cardiovascular (total, ischemic heart disease and stroke) death rate per 100,000 population in Canada 1990-2017

The data show changes in the rate of age-standardized cardiovascular disease (total, ischemic heart disease and stroke) deaths in Canada from 1990 to 2017 using data from the Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018. Available from http://vizhub.healthdata.org/gbd-compare/.

**Figure 2c: Disability adjusted life years due to cardiovascular disease in Canada.**

The data show changes in disability adjusted life years (DALYS) due to cardiovascular disease in Canada from 1990 to 2017 using data from the Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018. Available from http://vizhub.healthdata.org/gbd-compare/.