



**HSFC CIHR Chair in Hypertension Prevention and Control 2011-2016, University of Calgary, Recipient: Norm Campbell MD, June 2012-2013 report**

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**PREAMBLE:**

I feel honored to be the recipient of the HSFC CIHR Chair in Hypertension Prevention and Control. This report will attribute many activities to me; however, the success of all the activities has been dependant on the strong contributions of many individuals and to the collective support and contribution of national health and scientific organizations (especially the member organizations of Hypertension Advisory Committee and specifically Hypertension Canada.) Further, Tara Duhaney, the Policy Director of the Hypertension Advisory Committee, has played a critical role in many of the stated activities.

**SYNTHESIS AND RESEARCH PROBLEM:**

Increased blood pressure is the world's leading risk for premature death and disability causing vascular damage that results in ischemic heart disease, heart failure, strokes, kidney failure and other vascular diseases such as dementia. About half the blood pressure related death occurs in those with 'normal' but not optimal blood pressure and the other half occurs in those with clinically defined hypertension. The causes of increased blood pressure (e.g. unhealthy diet, physical inactivity, abdominal obesity, excess alcohol etc.) are largely known and are preventable. The majority of hypertension is directly or indirectly (through obesity) caused by unhealthy eating. To date, many internationally recommended actions to prevent increased blood pressure have not been implemented in Canada. Treatments are available to prevent disease caused by high blood pressure and although there has been much improvement in Canada, there are still many Canadians with high blood pressure who are not diagnosed or adequately treated.

The objective of the HSFC CIHR Chair in Hypertension Prevention and Control is to provide leadership to reduce the disease caused by increased blood pressure using a comprehensive action plan that aligns governments, as well as non government organizations in appropriate action. A 'Framework' on what actions are recommended to reduce the burden of blood pressure related disease in Canada (2011-2020) was developed and in my application I indicated the Framework would be used to guide me.

In the last reporting period (2011-2012), the major mechanism I developed to achieve the 'Chair' mandate was the development of the Canadian Hypertension Advisory Committee (CHAC) of national health charities and health care professional's organizations (Table 1). CHAC agreed to assist in operationalizing the Canadian Hypertension Framework, which was updated in 2012 based on their input. The committee prioritized prevention of hypertension as its major function and, given the majority of hypertension is caused by unhealthy eating, further prioritized advocating for healthy food policy as the major activity. Building partnerships to create supportive environments, evolving the healthcare system and strengthening community action were rated as second, third and fourth priorities, respectively.

**RESEARCH FINDINGS 2012-2013 (PLEASE SEE REFERENCES AND PRESENTATIONS FOR DETAILS IN THE APPENDIX)**

**1. FRAMEWORK COMMUNICATION AND DISSEMINATION**

Finalizing and dissemination the Hypertension Framework report was the initial priority. The framework was updated based on feedback from national health organizations in 2012. Seeking broad organizational endorsement and support is on-going. Many organizations have posted the framework and notified their members of the framework. A summary of the framework has been published and a slide deck created to support the framework. There are ongoing negotiations with Hypertension Canada to provide website housing for the framework supporting materials. The framework and supporting material is further being housed on Hypertension TALK, a website which my chair position has funded to further support and advance my mandate. The framework has been endorsed by the following organizations to date: Canadian Society of Internal Medicine, Canadian Council of Cardiovascular Nurses, Canadian Cardiovascular Society, Canadian Stroke Network, The Heart and Stroke Foundation of Canada,

Hypertension Canada and the Public Health Physicians of Canada. The Council of Chief Medical Officers of Health has further written a letter expressing their collective support for the framework and commitment to bringing forward the concepts.

**Table 1: Organizations Represented on the Canadian Hypertension Advisory Committee**

<b>Canadian Hypertension Advisory Committee</b>
Canadian Association of Cardiac Rehabilitation (CACR)
Canadian Cardiovascular Society (CCS)
Canadian Council of Cardiovascular Nurses (CCCN)
Canadian Medical Association (CMA)
Canadian Nurses Association (CNA)
Canadian Pharmacists Association (CPhA)
Canadian Society of Internal Medicine (CSIM)
Canadian Stroke Network (CSN)
College of Family Physicians of Canada (CFPC)
Heart and Stroke Foundation (HSF)
Hypertension Canada (HC)
Public Health Physicians of Canada (PHPC)
Canadian Institute for Health Research- Institute of Circulatory and Respiratory Health (ex officio)

## 2. CHAC POLICY DEVELOPMENT

### 2.1 Marketing unhealthy food to children

A national policy statement advocating for a broad ban on marketing unhealthy foods was developed and formally launched via a joint press release in May 2012. The statement has been endorsed by 24 national and provincial organizations as well as the WHO Collaborating Centre on Nutrition Changes and Development (University of Montreal) (Table 2). The statement can be accessed here: ([http://www.hypertensiontalk.com/publications/marketing\\_to\\_children/](http://www.hypertensiontalk.com/publications/marketing_to_children/)). A dissemination plan for the policy is underway and includes multiple publications related to the importance of the policy in Canadian health care journals, a systematic review on the effectiveness of bans on marketing unhealthy foods to children and presentations at national meetings. Standardized knowledge translation tools have been developed (slide sets, short summaries and messages). Supporting resources will be made publicly available through HypertensionTALK.

**Table 2: Marketing to Children Policy Statement Endorsing Organizations**

<ul style="list-style-type: none"> <li>▪ Canadian Association for Cardiac Rehabilitation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Canadian Stroke Network</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Association of Pediatric Nephrologists</li> </ul>	<ul style="list-style-type: none"> <li>▪ Chronic Disease Prevention Alliance of Canada</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Cardiovascular Society</li> </ul>	<ul style="list-style-type: none"> <li>▪ College of Family Physicians of Canada</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Council of Cardiovascular Nurses</li> </ul>	<ul style="list-style-type: none"> <li>▪ Heart and Stroke Foundation of Canada</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Dental Association</li> </ul>	<ul style="list-style-type: none"> <li>▪ Hypertension Canada</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Diabetes Association</li> </ul>	<ul style="list-style-type: none"> <li>▪ Kidney Foundation of Canada</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Medical Association</li> </ul>	<ul style="list-style-type: none"> <li>▪ Public Healthy Physicians of Canada</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Nurses Association</li> </ul>	<ul style="list-style-type: none"> <li>▪ Alberta Policy Coalition for Chronic Disease Prevention</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Pediatric Society</li> </ul>	<ul style="list-style-type: none"> <li>▪ Alberta Public Health Association</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Public Health Association</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ontario Physical Health and Education Association</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Society of Internal Medicine</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quebec Coalition on Weight Related Problems</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Society of Nephrology</li> </ul>	<ul style="list-style-type: none"> <li>▪ Helene Delisle, WHO Collaborating Centre on</li> </ul>

	Nutrition Changes and Development
<ul style="list-style-type: none"> <li>▪ Canadian Society of Pharmacology and Therapeutics</li> </ul>	<ul style="list-style-type: none"> <li>▪ CIHR/HSFC Chair in Hypertension Prevention and Control</li> </ul>

## 2.2 Healthy food procurement

A call to action has been developed by CHAC and is being considered for endorsement by CHAC member organizations. Currently 7 organizations have endorsed (Table 3). A systematic review of the evidence that healthy food procurement interventions increase healthy eating has been submitted for publication.

<b>Table 3: Healthy Food Procurement Endorsing Organizations</b>
<ul style="list-style-type: none"> <li>▪ Canadian Association for Cardiac Rehabilitation</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Council of Cardiovascular Nurses</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Society of Internal Medicine</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Stroke Network</li> </ul>
<ul style="list-style-type: none"> <li>▪ College of Family Physicians of Canada</li> </ul>
<ul style="list-style-type: none"> <li>▪ Canadian Nurses Association</li> </ul>
<ul style="list-style-type: none"> <li>▪ CIHR/HSFC Chair in Hypertension Prevention and Control</li> </ul>

## 2.3 Right to healthy food

A 1-page position statement calling for all Canadians to have access to affordable healthy food and beverages is under development for consideration by CHAC.

## 2.4 Fiscal policies to increase healthy eating.

A systematic review of evidence to examine if fiscal policies can increase healthy eating and or discourage unhealthy eating has been commissioned for consideration by CHAC. The review is expected late in 2013 or early 2014. Based on the review, CHAC will consider if policy statements are developed on the topic.

# 3. NON CHAC CANADIAN ACTIVITIES

## 3.1 Social Media (HypertensionTALK)

A part time social media consultant was hired to support the development and maintenance of HypertensionTALK, a website primarily focused on the latest news, views, research and evidence related to the **dietary determinants** of hypertension. The site provides a forum for consumers, health professionals, researchers, governments, non-governmental organizations and the private sector to engage in, advocate for and take action on strategies that effectively improve diet. The website is supported through other social media tools, including Twitter and Facebook.

HypertensionTALK is committed to raising the awareness of dietary risk factors contributing to hypertension and other chronic diseases. Through the resources and information provided on this site, it is hoped that we can collectively work to reduce the disease burden of hypertension caused by diet. The website remains a work in progress.

## 3.2 Sodium Reduction

*Bill C-460: Sodium Reduction For Strategy Act*

Meetings with Libby Davies (NDP Health Critic and Deputy Leader) and collective advocacy from the major national health organizations resulted in Libby Davies developing and presenting a private members bill in Canadian Parliament for a comprehensive sodium reduction strategy. As Hypertension Chair, I joined a small group of people to advocate for support of the bill. The bill was supported by over 50 Canadian organizations representing civil society, health care professionals and scientists. All told the supporting organizations represent the majority of Canadians. Meetings were held on Parliament Hill to provide information to Parliamentarians on health and dietary sodium and media releases were conducted. Nevertheless the Bill was defeated by a narrow margin.

*Sodium Knowledge Users Group*

I work with Mary L'Abbe's knowledge translation group to assist in the dissemination of sodium policies through her CIHR grant.

#### *Science of Salt Weekly*

With start-up funding from the Canadian Stroke Network, a weekly med line update of clinical and population sodium science was developed and is being disseminated in the format of an e-newsletter. A partnership was developed with additional funding and collaboration with the George Institute of International Health to increase the dissemination and international impact. The weekly updates are housed on the Hypertension Chair website (<http://www.hypertensiontalk.com/science-of-salt-weekly/>). The Sodium Science project is supported by the WHO coordinating centre for population salt reduction, the Pan American Health Organization WHO Salt reduction Technical Advisory Group, The World Hypertension League and World Action on Salt and Health.

### **3.3 Conflicts of interest**

An analysis of representation on Federal government food policy committees with members in potential financial conflict has been conducted and has been accepted for publication in Open Medicine. The results will be presented to CHAC and may result in develop of a policy statement relating to conflicts of interest and government food policy committees.

### **3.4 Physical Activity Day**

A private members bill from John Weston to have a Canadian day dedicated to promoting physical activity was supported-endorsed by the Hypertension Chair. Through CHAC, the bill was disseminated to member organizations requesting their support and endorsement, and other national health and scientific organizations were disseminated the bill and asked to also voice support. The CHAC members endorsed the bill. The bill has gone through introduction and first reading with strong support by all parties.

### **3.5 Outcomes Research Task Force**

During the reporting time frame I have co-chaired this Task Force for Hypertension Canada. An updated publication list of studies examining hypertension prevention and control in Canada has been conducted (see appendix). An agreement with the PHAC was achieved to conduct standardized analyses on national hypertension surveys and databases. An analysis of gaps in prevention and control of hypertension was published (in press last report).

## **4. INTERNATIONAL ACTIVITIES**

### **4.1 Sodium**

*PAHO (Pan American Health Organization) -WHO*

On the international front, I Co-Chair a Technical Advisory Group (TAG) for PAHO-WHO on dietary salt and participate in its various subgroups. The TAG is to support countries in the America's develop and implement sodium reduction policies. I am also on the Steering committee and a member of the Salt Smart Consortium formed by PAHO of governments, non government organizations and the private sector to accelerate salt reduction activities in the America's. In the reporting year, the TAG has developed and released an overall guidance document for countries to develop and run salt reduction programs and a document specifically to assist countries develop targets and timelines for reducing salt in food products. The TAG documents are frequently used as the standards for implementing salt reduction interventions in other WHO areas of the world. In June, I represented the TAG at a meeting with the World Bank to explore mechanisms funding countries to develop salt reduction programs.

### **4.2 WHO**

I have provided consultations at governmental meetings on salt reduction in the Americas and I have been a participant and consultant to salt reduction meetings in SEARO (South East Asia). I was a member/participant of WHO Platform III for salt reduction and salt fortification with iodine in March 2013 and was one of the developers (lead author) of publications on how the iodine deficiency disorders prevention community and the salt reduction community should optimally interact. I was asked to address the topic at the Platform III meeting.

I am a member of the WHO Nutrition Advisory Group and review and regularly provide input on WHO nutrition policy.

### 4.3 Hypertension

I was the President Elect (currently the President) of the World Hypertension League in the reporting year. The League is a coalition of national hypertension organizations with a mandate for global hypertension prevention and control. In the President elect role I was asked to attend World Health Day (on hypertension) at the WHO in Geneva and met with various WHO staff regarding collaboration between the League and the WHO. I also presented at the PAHO WHO World Health Day (Washington DC) in the President Elect role. I have developed a short work plan for the League, hired a CEO and have developed a draft dietary sodium policy for the League.

I was a participant at the Center for Disease Control (CDC-USA) PAHO meetings on health systems to improve hypertension control and also a reviewer of the material on medications for hypertension control for those meetings. The later was part of a PAHO effort that resulted in antihypertensive medications being funded for countries through the PAHO strategic fund. I was provided an opportunity to brief the Director of the Centre for Disease Control (CDC USA) on hypertension control interventions.

## 5. PROVINCIAL- REGIONAL ACTIVITIES.

I was chair and now am co-Chair of a vascular risk reduction committee developed by 4 strategic clinical networks of Alberta Health Services. The committee has received funding and has 6 innovative projects to improve the prevention of chronic disease through vascular risk reduction. It is hoped that the projects will in fact improve the health and wellness of Albertans and that if successful the interventions can be adopted by other provinces. The initiative was stimulated in part by the Council of Canada where the Premiers agreed to implement vascular risk reduction guidelines (C-Change guidelines).

### 5.1 Community Programs

As part of the DREAM Global Team (A Global Alliance against Chronic Disease funded project), I lead an intervention for healthy food procurement in Aklavik (an isolated Inuit and First Nations community near the Arctic Ocean). The project involves working with community stores to make available healthier processed foods to replace less healthy processed foods. Other aspects of the grant focus on improving hypertension management through cell phone technology in First nations and African communities. I am also a (currently inactive) member of another Global Alliance Grant to enhance hypertension care through AIDS clinics in Africa.

#### **RELATED PROJECT IMPLEMENTATION (SEE APPENDIX FOR PRESENTATION-BRIEFINGS, PUBLICATIONS, MEDIA ACTIVITIES ETC)**

- The HSF CIHR Chair program has been greatly aided by hiring a Policy Director, Tara Duhaney who has facilitated and supported the policy development process by CHAC and has been instrumental in the running of CHAC including drafting of documents.
- The implementation has been greatly aided by in kind support from the CHAC member organizations. Most of the organizational members have been in direct contact with the President and Executives of their national organizations on an ongoing basis and have had full and rapid support.
- Hypertension Canada has provided financial assistance in translating the Hypertension Framework and hosting CHAC meetings.
- The Canadian Hypertension Advisory Committee is in regular communication. Detailed minutes are kept.
- The University of Calgary has allowed me to reallocate \$90,000 of the overall Chair award towards operating expenses considerably assisting in the impact that I can have.

#### **WHAT CAN THE HSCF DO TO HELP?**

- The HSFC can sustain current levels of support including having Manuel Arango represent the HSF on the Hypertension Advisory Committee, and continuing to rapidly consider in kind support for and advocacy of Hypertension Advisory Committee Policy documents.
- Sustaining Terry Dean on the Dream Global Aklavik Steering committee and sustaining in kind support for the project would also be greatly appreciated.
- The HSF could assist by having a HSF CIHR Hypertension Chair symposia at the Cardiovascular Congress to aid dissemination and the 'Chair' Could report annual activities there.

- Although there are 3 years left in the my final term as Hypertension Chair early planning to ensure the Chair is sustained as a open completion for others would be desirable.
- HSF priority for research funding on the role of foods in health and disease would be desirable. Such research could include systematic reviews that would aid policy development.
- The HSF could consider becoming a partial funder of CHAC (meetings) as a mechanism for preventing cardiovascular disease through public policy development and advocacy

## Appendix (Publications and presentations)

Publications related to the effort Jan 2012 to June 2013 (note this is 1.5 years as I have difficulty assess what was before June and after June re I record the publication by year not ½ year)). Original research in bold

- 1) Joffres M, Falaschetti E, Gillespie C, Robitaille C, Loustalot F, Poulter N, McAlister FA, Johansen H, Baclic O, Campbell N. Hypertension prevalence, awareness, treatment and control in national surveys from England, the USA and Canada, and correlation with stroke and ischaemic heart disease mortality: a cross-sectional study. *BMJ Open* 2013;3:e003423 doi:10.1136/bmjopen-2013-003423
- 2) Gee ME, Pickett W, Janssen I, Campbell NRC, Birtwhistle R. Validity of self-reported blood pressure control in people with and without diabetes attending a primary care centre. *Blood Pressure Monitoring*. **In press.**
- 3) Campbell NRC, Lackland DT, MacGregor GA. Dietary Sodium. A perspective on recent sodium evidence, its interpretation and controversies. *J Clin Hypertension*. **In press**
- 4) Gee ME, Pickett W, Janssen I, Johnson JA, Campbell NR. Health Behaviors for Hypertension Management in People With and Without Coexisting Diabetes. *J Clin Hypertens (Greenwich)*. 2013 June;15(6):389-96.
- 5) Walker RL, Chen G, McAlister FA, Campbell NRC, Hemmelgarn BR, Dixon E, Ghali W, Rabi D, Tu K, Jette N, Quan H for Hypertension Outcome and Surveillance Team. Hospitalization for Uncomplicated Hypertension: An Ambulatory Care Sensitive Condition. *Can J Cardiol*. **In press.**
- 6) Cloutier L, Morris D, Bruneau J, McLean D, Campbell N. World Health Organization Celebrates World Health Day, April 7, 2013—Focusing on Hypertension. *Canadian Journal of Cardiovascular Nursing*, 2013; 23(2), 9– 11.
- 7) **The Food Monitoring Group (N Campbell, Contributor). Progress with a global branded food composition database. *Food Chemistry* 2013;140:451–457**
- 8) Morris D, Cloutier L, Bruneau J, McLean D, Campbell N. Bringing focus to hypertension. *Canadian Nurse (feedback)*. **In press**
- 9) Campbell N Tsuyuki RT. Hypertension: Silent and/or Ignored. *Can Pharmacists Journal*. **In press.**
- 10) Gelfer M, Drouin D, Dawes M, Campbell N. World Health Day. Focusing on hypertension in 2013. *Canadian Family Physician*. 2013;59:341-2.
- 11) Mohan S, Campbell N, Chockalingam A. World Health Day: Time to Effectively Address Hypertension in India. *Indian J Med Res* 2013;137:1-5.
- 12) Jones CA, Nanji A, Mawani S, Davachi S, Ross L, Vollman A, Aggarwal S, King-Shier K, Campbell N. Feasibility of community-based screening for cardiovascular disease risk in an ethnic



**community: The South Asian Cardiovascular Health Assessment and Management Program (SA-CHAMP). BMC Public Health 2013, 13:160 doi:10.1186/1471-2458-13-160**

- 13) Quan H, Chen G, Walker RL, Wielgosz A, Dai S, Tu K, Campbell NRC, Hemmelgarn BR, Hill MD, Johansen H, McAlister FA, Khan N for Hypertension Outcome and Surveillance Team. Incidence, cardiovascular complications and mortality of hypertension by sex and ethnicity. **Heart**. 2013 Feb 12. [Epub ahead of print]
- 14) Campbell NRC, Feldman R, Kaczorowski J, Larochelle P. High blood pressure selected as the theme for World Health Day April 7 2013: Cup half full or half empty? *Can J Cardiol* 2013;29:415-17.
- 15) Quan H, Chen G, Tu K, Bartlett G, Butt DA, Campbell N, Hemmelgarn BR, Hill MD, Johansen H, Khan N, Lix LM, Smith M, Svenson L, Walker RL, Wielgosz A, McAlister FA for Hypertension Outcome and Surveillance Team. Outcomes among 3.5 million newly diagnosed hypertensive Canadians. *Can J Cardiol*. 2013;29:592-97.
- 16) McAlister FA, Robitaille C, Rao D, Gillespie C, Yuan K, Loustalot F, Grover S, Joffres M, Campbell, N. The Impact of Cardiovascular Risk-Factor Profiles on Blood Pressure Control Rates in Adults From Canada and the United States. *Can J Cardiol* 2013;29:593-605.
- 17) He FJ, Campbell NRC, MacGregor GA. Reducing Salt Intake to Prevent Hypertension and Cardiovascular Disease. *Revista Panamericana de Salud Pública/Pan American Journal of Public Health*. 2012;32(4):293-300.
- 18) Chen J, Sykes L, Paul C, Dary O, Campbell N, Cappuccio FP on behalf of the Sub-Group for Research & Surveillance of the PAHO/WHO Regional Expert Group for Cardiovascular Disease Prevention through Population-Wide Dietary Salt Reduction. Systematic review of studies comparing 24-h vs spot urine collections for estimating population salt intake. *Revista Panamericana de Salud Pública/Pan American Journal of Public Health*. 2012;32(4):307–15.
- 19) Whelton PK, Appel LJ, Sacco RL, Anderson CMA, Antman EM, Campbell N, Dunbar SB, Frohlich ED, Hall JE, Jessup M, Labarthe DR, MacGregor GA, Sacks FM, Stamler J, Vafiadis DK, Van Horn LV. Sodium, Blood Pressure and Cardiovascular Disease: Further Evidence Supporting the American Heart Association Sodium Reduction Recommendations, A Presidential Advisory From the American Heart Association. *Circulation* **CIR.0b013e318279acbf** Published online before print November 2, 2012, doi: 10.1161/CIR.0b013e318279acbf
- 20) Campbell NRC, Dary O, Cappuccio FP, Neufeld LM, Harding KB, Zimmermann MB. A call for action to coordinate programs to improve global health by optimizing salt and iodine intake. *Revista Panamericana de Salud Pública/Pan American Journal of Public Health*. 2012;32(4):281-6.
- 21) Claro RM, Linders H, Zancheta C, Correa-Rotter R, Legetic B, Campbell NRC. Consumers' attitudes, knowledge and behaviors related to salt consumption in sentinel countries of the Americas. *Revista Panamericana de Salud Pública/Pan American Journal of Public Health*. 2012;32(4):265-73.



- 22) Campbell N, Correa-Rotter R, Legowski B, Legetic B. Efforts to reduce dietary salt in the Americas. *Revista Panamericana de Salud Pública/Pan American Journal of Public Health*. 2012;32(4):257-8.
- 23) McLaren L, Sumar N, Lorenzetti D, Campbell NRC, McIntyre L, Tarasuk V. **Population-level interventions in government jurisdictions for dietary sodium reduction: differential effects by social and economic indicators on health outcomes related to high sodium intake (protocol)**. *The Cochrane Library*, Issue 10, October 2012. DOI: 10.1002/14651858.CD010166.
- 24) Tobe SW, Poirier L, Tremblay G, Lindsay P, Reid D, Campbell NRC; Canadian Hypertension Education Program. Challenges and scientific considerations in hypertension management reflected in the 2012 recommendations of the Canadian Hypertension Education Program. *Open Med* 2012;6(4):e127–e133.
- 25) **The Food Monitoring Group (N Campbell a contributor to group)**. International collaborative project to compare and track the nutritional composition of fast foods. *BMC Public Health*. 2012, 12:559 doi:10.1186/1471-2458-12-559.
- 26) Bienek AS, Gee ME, Nolan RP, Kaczorowski J, Campbell NRC, Bancej C, Gwadry-Sridhar F, Robitaille C, Walker RL, Dai S. **Methodology of the 2009 Survey on Living with Chronic Diseases in Canada – hypertension component**. *Chronic Diseases and Injuries in Canada*. 2013;33:267-76
- 27) Campbell NRC, Gilbert RE, Leiter LA, Larochelle P, Tobe S, Chockalingam A, Ward R, Morris D, Tsuyuki RT, Harris S. Response to letter from Jacky Siu et al on Hypertension in People with Type 2 Diabetes: An Update on Pharmacological Management. *Can Family Physician*. 2012;58:634-636
- 28) Wilkins K, Gee M, Campbell NRC. **The difference in hypertension control between older men and women**. *Health Reports*. 2012;23:3-10.
- 29) Campbell NRC, McAlister FA, Quan H, for the Hypertension Outcomes Research Task Force. Monitoring and evaluating efforts to control hypertension in Canada. Why, how and what it tells us about current care gaps? *Can J Cardiol*. 2013;29:564-70.
- 30) McBrien K, Rabi D, Campbell N, Barnieh L, Clement F, Hemmelgarn B, Tonelli M, Leiter L, Klarenbach S, Manns B. **Systematic review and meta-analysis of intensive blood pressure targets in type 2 diabetes**. *Arch Intern Med*. 2012;172(17):1296-1303.
- 31) Daskalopoulou SS, Khan NA, Quinn RR, Ruzicka M, McKay DW, Hackam DG, Rabkin SW, Rabi DM, Gilbert RE, Padwal RS, Dawes M, Touyz RM, Campbell TS, Cloutier L, Grover S, Honos G, Herman RJ, Schiffrin LE, Bolli P, Wilson T, Feldman RD, Lindsay MP, Hemmelgarn BR, Hill MD, Gelfer M, Burns KD, Vallée M, Prasad RVR, Lebel M, McLean D, Arnold JMO, Moe GW, Howlett JG, Boulanger J-M, Larochelle P, Leiter LA, Jones C, Ogilvie RI, Woo V, Kaczorowski J, Trudeau L, Bacon SL, Petrella RJ, Milot A, Stone JA, Drouin D, Lamarre-Cliché M, Godwin M, Tremblay G, Hamet P, Fodor G, Carruthers SG, Pylypchuk G, Burgess E, Lewanczuk R, Dresser GK, Penner B,

Hegele RA, McFarlane PA, Sharma M, Campbell NRC, Reid D, Poirier L, and Tobe SW, for the Canadian Hypertension Education Program. The 2012 Canadian Hypertension Education Program (CHEP) Recommendations for the Management of Hypertension: Blood Pressure Measurement, Diagnosis, Assessment of Risk and Therapy. *Can J Cardiol* 2012;28:270-287

- 32) Campbell NRC. Re US tops salty fast food league table. Response to letter from Morton Satin. *BMJ* 2012 <http://www.bmj.com/content/344/bmj.e2769/rr/582338>, Re:Desk-bound authors do not understand food industry. Response to letter from Morton Satin. *CMAJ*, published on line May 2 2012.
- 33) Dunford E, Webster J, Woodward M, Czernichow S, Lun Yuan W, Jenner K, Ni Mhurchu C, Jacobson M, Campbell N, Neal B. The variability of reported salt levels in fast foods across six countries -opportunities for salt reduction. *CMAJ* 2012. DOI:10.1503/cmaj.111895
- 34) Gee ME, Campbell NRC, Gwadry-Sridhar F, Nolan RP, Kaczorowski J, Bienek A, Robitaille C, Joffres M, Dai S, Walker RL for the Outcomes Research Task Force of the Canadian Hypertension Education Program. Antihypertensive medication use, adherence, stops and starts in Canadians with hypertension. *Can J Cardiol* 2012;28:383-89.
- 35) Quan H, Smith M, Bartlett-Esquillant G, Johansen H, Tu K, Lix L for Hypertension Outcome and Surveillance Team ( N Campbell co- lead for HOST). Mining administrative health databases to advance medical science: Geographical considerations and untapped potential in Canada. *Can J Cardiol*. 2012;28:152-54.
- 36) Lix LM, Walker R, Quan H, Nesdole R, Yang J, Chen G on behalf of the CHEP ORTF Hypertension Outcomes and Surveillance Team (Campbell N co- lead of the Hypertension Outcomes and Surveillance Team). Features of Physician Services Databases in Canada. *Chronic Diseases and Injuries in Canada*. 2012;32:186-193.
- 37) Gee ME, Campbell NRC, Joffres M, Robitaille C, Tremblay MS, McAlister F, Johansen H, Bienek A. Factors associated with lack of awareness and uncontrolled high blood pressure among Canadian adults with hypertension. *Can J Cardiol*. 2012;28:375-82
- 38) Campbell N, Johnson JA, Campbell T. Sodium consumption, an individual's choice? *International Journal of Hypertension*. doi:10.1155/2012/860954
- 39) Houle SKD, Tsuyuki RT, Campbell NRC. The Canadian Hypertension Education Program (CHEP) 2011 guidelines for pharmacists. *Can Pharm J*. 2011;144:295-304.
- 40) Campbell NRC, Raine K, McLaren L. "Junk Foods", "Treats" or "Pathogenic foods"? A Call for Changing Nomenclature to Fit the Risk of Today's Diets. *Can J Cardiol*. 2012;28:403-4
- 41) Dutton DJ, Campbell NRC, Elliott C, McLaren L, A ban on marketing of foods/beverages to children: the who, why, what, and how of a population health intervention. *Can J Public Health*. 2012;103:100-102

- 42) Campbell N, Young E, Drouin D, Legowski B, Adams M, Farrell J, Kaczorowski J, Lewanczuk R, Moy Lum-Kwong M, Tobe S. A framework for discussion on how to improve prevention, management and control of hypertension in Canada. *Can J Cardiol.* 2012;28:262-69
- 43) Campbell NRC, Hemmelgarn BR. The Role of Ambulatory Blood Pressure Monitoring in the Diagnosis of Hypertension. New recommendations? Campbell NRC, Hemmelgarn BR. The Role of Ambulatory Blood Pressure Monitoring in the Diagnosis of Hypertension. New recommendations? *cmaj.*110501; published ahead of print February 6, 2012, doi:10.1503/cmaj.110501
- 44) Robitaille C, Dai S, Waters C, Loukine L, Bancej C, Quach S, Ellison J, Campbell N, Tu K, Reimer K, Walker R, Smith M, Blais C, Quan H. Incidence, prevalence and mortality of diagnosed hypertension in Canada. *CMAJ.* January 10, 2012 184:E49-E56.**
- 45) Campbell N, Dary O, Cappuccio FP, Neufeld LM, Harding KB, Zimmermann MB Collaboration to optimize dietary intakes of salt and iodine. A critical but overlooked public health issue. *Bulletin of the World Health Organization* 2012;90:73-74
- 46) Gee ME, Bienek A, Campbell NR, Bancej CM, Robitaille C, Kaczorowski J, Joffres M, Dai S, Gwady-Sridar F, Nolan RP. Prevalence of, and barriers to, preventive lifestyle behaviors in hypertension (from a national survey of Canadians with hypertension). *Am J Cardiol* 2012;109:570-5.
- 47) Gee ME, Janssen I, Pickett W, McAlister FA, Bancej CM, Joffres M, Johansen H, Campbell N. Prevalence, awareness, treatment and control of hypertension among Canadian adults with diabetes, 2007-2009. *Can J Cardiol.* 2012;28:367-74**
- 48) Gee M, Campbell NRC, Banceja CM, Robitaille C, Bieneka A, Joffres MR, Walker RI, Kaczorowski J, Dai S. Perception of uncontrolled blood pressure and behaviours to improve blood pressure: Findings from the 2009 survey on living with chronic disease in Canada. *J Hum Hypertens.* 2012;26:188-95.**

## **PRESENTATIONS AND BRIEFINGS RELATED TO THE MANDATE (JULY 2012 TO JUNE 2013)**

### **International**

2012

- August 18      Chronicles of a career. 40<sup>th</sup> reunion of Dr R Weinshilboum's Laboratory. Mayo Foundation, Rochester Minn.
- Sept 18        Improving Hypertension Control. The Canadian Experience. Annual meeting of Yaroslavl Health Care professionals, Regional Assistant Governor, Regional Minister of Health and Chiefs of Cardiology, General Practice, Rheumatology, Respiratory Medicine and Endocrinology. Yaroslavl Russia.
- Sept 19        The Canadian Hypertension Education Program. Moscow Cardiology Society. Prevention Institute, Moscow.
- Sept 29        International salt reduction efforts-challenges, successes and failures. In Physical activity, nutrition and a pinch of salt. A Satellite symposia to the International Hypertension Society. Sydney Australia.

- Oct 3 Canadian hypertension prevention and control programs, George Institute for International Health. Sydney Australia
- Dec 11 Review of Evidence of Interventions for Sodium Reduction - What Works and Why it Works. Plenary: Salt Reduction Strategies. Expert Meeting on Population Sodium Reduction Strategies for Prevention and Control of Noncommunicable Diseases in the South-East Asia Region. World Health Organization. New Delhi, India
- Dec 12 Recommended Methods for Measuring Population -Level Sodium Intake. Plenary: Monitoring Salt Intake in the Population. Expert Meeting on Population Sodium Reduction Strategies for Prevention and Control of Noncommunicable Diseases in the South-East Asia Region. World Health Organization. New Delhi, India
- 2013
- March 26 What is the evidence that salt reduction and iodine fortification strategies are compatible? WHO Platform 3 on salt reduction. Coordinating iodine fortification of salt with salt reduction, Sydney Australia.
- April 5 Hypertension and the Global Burden of Disease. Plenary Speaker, World Health Day Symposia, PAHO-WHO Washington DC
- April 12 Home Blood Pressure Monitoring and Controlling Hypertension. Cardiovascular Summit, Billings Montana. Montana Department of Public Health and Human Services and the University of Washington School of Medicine.
- April 12 Canadian hypertension prevention and control programs: Past, present and future. Medical Grand Rounds. Billings Clinic. Billings Montana
- June 12 Sodium/salt science. World Bank, Washington DC symposia on Improving Nutrition in Food Systems in Latin America and the Caribbean
- June 28 Hypertension Control: Coalition building for success. Workshop presentation, World Hypertension Congress. Istanbul
- June 28 Monitoring the nutritional composition of foods to improve the food supply and reduce chronic disease burden in the Americas. Oral abstract presentation, World Hypertension Congress. Istanbul
- June 28 Dietary salt, water, diuretics, hypotensive drugs, dehydration, and hypotension. Making simple connections. Symposia presentation. World Hypertension Congress. Istanbul
- June 28 Effectively implementing hypertension recommendations- Lessons from Canada. Symposia presentation. World Hypertension Congress. Istanbul

## National

2012

- Oct 17 Population approach: Sodium reductions polices: What works what doesn't'. Health Promotion Plenary Symposia. Canadian Society of Internal Medicine. Quebec City Quebec.
- Oct 19 Current gaps and screening for hypertension. Short snapper. Canadian Society of Internal Medicine. Quebec City Quebec.
- Oct 26 Salt reduction a cost effective public health measure. 30 minute Core curriculum track presentation. 2012 Canadian Hypertension Congress. Toronto Ont
- Oct 26 Public Health Approaches. Models for improvement of blood pressure by lifestyle modification. 30 minute presentation in Public Health Plenary session. 2012 Canadian Hypertension Congress. Toronto Ont
- Oct 27 Dreaming about hypertension. JG Fodor award presentation.30 minutes. Canadian Hypertension Congress. Toronto Ont

- Nov 2 Sodium in the food supply. Why is this a public health issue? Plenary presentation at Reducing the sodium intake of Canadians. A provincial and territorial multi sector engagement. Edmonton AB.
- April 2013. Hypertension. Invited short talk on global burden of hypertension. Centre Block Parliament Buildings.
- April 2013. HSFC CIHR Chair Hypertension Prevention and Control. Talk on role of the HSF CIHR Chair, Hypertension Framework and Hypertension Advisory Committee. Hypertension Canada Partners Forum

### **Regional**

2012

- Sept 25 Hypertension: Integrating public health approaches. Grand rounds. Department of Medicine, University of Calgary.
- Oct 30 Integrating healthy food policy to prevent and control hypertension. Grand Medical Rounds. University of Manitoba.

### **2013**

- March 1 Death by Food. Grand Medical Rounds. University of Alberta
- April 2013 Integrating healthy public nutrition policies to prevent and control cardiovascular disease. Key note speaker. Drug therapeutic day. Schulich Medicine and Dentistry. University of Western Ontario

### **Briefings**

- Council of Chief Medical Officers of Health re Hypertension Framework, July 2 2012
- Neil McDonald, Assistant Deputy Minister, Alberta Health re salt reduction and health promotion, Aug 8<sup>th</sup> 2012 and Feb 8 2013
- Libby Davies; Health Critic and deputy leader NDP Nov 5 2012, March 4 2013
- Tom Freidan; Director Centre for Disease Control, USA Jan 16 2013
- John Spika Director General, PHAC re implementation
- Vice Chancellor Prof. Jacob Mtabaji from the Catholic University of Health and Allied Sciences in Mwanza, Tanzania re hypertension prevention and control, Jan 24 2013
- Douglas Bettcher, Director, Prevention of Noncommunicable Diseases, WHO, March 27 2013
- Oleg Chestnov Assistant Director General Noncommunicable Diseases and Mental Health WHO April 2
- Shanti Mendis, Acting Director of Management of Noncommunicable Diseases, WHO April 3 2013
- Pedro Ordinez Advisor Chronic Disease Prevention and Control, PAHO, March 7 2013
- Mr Rajotte, Conservative MP re salt reduction, Feb 2 2013
- Hon. Dave Rodney, Associate Minister of Health Promotion, Alberta. April 19 2013

### **Electronic resources**

<http://www.facebook.com/pages/Dr-Norm-Campbell-HSFC-CIHR-Chair-in-Hypertension-Prevention-and-Control/305391829527061>

### **Paper resources**

- 2013 fact sheet on hypertension
- 2013 fact sheet on dietary sodium

### **Government Documents**

**EXPERT MEETING ON POPULATION SODIUM REDUCTION STRATEGIES FOR PREVENTION AND CONTROL OF 1–13 December 2012.** Expert Meeting on Population Sodium Reduction Strategies for Prevention and

Control of Noncommunicable Diseases in the South-East Asia Region Report of the Regional Meeting (WHO) April 2013.

A GUIDE FOR SETTING TARGETS AND TIMELINES TO REDUCE THE SALT CONTENT OF FOOD 2013. WHO/PAHO Regional Expert Group for Cardiovascular Disease Prevention through Population-wide Dietary Salt Reduction.

SALT SMART AMERICAS: A GUIDE FOR COUNTRY LEVEL ACTION. 2013. WHO/PAHO Regional Expert Group for Cardiovascular Disease Prevention through Population-wide Dietary Salt Reduction

**Participant at working meetings**

DREAM study, Global Alliance against Non communicable disease Toronto July 31 2012

PAHO Salt Smart Consortium, Washington DC Aug 2012

CSIM Health Promotion Committee, Quebec City Oct 2012

Hypertension Canada, Outcomes Research Task Force meetings. Toronto Oct 2012.

Hypertension Advisory Committee, Calgary Nov 2012

SEARO- WHO-Expert Meeting on Population Sodium Reduction Strategies for Prevention and Control of Noncommunicable Diseases in the South-East Asia Region, New Delhi Dec 2012

Sodium Day on Parliament Hill, Ottawa, March 2013

World Health Day on Parliament Hill April 23, 2013 including brief presentation on the global issue of hypertension Ottawa.

Hypertension Canada Partners Forum Ottawa April 23 2013

Platform III WHO meeting on Salt reduction and iodine fortification program, March 2013 Sydney Australia

CDC PAHO meeting on health systems to improve hypertension control. Miami March 2013

Food Procurement, Aklavik NWT, March 2013

World Health Day on Hypertension, WHO Geneva April 3

World Health Day on Hypertension, WHO-PAHO Washington DC April 5

PAHO Salt Smart Consortium Washington June 2013

World Bank meetings regarding salt reduction and PAHO TAG, Washington June 2013.

World Hypertension League Board meetings, Istanbul June 2013

## Appendix 2

### **HYPERTENSION PREVENTION AND CONTROL IN CANADA (Hypertension Canada, Outcomes Research Task Force (ORTF) publications in bold)**

**Bienek AS, Gee ME, Nolan RP, Kaczorowski J, Campbell NRC, Bancej C, Gwadry-Sridhar F, Robitaille C, Walker RL, Dai S. Methodology of the 2009 Survey on Living with Chronic Diseases in Canada – hypertension component. Chronic Diseases and Injuries in Canada. In press**

Wilkins K, Gee M, Campbell NRC. The gender disparity in hypertension control. Health Reports. In press

[Campbell NRC, McAlister FA, Quan H, for the Hypertension Outcomes Research Task Force. Monitoring and evaluating efforts to control hypertension in Canada. Why, how and what it tells us about current care gaps? Can J Cardiol 2012](#)

[Steiner S, Helis E, Chen L, Turton P, Leenen FHH, Sonkokoki S, Fodor GJ. A cross-national comparative study of blood pressure levels and hypertension prevalence in Canada and Hungary. J Hypertension. 2012 Nov; 30\(11\) 2105-11](#)

[Gee ME, Campbell NRC, Gwadry-Sridhar F, Nolan RP, Kaczorowski J, Bienek A, Robitaille C, Joffres M, Dai S, Walker RL for the Outcomes Research Task Force of the Canadian Hypertension Education Program. Antihypertensive medication use, adherence, stops and starts in Canadians with hypertension. Can J Cardiol 2012;28:383-89.](#)

[Quan H, Smith M, Bartlett-Esquillant G, Johansen H, Tu K, Lix L for Hypertension Outcome and Surveillance Team. Mining administrative health databases to advance medical science: Geographical considerations and untapped potential in Canada. Can J Cardiol. 2012;28:152-54.](#)

[Lix LM, Walker R, Quan H, Nesdole R, Yang J, Chen G on behalf of the CHEP ORTF Hypertension Outcomes and Surveillance Team. Features of Physician Services Databases in Canada. Chronic Diseases and Injuries in Canada. 2012; 32\(4\) 186-193](#)

[Gee ME, Campbell NRC, Joffres M, Robitaille C, Tremblay MS, McAlister F, Johansen H, Bienek A. Factors associated with lack of awareness and uncontrolled high blood pressure among Canadian adults with hypertension. Can J Cardiol. 2012;28:375-82](#)

[Campbell N, Young E, Drouin D, Legowski B, Adams M, Farrell J, Kaczorowski J, Lewanczuk R, Moy Lum-Kwong M, Tobe S. A framework for discussion on how to improve prevention, management and control of hypertension in Canada. Can J Cardiol. 2012;28:262-69](#)

[Bolli P, Campbell NRC Do Recommendations for the Management of Hypertension Improve Cardiovascular Outcome? The Canadian Experience," International Journal of Hypertension, 2011; Article ID 410754, doi:10.4061/2011/410754.](#)

[Walker R, Chen G, Campbell N, McAlister FA, Quan H, Tu K, Khan N, Hemmelgran B for the Canadian Hypertension Education Program Outcomes Research Task Force. Canadian provincial trends in antihypertensive drug prescriptions between 1996 and 2006. Can J Cardiol. 2011 Jul 2;4:461-467](#)



[Kaczorowski J, Chambers LW, Dolovich L, Paterson JM, Karwalajtys T, Gierman T, Farrell B, McDonough B, Thabane L, Tu K, Zagorski B, Goeree R, Levitt CA, Hogg W, Laryea S, Carter MA, Cross D and Sabaldt RJ. Improving cardiovascular health at population level: 39 community cluster randomised trial of Cardiovascular Health Awareness Program \(CHAP\). BMJ. 2011 Feb 7;342:d442.](#)

[Robitaille C, Dai S, Waters C, Loukine L, Bancej C, Quach S, Ellison J, Campbell N, Tu K, Reimer K, Walker R, Smith M, Blais C, Quan H. Incidence, prevalence and mortality of diagnosed hypertension in Canada. CMAJ. January 10, 2012 184:E49-E56.](#)

[G. Paradis, M.S. Tremblay, I. Janssen, A. Chioloro, T. Bushnik. Blood pressure in Canadian children and adolescents. Health Reports 21\(2\):15-22, 2010.](#)

[Gee ME, Bienek A, Campbell NR, Bancej CM, Robitaille C, Kaczorowski J, Joffres M, Dai S, Gwadry-Sridhar F, Nolan RP. Prevalence of, and barriers to, preventive lifestyle behaviors in hypertension \(from a national survey of Canadians with hypertension\). Am J Cardiol 2012;109:570-5.](#)

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[McAlister FA, Wilkins K, Joffres, M, Leenen, FF, Fodor JG, Baclic O, Gee, M, Tremblay, MS, Walker R, Johansen H, Robitaille C, Campbell NRC. Changes in hypertension awareness, treatment, and control rates in Canada over the past two decades. CMAJ 2011;183:1007-1013.](#)

[Gee M, Campbell NRC, Banceja CM, Robitaille C, Bieneka A, Joffres MR, Walker RI, Kaczorowski J, Dai S. Perception of uncontrolled blood pressure and behaviours to improve blood pressure: Findings from the 2009 survey on living with chronic disease in Canada. J Hum Hypertens. 2012;26:188-95.](#)

[Grover S, Coupal L, Kouache M, Lowensteyn I, Marchand S, Campbell N. Estimating the benefits of patient and physician adherence to cardiovascular prevention guidelines: The MyHealthCheckUp Survey. Can J Cardiol 2011;27:159-66.](#)

[Rabkin SW, Feldman R, Tobe SW, Drouin D, McAlister FA, Campbell N. A strategy to improve hypertension control: The Canadian experience. CVD Prevention and Control. 2010;5:107-113](#)

[Neutel CI, Campbell NR, Morrisson HI. Trends in diabetes treatment in Canadians, 1994-2004. Chronic Disease in Canada. 2010;30:107-111](#)

[Campbell NRC, Tobe SW. The Canadian Effort to Prevent and Control Hypertension. Can Other Countries adopt Canadian Strategies? Current Opinion in Cardiology 2010;25:366-372.](#)

[Klarenbach SW, McAlister FA, Johansen H, Tu K, Hazel M Walker R, Zarnke KB Campbell NRC. Identification of factors driving differences in cost-effectiveness of first line pharmacologic therapy for uncomplicated hypertension. CJC 2010;26:e158-163](#)

[Bancej CM, Campbell N, McKay DW, Nichol M, Walker RL, Kaczorowski J. Home blood pressure monitoring among Canadian adults with hypertension: Results from the 2009 Survey on Living with Chronic Diseases in Canada. CJC. 2010;26:e152-157](#)

[Campbell NRC, Chen G. Canadian Efforts to Prevent and Control Hypertension. Can J Cardiol. 2010;26\(Suppl. C\):14-17](#)

[Liu R, So L, Mohan S, Khan N, King K, Quan H. Cardiovascular risk factors in ethnic populations within Canada: results from national cross-sectional surveys. Open Med 2010; 4\(3\):e143-e153](#)

[Friedman O, McAlister FA, Yun L, Campbell NRC, Tu K, for the CHEP Outcomes Research Taskforce. Antihypertensive drug persistence and compliance among incident elderly hypertensives In Ontario. Am J Med. 2010;123:173-8.](#)

[Bryan S, St-Pierre Larose M, Campbell N, Clarke J, Tremblay MS. Resting blood pressure and heart rate measurement in the Canadian Health Measures Survey, cycle 1. Health Reports. 2010;21:71-8](#)

[Wilkins K, Campbell NRC, Joffres MR, Johansen HL, McAlister FA, Nichol M, Quach S, Tremblay MS, Blood pressure in Canadian adults. Health Reports. 2010;21: 1-10](#)

[Leenen FHH, McInnis MH, Fodor G. Obesity and the Prevalence and Management of Hypertension in Ontario. American Journal of Hypertension 23:1000-1006, 2010.](#)

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[Connor Gorber S, Tremblay M, Campbell N, Hardt J. The Accuracy of Self-Reported Hypertension: A Systematic Review and Meta-Analysis. Current Hypertension Reviews. 2008;4:36-62](#)

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[Petrella RJ, Merikle EP, Jones J. Prevalence, treatment, and control of hypertension in primary care: gaps, trends, and opportunities. J Clin Hypertens \(Greenwich \). 2007;9:28-35.](#)

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**[McAlister FA, Campbell NRC, Duong-Hua M, Chen Z, Tu K. Antihypertensive prescribing in 27 822 elderly Canadians with diabetes mellitus over the past decade. Diabetes Care. 2007;29:836-841.](#)**

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