



Editorials

New Canadian hypertension recommendations

So what?

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The new Canadian recommendations for diagnosis and pharmacotherapy of hypertension have recently been published in the *Canadian Medical Association Journal*¹ and are summarized in this issue of *Canadian Family Physician* (page 1479). The recommendations are based on the most recent, relevant clinical trials in hypertension and were produced in Canada by local hypertension experts. Nevertheless, we can anticipate a collective national groan.

Family physicians are inundated with hundreds of guidelines, and many will have recently been exposed to the 1998 American (JNC VI) Hypertension Recommendations² or the 1999 World Health Organization–International Society of Hypertension (WHO-ISH) guidelines.³ Why should family doctors take time to read or implement more Canadian hypertension recommendations?

Hypertension is a common problem

Hypertension remains a common problem in Canada, and there are strong indications that the health care system is doing a poor job of controlling it. About 22% of adult Canadians have hypertension.⁴ Blood pressure, particularly systolic blood pressure, increases with age, and more than 50% of elderly Canadians have hypertension.⁴ The Canadian Heart Health Survey indicates that only 16% of Canadians with hypertension are well controlled, and 84% are at unnecessarily high risk of preventable cardiovascular disease.⁴

While most Canadians have had a blood pressure measurement and almost three quarters have had a measurement within the last year, 42% of those with hypertension are unaware they have it. Also, approximately 42% of Canadians with hypertension, while aware, are either not treated or inadequately treated.⁴ Lack of blood pressure control contributes to cardiovascular disease, increasing mortality and health care costs.⁵ Control of blood pressure in Canada is worse than in the United States but is comparable to or better than control in many other countries.^{2,6}

Recent evidence shows that physicians' non-compliance with recommendations⁷⁻⁹ and poor patient adherence to pharmacotherapy^{10,11} are both responsible for poor hypertension control. A recent survey from Veterans Administration Hospitals demonstrated that, over a 3-year period of observation, patients with high blood pressure were seen frequently but often did not have their medication adjusted.⁸ Blood pressure control rates were almost as poor at the end of 3 years as at the beginning.⁸ Surveys by McAlister et al^{7,9} have shown poor compliance with recommendations for diagnosing and treating hypertension. Further, while lack of patient adherence to antihypertensive therapy is a major issue, many steps that health care professionals can take to facilitate patient adherence¹² are rarely implemented.

The new Canadian guidelines are in part designed to increase awareness of hypertension and to provide the most recent evidence and evidence-based guidance to health care professionals. Recommendations on their own are unlikely to be successful unless both health care professionals and patients are made aware of and educated about them and health care professionals adopt tools that can improve their ability to treat chronic conditions.¹³⁻¹⁷ Changes in the structure of health care delivery in Canada, to create multidisciplinary teams for managing patients with risk factors and chronic diseases, might also help.¹⁸⁻²⁰ Further adoption and modification of these recommendations at local levels will also increase their success.²¹

Several groups under the leadership of Health Canada are developing an expert committee to assist with implementing the hypertension recommendations. A national strategic plan for preventing and controlling hypertension has been released in draft and will also provide guidance on resource allocation (see website canadianbpcoalition.org).

Some are stronger than others

The many different hypertension recommendations available to family practitioners have various

strengths and weaknesses. The JNC VI 1998 American recommendations² have been promoted in Canada for the last 2 years. These recommendations are a mixture of opinion and evidence, but the pharmacotherapy recommendations are based on large randomized controlled clinical trials that examine morbidity and mortality. The ungraded recommendations in JNC VI, however, leave practitioners unaware of the strength of evidence behind the recommendations; hence they might hesitate to adopt recommendations contrary to their current practice.

The newer WHO-ISH recommendations³ have not been widely distributed yet but are being heavily promoted by pharmaceutical companies. The WHO-ISH document summarizes the available evidence, but the recommendations are nondirective and fail to differentiate between strong, weak, or even lack of evidence. For example, all major antihypertensive classes are recommended as first-line drug therapies even though several classes have no proof that patients derive morbidity or mortality benefit from use. Other classes have proof of efficacy. This failure to connect recommendations and evidence and the open laissez-faire approach will result in heavy promotion of these "recommendations" by industry. The frailty of these guidelines is exposed by recent results from the ALLHAT trial, which found α -blocker (doxazosin) use was associated with more stroke, congestive heart failure, and combined cardiovascular events than chlorthalidone, a thiazidic diuretic.²²

The new Canadian recommendations summarize evidence unavailable in the JNC VI or WHO-ISH recommendations and have a clearer link to evidence, allowing practitioners to make rational decisions on whether to adopt specific recommendations. The relatively rigid Canadian procedure requiring evidence to establish recommendations has limitations and results in some areas being ignored or inadequately addressed. The Canadian recommendations should be viewed as scientific recommendations and not clinical practice guidelines. Steps are being taken to translate the recommendations in a more practical way for health care professionals.

Unfortunately, several of the important recommendations are unlikely to be adopted by health care professionals. These include proper measurement of blood pressure levels, follow up of people who have high readings before establishing diagnosis, and selection of proven therapies. It takes approximately 8 minutes to measure blood

pressure levels properly. Most health care professionals are unaware of the importance of this or believe they do not have the time or resources to do it. Unfortunately, improper blood pressure measurement leads to inappropriate assessment of cardiovascular risk and diagnoses of high blood pressure.²³

Further, both health care professionals and patients might find the number of return visits to assess blood pressure onerous; however, the risk is falsely labeling patients. Many physicians will still not use diuretics and β -blockers as first-line therapy, believing they frequently cause adverse effects. Despite three large, well conducted, randomized controlled trials demonstrating similar side effects, quality of life, tolerability, continuation of therapy, and the antihypertensive effectiveness of diuretics and β -blockers compared with angiotensin-converting enzyme (ACE) inhibitors and calcium channel blockers,²⁴⁻²⁶ the false belief that newer is better is highly prevalent.

Goals of treatment

Some of the most important recommendations concern goals of treatment. Failure to lower blood pressure adequately is commonplace,⁴ and the new guidelines strongly emphasize that a general goal of < 140/90 mm Hg is highly desirable. Groups of patients at higher risk who need even lower goals are also emphasized. These groups include diabetics and those with renal impairment in whom a goal of < 130/80 mm Hg is recommended. In those with renal impairment and proteinuria (> 1 g/24 h), the recommended goal is < 125/75 mm Hg. These targets are a huge challenge to family physicians and patients; only 16% are currently achieving blood pressure levels of < 140/90 mm Hg. New clinical trial data show that most patients require combination therapy²⁷ or multiple trials of single medications²⁸ to achieve therapeutic targets.

The new Canadian recommendations do not take economic consequences into consideration. Nevertheless, two of the older, less expensive classes of antihypertensive agent (thiazide-type diuretics and β -blockers) are recommended as first-line therapies for younger adults. This recommendation is based on strong proof of the effectiveness of these agents in reducing cardiovascular morbidity and mortality. Failure of physicians to adopt these recommendations in the past is in part responsible for high health care expenditures and a subsequent lack of health care resources (opportunity costs).²⁹ Including ACE inhibitors as first-line

therapy in the current recommendations reflects the similar effectiveness of these agents in preventing cardiovascular disease in hypertensive patients. Prescribing physicians need to consider the economic consequences of this recommendation.

Change is a challenge

Canadian family physicians face many challenges; change is one of them. Family physicians have been leaders in Canada in applying the principles of adult learning to medicine and in examining how to improve care for patients with chronic conditions. For blood pressure control to improve, family doctors will have to adopt hypertension recommendations more quickly into their learning programs and adopt the evidence on office set-ups for improving patient care.^{15-17,21} Evidence shows that a multidisciplinary approach is more effective than our current health care model. Health care system changes are clearly necessary to improve care for patients with cardiovascular risk factors and chronic medical conditions.

Outside organizations also offer support. The Healthy Heart Kit contains useful tools to assist doctors and patients. A national strategic plan for hypertension control recommends system changes that will be helpful to governments.

Finally a new procedure for developing hypertension recommendations is being implemented in Canada. This process will update recommendations annually. The recommendations will be published, but unlike in the past, they will also undergo a separate implementation process to assist adoption.

Assessment of blood pressure is the most common reason adults see physicians. It is up to family doctors to prioritize high blood pressure, adopt evidence-based treatment, and advocate for system change to facilitate care of those with hypertension. ❁

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References

1. Feldman RD, Campbell NRC, Larochelle P, Bolli P, Burgess ED, Carruthers G, et al. 1999 Canadian recommendations for the management of hypertension. *Can Med Assoc J* 1999;161(Suppl 12):1-17.

2. Heart and Stroke Foundation of Canada. *Heart disease and stroke in Canada*. Ottawa, Ont: Health Canada; 1997.
3. Guidelines Subcommittee. 1999 World Health Organization-International Society of Hypertension guidelines for the management of hypertension. Chalmers J, Mancia G, van Zwieten PA. 1. 1999. ISH Hypertension News, Publi Creations S.A.M., Monaco. Bulletin of the International Society of Hypertension.
4. Joffres MR, Ghadirian P, Fodor JG, Petrasovits A, Chockalingam A, Hamet P. Awareness, treatment, and control of hypertension in Canada. *Am J Hypertens* 1997;10:1097-102.
5. Heart and Stroke Foundation of Canada. *The changing face of heart disease and stroke in Canada 2000*. Ottawa, Ont: Heart and Stroke Foundation of Canada; 1999.
6. Marques-Vidal P, Tuomilehto J. Hypertension awareness, treatment and control in the community: is the 'rule of halves' still valid? *J Hum Hypertens* 1997;11:213-20.
7. McAlister FA, Teo K, Lewanczuk R, Wells G, Montague T. Contemporary practice patterns in the management of newly diagnosed hypertension. *Can Med Assoc J* 1997;157:23-30.
8. Berlowitz DR, Ash AS, Hickey EC, Friedman RH, Glickman M, Kader B, et al. Inadequate management of blood pressure in a hypertensive population. *N Engl J Med* 1998;339(27):1957-63.
9. McAlister FA, Laupacis A, Teo KK, Hamilton PG, Montague TJ. A survey of clinician attitudes and management practices in hypertension. *J Hum Hypertens* 1997;11:413-9.
10. Caro JJ, Salas M, Speckman JL, Raggio G, Jackson JD. Persistence with treatment for hypertension in actual practice. *Can Med Assoc J* 1999;160:31-7.
11. Jones JK, Gorkin L, Lian JF, Staffa JA, Fletcher AP. Discontinuation of and changes in treatment after start of new courses of antihypertensive drugs: a study of a United Kingdom population. *BMJ* 1995;311:293-5.
12. Chockalingam A, Bacher M, Campbell N, Cutler H, Drover A, Feldman R, et al. Adherence to management of high blood pressure: recommendations of the Canadian Coalition for High Blood Pressure Prevention and Control. *Can J Public Health* 1998;89(Suppl):I-5-I-7.
13. Balas EA, Jaffrey F, Kuperman GJ. Electronic communication with patients. Evaluation of distance medicine technology. *JAMA* 1997;278:152-9.
14. Shea S, DuMouchel W, Bahamonde L. A meta-analysis of 16 randomized controlled trials to evaluate computer-based clinical reminder systems for preventive care in the ambulatory setting. *J Am Med Inform Assoc* 1996;3:399-409.
15. Davis DA, Taylor-Vaisey A. Translating guidelines into practice. A systematic review of theoretic concepts, practical experience and research evidence in the adoption of clinical practice guidelines. *Can Med Assoc J* 1997;157:408-16.
16. Tamblyn R, Battista R. Changing clinical practice: which interventions work? *J Continuing Educ Health Professions* 1993;13:273-88.

17. Oxman AD, Thomson MA, Davis DA, Haynes RB. No magic bullets: a systematic review of 102 trials of interventions to improve professional practice. *Can Med Assoc J* 1995;153:1423-31.
 18. Schectman G, Wolff N, Byrd JC, Hiatt JG, Hartz A. Physician extenders for cost-effective management of hyper-cholesterolemia. *J Gen Intern Med* 1996;11:277-86.
 19. Imperial Cancer Research Fund OXCHECK Study Group. Effectiveness of health checks conducted by nurses in primary care: results of the OXCHECK study after one year. *BMJ* 1994;308:308-12.
 20. Family Heart Study Group. Randomised controlled trial evaluating cardiovascular screening and intervention in general practice: principal results of British family heart study. *BMJ* 1994;308:313-20.
 21. Authors? *Implementing clinical practice guidelines. A handbook for practitioners.* Ottawa, Ont: Canadian Medical Association; 1997. p. 1-38.
 22. ALLHAT Officers and Coordinators for the ALLHAT Cooperative Research Group. Major cardiovascular events in hypertensive patients randomized to doxazosin vs chlorthalidon. *JAMA* 2000; 283:1967-75.
 23. Campbell NRC, Myers MG, McKay DW. Is usual measurement of blood pressure meaningful? *Blood Press Monitoring* 1999;4:71-6.
 24. Neaton JD, Grimm RH Jr, Prineas RJ, Stamler J, Grandits GA, Elmer PJ, et al. Treatment of mild hypertension study. Final results. Treatment of mild hypertension study research group. *JAMA* 1993;270:713-24.
 25. Materson BJ, Reda DJ, Cushman WC, Massie BM, Freis ED, Kochar MS, et al. Single-drug therapy for hypertension in men. A comparison of six antihypertensive agents with placebo. *N Engl J Med* 1993;328:914-21.
 26. Philipp T, Anlauf M, Distler A, Holzgreve H, Michaelis J, Wellek S, et al, on behalf of the HANE Trial Research Group. Randomised, double blind, multicentre comparison of hydrochlorothiazide, atenolol, nitrendipine, and enalapril in antihypertensive treatment: results of the HANE study. *BMJ* 1997;315:154-9.
 27. Hansson L, Zanchetti A, Carson DS, et al. Effects of intensive blood-pressure lowering and low-dose aspirin in patients with hypertension: principal results of the Hypertension Optimal Treatment (HOT) randomised trial. *Lancet* 1998;351:1755-62.
 28. Dickerson JEC, Hingorani AD, Ashby MJ, Palmer CR, Brown MJ. Optimisation of antihypertensive treatment by crossover rotation of four major classes. *Lancet* 1999;353:2008-13.
 29. Siegel D, Lopez J. Trends in antihypertensive drug use in the United States. Do the JNC V recommendations affect prescribing? *JAMA* 1997;278:1745-8.
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