



Blood pressure self-monitoring in pharmacies *Building on existing resources*

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Family physicians, pharmacies, and public health authorities should work together to improve control of high blood pressure among Canadians. Building on existing community-based resources, they could help ensure the accuracy of readings and promote communication among health care providers about patients' blood pressure.

Hypertension affects about 22% of Canadian adults and is a modifiable risk factor for stroke, ischemic heart disease, congestive heart failure, renal failure, and peripheral vascular disease.¹ The prevalence of hypertension increases with age; more than half of the men and women in Canada aged 65 to 74 have a mean systolic or a mean diastolic blood pressure greater than 140/90 mm Hg.² Family physicians routinely detect and treat hypertension,³ but the "rule of halves" still applies in many practices: half the hypertensive patients are undiagnosed, half the diagnosed patients are untreated, and half the treated patients are uncontrolled.⁴

Cardiovascular diseases have the highest health care costs of all diseases.⁵ Blood pressure control is a cost-effective preventive strategy.⁶ If blood pressure control were successful among people 60 years and older, overall mortality could be reduced by 20%, and incidence of cardiovascular disease by 33%, stroke by 40%, and coronary artery disease by 15%.¹

The 2001 Canadian Hypertension Recommendations (www.chs.md/index2.html) highlight the importance of assessing blood pressure for all adults at all appropriate visits to physicians' offices.⁷ Self-measurement and 24-hour ambulatory measurement are appropriate for assessing office-induced blood pressure elevation ("white coat" hypertension); self-measurement is considered a feasible option for improving patient compliance with prescribed treatments.⁷

Pharmacies: a missed opportunity?

Blood pressure self-measuring devices in pharmacies present an opportunity to improve blood pressure monitoring. A Canadian corporation with 5000 pharmacies reports that the devices in each of its pharmacies are used, on average, 800 times monthly (personal communication from Paul Claxton of Cardio-Tech International, 2001). Simply put, more than four million blood pressure

readings are taken each month in Canada in one pharmacy chain. Self-monitored readings obtained by patients at home or in the pharmacy and discussed with family physicians can help facilitate diagnosis and improve monitoring of high blood pressure only if they are obtained using accurate and calibrated devices.

How accurate are automated devices?

Most physicians consider patient-reported readings to be an adjunct to office monitoring, not a replacement, because the accuracy of patient-obtained readings is unreliable. A study in Toronto community-based pharmacies using a modified protocol compared the Vita-Stat (V) 90550, a blood pressure measuring device commonly used in pharmacies, and the Omron HEM-705CP to a sphygmomanometer. Neither automated device met criteria for accuracy established by the Association for the Advancement of Medical Instrumentation or the British Hypertension Society.⁸ There are internationally accepted protocols for assessing the accuracy of blood pressure measuring devices in laboratories.⁹ The European Society of Hypertension recommends only five among 23 self-measurement blood pressure devices for the upper arm.¹⁰ Any program to assess blood pressure in pharmacies should incorporate devices meeting international standards and should ensure that patients know how to use them properly. Many devices sold in pharmacies for home use do not meet international standards.

Should physicians routinely receive readings from pharmacies?

Physicians' awareness of self-monitored blood pressure readings is key to improved management of hypertension.¹¹ Optimal management, which includes self-monitoring in pharmacies, is currently limited by poor communication between physicians and pharmacists about clinical information generated in pharmacies. Because many patients check their own blood pressure in pharmacies across Canada, a system for transferring accurate in-pharmacy blood pressure readings efficiently to patients' health records in their physicians' offices could benefit

diagnosis and management. This transfer could be accomplished simply by patients carrying logbooks, such as those promoted by the Heart and Stroke Foundation. Such a system could also identify older adults with high blood pressure who frequent pharmacies but might not visit physicians.

How could public health units contribute?

Public health units could assist in transferring accurate readings and in teaching patients about hypertension. A promising approach to promoting educational messages, the use of age-matched peers as peer health educators, is likely to reach a greater number of older adults effectively.¹² A systematic review of 47 peer-based health education programs found consistently positive results.

Peer health educators could be recruited and trained by public health units to assist with self-monitoring in pharmacies. These volunteers in pharmacies could participate in a larger public health program by teaching patients to use automatic blood pressure measurement devices and to record their readings in personal logs or on forms to be forwarded directly to family physicians. In addition, peer health educators could provide patients with important educational messages about hypertension that have been prepared by public health authorities. Peer health educators would not perform a clinical function.

Where do we go from here?

We recommend that pilot demonstration projects with peer health educator volunteers and linkage to family physicians be set up in pharmacies and evaluated. Such an innovative program could be established on a larger scale if outcomes are positive.

The challenge is to launch a program that is inexpensive and easily replicated across communities. Collaboration among family physicians, pharmacies, and peer educators trained by public health authorities could help meet these objectives and could improve the identification, diagnosis, and monitoring of high blood pressure in Canada. A program to make better and systematic use of the resources readily available in communities makes good sense. ♣

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