Innovations in primary care: Implications for hypertension detection and treatment

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The majority of hypertension detection and management in Canada is provided by family physicians. Although various organizations have called attention to the poor rates of hypertension detection and control on a worldwide basis, the tools and infrastructure that allow for better hypertension management have generally been lacking in primary care. Recent advances in the fields of primary care and chronic disease management have led to the development of frameworks wherein chronic diseases such as hypertension can be more effectively managed. Such paradigms integrate the primary care physician, the specialist, technologies, and a wide variety of health system and community resources to provide optimal care to the patient with hypertension. The present review highlights many of the advances in primary health care delivery in Canada that apply to hypertension.

Key Words: *Chronic disease management; Hypertension; Primary care*

If one lives long enough, one will eventually develop hypertension. The prevalence of hypertension is approximately 50% by 65 years of age and increases to over 90% by 80 years of age (1,2). It is therefore not surprising that hypertension is the single most common reason for visiting a family physician. Similarly, it is not surprising that antihypertensive drugs are the single most prescribed class of medications (3). From a public health perspective, hypertension is the leading contributor to the leading cause of premature death and disability worldwide – cardiovascular disease (4). For these reasons, family physicians have been overwhelmed over the years with information and admonishments concerning hypertension. Such information comes from a variety of sources. Industry representatives encourage physicians to use drug A in preference to drug B. Specialists and key opinion leaders provide mixed messages on which drugs and diagnostic or therapeutic strategies to use. Clinical trials are sometimes conflicting or contradictory. Guidelines are voluminous, and often appear to differ between various medical organizations. Knowledge that was dogma yesterday is fallacy today. It is no wonder that confusion exists at the level of the family physician.

The final insult is that published articles, specialists and various organizations constantly tell family doctors what a poor job they are doing in the management of hypertension, either

Nouvelle approche en soins primaires : incidence sur la détection et le traitement de l'hypertension artérielle

La plupart des interventions liées à la détection et au traitement de l'hypertension artérielle (HTA) au Canada sont faites par les omnipraticiens. Même si différentes organisations ont déjà attiré l'attention sur les faibles taux de détection et de traitement de l'HTA dans le monde, les outils et l'infrastructure nécessaires à une meilleure prise en charge de l'hypertension font généralement défaut en soins primaires. Des progrès récents, réalisés en soins primaires et dans la prise en charge de maladies chroniques ont conduit à l'élaboration de cadres dans lesquels les maladies chroniques comme l'HTA sont traitées plus efficacement. Les nouveaux paradigmes tiennent compte du rôle des omnipraticiens et des spécialistes, des technologies et des ressources communautaires ainsi que du fonctionnement de différents systèmes de santé en vue de fournir des soins optimaux aux patients atteints d'hypertension. Le présent article met en relief les principaux progrès en matière de soins primaires au Canada, susceptibles d'influer sur la prise en charge de l'hypertension artérielle.

overtly or by implication. For example, in Canada, we frequently quote the poor levels of both hypertension detection and control (5), implying that, in some way, this is due to some failure on the part of family physicians. Articles appear in journals reporting that 'specialized' hypertension care is better than 'usual' care. In contrast, publications that actually provide real-life, useful advice in hypertension management are few and far between. Similarly, despite the admonishments against family physicians, virtually no infrastructure or resources have been provided to enhance the level of 'usual' care.

Many of these issues have started to be recognized by professional organizations, health authorities and governments. For example, in the past few years, there has been an increasing emphasis by the Canadian Hypertension Education Program (CHEP) to disseminate recommendations in a user-friendly manner. Similarly, there has been recognition that guidelines must be strongly grounded in evidence to avoid confusion and subsequent contradiction. Finally, tools and practical recommendations concerning ways to implement hypertension detection and control have been promulgated by CHEP. However, despite these advances, the average family physician still has few resources and little infrastructure to enable better hypertension management.

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The practical difficulties relating to hypertension management in primary care have not gone unnoticed. A number of initiatives are therefore underway to provide better support to family physicians and to the health care system at large in the management of hypertension. These initiatives are described below, but it is important to note that the challenges described above are not exclusive to hypertension; family physicians treating persons with other chronic diseases face similar challenges. The chronic care model has therefore been developed to enhance the level of care for persons with chronic diseases (6). In this model, the delivery of care is considered under a number of domains, which include health system organization, community resources, information systems, decision support, patient self-management and delivery system design.

HEALTH SYSTEM ORGANIZATION AND DELIVERY SYSTEM DESIGN

The Canadian health care system is largely organized around an acute care model. That is, a patient develops an illness and the system responds to that acute episode. To date, there has been little organized effort aimed at the prevention, early detection and ongoing management of chronic diseases. Moreover, two systems of care seem to have evolved: the specialist-driven acute care system and family physician-based primary care system. These two systems have grown apart and often seem to function independently.

The good news is that this archaic system is finally being challenged and changed. A number of jurisdictions in Canada are adopting the chronic care model, meaning that diseases such as hypertension are now being addressed in a system-wide, integrated manner. For example, the delivery of hypertension care may start with a central disease registry. This allows the system to identify a given patient as having a particular disease. Then, the level of disease complexity and severity may result in triaging patients to the most appropriate level of care. This may mean that patients such as those with newly diagnosed hypertension are treated at the family physician level, whereas patients with resistant or complex hypertension are managed by a specialized team. At the family physician level, primary care reform measures across the country are also altering the method of care. In Alberta, for example, groups of family doctors, forming primary care networks, are charged with managing patients with chronic diseases and are provided with extra funding for this purpose. To provide this care, these primary care networks are hiring allied health professionals such as nurses, nurse practitioners, pharmacists, social workers and a host of other individuals. These health care professionals work with physicians, often using care maps or algorithms to provide care to patients with hypertension. An important component of this partnership is the maintenance of regular follow-up, ensuring guidelines are followed, promoting patient self-management, and establishing defined linkages to specialist services and the health care infrastructure. In practical terms, once the diagnosis of hypertension is made, a clinic nurse may follow the patient's blood pressure on a regular basis, adjust medications within preset parameters and ensure that required testing is carried out. The family physician may see the patient for periodic review or if difficulties arise. Should the primary care team encounter difficulties in patient management, a specialist or specialty team may be consulted.

Within this system, there is an alteration in the role of the specialist. First, the specialist may function with their own

multidisciplinary team. Rather than seeing 'all comers', the specialist now sees only the more complicated patients. While this may result in more appropriate usage of specialist skills, it may also result in financial penalties for the specialist. Accordingly, we are seeing the introduction and proliferation of specialist alternate funding plans across the country. A further role of the specialist under the chronic care system is to help train and mentor the primary care-based physicians and teams. Thus, specialists may hold satellite clinics in primary care settings, engage in academic detailing, provide group education sessions or be available for various forms of distance consultation.

In this redesigned health care system, continuous evaluation and monitoring are paramount. Health care teams and regions are made accountable for outcomes. A system of indicators is frequently developed, with feedback being made available to individual physicians and to the system in general. For example, a physician may be provided with information on the number of hypertensive patients at blood pressure targets in his or her practice.

Finally, the artificial separation between diseases is removed, and the system strives to treat the entire patient rather than the disease. So, for example, in the Chinook Health Region of southern Alberta, hypertension, lipid and diabetes services are provided in conjunction with each other.

INFORMATION SYSTEMS AND DECISION SUPPORT

Information systems are critical for enabling the changes noted above. An electronic central registry provides valuable data to public health officials that enable preventative or screening measures for hypertension to be targeted at high-risk populations. A central registry also provides information on disease burden, which helps in the planning and prediction of health care services. In the Capital Region of Edmonton, Alberta, central registries are cued to other data repositories to provide patient and physician reminders and alerts. For example, regional disease management software may link a given lipid level with the fact that a patient is hypertensive, reminding the physician to institute lipid-lowering therapy. Decision support embedded within electronic charts can provide similar support at a primary care level.

Care delivery to patients with hypertension and other chronic diseases is often compromised by the inability to share medical information about patients. Thus, the medication history of a patient with hypertension who changes physicians may not be fully appreciated, potentially leading to adverse drug effects. The Western Health Information Collaborative project is jointly funded by the federal government and four western provincial governments. A major aim of this project is to create data standards for chronic disease that will enable the sharing of core data between jurisdictions and care providers (7). Three key chronic diseases have been identified by the Western Health Information Collaborative project: diabetes, chronic kidney disease and hypertension. Hence, in the near future, data sharing around hypertensive patients should be possible in the four western provinces.

PATIENT SELF-MANAGEMENT

The self-management of hypertension is an important component of its treatment. CHEP recommendations continue to emphasize the role the patient can play in the management of

their condition. For example, home blood pressure monitoring has been increasingly emphasized over the years, with current 2006 recommendations suggesting that all patients with hypertension monitor themselves (8). Not only does this result in more prognostically useful blood pressure readings, but studies have shown that patients who do monitor their own blood pressure achieve better blood pressure control (9,10). Similarly, adherence to lifestyle recommendations can also greatly improve blood pressure levels and reduce other cardiovascular risk factors. The primary care physician is key in both introducing and continually encouraging patient self-management. Similarly, primary care groups or the health system itself can facilitate self-management through the provision of educational and motivational programs, patient portals and engagement of other community resources.

COMMUNITY RESOURCES

Health care delivery has traditionally been fragmented in the Canadian health care system. Just as primary care has separated from acute/specialist care, so too has the formal health care delivery system separated itself from the community. However, numerous resources exist within the community that can help provide care to the hypertensive patient. Not-for-profit organizations such as the Heart and Stroke

Foundation lobby on behalf of patients with, and are at risk for, cardiovascular disease. Lifestyle organizations such as the YMCA and even for-profit health clubs can also be of use to the hypertensive patient. Community health care providers such as dietitians and, particularly, pharmacists can provide useful services to patients with hypertension. For example, community pharmacists can play a major role in screening for hypertension, patient education, and facilitation of both lifestyle and pharmacotherapeutic adherence. In fact, an entire issue of the *Canadian Pharmacists Journal* (11) has been devoted to the role of the pharmacist in hypertension care. Indeed, a number of successful pharmacy and community-based hypertension management projects have been reported in Canada (12-14).

CONCLUSION

A classic study in the realm of health care delivery found that of 750 patients developing an illness, 250 will see a primary care physician and only one will ever see a university-based specialist (15). Clearly, the role of primary care in the management of hypertension is paramount. Gone are the days of the specialist clinic, designed to see every patient with hypertension. Instead, we need to support the delivery of hypertension care at the level of primary care and the patient.

REFERENCES

1. Meissner I, Whisnant JP, Sheps SG, et al. Detection and control of high blood pressure in the community: Do we need a wake-up call? *Hypertension* 1999;34:466-71.
2. Vasan RS, Beiser A, Seshadri S, et al. Residual lifetime risk for developing hypertension in middle-aged women and men: The Framingham Heart Study. *JAMA* 2002;287:1003-10.
3. IMS HEALTH Canada. <www.imshealthcanada.com> (Version current at April 26, 2006).
4. World Health Organization. The world health report 2002 – Reducing risks, promoting healthy life. <www.who.int/whr/2002/en> (Version current at April 26, 2006).
5. Joffres MR, Hamet P, MacLean DR, L'Italien GJ, Fodor G. Distribution of blood pressure and hypertension in Canada and the United States. *Am J Hypertens* 2001;14:1099-105.
6. Wagner EH, Davis C, Schaefer J, Von Korff M, Austin B. A survey of leading chronic disease management programs: Are they consistent with the literature? *Manag Care Q* 1999;7:56-66.
7. The WHIC Chronic Disease Management (CDM) Infrastructure Initiative. <www.whic.org/public/profiles/cdm.html> (Version current at April 26, 2006).
8. Canadian Hypertension Education Program 2006. <www.hypertension.ca/CHEP2006/CHEP_2006_complete.pdf> (Version current at May 9, 2006).
9. Haynes RB, Sackett DL, Gibson ES, et al. Improvement of medication compliance in uncontrolled hypertension. *Lancet* 1976;1:1265-8.
10. Ashida T, Yokoyama S, Ebihara A, Sugiyama T, Fujii J. Profiles of patients who control the doses of their antihypertensive drugs by self-monitoring of home blood pressure. *Hypertens Res* 2001;24:203-7.
11. *Canadian Pharmacists Journal* 2006;139(Suppl 1):S1-S24.
12. Côté I, Moisan J, Chabot I, Grégoire JP. Health-related quality of life in hypertension: Impact of a pharmacy intervention programme. *J Clin Pharm Ther* 2005;30:355-62.
13. Tobe SW, Pylypchuk G, Wentworth J, et al. Effect of nurse-directed hypertension treatment among First Nations people with existing hypertension and diabetes mellitus: The Diabetes Risk Evaluation and Microalbuminuria (DREAM 3) randomized controlled trial. *CMAJ* 2006;174:1267-71.
14. Karwalajtys T, Kaczorowski J, Chambers LW, et al. A randomized trial of mail vs. telephone invitation to a community-based cardiovascular health awareness program for older family practice patients. *BMC Fam Pract* 2005;6:35.
15. White KL, Williams TF, Greenberg BG. The ecology of medical care. *N Engl J Med* 1961;265:885-92.