

# A Community-based Program for Cardiovascular Health Awareness

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## ABSTRACT

**Objective:** The objective of the Cardiovascular Health Awareness Program (CHAP) is to improve the processes of care related to the cardiovascular health of older adults.

**Participants:** Two Ontario communities including family physicians (FP), pharmacists, public health units and nurses, volunteer peer health educators, older adult patients and community organizations.

**Setting:** Community pharmacies and family physician offices.

**Intervention:** CHAP is designed to close a process of care loop around cardiovascular health awareness that originates from, and returns to, the FP. Older patients are invited by their FP to attend pharmacy CHAP sessions. At these sessions, trained volunteer peer health educators (PHEs) assist patients both in recording their blood pressure using a calibrated automated device and in completing a cardiovascular risk profile. This information is relayed to their respective FP via an automated computerized database. Pharmacists and patients receive copies of the results. Based on these cumulative risk profiles, patients are advised to follow-up with their FP.

**Outcomes:** Of the FPs and pharmacists asked, 47% and 79%, respectively, agreed to participate in the project. 39% of older adult patients invited by their FPs attended the CHAP community pharmacy sessions. Of these, 100% agreed to having their risk profile, including their blood pressure readings, forwarded to their FP. Positive feedback about CHAP was expressed by the volunteer PHEs, the FPs and the pharmacists.

**Conclusion:** The community-based pharmacy CHAP sessions are a feasible way of improving patient, physician, and pharmacist access to reliable blood pressure measurements and to cardiovascular health information. A randomized trial is in progress that will assess the impact of CHAP on monitoring of blood pressure.

**MeSH terms:** Cardiovascular disease; health promotion; volunteer workers; family practice; community pharmacies

*La traduction du résumé se trouve à la fin de l'article.*

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**Acknowledgements:** Our thanks go to the CHAP working group, namely: Margaret Black, Kim Canary, Tom Elmslie, Manal Guirguis-Younger, Maureen Harmer, Crystal LaRose, Pamela Logan, Robert S. McKelvie, Rolf J. Sebaldt, Constance Sellors, Brenda Szabo, Lehana Thabane, Jennifer Thompson, and Claire Zanetti.

**Sources of support:** This Program is funded in part by the Canadian Institutes of Health Research, project number: 57902, by a contract with the Ministry of Health and Long-Term Care, Government of Ontario, and by The Team for Individualizing Pharmacotherapy in Primary Care for Seniors. We also thank The Kidney Foundation for its contributions in kind for coordinating the older adult volunteers.

This program targets cardiovascular health awareness for older adults through the collaboration of family physicians (FPs), pharmacists, public health authorities and their personnel, community organizations, such as The Kidney Foundation of Canada, and the trained volunteer peer health educators working within a community setting.

Evidence supports a multi-faceted, collaborative approach to implement programs for primary care intervention and health awareness.<sup>1-8</sup> Approaches directed at cardiovascular health promotion, including education seminars and other single-strategy interventions, have been largely unsuccessful.<sup>1-3,9,10</sup> Developing community-based health awareness programs should help remove system barriers to monitoring and management of cardiovascular risk factors, especially those difficulties associated with regular blood pressure measurements.<sup>11</sup>

High blood pressure affects about 22% of Canadian adults and is a modifiable risk factor for stroke, ischemic heart disease, congestive heart failure, kidney failure, peripheral vascular disease and Alzheimer disease.<sup>12</sup> Blood pressure is modifiable through diet and physical activity.<sup>13</sup> However, if lifestyle changes do not lower blood pressure, a pharmacological approach is recommended.<sup>8,14</sup> The prevalence of high blood pressure increases with age.<sup>15</sup> In 1996, over 50% of older Canadians had elevated blood pressure.<sup>16</sup> According to the Canadian Heart Health Survey, 84% of adults with high blood pressure aged 65 to 74 are uncontrolled. First, 42% of these adults are unaware of their high blood pressure; second, 19% remain untreated and uncontrolled despite being aware of their condition; third, 23% of these patients are treated but uncontrolled; leaving only 16% of this population being both treated and controlled.<sup>17</sup>

A consequence of high blood pressure remaining undiagnosed or uncontrolled is the cost to Canada's health care system. Cardiovascular diseases contribute to the highest financial health care cost of all diseases,<sup>18</sup> with improved blood pressure control being one of the most cost-effective health interventions available.<sup>19</sup> Cost reductions to a community program are also possible through the inclusion of volunteers.<sup>20</sup>

The Cardiovascular Health Awareness Program (CHAP) is designed to be a low-

**TABLE I**  
**Program Challenges by Collaborator Group and Approach to Resolving Them**

| Collaborator Group    | Challenge   | Approach to Resolving It   |
|-----------------------|---|--|
| Peer Health Educators | <ul style="list-style-type: none"> <li>• Some media and community organizations refused to promote the Program without being financed.</li> <li>• Potential volunteers could not access hospitals and health centres, where advertisements were posted, due to SARS restrictions.</li> <li>• Inability to give volunteers advance notice regarding pharmacy session locations and times.</li> </ul> | <ul style="list-style-type: none"> <li>• Approached alternate media and community organizations.</li> <li>• Posted advertisements in alternate venues (e.g., community centres, local YMCAs).</li> <li>• Provided volunteers with explanations and recruited a surplus of volunteers.</li> </ul> |
| Family Physicians     | <ul style="list-style-type: none"> <li>• Unwillingness to participate after initial agreement.</li> <li>• Overloaded with work.</li> <li>• Inaccessible.</li> <li>• Inability to produce patient lists.</li> </ul>  | <ul style="list-style-type: none"> <li>• Recruited additional physicians.</li> <li>• Recruited alternate physicians.</li> <li>• Recruited alternate physicians.</li> <li>• Assisted office staff to produce list; if this failed, recruited alternate physicians.</li> </ul>                     |
| Pharmacies            | <ul style="list-style-type: none"> <li>• Busy environment with high levels of customer traffic.</li> <li>• Limited or inadequate space.</li> </ul>  | <ul style="list-style-type: none"> <li>• Attempted to set up sessions in unobtrusive areas.</li> <li>• Recruited alternate pharmacies or worked within constraints.</li> </ul>   |
| Patients              | <ul style="list-style-type: none"> <li>• Tendency to arrive all at the same time, notably at the start of sessions.</li> <li>• Lack of adherence to protocol (i.e., talked or moved while blood pressure was being measured).</li> </ul>  | <ul style="list-style-type: none"> <li>• Broke sessions into two time slots.</li> <li>• Reinforced need for volunteer peer health educators to monitor patients.</li> </ul>  |

cost community program to improve the processes of care related to cardiovascular health.

## PARTICIPANTS, SETTING AND INTERVENTION

The project reported here received Research Ethics Board approval from the Universities of Ottawa and McMaster. Working over a two-year period, the Program was designed by a multi-disciplinary Program team (see <http://www.chapprogram.ca/> for further details).

To arrive at the target population, letters are mailed from the FPs inviting their patients 65 years and older to attend community pharmacy CHAP sessions. These sessions are operated by volunteer peer health educators (PHEs) trained by public health nurses. During the sessions, the PHEs assist patients to take and record their blood pressure using an automated device,<sup>21,22</sup> the BpTRU model BPM 100 (VSM MedTech LTD., Coquitlam, BC, Canada: [see [www.monitorbloodpressure.com/bptru/bpm100.html](http://www.monitorbloodpressure.com/bptru/bpm100.html) for more information]). The PHEs also assist the patients in completing a cardiovascular risk profile and suggest that patients see their FPs, or their regular pharmacists, when appropriate. With patient permission, Program coordinators fax their results to a computerized database, managed by Clinforma (see [www.figsoft.com/clinforma.htm](http://www.figsoft.com/clinforma.htm) for further

details). The software prepares tailored patient reports, based on the FP's preferences. These reports are sent to FPs by fax or e-mail in an effort to augment in-office records and to assist FPs with the cardiovascular risk profiles of their patients. Two types of reports are sent immediately after the patient has attended a session: a single summary sheet for each patient and a list of patients who attended at least one session, rank-ordered by their most recent systolic blood pressure readings. Six months after the session, a confidential report is sent to the FP comparing the percentage of patients in his/her practice with blood pressure readings above 140/90mmHg with the percentages for other anonymous FP practices in the Program. The names of their patients with high blood pressure are also listed. The percentage of patients with target organ damage or with diabetes mellitus and with blood pressure 130/80mmHg are also shown to the FP and compared with other FP practices.<sup>23,24</sup>

A number of steps are central to ensuring the success and sustainability of the Program: first, forging partnerships with existing organizations such as the local public health unit; second, recruiting FPs and pharmacists; third, recruiting and training volunteers; and fourth, operating the CHAP sessions in pharmacies.

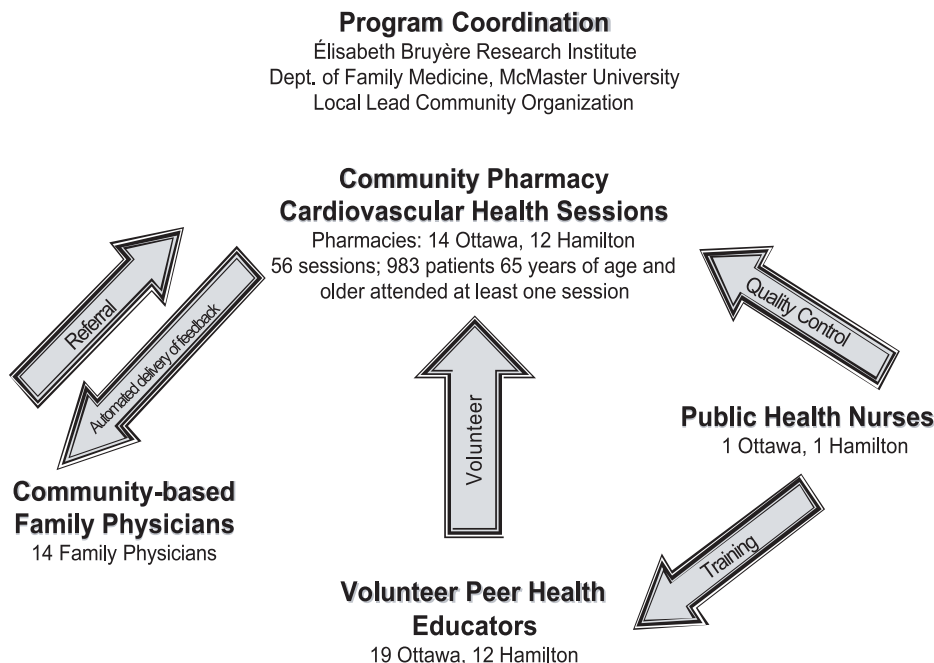
## Recruitment and training

*Volunteer Peer Health Educators (PHE)*  
 The PHE coordinator, working with a community organization, prepares patient education resources and advertisements for the recruitment of volunteer PHEs. This coordinator, using a standard message about the Program and description of the volunteers' training and duties, contacts a variety of "channels", such as seniors' groups, health organizations and local media, to communicate the message. Individuals are encouraged to volunteer to be a PHE if: they are 55 years or older, live close by, and can participate in three training sessions and attend at least two pharmacy sessions. The training sessions, conducted by community health nurses using a standardized training package, include the following topics: cardiovascular health awareness; healthy eating; physical activity; stress management and cardiovascular health; high blood pressure and practice in setting up and operation of the pharmacy sessions, including the use of the blood pressure measuring devices.

### *Family Physicians*

FPs are identified using physician databases. Eligible practitioners are full-time FPs practicing in a regular family practice (in terms of size and case-mix). Several approaches are employed to

# Community-based Program for Cardiovascular Health Awareness



**Figure 1.** The community-based program for cardiovascular health awareness

encourage FP participation, including use of opinion leaders in the area of cardiovascular disease and FP peer recruitment similar to that used by the pharmaceutical companies when persuading FPs to use their products.<sup>25,26</sup> Once FPs agree to participate, a Program coordinator arranges a meeting to introduce them to the Program, obtain their consent, request the completion of a physician/practice characteristic questionnaire and acquire a list of their older adult patients.

### Community Pharmacies

After compiling a list of the eligible pharmacies, the pharmacies closest to each participating FP's office are identified. Pharmacists on the Program team contact the managers of eligible pharmacies to request their participation in the Program. Each pharmacy is required to hold at least two CHAP sessions. The pharmacists are contacted by the volunteer coordinator to arrange a meeting to review a logistics checklist and to provide the pharmacists with copies of the Pharmacist Documentation Form.

### Patients

A list of patients aged 65 years and older is identified using practice files that many FPs now have in electronic format. FPs and their practice staff are asked to identify patients who have visited the practice at least once in the last 12 months, are community-dwelling, mobile and regular patients of the FP. Each FP invites by letter his/her eligible patients to attend at least one (preferably two) CHAP sessions in community pharmacies in close geographical proximity to their practice.

Challenges and approaches to overcoming these with the above four groups are outlined in Table I.

### Operation of the pharmacy sessions

At least three PHEs are scheduled to run each pharmacy session. These volunteers are responsible for: welcoming participants, obtaining consent, helping participants to fill out the Program forms, assisting patients in taking and recording their blood pressure with the automated blood pressure device, completing the cardiovascular risk profile, and distributing information on community resources and health-

related topics. A community health nurse is on call to provide an assessment of participants with elevated blood pressure (i.e., systolic blood pressure >180mmHg). The pharmacists are available to provide assistance or answer questions from the patients. After asking the patients' permission and following the session, the PHE coordinator sends the risk profiles, including the blood pressure readings, to each patient's FP via the automated computerized fax system and to their regular pharmacists by mail.

### Evaluating the program

CHAP incorporates process evaluation measures, including: the number of PHEs volunteering, the number of family physicians and pharmacists participating, the number of sessions held, and the number and frequency of patients attending the pharmacy sessions. PHEs complete pre- and post-pharmacy session questionnaires and participate in debriefing meetings throughout the operation of the sessions. FPs complete a needs assessment prior to taking part in CHAP. Pharmacists and FPs complete a feedback questionnaire describing their attitudes and assessment of CHAP.

## OUTCOMES

Between May and December 2003 in Ottawa and Hamilton, a total of 56 four-hour CHAP sessions were held in the 27 community pharmacies.

Figure 1 shows the participation levels for participants in the Program.

Of those contacted, 79% of eligible pharmacists and 47% of eligible FPs participated in CHAP. Of all those invited by letter by the 14 FPs, 39% (983 of 2,493) of patients attended the pharmacy sessions. There were 59% (589 of 983) who returned for a second pharmacy session and this varied across FPs from 39% to 74%. The average age of patients attending the pharmacy sessions was 74.8 years, and 53% were females. Of those attending, 59% were married and 39% had completed post-secondary education. 100% (983 of 983) of those attending the pharmacy sessions agreed to have their risk profiles, including their blood pressure readings, forwarded to their FP. All these profiles were faxed to the FP practices.

Furthermore, the following benefits were noted: the volunteers indicated that they enjoyed taking part in CHAP, that they would recommend CHAP to a friend and that they would be interested in volunteering on a long-term basis. Pharmacists expressed positive feedback, noting increased patient traffic and dialogue with their patients, as well as with the FPs. Additionally, the FPs and the patients voiced their enjoyment in participating in CHAP.

## DISCUSSION

The innovative nature of this community-based intervention lies in the “loop” that it creates with the patient’s FP. Unlike other community blood pressure monitoring strategies, CHAP ensures that when older adults have their blood pressure taken in community pharmacies, accurate information about the readings and cardiovascular risk factors is forwarded to their FP and their pharmacist. Traditional system barriers associated with a clinical setting are overcome by the use of community pharmacies and PHEs who relate to their peers while themselves learning more about cardiovascular health issues. Hutchinson et al.<sup>27</sup> found that FPs and patients faced several barriers concerning preventive care, not the least of which is the notion that medical care is viewed as illness care. As such, priority is inevitably given to the presenting problem leaving less time for preventive health care, for example, blood pressure monitoring. Joffres et al.<sup>15</sup> conclude that if a better level of awareness, treatment and control could be achieved, Canadians could improve their overall blood pressure levels, thus significantly decreasing their cardiovascular disease risk factors. Considering that 84% of Canadians with high blood pressure aged 65 to 74 are uncontrolled,<sup>17</sup> CHAP appears to present a positive step forward in the prevention of cardiovascular disease through the identification and monitoring of individuals at higher risk.

A randomized trial is in progress comparing the impact of CHAP in the FP practices with non-CHAP FP practices in terms of the number of times that FPs monitor their patients’ blood pressure. This outcome measure is the primary endpoint as it is based on the whole practice

population, not just those with high BP, for example. A frequency count, rather than, for example, a blood pressure measurement avoids the negative aspects of “in practice” blood pressure measurement such as the “white coat” high blood pressure and/or poor high blood pressure management guideline adherence by the FP.

We describe here a Program that is limited to two communities and to patients 65 years and older whose FPs participated in CHAP. Nonetheless, the strengths of CHAP include the following elements: its multi-disciplinary team encourages buy-in from the FPs, the pharmacists, the public health units and the community residents; the accurate blood pressure measurements allow for confidence in the results; and the automated feedback to the FPs gives customized reporting and encourages FP follow-up. The system of training and deploying volunteer PHEs to assist the patients with the blood pressure measuring device contributes to reduced Program costs. Finally, involvement of different organizations in each community increases the possibility of CHAP being introduced in other communities in Canada.

The CHAP intervention produces a synergy offering an empowering process through which community partners are able to participate, co-operate, co-learn and community build through the enhanced awareness of cardiovascular health.

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Received: June 15, 2004  
Accepted: March 10, 2005

## RÉSUMÉ

**Objectif :** L'objectif du programme communautaire de sensibilisation à l'hypertension CHAP (*Cardiovascular Health Awareness Program*) est d'améliorer les soins apportés aux personnes âgées en matière de santé cardiovasculaire.

**Participants :** Deux localités de l'Ontario, des médecins de famille, des pharmaciens, des infirmières de santé publique, des bénévoles-éducateurs en santé des pairs, des personnes âgées, des bureaux de santé publique et des organismes communautaires.

**Milieu :** Pharmacies communautaires et cabinets de médecins de famille.

**Intervention :** CHAP est un programme conçu pour boucler la boucle des soins en matière de sensibilisation à la santé cardiovasculaire qui débute et se termine avec le médecin de famille. Des personnes âgées reçoivent une invitation de leur médecin de famille de participer au programme CHAP. Au cours de ces séances, des éducateurs-bénévoles en santé des pairs ayant reçu une formation aident les patients à mesurer leur tension artérielle à l'aide d'un appareil calibré et automatisé, ainsi qu'à remplir un profil de risques cardiovasculaires. Ces renseignements sont ensuite transmis à leurs médecins de famille à l'aide d'une banque de données informatisée; les pharmaciens et patients reçoivent aussi des copies des résultats. Selon leur profil cumulé de risques, on conseille aux patients de consulter leur médecin.

**Résultats :** Parmi les médecins et pharmaciens approchés, 47 % et 79 % respectivement ont accepté de participer au projet. Chez les aînés, 39 % des personnes ayant reçu une invitation de leur médecin de famille ont participé aux séances d'évaluation de la tension artérielle. De ce groupe, 100 % ont consenti à ce que leur profil de risques et leurs chiffres tensionnels soient transmis au médecin de famille. Les bénévoles-éducateurs, médecins de famille et pharmaciens ont exprimé des commentaires positifs au sujet du CHAP.

**Conclusion :** Ces séances en pharmacies communautaires sont une façon viable d'améliorer l'accès des patients, des médecins et des pharmaciens à des mesures précises de la tension artérielle et à des renseignements sur la santé cardiovasculaire.

## Coming Events / Activités à venir

To be assured of publication in the next issue, announcements should be received by **July 15, 2005** and valid as of **August 31, 2005**. Announcements received after **July 15, 2005** will be inserted as time and space permit. Pour être publiés dans le prochain numéro, les avis doivent parvenir à la rédaction avant le **15 juillet 2005** et être valables à compter du **28 août 2005**. Les avis reçus après le **15 juillet 2005** seront insérés si le temps et l'espace le permettent.

Mapping the Future of Public Health: People, Places and Policies / *Planifier l'avenir de la santé publique : les gens, les lieux et les politiques*

CPHA 96<sup>th</sup> Annual Conference/96<sup>e</sup> conférence annuelle de l'ACSP

In partnership with/En partenariat avec the Canadian Institute for Health Information - Canadian Population Health Initiative (CIHI-CPHI) and the Canadian Institutes of Health Research - Institute of Population and Public Health (CIHR-IPPH) and in association with Statistics Canada's 2nd Health Statistics Data Users Conference 2005

18-21 September/septembre 2005 Ottawa, Ontario  
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or Suzanne Shaw Tel: 416-338-1706  
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*A Toolkit for Primary Care Reform*

Calgary Health Region  
26 September 2005 Calgary, AB

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Samuel Liaw, Conference Planner  
Tel: 403-943-1184, Fax: 403-943-0787  
E-mail: samuel.liaw@calgaryhealthregion.ca  
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*Healthy Bodies, Healthy Minds for Canada's Children and Youth*

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The 4th International Conference on Urban Health  
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E-mail: icuh@crich.ca

*Ideas to Action: Healthy Living in Canada/Du concept à la pratique : vers une vie saine au Canada*  
Canadian Society for Exercise Physiology/Société canadienne de physiologie de l'exercice  
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Contact/contacter : CSEP/SCPE 2005  
http://www.csep.ca/csep2005.asp

*Issues of Substance*  
Canadian Centre on Substance Abuse National Conference 2005  
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### CALL FOR ABSTRACTS

17th International Conference on the Reduction of Drug-related Harm  
*Hear and Now: The PEER Conference*  
British Columbia Centre for Excellence in HIV/AIDS, IHRA, Providence Health Care  
30 April-4 May 2006 Vancouver, BC  
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**Deadline for abstracts:** 3 October 2005