

# Implementation of the Cardiovascular Health Awareness Program (CHAP) for adults on a waiting list for a family physician

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## Research article

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# Abstract

**Background:** The Cardiovascular Health Awareness Program (CHAP) was originally developed and evaluated as a community-based cardiovascular disease (CVD) prevention program in communities where access to family physicians was not a significant issue. Many Canadians now face sub-optimal access to a regular source of primary healthcare. Centralised waiting lists and prioritization based on urgency of medical need were created to address this problem. Our objective was to assess the potential benefits of offering a modified version of the CHAP program to adults on the waiting list.

**Methods:** The implementation was conducted in Laval (Canada), targeting individuals 40 years of age or older who were registered on the waiting list (GACO) and had a priority code of 3. Participants were invited through a personalized letter to attend sessions in community health centres. The sessions were facilitated by trained volunteers and supervised by a nurse. During the sessions, participants completed CVD risk profiles, risk of type 2 diabetes questionnaire (CANRISK); had their blood pressure, height and weight as well as waist circumference measured; received targeted healthy lifestyle and patient education materials; and were referred to local programs including a medical follow-up, when required.

**Results:** A total of 2,036 invitation letters were sent resulting in 281 (14.2%) participants attending one of 26 3-hour sessions held in 4 community health centres, assisted by 33 volunteers and supervised by a nurse. The average age of attendees was 58.1 (SD=8.2) and a majority were female (58%, n=163). Most participants were sedentary (57.3%, n=161), had low fruit and vegetable consumption (54.4%, n=153), and were overweight (38.9%, n=109) or obese (41.7%, n=117). A third of participants (34.2%, n=96) had BP  $\geq$ 140/90 and 11.4% (n=32) were classified as having a very high risk for developing diabetes. Over 40% (n=117) of participants were referred to health promotion programs offered by local health authorities and 4.6% (n=13) were referred to family physicians or emergency departments (1.8%, n=5) for short-term medical assistance.

**Conclusions:** Many Laval adults on a waiting list for a family physician would greatly benefit from having a regular source of primary healthcare to prevent, delay, and manage their cardiovascular health.

## Background

Canada, as most other countries, does not fare well in preventing or delaying the onset of chronic diseases. This, despite the fact that a small set of well-established, modifiable lifestyle behaviours are responsible for most of the main chronic conditions. The latest reports indicate that 85% of Canadians are not meeting the weekly physical activity recommendations; fruit and vegetable consumption is in decline; consumption of processed and fast foods as well as heavy alcohol consumption are on the rise; elevated rates of obesity and overweight remain virtually unchanged, putting roughly 60% of men and 45% of women at an increased health risk as a result of excess weight [1,2].

The Cardiovascular Health Awareness Program (CHAP, [www.CHAPprogram.ca](http://www.CHAPprogram.ca)) is a patient-centred, interdisciplinary, multi-pronged, community-led cardiovascular disease (CVD) prevention and

management program targeting key modifiable risk factors and aimed at older Canadians [3,4]. Essential components of CHAP are to increase cardiovascular risk awareness, connect with community programs and resources, create a feedback loop with primary care providers, and enable participants to acquire self-management skills. The program is explicitly based on the expanded Wagner's Chronic Care Model [5].

During a CHAP session, blood pressure is measured using validated, automated devices and protocols based on Hypertension Canada recommendations [6] and participants are assessed for cardiovascular/chronic disease risks (including diabetes) in familiar settings such as pharmacies, places of worship, social housing buildings, and other community spaces. Locally recruited and trained volunteers assist participants in measuring their blood pressure and in understanding their risk profiles. They also provide targeted healthy lifestyle and patient education materials, and offer advice about free or low-cost locally available resources and support programs. With the participants' permission, blood pressure readings and cardiovascular disease risk information are shared with participants' healthcare provider.

CHAP was originally developed and evaluated as a community-based intervention targeting older Canadians living in small to medium-sized communities in Ontario where access to a regular primary healthcare provider was not a significant issue [4]. Currently, many Canadians, especially in Quebec, are either not affiliated with a regular source of primary healthcare, or else face sub-optimal access to care. The latest statistics from Quebec indicate that one-third of residents in the Greater Montreal Area have no regular source of care and that this proportion is as high as one in two in some neighbourhoods [7]. In this context, it was felt that it would be inappropriate to offer population-based screening and CVD risk assessment sessions knowing that many participants could not be provided with appropriate and timely follow-ups.

Several Canadian provinces, including Quebec, have established centralized waiting lists to facilitate access to family physicians based on urgency of medical need and availability of primary care physicians [8,9]. In 2008 the *Ministère de la Santé et des Services Sociaux* (Quebec ministry of health and social services), in collaboration with the Quebec Federation of General Practitioners, introduced the *Guichet d'accès pour la clientèle orpheline* (GACO), a province-wide service where citizens without a family physician could register to access a healthcare provider. The objective of this program was to centralize and prioritize demand as a way to help people find a family physician [10]. In order to triage these requests according to urgency of care individuals looking for a family physician are asked to complete a form that can be submitted online or returned by mail. Once the form has been submitted, a nurse contacts the person by phone and assesses the individual's health status based on a standardized questionnaire [8]. Individuals are then assigned one of five priority codes. Priority 1 indicates need for immediate medical care (< 30 days); priority 2 and 3 within 3 and 6 months, respectively. Patients classified as priority 4 do not require urgent care, and those with priority 5 are considered in good health, with no known health problems [11].

It was felt that offering a modified CHAP program to individuals on a waiting list might bring a number of benefits including: providing a more accurate and up-to-date evaluation of their priority status on the waiting list; learning about and accessing locally available programs and initiatives targeting lifestyle modification; and supporting self-management and healthy lifestyle.

The main objective of our project was to assess the potential benefit of offering a modified version of CHAP program targeting adult patients on the GACO waiting list. This assessment included participation rate, demographic characteristics, CVD profile, and risk of developing type 2 diabetes of the attendees as well as their satisfaction (not reported here) with the program. After the sessions, we also conducted focus groups with volunteers to solicit their views on how the program could be improved (not reported here).

## Methods

The implementation of the modified CHAP program was conducted in Laval (population 420,000), Quebec's third largest city between March and June 2016 [12]. The target population consisted of persons 40 years of age or older, registered on the Laval waiting list (GACO) and attributed a priority code 3. All these individuals were mailed a personalized letter signed by the manager of the Laval GACO inviting them to attend one or more CHAP sessions held in one of four community health centres (*CLSC: Centre local de services communautaires*). The invitation letter indicated that participation in the program was voluntary and would not guarantee or accelerate assignment to a family physician. Before sending the invitations, the research team, at the invitation of the Laval regional department of general practice director, met with representatives of Laval family medicine groups (GMF) to explain the program, to discuss the FP referral protocol, and to ensure that participants identified with very high blood pressure or irregular heart rate readings would be provided timely follow-up by community family physicians. CHAP-GACO was seen as a novel way to reach persons on the waiting list and FP agreed to evaluate persons referred to them by the program, providing the essential feedback loop with a primary care provider ensuring their safety. Participants were free to choose their preferred location and time: morning, afternoon and evening sessions were offered. Participants were also offered parking reimbursement, when applicable.

The sessions were facilitated by volunteers recruited in partnership with local volunteer organizations (*Centre d'action bénévole Laval and Moisson Laval*). Volunteers were trained by the CHAP team using a standardized one-day training workshop. CHAP 3-hour sessions were supervised by a nurse who insured the CHAP protocol was followed. This included selection of the proper size and placement of a BP cuff, following guidelines for BP, weight, height and waist circumference measurements, and respecting participants' privacy and confidentiality of the collected data. A CHAP nurse was also available onsite to answer participants' and volunteers' questions. Finally, participants who were identified as high-risk were re-assessed by a CHAP nurse using a standardized protocol (see Appendix 1).

During the sessions, participants completed CVD risk profiles including diabetes risk assessment (CANRISK) [13,14]; had their blood pressure measured using a validated, automated device with an atrial fibrillation (AF) detection algorithm; had their height, weight as well as waist circumference measured; received targeted healthy lifestyle and patient education materials; and were informed about and linked to supportive, local, free or low-cost resources and programs (e.g. walking clubs, smoking cessation programs). This included referrals to *Cible Santé* and *Saines Habitudes de Vie*, two lifestyle modification programs offered by the local health authority (*CISSS Laval*) that would normally require a referral from a health professional. Finally, based on a *a priori* developed protocol, several family physicians in Laval agreed to provide a timely follow-up to participants who were identified as requiring urgent care at the CHAP sessions.

Data were analyzed with SPSS, version 24.0 for Macintosh. Univariate descriptive statistics and frequency distributions were used to describe the data. The study protocol was approved by the scientific and research ethics committee of the Laval regional health authority (*CISSS: Centre intégré de santé et de services sociaux de Laval*).

## Results

As of February 9, 2015, a total of 20,418 individuals in Laval had a priority code assigned and were on the waiting list for a family physician (around 5% of the total population). Of this group, 6,310 had a priority code 3 and 2,036 were 40 years of age or older and were therefore eligible to participate in the study. Invitation letters were sent over several weeks using a staggered approach. Potential participants were then invited to attend CHAP sessions based on proximity of their home address to one of four community health centres. Of the 2,036 invitation letters mailed, 60 (2.9%) were returned due to incorrect addresses, and 281 (14.2%) adults attended at least one CHAP session and 14 of those attended a second session. A total of 33 volunteers were recruited and trained to assist participants, with an average of 5 volunteers per session. A total of 26 CHAP sessions were held in the 4 community health centres.

### *Demographic characteristics and self-reported risk profiles*

The average age of attendees was 58.1 (SD=8.2) and 58% (n=163) were female. Almost 1 in 5 participants rated their general health as fair or poor (19.9%, n=56) and a similar proportion was living alone (21.7%, n=61). A more detailed participant profile in terms of demographic characteristics and self-reported lifestyle risk factors is shown in Table 1.

Participants were asked whether they have ever been diagnosed by a physician with type 2 diabetes (1.1%, n=3), high blood sugar level (6.8%, n=19), high blood pressure (37.0%, n=104), heart disease (4.3%, n=12), or dyslipidemia (9.6%, n=27). The vast majority of participants who were previously diagnosed

with hypertension indicated that their BP was controlled with medication (87.5%, 91/104) or with lifestyle changes (12.5%, 13/104).

Participants were asked to indicate which health related topics they would like to receive more information about. The most popular topics, in decreasing order of frequency, were *Healthy eating/healthy weight* (58.4%, n=164); *Physical activity/exercise programs* (47.3%, n=133), *Support programs to modify lifestyle habits* (34.5%, n=97), *Stress management* (33.5%, n=94), and *Living with pain and/or chronic health condition(s)* (32.0%, n=90).

### *Physical measurements and diabetes risk evaluation*

Automated BP measurements in both arms (3 consecutive readings at 1-minute intervals) were obtained using the Microlife WatchBP™ monitor with simultaneous atrial fibrillation (AF) detection. The trained volunteers ensured that appropriate cuff size was used and that the Hypertension Canada guidelines for BP measurement were followed. The mean readings from the arm with higher readings were subsequently used.

Volunteers assisted the participants with weight (digital scale), height and waist circumference measurements, as well as filling of the CANRISK questionnaire.

The mean (SD) systolic and diastolic BP was 131.9 (17.3) mm Hg and 77.9 (9.8) mm Hg, respectively. More than a third of participants (34.2%, n=96) had BP  $\geq$ 140/90, including 1.8% (n=5) whose BP  $\geq$ 180/110 mm Hg. Over 43% (n=45) of participants who reported that their hypertension was controlled with medications or lifestyle had a BP reading  $\geq$ 140/90 mm Hg. There was one participant with possible AF based on the WatchBP™ detection algorithm. Over 80% of participants had a Body Mass Index (BMI, kg/m<sup>2</sup>) which would fall in the overweight (38.8%, n=109) or obese (41.7%, n=117) categories. Almost half of participants had high (34.5%, n=97) or very high risk (11.4%, n=32) of developing type 2 diabetes based on their CANRISK scores. Table 2 provides more detailed summary of the physical measures.

### *Review of CVD risk profiles*

After completing the CVD risk profile questionnaire and undergoing physical measures, participant results were reviewed by one of the trained volunteers. At-risk participants were either referred to one of the lifestyle modification programs offered by the local health authority or to a CHAP nurse for on-site re-assessment: almost a third (28.8%, n=81) of attendees were referred to *Cible-Santé* and 12.8% (n=36) to *Saines habitudes de vie* and approximately 1 in 10 participants (11.7%, n=33) were re-assessed by a CHAP nurse based on the predetermined protocol. The main reason for nurse re-assessments was elevated systolic BP ( $\geq$ 160 mm Hg). The re-assessment included re-measurement of BP as well as a detailed medical history including previous diagnosis of hypertension, type 2 diabetes, atrial fibrillation, current medications, important changes in health status, and adherence to medication. Following re-

assessment by a nurse, 15 (5.3%) participants were asked to return for another CHAP session held on a different day, 5 (1.8%) were referred to the local emergency department, and 13 (4.6%) were referred to one of the family physicians that agreed to provide timely follow-up for participants identified as requiring urgent care at the CHAP sessions.

## Discussion

A modified version of the CHAP program targeting adult patients on the waiting list for a family physician in Laval, Canada, was successfully implemented. The implementation of CHAP required the collaboration of and support from a number of organizations and groups including the Laval regional health authority, the Laval regional direction of general practice, local volunteer organizations, waiting list managers, community health (CLSC) centers, and local family physicians and the emergency room department. While the overall attendance rate at CHAP sessions was modest, this is not unexpected given participation rates in health promotion activities are often quite low [15]. The invitation letter was from the GACO manager and not from someone that potential participants would have known or trusted. Further, it should be noted that the invitation letter clearly stated that participation in the program would not secure or accelerate assignment to a family physician. This was a younger group of participants, probably actively employed, thus making participation more challenging, even though a few evening sessions were held.

The prevalence of modifiable risk factors based on both self-reports and physical measures was high and, for many risk factors, significantly exceeded reported rates for similar age groups in the Quebec general population. For example, the proportion of attendees classified as obese was more than twice the proportion for Quebecers in the same age group [16]. Perhaps not surprisingly, close to half of the participants had a high or very high CANRISK score putting them at significant 10-year risk of developing type 2 diabetes. Similarly, CHAP attendees rated their own health as significantly poorer than the general population [16]. The prevalence of high blood pressure that was either undiagnosed, untreated or uncontrolled was quite high. This despite the fact that many attendees reported that their hypertension was treated with medication and/or lifestyle modification. Taken as a whole, the CVD risk profiles suggests that many Laval adults on a waiting list for a family physician classified as priority 3, would greatly benefit from having a regular source of primary healthcare to prevent, delay, and manage their cardiovascular health.

The program was beneficial to the participants. The attendees learned about and were referred to free or low-cost community-based programs and resources, which are often not well known and are frequently underutilized. Close to half of the attendees were referred to lifestyle programs offered by the local health authority. And a further 5% were referred to a family physician practising in local family health teams (GMF) or to an emergency room to address urgent health problems identified at the sessions. This suggests the importance of having a more detailed screening process that prioritizes patient health needs using more objective criteria. Finally, many participants had the opportunity to learn more about their

modifiable and non-modifiable risk factors that might have resulted in the initiation or reinforcement of healthy lifestyle while awaiting assignment to a family physician.

There were also some limitations and challenges. First, despite efforts to encourage participation with personalized letters, to offer sessions at different times of day (morning, afternoon and evening) and in close proximity to participants' homes as well as reimbursement of parking fees, the overall turnout was low. Second, no follow-up was conducted with participants to check if they had used the resources or attended the programs or services they were referred to. Third, the structure, organization and management of waiting lists changed during the intervention period. All regional waiting lists are now centrally managed by the Québec Ministry of Health and Social Services and priority codes have been redefined. These changes make it difficult to extrapolate the results obtained under GACO to the new Family Doctor Finder (*GAMF: Guichet d'accès à un médecin de famille*) waiting list structure.

## Conclusion

CHAP was successfully implemented and helped to identify participants in need of short-term medical follow-up. Participants were referred to local resources, which may have been unknown or underutilized, and helped to initiate or reinforce a healthy lifestyle. Participation in the program led to reprioritisation and hence accelerated access to a family physician for a minority of attendees. It would be interesting to re-assess the implementation and impact of the CHAP program on a larger scale, under the new centralized waiting list structure (GAMF), and with some of the 'lessons learned' from the current study.

## List Of Abbreviations

AF: Atrial Fibrillation

BMI: body mass index

BP: blood pressure

CHAP: Cardiovascular Health Awareness Program

CLSC: centre local de services communautaires

CVD: cardiovascular disease

GAMF: guichet d'accès à un médecin de famille

GACO: guichets d'accès pour la clientèle orpheline

GMF: groupe de médecine de famille

SD: standard deviation

# Declarations

## *Ethics approval and consent to participate*

The study protocol was reviewed and approved by the scientific and research ethics committee of the Laval regional health authority (Centre intégré de santé et de services sociaux de Laval). Participants and volunteers provided written consent to participate.

## *Consent for publication*

Not applicable.

## *Availability of data and materials*

The datasets used and/or analysed during the current study are available from the corresponding author (JK) on reasonable request.

## *Competing interests*

The authors declare that they have no competing interests.

## *Funding*

This project was supported by a grant from the Canadian Institute of Health Research. The funding agency had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

## *Authors' contributions*

JK, MTL, and MG conceptualized the study protocol and its implementation. JK and MG carried out analyses, ABC and JK drafted the initial manuscript, and reviewed and revised the manuscript. All authors assisted with data interpretation and synthesis and reviewed and revised the manuscript. JK, MTL, MG, and ABC read and approved the final manuscript as submitted and agreed to be accountable for all aspects of the work.

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# References

1. Statistics Canada. Canadian Community Health Survey, 2011. The Daily 2012;(Tuesday, June 19, 2012). Available at: <http://www.statcan.gc.ca/daily-quotidien/120619/dq120619b-eng.pdf> Accessed February 11, 2020.
2. Committee on Public Health priorities to reduce and control hypertension in the US population IoM. A population-based policy and systems change approach to prevent and control hypertension (executive summary). National Academies of Sciences Press. Available at: <http://www.nap.edu/catalog/12819.html> Accessed Feb 11, 2020.
3. Carter M, Karwalajtys T, Chambers L et al. Implementing a standardized community-based cardiovascular risk assessment program in 20 Ontario communities, *Health Promotion International*, 2009: [doi.org/10.1093/heapro/dap030](https://doi.org/10.1093/heapro/dap030)
4. Kaczorowski, Chambers LW, Dolovich L et al. Improving cardiovascular health at population level: 39 community cluster randomised trial of Cardiovascular Health Awareness Program (CHAP) *BMJ* 2011;342:d442.
5. Barr VJ, Robinson S, Marin-Link B et al. The expanded Chronic Care Model: an integration of concepts and strategies from population health promotion and the Chronic Care Model. *Hospital quarterly*2003;7(1):73-82.
6. Nerenberg KA, Zarnke KB, Leung AA et al. Hypertension Canada's 2018 Guidelines for Diagnosis, Risk Assessment, Prevention, and Treatment of Hypertension in Adults and Children. *Can J Cardiol*. 2018 May;34(5):506-525. doi: 10.1016/j.cjca.2018.02.022. Epub 2018 Mar 1.
7. Canadian Institute for Health Information (CIHI). Your Health System: Has a Regular Health Care Provider. Available at <https://yourhealthsystem.cihi.ca/hsp/inbrief?lang=en#!/indicators/074/a-un-fournisseur-habituel-de-soins-de-sante;/mapC1;mapLevel2;/> Accessed February 11, 2020.
8. Crooks VA, Agarwal G, Harrison A. Chronically ill Canadians' experiences of being unattached to a family doctor: a qualitative study of marginalized patients in British Columbia. *BMC Fam Pract*. 2012;13:69.
9. Breton M, Gagne J, Gankpé F. Implementing centralized waiting list for patients without family physicians across Québec. *Health Reform Obs/Observatoire des Réformes de Santé*. 2014;1(2):1–12.
10. CISSS libre parole. Série histoires d'experts : Mylaine Breton PhD. Available at: <http://www.cissslibreparole.com/entrevues-exclusives.html> Accessed February 11, 2020
11. Ministère de la santé et des services sociaux (MSSS). Rapport annuel GACO 2013 : Annexe I. ville, Qc : Cadre de référence provinciale, 2013 (Version 2011-10-18)
12. Institut de la statistique Québec. Municipalités de 100 000 habitants et plus au Québec, au 1<sup>er</sup> juillet 2016. Available at : [http://www.stat.gouv.qc.ca/statistiques/population-demographie/structure/mun\\_100000.htm](http://www.stat.gouv.qc.ca/statistiques/population-demographie/structure/mun_100000.htm) Accessed February 11, 2020.
13. Kaczorowski J, Robinson C, Nerenberg K. Development of the CANRISK questionnaire to screen for prediabetes and undiagnosed type 2 diabetes. *Canadian Journal of Diabetes* 2009;33(4):381 – 385

14. Robinson CA, Agarwal G, Nerenberg K. Validating the CANRISK prognostic model for assessing diabetes risk in Canada's multi-ethnic population. *Chronic Dis Inj Can.* 2011;32(1):19-31.
15. Rongen A, Robroek SJW, van Ginkel W et al. Barriers and facilitators for participation in health promotion programs among employees: a six-month follow-up study. *BMC Public Health.* 2014;14:573. doi: 10.1186/1471-2458-14-573.
16. L'Enquête québécoise sur la santé de la population, 2014-2015 : pour en savoir plus sur la santé des Québécois. Available at: [http://www.stat.gouv.qc.ca/statistiques/sante/etat-sante/sante-globale/sante-quebecois-2014-2015\\_an.html](http://www.stat.gouv.qc.ca/statistiques/sante/etat-sante/sante-globale/sante-quebecois-2014-2015_an.html) Accessed February 11, 2020

## Tables

Table 1 - Self-reported demographic and lifestyle risk factors (n=281\*)

Characteristic	Mean (SD) or n (%)
Age: (Years)	58 (8.2)
Sex: (Female)	163 (58%)
Living alone: (Yes)	61 (21.7%)
Health status: (Fair/Poor)	56 (19.9%)
Smoking status	
Current (Yes)	24 (8.5%)
Former (Yes)	125 (44.5%)
Eat at least five portions of fruits and vegetables each day: (NO)	153 (54.4%)
In a typical week, how many times do you eat high fat foods or fast food? (>3 times)	30 (10.7%)
Drink 2 or more alcoholic beverages per day (woman) or 3 or more (man): (Yes)	34 (12.1%)
Physical activity for at least 30 minutes each day: (No)	161 (57.3%)
In a typical week, how frequently do you feel overwhelmed or stressed?: (Often)	64 (22.8%)

\* Not all questions answered by all respondents

Table 2 - Physical measures and CANRISK scores (n=281\*)

Characteristic	Mean (SD) or n (%)
Systolic BP: (mean)	131.9 (17.3)
<120	56 (19.9%)
120-139	139 (49.5%)
140-179	81 (28.8%)
>180	5 (1.8%)
Diastolic BP: (mean)	77.9 (9.8)
<80	164 (58.4%)
80-89	80 (28.5%)
90-119	37 (13.2%)
>120	-----
BP $\geq$ 140-179/90-109	91 (32.4%)
BP $\geq$ 180/110	5 (1.8%)
Heart rate (mean)	73.3 (13.0)
Body Mass Index (mean)	29.8 (5.8)
Normal weight (18.5 - 24.9)	54 (19.3%)
Overweight (25.0 - 29.9)	109 (38.9%)
Obese (30.0 - 39.9)	104 (37.1%)
Morbidly obese (>40)	13 (4.6%)
Waist circumference	
Males:	
$\geq$ 102 cm (40 inches)	94 (80.3%)
Females	
$\geq$ 88 cm (35 inches)	135 (82.8%)
CANRISK Score	
Low (<21)	37 (13.2%)
Moderate (21-32)	115 (40.9%)
High (33-42)	97 (34.5%)
Very high (43-87)	32 (11.4%)

Not all questions answered by all respondents

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Appendix.pdf](#)