



Assessment of the educational competencies for the Hypertension Canada Professional Certification Program (HC-PCP) designed for implementation of hypertension guidelines into primary care

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We were interested in designing an implementation strategy to increase the use of Hypertension Canada's evidence-based guidelines. The developed competencies were mapped to the guidelines and formed the foundation of an educational program that not only highlights the importance of the guidelines but actively integrates them into clinical practice.

Nous voulions concevoir une stratégie de mise en œuvre pour accroître l'utilisation des lignes directrices fondées sur des données probantes provenant d'Hypertension Canada. Les compétences développées ont été mises en correspondance avec les lignes directrices et ont constitué la base d'un programme éducatif qui non seulement met l'accent sur l'importance des lignes directrices mais les intègre activement dans la pratique clinique.

ABSTRACT



Background: The uptake of clinical practice guidelines into practice is limited for many chronic conditions, including hypertension. The aim of this study was to ascertain the importance of the educational competencies for the development of the Hypertension Canada Professional Certification Program (HC-PCP) among frontline, primary care professionals (e.g., pharmacists, physicians, nurses).

Methods: A group of hypertension experts developed 15 competencies believed to be important for primary care professionals to master when providing hypertension management. These competencies were surveyed for consensus by frontline clinicians through the Hypertension Canada e-newsletter in 2018. Clinicians were asked to rank the importance of each competency for a primary care provider to acquire when undertaking a certifi-

cation in hypertension management, using a Likert scale from 1 (not important) to 5 (very important).

Results: A total of 121 clinicians responded to the survey. Of these, 38% were pharmacists, 31.4% were registered nurses, 10.7% were physicians and 7% were nurse practitioners. There was at least 1 respondent from each Canadian province and territory, except for the Northwest Territories. All 15 competencies received a mean rank of at least 4. The competency with the highest ranking was Competency 6: Ability to screen and identify hypertension (mean 4.83 [0.04]). The competencies with the lowest average ranks were Competency 1: Demonstrates a sound knowledge of the epidemiology of hypertension (mean 4.07 [0.85]) and Competency 5: Demonstrates an understanding of the validation process for blood pressure devices (mean 4.15 [0.08]).

Conclusions: Clinicians generally ranked all 15 competencies to be of high importance for a provider who is certified in hypertension management to possess. These competencies and the current Hypertension Canada guidelines were used as the foundation for the development of an education program called the Hypertension Canada Professional Certification Program. *Can Pharm J (Ott)* 2021;154:271-277.

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KNOWLEDGE INTO PRACTICE



- There are good evidence-based guidelines for the management of hypertension, but the uptake of these guidelines into practice is limited.
- An implementation strategy is needed to incorporate the guidelines into primary care practice. These competencies and the current Hypertension Canada guidelines were used as the foundation for the development of the Hypertension Canada Professional Certification Program (HC-PCP).

MISE EN PRATIQUE DES CONNAISSANCES



- Il existe de bonnes lignes directrices fondées sur des données probantes pour la prise en charge de l'hypertension, mais leur mise en pratique est limitée.
- Une stratégie de mise en œuvre est nécessaire pour intégrer les lignes directrices dans la pratique des soins primaires. Ces compétences et les lignes directrices actuelles d'Hypertension Canada ont servi de base à l'élaboration de ce programme éducatif sur l'hypertension, le Programme de certification professionnelle d'Hypertension Canada (PCP HC).

Introduction

Complications related to cardiovascular diseases are the leading causes of death globally.^{1,2} For the past 2 decades, Canada has been a leader in hypertension screening and management, and hypertension control rates have drastically improved. Hypertension is the leading risk factor in Canada before development of cardiovascular disease.³ Greater implementation of evidence-based guidance for hypertension management into clinical practice is warranted.³ It is proposed that this global gap in hypertension control is caused by a lack of awareness and treatment.^{4,5} This is not unique to hypertension, with research suggesting the uptake and incorporation of clinical practice guidelines into practice is limited for many chronic conditions,⁶⁻⁹ and it is proposed that 30% to 40% of patients receive treatment that is not based on evidence and guidelines.⁶ Barriers to implementation of guidelines into practice are suggested to be related to knowledge, behaviour and attitudes of clinicians.⁷

Hypertension detection and management remains a high priority and the core focus of many organizations, including Hypertension Canada (HC). Recent reports have suggested there is a higher incidence of uncontrolled hypertension in older women in Canada.¹⁰ HC provides up-to-date, evidence-based guidelines,³ but the uptake of these guidelines and

implementation into primary care providers' clinical practice remains challenging.^{3,4,7}

Programs designed to address these barriers and increase uptake and implementation of clinical practice guidelines are not new to health care. A 2012 study evaluated the uptake of evidence-based management of lower back pain in primary care.¹¹ This study evaluated a 6.5-hour, guideline-based workshop for primary care physicians and found there was an increase in evidence-based attitudes and beliefs following the program.¹¹ There are several hypertension programs designed as continuing education for primary health care professionals that are currently available, ranging in time commitments from a few hours to months.¹²⁻¹⁹ However, the impact of these programs on uptake of the clinical guidelines is unknown. Thus, HC has created a novel evidence-based program, called the Hypertension Canada Professional Certification Program (HC-PCP), that differs from these other programs and aims to increase the integration of the current Canadian hypertension guidelines into practice for primary health care providers (e.g., pharmacists, physicians, nurses). The HC-PCP was created as an evidence-based program constructed around core competencies developed by hypertension experts and agreed upon by primary care providers (e.g., pharmacists, physicians, nurses). The HC-PCP incorporates self-directed learning with immediate and delayed feedback from hypertension experts.

This article describes how these HC-PCP foundational core competencies were developed and tested. There is no standardized approach to defining and measuring competencies, and often the steps taken to define them are not disclosed.¹⁶ However, there are several rationales for developing competencies: 1) improved education, 2) creation of competency framework, 3) improved care, 4) improved understanding, 5) standardization and 6) health care system changes.²⁰ This study aimed to standardize the hypertension competencies used in primary care, improve the management of hypertension and increase the uptake of hypertension guidelines into primary practice. The objective was to ascertain which competencies are important for certification in hypertension management for frontline, primary care professionals.

Methods

The competencies were established using survey and consensus methods.²⁰ The authors and a larger group of hypertension experts and researchers drafted the potential competencies for certification in hypertension management and mapped the competencies to the HC guidelines framework for managing hypertension.^{3,21} They then formulated 15 competencies, through an informal modified Delphi process, that they deemed to be essential to providing certification in hypertension management for primary care professionals. These competencies were then tested through a survey of frontline, primary care professionals to obtain consensus on which competencies are considered important for certification in

hypertension management by both hypertension experts and frontline, primary care providers.

The online survey was developed using Google Forms (Appendix 1, available online at www.cpjournal.ca) and available in English and French. The survey was internally reviewed by several hypertension experts for readability before being distributed to the HC mailing list for input on the importance of each competency. The mailing list consisted of individuals from a wide range of backgrounds, including researchers, health policy experts, physicians, pharmacists and nurses. The survey was distributed in the HC e-newsletter in December 2017 and again in the January and February issues, which were sent out to 2898 individuals on the HC mailing list; however, only 928 people opened and reviewed the e-newsletter. Of these 928 readers, 250 individuals clicked through to the HC content and obtained access to the survey link. The survey remained open until the end of February 2018.

The survey included demographic questions to capture the participant's profession and province/territory and the 15 drafted competencies. Participants were asked to rank the importance of each competency for a primary care provider who has received certification in hypertension management to possess on a Likert scale from 1 to 5, with 1 being not important at all and 5 being very important. The data were analyzed using SPSS version 25 software (SPSS, Inc., Chicago, IL). A copy of the survey, which was distributed, can be found in Appendix 1.

Results

A total of 121 clinicians responded to the survey out of the possible 928 people who opened the e-newsletter, yielding a response rate of 13.04%. Of the 121 clinicians, 38% (46/121) were pharmacists, 31.4% (38/121) were nurses, 10.7% (13/121) were physicians, 9.1% (11/121) were nurse practitioners, 2.5% (3/121) were dietitians, 2.5% (3/121) were kinesiologists and 5.8% (7/121) were identified as other professions (e.g., health care aid, clinical research associate, hypertension management program, therapist, exercise therapist). There was at least 1 respondent from each Canadian province and territory, except the Northwest Territories. The provinces with the highest response rates were Ontario (38.8%, 47/121), Alberta (19%, 23/121), Québec (17.4%, 21/121), British Columbia (9.1%, 11/121) and Nova Scotia (5%, 6/121). Cronbach's alpha for the questionnaire was 0.853, indicating excellent internal consistency of the competencies.

All 15 competencies received a mean rank of at least 4 (Table 1). The competencies with the lowest average ranks were Competency 1: Sound knowledge of the epidemiology of hypertension (mean 4.07 [0.85]) and Competency 5: Understanding blood pressure (BP) device validation (mean 4.15 [0.08]). The Likert scale responses were heavily skewed to 4 to 5 (important and very important). Therefore, the Likert scale responses 1 and 2 (not important) were grouped together. The highest-ranking competencies were Competency 6: Ability to screen and identify hypertension (mean 4.83 [0.04]), Competency 7:

Ability to diagnose hypertension (mean 4.81 [0.043]), Competency 3: Knowledgeable in hypertension prevention strategies (mean 4.79 [0.043]) and Competency 4: Demonstrating the proper BP measuring technique (mean 4.77 [0.045]).

There was an overwhelming acceptance from primary care providers as to the importance of all 15 competencies for certification of hypertension management developed by the hypertension experts. Thus, these competencies were used as the foundation and development of the HC-PCP learning objectives and were mapped to the current HC guidelines for the core curriculum, as shown in Figure 1.

Participants were able to provide general comments at the conclusion of the study. One participant expressed the opinion that certification should mean being competent in all areas of disease management, while another suggested the certificate include industry partners as an additional stakeholder in hypertension management with the development of BP devices. One clinician highlighted the credibility a program like this can extend to health care professionals, similar to other disease programs, like diabetes.

I think that certification in any disease should mean that you are very competent in ALL aspects of diagnosis, teaching, management and follow-up.

For nurses, I see this role working similarly to the certified diabetes educator (CDE) role, where the nurse supports lifestyle interventions and self-management strategies, but is also knowledgeable about medications and can identify concerns and report to the prescriber when required. My hope is that prescribers will develop the same respect for these nurses as they currently have for CDEs. I hope there will be a lot of education to all about what is involved in this certification. I am very excited about this for primary care nurses in health teams, as they are well situated to have a tremendous role in hypertension management.

Discussion

This survey was well distributed across Canada with clinicians from a variety of primary health care professions and representing all provinces and all but 1 territory. All 15 competencies were highly ranked, with most of the clinicians identifying each competency as important or very important in hypertension management for primary care providers. These competencies were drafted by hypertension experts and researchers and agreed upon by primary care providers. They are mapped to the Hypertension Canada guidelines and align with hypertension competencies published for primary health care nurses, nurse practitioners and physician assistants.^{22,23}

These competencies were used as the foundational basis for the development of the HC-PCP. Each competency was strongly supported by the clinicians for inclusion in the HC-PCP for primary health care professionals in managing hypertension. The development of the HC-PCP began in March

TABLE 1 Participant responses to the 15 potential competencies

Competencies (n = 121)	Mean (SD)	Not important, n (%)	Neutral, n (%)	Important, n (%)	Very important, n (%)
1. Demonstrates a sound knowledge of the epidemiology of hypertension.	4.07 (0.85)	6 (5)	28 (23.1)	38 (31.4)	49 (40.5)
2. Demonstrates a substantial understanding of the pathophysiology of hypertension.	4.42 (0.075)	5 (4.1)	8 (6.6)	38 (31.4)	70 (57.9)
3. Is knowledgeable in hypertension prevention strategies.	4.79 (0.043)	0	3 (2.5)	20 (16.5)	98 (81)
4. Is able to demonstrate the proper technique when measuring blood pressure.	4.77 (0.045)	0	4 (3.3)	20 (16.5)	97 (80.2)
5. Demonstrates an understanding of the validation process for blood pressure devices.	4.15 (0.08)	3 (2.5)	27 (22.3)	39 (32.2)	52 (43)
6. Demonstrates an ability to screen for and identify individual patient cases for hypertension.	4.83 (0.04)	0	3 (2.5)	15 (12.4)	103 (85.1)
7. Demonstrates the ability to appropriately diagnose hypertension.	4.81 (0.043)	0	4 (3.3)	15 (12.4)	102 (84.3)
8. Demonstrate a knowledge of common comorbidities in hypertension and how they affect diagnosis and management.	4.74 (0.049)	1 (0.8)	3 (2.5)	23 (19)	94 (77.7)
9. Demonstrates the ability to assess risk factors for cardiovascular disease and calculate a risk score for cardiovascular events.	4.74 (0.043)	0	2 (1.7)	27 (22.3)	92 (76)
10. Demonstrate a knowledge of the end-organ effects of hypertension and how it is identified and prevented.	4.75 (0.043)	0	2 (1.7)	26 (21.5)	93 (76.9)
11. Has a working knowledge of diet and lifestyle measures for hypertension.	4.69 (0.048)	0	4 (3.3)	29 (24)	88 (72.7)
12. Demonstrates exemplary decision-making with respect to the pharmacologic management of hypertension.	4.72 (0.047)	0	4 (3.3)	26 (21.5)	91 (75.2)
13. Can identify adherence support strategies for antihypertensive therapy.	4.6 (0.055)	0	7 (5.8)	35 (28.9)	79 (65.3)
14. Can implement appropriate follow-up strategies.	4.57 (0.057)	0	9 (7.4)	34 (28.1)	78 (64.5)
15. Is able to identify patients who require referral to other health care professionals (e.g., specialists).	4.64 (0.055)	0	8 (6.6)	28 (23.1)	85 (70.2)

2019, and the course was made available in April 2020 (<https://hypertension.ca/professional-certification-program/>).

The HC-PCP is similar to other hypertension and implementation programs in its intent to increase uptake of clinical

hypertension guidelines into primary practice, but with a few key differences. The HC-PCP consists of 4 online learning modules and a hypertension registry that is integrated into a practitioner's practice, with the expectation that the registry

FIGURE 1 Hypertension Canada Professional Certification Program course outline with the mapped competencies and Hypertension Canada guidelines

MODULE 1: Epidemiology and Pathophysiology of Hypertension	MODULE 2: Hypertension Screening	MODULE 3: Prevention and Non-Pharmacologic Management of Hypertension	MODULE 4: Pharmacologic Management of Hypertension Management
<p>Competency 1 Demonstrates a sound knowledge of the epidemiology of hypertension.</p> <p>Competency 2 Demonstrates a substantial understanding of the pathophysiology of hypertension.</p> <p>Competency 8 Demonstrate a knowledge of common co-morbidities in hypertension and how they affect diagnosis and management. <i>(Prevention & Treatment Guidelines VI-XIII)</i></p> <p>Competency 10 Demonstrate a knowledge of the target organ effects of hypertension and how it is identified and prevented.</p>	<p>Competency 4 Is able to demonstrate the proper technique when measuring blood pressure. <i>(Diagnosis & Assessment Guidelines I, III, IV)</i></p> <p>Competency 5 Demonstrates an understanding of the validation process for blood pressure devices.</p> <p>Competency 6 Demonstrates an ability to screen for and identify individual patient cases for hypertension. <i>(Diagnosis & Assessment Guideline V)</i></p> <p>Competency 7 Demonstrates the ability to appropriately diagnose hypertension. <i>(Diagnosis & Assessment Guideline II) -from 1</i></p> <p>Competency 9 Demonstrates the ability to assess risk factors for cardiovascular disease and calculate a risk score for cardiovascular event. <i>(Diagnosis & Assessment Guidelines VI, VII)</i></p> <p>Competency 15 Is able to identify patients who require referral to other healthcare professionals.</p>	<p>Part 1: Lifestyle Strategies for Prevention and Management Competency 3. Is knowledgeable in hypertension prevention strategies. <i>(Prevention & Treatment Guideline I)</i></p> <p>Competency 11 Has a working knowledge of diet and lifestyle measures for hypertension. <i>(Prevention & Treatment Guideline I)</i></p> <p>Part 2: Non-adherence, Coaching, Motivation and Intervention Competency 13 Can identify adherence support strategies for antihypertensive therapy. <i>(Prevention & Treatment Guideline XIII)</i></p> <p>Part 3: Follow Up Strategies Competency 15 Is able to identify patients who require referral to other healthcare professionals.</p> <p>Competency 14 Can implement appropriate follow-up strategies. <i>(Diagnosis & Assessment Guideline II)</i></p>	<p>Part 1 Competency 12 Demonstrates exemplary decision-making with respect to the pharmacologic management of hypertension. <i>(Prevention & Treatment Guidelines VI-IX)</i></p> <p>Part 2: Bringing the Course Together Competency 12 Demonstrates exemplary decision-making with respect to the pharmacologic management of hypertension.</p>



will become integrated into their daily practice. Hypertension experts are the facilitators of the HC-PCP and provide evaluation and feedback to primary care providers on their individual management of hypertension. The HC-PCP has been designed for primary health care professionals, with pharmacists chosen as the initial group to undertake the program. There is strong evidence to support the benefits of pharmacist-led hypertension interventions in assessing, prescribing and managing hypertension.²⁴⁻³² Pharmacists have been recognized as a key practitioner in identifying and managing hypertension in the community.²⁴⁻³² Indeed, the HC-PCP has recently received accreditation from the Canadian Council on Continuing Education in Pharmacy (CCCEP) for 30 units.

The HC-PCP will be tested to determine the program's effectiveness at increasing the uptake and implementation of current clinical practice guidelines. This rigorous testing and evaluation will be conducted through a clinical trial (Rx PATH trial, ClinicalTrials.gov #NCT03965104) to evaluate the efficacy of the competencies and the HC-PCP on the uptake of the hypertension guidelines and the improvement of hypertension detection and management in patients with uncontrolled hypertension (<https://www.epicore.ualberta.ca/home/rxpath/>).

Limitations

The development of the competencies and HC-PCP were conducted in partnership with Hypertension Canada (HC). Thus, this study was restricted to Canadian hypertension frontline professionals, and the resulting competencies are limited to hypertension management in Canada. Another limitation of this study was the recruitment method of clinicians through the HC e-newsletter, as this could have potentially excluded other frontline professionals who are not part of the HC mailing list. It is also likely, as in other surveys, that those who were more motivated or interested in this topic may have responded disproportionately. However, the consensus of these competencies was well distributed, with over 6 different health care professions being represented and including all the Canadian provinces and all but 1 territory. Furthermore, it is the opinion of hypertension experts (included on the HC mailing list) that we sought to develop and provide consensus of these competencies.

Conclusion

A high degree of consensus was reached by the primary health care professionals surveyed in this study on 15 competencies required for certification in hypertension management drafted by the hypertension experts and

researchers. The HC-PCP was developed using these foundational core competencies and included hypertension experts, researchers and primary care providers (e.g.,

pharmacists, physicians, nurses) to increase the incorporation and uptake of hypertension clinical practice guidelines into primary practice. ■

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