

Professional education and training of public health and preventive medicine specialists in Canada

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Public health and preventive medicine (PHPM) specialist physicians focus on the population rather than individuals as their patients. These specialists assess the health status of a community and subsequently develop, implement and evaluate effective interventions at the population level to improve health. This work brings together their medical expertise, population health approach and management/leadership skills.^[1] The Royal College of Physicians and Surgeons of Canada (RCPSC) states that *'the Public Health and Preventive Medicine or community medicine (as called previously) specialist uses population health knowledge and skills to play leading and collaborative roles in the maintenance and improvement of the health and well-being of the community.'*^[2] It is a broad speciality that requires strong generalist skills including in preventive medicine, management, epidemiology, emergency response, health promotion, and health protection.^[3]

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Undergraduate medical training in Canada

To enter medical training in Canada, most prospective medical students would have completed a 4-year undergraduate degree, typically in the sciences but occasionally in other disciplines. However, in rare instances, individuals with 2 - 3 years of undergraduate training may be admitted into medical school. Undergraduate medical training spans 3 or 4 years (in most schools) at one of 17 medical schools in Canada. Previously, there was a mandatory 1-year rotating internship following medical school in Canada, but this practice was discontinued by the early 1990s. Now students commonly proceed directly into a residency programme, which serves as their training scheme.

Residency training in public health and preventive medicine in Canada

In Canada, Family Medicine and other Specialty training matches are done in the 4th year of medical school via the Canadian Resident Matching Service (CaRMS).^[4] CaRMS is a national, independent, not-for-profit organisation that provides a transparent matching service for medical programmes.

The qualification of training for specialists in Public Health and Preventive Medicine (PHPM) is overseen by the Royal College of Physicians and Surgeons of Canada (RCPSC).^[4]

Post-graduate training in PHPM is typically 5 years, with the minimum entry requirement being a degree in medicine. Rarely, in cases where individuals already have a master's degree, it can be completed in 4 years. Therefore, excluding gaps, additional degrees, etc., it typically takes 13 years from high school graduation to completion of PHPM speciality training.

The five years of residency training must be done under the oversight of an accredited residency program. Requirements currently include the list below. However, changes are underway with the Competence by Design initiative.

1. One year of basic clinical training selected from at least three of the following: Obstetrics and Gynaecology, Paediatrics or its sub-specialities, Emergency Medicine, Geriatric Medicine/care of the elderly, Family Medicine, Internal Medicine or its sub-specialities
2. Four years, which include:
 - (a) a minimum of two semesters of academic work in PHPM, which must include epidemiology and biostatistics, and may include research methods (qualitative/quantitative), public health system/policy, program evaluation or management/leadership
 - (b) a minimum of 18 months of field placements selected from at least one of the following settings such as national, provincial, territorial, regional, or local public health agencies; health planning authority; environmental health setting; occupational health department in government and/or industry
 - (c) up to 12 months of other field placements relevant to the candidate's future career goals, such as clinical pharmacology and toxicology, aerospace medicine, occupational Medicine or other, as approved by the program director
 - (d) up to 18 months of research relevant to PHPM
 - (e) up to 12 months of College of Family Physicians of

Canada (CFPC) accredited training or RCPSC clinical speciality relevant to the practice of PHPM or selective clinical experiences related to disease prevention and health promotion for specific populations or groups.'

A common example of PHPM rotations and field placements done over the last few years of the training programme includes:

- 3 months of Communicable disease
- 3 months of Environmental Health
- 3 months of Non-communicable Disease
- 3 months of Health Policy
- 6 months of Management and Leadership
- Electives and Selectives

The breadth of this training offers significant strengths. However, there are also opportunities for further improvement and evolution. For instance, updating communication approaches to encompass social media, addressing power dynamics enhancing community engagement, and considering the impacts of emerging technological tools like artificial intelligence.

Training evaluations are done throughout the residency program. These ultimately lead up to the final in-training evaluation report (FITER).^[5] After this, the resident is required to successfully pass the speciality examination, which involves both written and applied components, over multiple days.^[6]

Scope of practice

Six core functions for public health are commonly discussed in Canada:

- Population Health Assessment
- Health Surveillance
- Health Protection
- Health Promotion
- Disease and Injury Prevention
- Emergency Preparedness and Response

It is important to note the value of Indigenous expertise and perspectives in Canada, as well as ongoing work addressing the impacts of colonialism and racism, including within health systems.

There are approximately 600 PHPM specialists in Canada, serving a population of 38 million. This figure may include individuals who are retired and those who are not primarily engaged in public health roles. It would not include family physicians and other specialists who sometimes may also be working in predominantly public health roles such as Medical Officers of Health. Public Health Physicians of Canada (PHPC, [www.phpc-](http://www.phpc-mspc.ca)

[mspc.ca](http://www.phpc-mspc.ca)) is the national speciality association that plays roles in continuing professional development and other support for those in practice.

Canada is a federation with responsibility for both healthcare and public health services falling predominantly within provincial/territorial jurisdiction, as opposed to nationally. Structures may differ between provinces or territories. For example, while Medical Officer of Health (MOH) or Medical Health Officer (MHO) roles are common for public health physicians in Canada, in one province they may work within a 'public health unit' (e.g., Ontario) and in others within 'regional health authorities'. Other sites of their work may include provincial agencies (e.g. British Columbia Centre for Disease Control (BCCDC), Public Health Ontario (PHO), Institut National de santé Publique du Québec (INSPQ); provincial and territorial ministries of health; and national organizations (e.g., Public Health Agency of Canada). They may also do teaching, research, healthcare and other roles. They typically work in teams with public health nurses, public health inspectors, epidemiologists, administrative staff and others.

PHPM physicians possess skills in effectively prioritising at a population level, an important aspect given the complexity of health and wellbeing. Our roles can be misunderstood, and this requires us to better communicate our values, perspectives, roles and position within the health system. At its best, PHPM training and practice experience methodically enhance a medical background with a comprehensive understanding of health determinants, effective interventions, and community engagement strategies. The context of a recent pandemic and the expectation of many other upcoming health system challenges provide an opportunity for PHPM physicians to continue to demonstrate the value of this skillset and expertise.^[1]

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