

PUBLIC HEALTH SCIENCES

Telephone

(613) 533-2901 (M.Sc. and Ph.D. Programs)

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<https://phs.queensu.ca/>

Mission of the Department

Established in 1968 (originally named the Department of Community Health and Epidemiology), the vision of the Department of Public Health Sciences is to improve population health, health outcomes and health equity at local, national and global levels. The mission is to advance the health of communities through rigorous research, exceptional education, and collaborative partnerships. The Department's guiding values are: rigour, impact, collaboration, student-focus and equity.

The Department offers a thesis-based Master of Science (M.Sc.) degree in Public Health Sciences (Field of Study: Epidemiology), a non-thesis based M.Sc. degree in Public Health Sciences (Specialization in Biostatistics, Collaborative with Department of Mathematics and Statistics), a professional Master of Public Health (M.P.H.) degree, a Doctor of Philosophy degree (Ph.D.) in Public Health Sciences, a Ph.D. degree in Public Health Sciences (Field of Study: Epidemiology) and a Ph.D. degree in Public Health Sciences (Field of Study: Biostatistics). It also contributes to education in the undergraduate medical curriculum as well as the undergraduate curriculum in Life Sciences and Biochemistry and the Bachelor of Health Sciences program.

Purpose of the M.Sc. Program (Field of Study: Epidemiology)

Epidemiology is the study of the distribution and determinants of health-related events in populations and the application of this study to the control of health problems. The purpose of the M.Sc. program is to provide the common methodological foundation to conduct research across diverse health-related areas.

The Department offers a 24-month research-based M.Sc. degree, with one cycle of enrollment in September of each year.

Students graduate from the program with abilities to: communicate scientifically; describe trends and patterns of disease incidence and prevalence; critically review health evidence; apply epidemiologic and analytic methods in the design of research; collect, analyze and interpret health data; conduct a study; and, write and defend a thesis.

Study satisfactorily completed by physicians may fulfill part of the requirements for Fellowship in Public Health and Preventive Medicine of the Royal College of Physicians and Surgeons of Canada.

Purpose of the M.Sc. Program (Specialization in Biostatistics, Collaborative with the Department of Mathematics and Statistics)

There is a growing demand for qualified Master's level biostatisticians in academic and industry sponsored epidemiologic studies, health services research, and clinical trial analysis.

The purpose of this 12-month Collaborative M.Sc. program specializing in Biostatistics is to produce graduates who will be capable of working as biostatistical analysts within multi-disciplinary health research teams. This objective will be achieved through two-term coursework that will equip students with a sound knowledge in observational and experimental study designs, statistical theory, and statistical models for health data analysis, and statistical computing. A four-month practicum will allow students to apply basic knowledge and develop consulting expertise within a health research group in a research institution, government or industry setting.

Purpose of the M.P.H. Program

The M.P.H. is a professional, course-based degree built on the foundational disciplines of epidemiology and biostatistics. It is designed to educate, equip and inspire students to take evidence-informed action for public health.

The degree is 16 consecutive months in duration, attracting applicants from a range of disciplines.

A 12-month Accelerated M.P.H. program is available for candidates with at least two years of full-time cumulative paid work experience in health care, public health or a related field. Work experience may include two years of accredited residency through the Royal College of Physicians and Surgeons of Canada or two years of work as a Regulated Health Professional in Canada.

By the completion of the program, graduates are able to:

- Define public health issues using a population health approach
- Search for evidence to address public health issues
- Appraise and interpret public health evidence



- Synthesize evidence to develop recommendations for public health action
- Adapt public health communication and evidence-based interventions to specific contexts and populations
- Plan to implement public health programs, services and policies
- Evaluate the process and outcomes of public health actions
- Demonstrate development of core attitudes and values of a public health professional.

Each of these eight program outcomes is critical to enable evidence-informed action for public health.

Study satisfactorily completed by physicians may fulfill part of the requirements for a specialist certification in Public Health and Preventive Medicine from the Royal College of Physicians and Surgeons of Canada.

Purpose of the Ph.D. Program

The program objective is to graduate individuals who are capable of functioning as independent investigators within academic (or equivalent) research positions, or who can occupy positions of professional leadership in public health- or health-related agencies where research is an important function.

Through coursework students demonstrate a mastery of theories, methodological concepts, and substantive knowledge integral to their research area. In the Comprehensive Exam, students demonstrate their in-depth knowledge in theoretical and applied methods; and an ability to apply that knowledge to their research area.

Through the dissertation process, students demonstrate the ability to undertake research including the ability to critically appraise and synthesize appropriate literature; develop researchable questions; design practical and feasible studies; write scientific protocols that summarize research plans and demonstrate an understanding of key methodological issues; collect primary or process secondary data, where the latter are not 'research ready' at the outset; analyze and interpret data; and understand the implications of findings within the appropriate context.

Students also have opportunities to present their research in seminars and scholarly academic meetings. Students gain an ability to communicate scientifically, both in terms of publishing research findings in reputable journals, and by presenting research findings to their respective research communities. Some students also gain experience as teaching assistants.

Areas of Research

Faculty members conduct research in a wide variety of areas related to epidemiology, clinical trials, biostatistics, health services research, health policy, health economics, and other fields. Within these broad disciplines, specific content strengths include: cancer epidemiology, biostatistics methodology, child health, clinical epidemiology, global health, social and behavioural epidemiology, mental health, social science and health, qualitative research methods, data science, infectious disease epidemiology, and health equity. Opportunities in many of these areas are strengthened by formal affiliations with research groups such as: The Canadian Cancer Trials Group (CCTG) and the Division of Cancer Care and Epidemiology (CCE), both located in the Queen's Cancer Research Institute (QCRI), the Health Services and Policy Research Institute (HSPRI), ICES Queen's, KFL&A Public Health, and Kingston Health Sciences Centre / Kingston General Health Research Institute (KGHRI).

Financial Assistance

Ph.D. candidates who are accepted into the program will be guaranteed four year funding of \$23,000 per year minimum. The Department guarantees a minimum of one teaching assistant position per year for which the student must apply, and which is included in the minimum funding package. The total amount may be higher based upon available external and internal awards.

Funding is provided for all first and second year full-time M.Sc. students with a current guaranteed minimum of \$12,000 per year for M.Sc. Field of Study Epidemiology, and \$10,000 per year for M.Sc. Specialization in Biostatistics. Qualified candidates will be automatically nominated for internal Queen's Fellowship and Graduate Awards. Students who are eligible are required to apply for Ontario Graduate Scholarships, and encouraged to apply for other major awards available through national, provincial, or private funding bodies.

There is no funding for students in the professional M.P.H. program, although some of the practicums offered for the summer term may provide funding.

Each year there is a limited number of teaching assistantships. Positions are posted in June for the fall term and September for the winter term and are awarded according to the instructor's assessment of skills for the position.

Students may also be employed by individual faculty members with research assistantships or research fellowships. Research assistantships vary according to the availability of positions and are paid as wages based on a

collective agreement. Research fellowships are related to student thesis work and paid as non-taxable (T4A) income.

Departmental Facilities

Shared desk space with power and wireless hookup, as well as separate general meeting space, is available on the third floor of Carruthers Hall to M.P.H. students during their program and to first year M.Sc. students. Students are required to have their own computers. Upper year research students who are working on their theses typically arrange appropriate workspace through their thesis supervisors. SAS and SPSS student licenses are available for free download through Queen's Information Technology Services (ITS).

Degree Program

The graduate program is administered under the rules and regulations of the School of Graduate Studies and Postdoctoral Affairs and applicants are accepted under these general regulations.