



Consider a Career in Clinical Chemistry Science in Healthcare

What is clinical chemistry?

Clinical Chemistry is one of the most rewarding, exciting and diverse field you can choose for a career. It is the scientific discipline which supplies various analytical techniques to the measurement of substances in the human body in order to identify disease states, assess prognosis (outcome) and monitor treatment.

Where does a clinical chemist work?

There are about 400 Clinical Chemists in Canada. Clinical Chemists are responsible for the day-to-day operation of a Clinical Chemistry Laboratory or section thereof. Although some Clinical Chemists work in universities, government or industry, the majority work in a teaching hospital's Clinical Chemistry Laboratory where the Clinical Chemist is an important member of the healthcare team.

What does a clinical chemist do?

In the course of their daily duties Clinical Chemists supervise technologists in the performance of analytical chemistry determinations, establish new methods, evaluate diagnostic problems, advise the medical staff on the interpretation of results and suggest additional chemical diagnostic or monitoring procedures. In doing this, the Clinical Chemist makes use of various forms of automated instrumentation, manual procedures, computerization, spectrophotometry, immunochemistry, and other techniques including molecular biology. Examples of tests performed are those for assessing kidney, liver and thyroid function; for assisting in the diagnosis of a heart attack; and for checking glucose control in diabetic patients or cholesterol in patients with cardiovascular disease. Other tests are useful to screen newborns for "inborn errors" of metabolism and for monitoring drug concentrations in patients with epilepsy or asthma. The Clinical Chemist must also have management skills to deal with budgets, costs, personnel and related matters, and to select laboratory equipment. Clinical Chemists in teaching hospitals have cross-appointments to the affiliated University and are often involved in University teaching. In addition, they are encouraged to carry out research according to their personal interests. Many Clinical Chemists are involved in teaching medical laboratory technologists, both in the hospital laboratory and in the local community college or technology institute.

How do I become a clinical chemist?

There are several routes to becoming a Clinical Chemist in Canada. The most common is first to obtain a Ph.D. in a branch of chemistry or life science (often biochemistry or physiology) and then to enter a two-year Postdoctoral Training Program in Clinical Chemistry (one centre has a three-year program). Such programs, available at a number of universities in Canada are directed toward acquiring professional competence as well as a small research complement. Professional competence is assessed through written and oral examinations set and supervised by the Canadian Academy of Clinical Biochemistry (CACB), a body incorporated within the Canadian Society of Clinical Chemists (CSCC). A Specialty Certificate is awarded following successful completion of the examinations. A few Clinical Chemists enter the field via a Doctoral Program in Clinical Chemistry, which incorporated a hospital laboratory rotation as part of the Ph.D. requirements.

Professional associations

The Canadian Society of Clinical Chemists, a scientific and professional society represents Canadian Clinical Chemists across the country. The Society exists for the advancement of the practice of Clinical Chemistry through the promotion of excellence in education, research and practice, by means of activities at the national, provincial and local levels. Activities of the CSCC include an Annual Scientific Congress and Annual General Meeting; publications including an internationally acclaimed scientific journal *Clinical Biochemistry*, a member newsletter *CSCC News*, and position papers on current issues; liaison with government and allied health organizations at the provincial and federal level; and monitoring of continuing education of members (credits earned through paper and poster presentations, participation at symposia and conferences, and involvement on task forces).

The Canadian Academy of Clinical Biochemistry is the academic and professional body to which only Certified Clinical Chemists may belong. It is responsible for the Certification of individual Clinical Chemists, professional development throughout their career, and for the Accreditation of Training Programs.

Training Programs

University of Toronto Training Program

Director: Dr. Khosrow Adeli
k.adeli@utoronto.ca

McMaster University Training Program

Director: Dr. V. Tony Chetty
chetty@hhsc.ca

University of Manitoba Training Program

Director : Dr. Lorne Seargeant
lseargeant@exchange.hsc.mb.ca

Université de Montréal Training Program

Dr. Roger Sanfaçon
rsanfacon.hmr@ssss.gouv.qc.ca

To join the Canadian Society of Clinical Chemists:

Go to www.csccl.ca and click on "Membership"

To learn more about the Canadian Academy of Clinical Biochemists and how to become certified:

Go to www.csccl.ca and click on "Academy" and on "Certification"