Canadian Medical Education Journal
Revue canadienne de l'éducation médicale

The training and credentialing of physician informaticists in Canada
La formation et la reconnaissance professionnelle des médecin informaticien au Canada

Adam Paul Yan et Sarah Mousseau

Aller au sommaire du numéro

Découvrir la revue

Citer ce document

Yan, A. & Mousseau, S. (2022). The training and credentialing of physician informaticists in Canada. *Canadian Medical Education Journal / Revue canadienne de l'éducation médicale, 13*(5), 111–113. https://doi.org/10.36834/cmej.75026

The training and credentialing of physician informaticists in Canada
La formation et la reconnaissance professionnelle des médecin informaticien au Canada

Adam Paul Yan,[1,2] Sarah Mousseau[3,4]

[2]The Hospital for Sick Children, Division of Hematology/Oncology, Ontario, Canada; [2]Boston Children's Hospital, Division of Hematology & Oncology, Massachusetts, USA; [3]Pediatric Emergency Department, Sainte-Justine Hospital, Quebec, Canada; [4]Université de Montréal, Quebec, Canada

Correspondence to: Adam Yan, 500 University Avenue, Toronto ON, M5G 1XA; phone: 857-225-7809; email: adam.yan@sickkids.ca

What is clinical informatics?

Clinic informatics (CI) is the use of information technology to improve the clinical care of patients. The field includes the development and optimization of electronic health records (EHRs), development of clinical decision support tools and predictive algorithms, along with deployment of novel technologies including mobile health, remote monitoring, and telehealth programs.[1] The uptake and utilization of these technologies is growing rapidly, and the COVID-19 pandemic has rapidly accelerated the adoption and reliance on innovative technologies to provide high-quality medical care to patients.[2]

To maintain the effective use of information technology, healthcare organizations must employ individuals with expertise in CI. The responsibility for the development, implementation and maintenance of these systems is shared between clinicians with an interest in CI including nurses, pharmacists, and physician informaticists, and non-clinically trained individuals with backgrounds in information technology. Physician informaticists have a unique role in operationalizing CI endeavors given their central role in the healthcare team and intricate knowledge of the healthcare system. The position of Chief Medical Information Officer (CMIO) is typically held by a physician and serves as the ultimate bridge between the medical and information technology departments. As of 2015 only 62% of Canadian physicians were using EHRs despite evidence of time savings, improved patient safety and more efficient data retrieval compared to 86% of physicians in the United States.[3,4] In the United States health information technology was made a priority under the HITECH Act in 2009. The HITECH Act provided more than $30 billion in funding to American hospitals to promote the adoption of EHRs.[5] Besides funding constraints, another barrier to implementation of EHRs identified by Canadian physicians is a lack of knowledgeable support personnel such as physician informaticists.[3]

Becoming a clinical informaticist

A traditional medical residency does not provide physicians with the skills or knowledge to be a physician informaticist, requiring interested individuals to seek additional educational experiences. Canada and the United States have taken different approaches to the training and accreditation of physician informaticists. In the United States CI became a board accredited specialty in 2013, and the first CI fellowships became accredited by the American College of Graduate Medical Education in 2014.[6] Currently there are 1,851 physicians who have met the American Board of Preventative Medicine's (ABPM) standards for board certification in Clinical Informaticists, and there are over 50 accredited CI fellowship programs in the United States. CI fellowships in the United States are two years in length and eligibility is restricted to individuals who are

already board certified/eligible in a primary clinical specialty.[7]

In Canada, CI is not a board accredited medical specialty, and no accredited fellowship programs exist. To our knowledge, McGill University is the only institution with a CI fellowship, however it is not independently accredited and currently only open to emergency medicine physicians.[8] Numerous Canadians have successfully developed expertise in clinical informatics through on-the-job experience, graduate degrees in clinical informatics, or through training in the United States. The ABPM currently lists nine Canadians who have become board certified in CI through the American credentialing pathway.[9] The current approach to training and accrediting physician informaticists in Canada is problematic as it lacks transparency and standardization. Individuals interested in CI have no guidance as to what skills are necessary for the practice of informatics in Canada, and no way of identifying programs that are well suited to helping them gain those skills. In addition, the lack of funding for training physician informaticists may result in many interested candidates without the financial means to self-fund informatics training being obstructed from entry into the field. The creation of CI fellowships and board accredited certification in Canada would further publicize this new and rapidly growing field of medicine to ensure Canada has the workforce of informaticists it needs to support the ongoing provision of high-quality medical care in Canada.

The future of clinical informatics in Canada

In 2020 the Royal College of Physicians and Surgeons of Canada (RCPSC) released a report on Emerging Digital Technologies where they recommended "introducing a new discipline in the area of Clinical Informatics".[10] The certifications offered by the RCPSC are divided into Specialties (ex. General Surgery), Subspecialties (ex. Pediatric Endocrinology), and Areas of Focused Competency Diplomas (ex. Transfusion Medicine).[11]All certification types require trainees to meet certain milestones for accreditation, while the type of adjudication of those skills (ex. formal examination, evaluations submitted by supervisors, report written by trainee) and duration of training vary. Family physician accreditation is governed by the College of Family Physicians of Canada (CFPC) and family physician are not eligible for RCPSC certifications. The CFPC has created Certificates of Added Competence (CAC) in various areas such as Addiction

Medicine to allow family physicians to gain recognition of additional skills in a predefined area of medicine.[12] The RCPSC and CFPC must work together to develop new certification pathways for both family physicians and specialist physicians in CI to support the growing need for physicians with this skillset in Canada. Once this new speciality is created, individuals in Canada who are already working in CI must also be provided with an avenue to become board certified in CI without needing additional training. For example, in the United States, a "practice pathway" was created to allow established clinical informaticists to become board certified in CI.

The disparity in the uptake of health IT and EHR usage between Canada and the United States may be partially mitigated by the purposeful development of physician leaders in health IT. The accreditation of CI as a specialty and the creation of CI fellowships will help attract aspiring physicians to seek formal training in CI and will strengthen Canada's health IT workforce. These individuals will be prepared to hold key leadership roles within Canadian healthcare institutions such as the position of CMIO. It is time for the RCPSC and the CFPC to establish a plan for the training and accreditation of physician informaticists in Canada to support the growing demand for individuals with these skills in Canada.

References

1. Gardner RM, Overhage JM, Steen EB, et al. Core content for the subspecialty of clinical informatics. *J Am Med Informatics Assoc*. 2009;16(2). https://doi.org/10.1197/jamia.M3045

2. Golinelli D, Boetto E, Carullo G, Nuzzolese AG, Landini MP, Fantini MP. *J Med Internet Res*. 2020 Nov 6; 22(11):e22280. Epub 2020 Nov 6.

3. Chang F, Gupta N. Progress in electronic medical record adoption in Canada. *Cam Fam Physician*. 2015;61(12):1076-1084

4. Office of the National Coordinator for Health Information Technology. *'Office-based Physician Electronic Health Record Adoption,' Health IT Quick-Stat #50.* Aug 6, 2021; Available at https://www.healthit.gov/data/quickstats/office-based-physician-electronic-health-record-adoption. [Accessed on Aug 5 2022]

5. O-Harrow R. *The machinery behind health-care reform*. The Washington Post. 06/16/2009. Available at https://www.washingtonpost.com/wp-

dyn/content/article/2009/05/15/AR2009051503667.html [Accessed on Aug 5 2022].

6. Longhurst CA, Pageler NM, Palma JP, et al. Early experiences of accredited clinical informatics fellowships. *J Am Med Informatics Assoc*. 2016;23(4). https://doi.org/10.1093/jamia/ocv209

7. Desai S, Mostaghimi A, Nambudiri VE. Clinical informatics subspecialists: characterizing a novel evolving workforce. *J Am Med Informatics Assoc*. 2020;27(11). https://doi.org/10.1093/jamia/ocaa173

8. Department of Emergency Medicine. *Clinical informatics fellowship.* 2022. Available at https://www.mcgill.ca/emergency/education/fellowship/health-informatics. [Accessed on Mar 9, 2022].

9. American Board of Preventative Medicine. *Physician Look Up*. 2022. Available at https://certification.theabpm.org/physician-lookup [Accessed on Mar 9, 2022].

10. Reznick RK, Harris K, Horsley T and Sheikh M. *Task force report on artificial intelligence and emerging digital technologies.* In collabor with: Council task force on artificial intelligence and emerging digital technologies. 2020 Feb. https://www.royalcollege.ca/rcsite/documents/health-policy/rc-ai-task-force-e.pdf [Accessed on Aug 5 2022].

11. The Royal College of Physicians and Surgeons of Canada. *Areas of focused competence (Diploma).* https://www.royalcollege.ca/rcsite/credentials-exams/exam-eligibility/areas-focussed-competence-afc-diploma-e [Accessed on Feb 20, 2021].

12. The College of Family Physicians of Canada. *Certificates of added competence in family medicine*. 2022. Available at https://www.cfpc.ca/en/education-professional-development/examinations-and-certification/certificates-of-added-competence-in-family-medicin [Accessed on Feb 20, 2021].