

Objectives for Post Graduate Health Informatics areas of interest (R5 yr)
McGill Emergency Medicine Program.

General Objectives.: AOI 6 months rotation

The area of interest rotation in health informatics of the Emergency Medicine Program is a six-month rotation open to qualified residents who are completing an accredited residency program in Canada. The curriculum aims at providing a basic exposure to important aspects of health informatics and digital health innovations. It will allow candidates to further explore their interest in this field and is meant as a stepping stone for further training.

It is expected that at the end of their rotation residents will have acquired basic knowledge to understand basic software design, hardware configuration, data management and analysis, cybersecurity, user interface challenges, implementation strategies, deployment and support of IT technologies relevant to ED function and understand the concept of clinical innovation.

Emphasis will be placed on basic concepts of the “pillars of ED health informatics”: user interface, Big Data and artificial intelligence. In addition, the innovation and change management practices will be introduced.

The rotation will involve clinical and non-clinical work. The clinical aspect of the training will involve rotations in two of the four adult teaching hospitals (JGH, MGH, RVH, St Mary’s). Selection of the site will be based on the trainee’s goals and the availability of rotations at a given site. The goal of the clinical rotations is for the trainee to be exposed to various workflows, patient populations and IT needs within the context. Each hospital presents a different challenge either with the IT software profile or the level of integration into the workflow allowing for a broad exposure to different dynamics.

Positions: max 2

Details of rotation:

- ◇ 6 periods of clinical rotation (8 shifts per month) divided between 2 sites.
- ◇ Bi-monthly journal club (depending on number of trainees) 5 presentations over 2 months (under supervision of the fellow)
 - 2 critical appraisal of journal articles
 - 3 case studies
- ◇ Participation in ED leadership IT group meetings and other IT committees across sites.
- ◇ A project on each site or a longitudinal project. (trainee must prepare this ahead of time)
- ◇ Complementary core curriculum readings with short essay on those topics

SPECIFIC OBJECTIVES

Medical Expert

Residents should be able to

- 1- Demonstrate basic knowledge of clinical/ health informatics interface
- 2- Discuss the impact of health informatics on clinical care
- 3- Fully integrate health informatics into his daily clinical work

Communicator

Residents should be able to demonstrate effective communication skills by their ability to

- Develop strategies to communicate with user of ED IT systems
- Address concerns in change management

Collaborator

- Seek/understand issues users face

Manager

Demonstrate basic knowledge of user interface design

Demonstrate basic knowledge of hardware configuration (the user will not be expected to know how to code)

Demonstrate basic knowledge of configuration of contingency plans and cybersecurity including legal aspects.

Demonstrate basic knowledge of management and configuration of large databases

Demonstrate understanding of the potential and impacts of artificial intelligence in EM

Demonstrate basic understanding of road blocks to IT deployment and strategies to address and manage change

Demonstrate knowledge of Big Data management in the optimization of ED flow

Have working knowledge of Quality Improvement processes

Understand cybersecurity issues and solutions

Demonstrate basic understanding of change management.

Demonstrate basic understanding of innovation principles such as design thinking, lean startup, minimum viable product, agile product development.

Health Advocate

Be able to articulate positive and negative impacts of deployment of IT platforms and use of AI on the care of patients.

Scholar

Residents should be able to demonstrate an intellectual approach to IT in the emergency department in the following areas during participation on patient rounds, teaching sessions, journal clubs.

- Continuing medical education;
 - show interest in self-education skills by demonstrating knowledge in the evolving concepts in the IT field
- Critical Appraisal of the Literature both medical and non-medical as it applies to IT
 - demonstrate the ability to research the literature and identify the best available articles
 - Identify field and areas of cutting-edge publications in IT
- Scientific interest
 - Demonstrate ability in identifying areas in IT where gaps in knowledge or expertise exists by retrieving the essentials of the literature, summarizing the evidence to date and develop research ideas to fill these gaps while being able to demonstrate the relevance of finding answers to the question at hand.

- Teaching skills
 - Should be available to answer questions or discuss common difficulties users experience.

Professional

Residents should be familiar with medical, legal, and social aspects of IT in day-to-day work as well as it pertains to Big Data management and cybersecurity. They should approach situations with the highest level of integrity and honesty being able to identify areas of potential conflict of interest. They should show responsibility and reliability in the exercise of their function and demonstrate awareness of their own limitations and seek advice appropriately. Resident should more specifically demonstrate professionalism in the following issues:

- Be aware of privacy issues and how to address them with users
- Recognize the limitation IT and AI in medical practice in the face security of information
- Recognize areas of conflict of interest in IT