

## Volume 10 - Issue 3, 2010 - Interview

### Clinical Decision Support System

---

Medical imaging is a critical component of the care that health professionals provide. However, mounting evidence demonstrates that between 10 - 20% of imaging studies are unnecessary. Any clinical intervention without clear purpose or patient benefit creates waste and negatively affects quality of care. Rising costs alone for imaging are a looming threat to health system sustainability. Spending for diagnostic imaging in Canada has increased markedly and now exceeds an estimated 2.2 billion dollars in operational costs alone. Eliminating even 10 percent of unnecessary tests could eradicate 220 million dollars in wasteful spending each year.

Recognising that healthcare professionals must assume responsibility for ensuring that the work they do is necessary and appropriate, the Canadian Association of Radiologists (CAR), the national association representing all radiologists in Canada, introduced a set of evidence-based clinical guidelines in Canada in 2005 based on the guidelines of the Royal College of Radiologists in the United Kingdom. An update of the CAR guidelines will be completed this year. These diagnostic imaging referral guidelines help physicians order the most appropriate imaging exam for the clinical presentation. When physicians choose the best test first it results in more effective and efficient use of imaging equipment and health human resources (radiologists, technologists and others). It also improves patient care and safety by shortening wait times for patients who stand to benefit most and by reducing unnecessary exposure to medical radiation.

Although CAR imaging referral guidelines are available in booklet, PDF and CD formats and on physician websites, the CAR recognised that for maximal effect, guidelines must be made seamlessly available as part of the clinician's regular workflow. To achieve this, the guidelines have been integrated into a computerised physician order entry (CPOE) system for diagnostic imaging with attendant computerised clinical decision support (CCDS). The CAR believes that this is the most effective way of implementing guidelines to ensure that imaging resources are used most appropriately and effectively.

The CAR tested the effectiveness of providing its diagnostic imaging referral guidelines through the computerised clinical decision support and CPOE in two settings in the province of Manitoba, a tertiary care children's hospital (Winnipeg; completed 2007) and a rural family practice clinic (Steinbach; completed 2009). The side bar describes how the system works. Results of the studies suggested that 10 - 20% of imaging requests were inappropriate. The CAR has a third study currently underway at a children's hospital in Winnipeg to study how to improve compliance with the best practice guidelines. Several other provinces are separately undertaking or exploring guidelines implementation initiatives.

This delivery model of computerised clinical decision support can serve as a prototype for other areas of medicine, and the lessons learned can assist in the integration of other types of decision support into Electronic Health Records in Canada, a current healthcare priority. Canada Health Infoway, a not-for-profit organisation funded by the federal government, is working with the provinces and territories to foster and accelerate the development and adoption of electronic health information systems for all Canadians. Canada Health Infoway's report EHR: 2015 Advancing Canada's Next Generation of Healthcare at a Glance identifies one of its emerging 2015 priorities to be to "unlock additional quality and safety benefits by enabling decision support and communication across the care continuum."

Working together towards maximum digitisation in the delivery of medical imaging care will require focused attention to address the technological challenges of systems integration and Canada's unique requirements in a multi-system healthcare delivery structure (10 provinces, three territories). Attending to medical imaging appropriateness in a way that fits within a digitised healthcare system will be one of many methods needed to reduce imaging costs and preserve system sustainability in a way that is patient-focused and maximises appropriateness, quality and safety.

Published on : Wed, 10 Nov 2010