Taking a Page from Denmark, New Zealand & UK: George Brown Student Delves into EMR Lessons Learned in Winning Essay

Wellington Matambo

Congratulations to Wellington Matambo, who wrote the winning essay in the COACH: Canada’s Health Informatics Association 2012 Student Innovation Competition. A student in the George Brown College Health Informatics Graduate Certificate Program, Wellington examines the lessons Canada can learn from other countries with high electronic medical record adoption. (See About the Competition below.) Wellington, a qualified Information Systems Analyst with 12 years working experience in the IT industry, will graduate from George Brown in December.

Read Wellington’s innovative ideas in his essay below and meet him in person when he presents the essay at e-Health 2012.

In their research “A qualitative study of Canada’s experience with the implementation of electronic health information technology”, Rozenblum et.al. (2011) state that:

“In 2001, Canada Health Infoway unveiled a plan to implement a national system of interoperable electronic health records. This government-funded corporation introduced a novel model for interprovincial/territorial collaboration to establish core aspects of a national framework. Despite this $1.6 billion initiative, Canada continues to lag behind other western countries in adopting electronic medical records.”

Lack of an e-Health policy; inadequate involvement of clinicians; failure to establish a business case for using electronic health records; a focus on national rather than regional interoperability; and inflexibility in approach were seen as some of the barriers to adoption of the plan.

Denmark, New Zealand and the United Kingdom’s primary care physicians are at the forefront of the use of electronic medical records (EMRs), with an adoption rate of over 95%. While EMRs have certainly gained ground in Canadian medical offices, the vision of full EMR adoption in Canada is still far from reality. Canada ranks very low as compared to Denmark, New Zealand and the United Kingdom in terms of adoption and use of EMR.

In this paper I will list some identified barriers to EMR adoption in Canada. I will then address the driving forces behind Denmark, New Zealand and the United Kingdom’s success in attaining high EMR adoption rates. These are the successful initiatives Canada can learn from. I will list some success factors from New Zealand that Canada should consider in order to improve EMR adoption, and then make suggestions on how Canada can attain the levels of EMR adoption where health system benefits and the transformation of patient care can be achieved.

Barriers to EMR adoption in Canada

In a qualitative study of Canada’s experience with the implementation of electronic health information technology published in the Canadian Medical Association Journal on March 22, 2011, Rosenblum et al. (2011) state that a key issue is the absence of an e-Health policy to align the investment in information technology with the priorities of the health care system and of health care providers, in order to accelerate adoption and achieve early return on the investment. According to a seminar by the Rogers Healthcare Group (2010), barriers to EMR adoption include:

• Cost (purchase, implementation, and operation).
• Lost productivity and impact on workflow.
• Small practice size.
• Perception of inadequate return on investment.
• Satisfaction with current paper-based system (If-it-ain’t-broke-why-fix-it syndrome).
• Lack of EMR products that meet individual practice needs.
• Confusion about the array of products on the market.
• Lack of expertise (computer skills, project management) with EMR.
• Security and privacy concerns.
• Imminent retirement.

About the Competition

The annual Student Innovation Competition is open to all COACH Student Members. This year, participants were challenged to share original ideas around this statement: “New Zealand, Denmark and the United Kingdom all have primary care EMR adoption rates over 95%. What can Canada learn from these other countries? How can Canada attain the levels of EMR adoption where we can achieve health system benefits and the transformation of patient care?”

Visit www.coachorg.com for details.
Most of these barriers can be distilled to fear on the part of physicians. There is a fear of change, fear of being unable to master the technology, or fear of looking incompetent in front of patients. The fact is, doctors who take the leap into EMR are unanimously satisfied and would never consider going back to paper. It’s the transition that scares them. It is therefore vital to focus on how to ease the transition for doctors.

**Driving forces for the evolution of EMR in Denmark, New Zealand and the UK**

Denmark, New Zealand and the United Kingdom all have a national health network in use. Most of their practitioners are connected to this national network. Below are some of the initiatives and programs these three countries have put in place and enforced, resulting in very high EMR adoption rates. These initiatives and programs are lessons that Canada can learn from these other countries.

**Government Financial Incentives**

In the United Kingdom, a major contributing factor to the use of information technology is that the government pays for all or most of the physician’s expenses. In 1990, the National Health Service for Scotland introduced financial rewards for doctors who achieved specific NHS health priority targets. In 1993, additional financial incentives were available to physicians who could demonstrate that they were proactively managing specific chronic conditions such as asthma and diabetes. Denmark has the same financial incentives program. To qualify, the physician has to (a) use an information system that passed evaluation by a professional organization, (b) introduce computer-based patient records within two years and, (c) provide data for health policy planning.

**Government Policy: Physician Collectives**

Protti (2007) noted the presence of physician collectives in England and New Zealand. Since 2000, all English physician practices and community health services have been formed into 300 primary care trusts (PCTs), with influence over the healthcare budgets for their enrolled population. Since 1995, the majority of New Zealand physicians have been working in collectives called Independent Practitioner Associations. While many still have small clinics, over 84% of physicians are part of a larger network. In some areas, the IPAs have come up with incentives to attract doctors to rural and remote areas where primary care coverage is limited. These initiatives have resulted in new resources including the provision of people to support the use of IT in general practices.

**Mandatory Electronic Billing**

New Zealand mandated electronic billing in 1998 – four years after the widespread use of computers for laboratory results delivery. However, Denmark and the United Kingdom did not have a government mandate on electronic billing.

**Peer Influence**

In Denmark, peer influence amongst physicians played a significant part in the computer movement. Early adopters often hosted their colleagues showing them how a computer system had positively influenced their work. Physician education seminars had IT workshops covering topics ranging from basic computer use to advanced use of diagnostic coding.

**Support from Counties (Provinces)**

Since 1992, counties in Denmark have provided physicians with a database of all their patients when they first start their practice. In 2000, the counties started providing a helpdesk and training by a data consultant who visits physicians on regular basis.

**Professional Colleges and Associations**

There are several professional bodies in New Zealand that represent general practice, working together under an umbrella group called the GP Leaders Forum. Each of these organizations has a strong interest in IT. The government and non-government health sector organizations consult with these organizations on their views of any forthcoming IT initiatives.

**How Canada Can Attain Higher EMR Adoption Rates**

Valuable lessons can be learnt from studying the above driving forces in Denmark, New Zealand and the United Kingdom where the role of government health policy has played a huge part in the high use of computer technology by physicians. Some of the policies may not have been directly related to primary care computing, but in many instances, they directly stimulated the introduction of technology. Closely related were the financial incentives and rewards provided to physicians upon automation.

Canada has implemented a national strategy for interoperable electronic medical records by establishing a model for successful interprovincial collaboration on core aspects of a national framework. Looking forward, Canada needs to establish an e-Health policy to guide the implementation of health information technologies to address the major strategic priorities of health care reform — improvements in patient safety, management of chronic diseases and sustainability of the health care system — and to promote the adoption of electronic medical records and exchange of clinical data to address these challenges. To achieve these objectives, policies are needed to:

- Facilitate timely sharing of clinical information between health care providers in all settings, including community, hospital, long-term care facilities and home care.
- Make personal health records and self-management tools accessible.
- Establish incentives for the use of reminders for preventive care and for the use of comparative quality indicator assessment and reporting.
- Enable reimbursement for e-visits.
- Reform the payment model to include financial reimbursement based on patient outcomes that can be achieved with the use of electronic medical records.

As Canada moves forward with its ambition to attain high levels of EMR adoption, there are useful lessons that may be drawn from the NZ experience. Research by Protti and Bowden (2010) listed the following critical factors in New Zealand’s implementation of EMR. Canada should consider them in its efforts to attain higher adoption rates:

- The clarity and purpose of the New Zealand government’s overall health care policy, which charted a course toward a primary care-led health system, gave private sector organizations confidence to invest in the relevant technology and systems needed to support the primary care strategy.
- New Zealand has a long-established and universally-used unique patient identifier, which is governed by a robust legal health information privacy code. This allows patients’ data to be shared and accessed by providers across the system.
- Early on, New Zealand nurtured and supported a highly visible central unifying body or health system integrator, which operated
as a national health information exchange and provided key technical services, including a support desk, implementation services, a software team designing and developing new electronic capabilities, and vendor accreditation.

- Successful establishment of private-public partnerships allowed the New Zealand government to take advantage of the expertise and agility of the private sector while minimizing its own investment in technology.
- A nationally designated entity that provided governance and leadership for the implementation of New Zealand’s health information strategy and that was charged with prioritization and governance of standards processes across health sectors was key to supporting health IT development.
- Physicians in New Zealand quickly embraced new technology when they saw a benefit in personal and practice productivity. But financial incentives, compulsory electronic claims, and mandated immunization registers encouraged adoption.
- Adoption of EMR was aided by providing physicians with technical support. This was made available via EMR vendors, HealthLink, primary health organizations and independent practitioner associations.
- Another essential component to success in New Zealand has been the grassroots approach to health sector automation, included a relatively modest financial investment and a low-key and incremental approach to automation.
- The public’s role was a critical influence. As far back as 1997, there was a general expectation by New Zealand that physicians would use computers to record clinical details during appointments and maintain all patients’ records.

I adapted the table below from Rogers Healthcare Group (2010) showing some recommendations by key participants at the seminar on Accelerating EMR adoption and Use, held at the University of Waterloo in October 2010.

### KEY RECOMMENDATIONS FOR EMR ADOPTION AND MEANINGFUL USE

#### For Vendors
- Explain how the system helps manage doctors’ caseload and fits into their workday.
- Dispel the myth that EMR systems are not useful or cost-effective for solo practices.
- Tackle the cost issue head-on and make a stronger business case.
- Continue to innovate with ease of use of mind.

#### For Policy Makers
- Explain how the system helps manage doctors’ caseload and fits into their workday.
- Dispel the myth that EMR systems are not useful or cost-effective for solo practices.
- Tackle the cost issue head-on and make a stronger business case.
- Continue to innovate with ease of use of mind.

#### For Peer Leaders/Mentors
- When communicating the benefits of EMR, keep the focus on key physician concerns: time, money, patient care.
- Provide extra support to doctors and other staff during the transition period.
- Teach EMR in ‘layers’, starting with basic clinical functions.
- Launch awards program for clinics with best use of EMR.

### Conclusion

Denmark, New Zealand and the United Kingdom’s use of information technology in primary care is among the highest in the world, with an adoption rate of over 95%. This is mainly attributed to their governments implementing e-Health policies, programs and initiatives that encouraged and supported physicians’ use of information technology. Significant progress towards attaining higher levels of EMR adoption, with all its associated benefits is was made possible with the full participation and cooperation of physicians.

For Canada to increase adoption of electronic medical records, it can learn from the experiences of Denmark, New Zealand and the United Kingdom and implement similar or identical support initiatives and policies. e-Health policies must be established to guide the implementation of health information technologies to address the major strategic priorities of health care reform. Strong clinical and administrative leadership will be needed, as will professionals trained in health informatics to bridge the gap between information technology and health care. Each province and territory should create a clinical information office that could be used to engage physicians in the establishment of priorities for investment in health information technology, the development of clinically meaningful criteria for use of electronic records, and the construction of the business plan for computerization of primary care practices and community-based care. Information technology vendors, policy makers and the physicians themselves will all play major roles in Canada’s efforts to attain levels of EMR adoption where we can achieve health system benefits and the transformation of patient care.

### REFERENCES


Rogers Healthcare Group, Accelerating EMR adoption and Use, October 2010