

# Commentary on the COACH White Paper on e-Health Adoption

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**C**OACH: Canada's Health Informatics Association is to be commended for putting the effort into discussing and producing their White Paper on e-Health adoption, with its particular focus on the need for a robust and consistently applied adoption model. The Organisation for Economic Co-operation and Development (OECD) would agree, for they themselves are convening a workshop in late January 2012 on "Benchmarking Adoption and Use of Information and Communication Technologies in the Health Sector." The workshop is an outgrowth of a meeting sponsored by the Spanish Ministry of Health and the European Commission and chaired by the US Office of the National Coordinator for IT, held in Barcelona in March 2010. At that meeting the participants worked on an action plan to employ common measures of IT adoption. Similar to COACH's observations, they identified four categories of indicator areas of increasing complexity, namely (1) adoption, (2) modes of use/purpose of use, (3) critical success factors, and (4) outcomes/impacts. They produced a preliminary set of 14 indicators, noting that the ability to achieve consensus would best be achieved by focusing on indicators that measured only adoption and modes of use.

The January meeting will be attended by representatives of 27 countries as well as an assortment of others from organizations such as the World Health Organization, the European Commission and The Commonwealth Fund. The meeting will review a conceptual framework and draft core set of indicators aimed to benchmark adoption and use/purpose of use of

health-related information and communications technologies in the ambulatory and hospital sectors. Additional issues to be addressed will include survey scope and coverage, terminology and definitions, size of the model questionnaire and collection modalities – all facets of the COACH White Paper.

The White Paper makes the point that "there is an important need to measure both our progress in achieving e-Health adoption and the clinical value and patient benefits that are being achieved from e-Health use." Many others have said the same; the adoption journey is not only arduous, it can be frustratingly lengthy for some. The Holroyd-Leduc et al. paper (2011) recently published in *JAMA* systematically reviewed the literature between 1998 and 2010 around the impact of the electronic medical record/electronic health record (EMR/EHR) within primary care outpatient practices. Thirty studies met the inclusion criteria, and only four focused on health-related outcomes. The conclusion: the EMR/EHR appears to have structural and process benefits, but the impact on clinical outcomes is less clear – a finding similar to that of Jha's, who, in the August 24/31, 2011 issue of *JAMA* wrote,

Although studies have consistently shown that EHRs can help clinicians adhere to guideline-based care and reduce medication errors, beyond these narrow benefits, there is little evidence that EHRs improve patient outcomes and even less evidence that they improve the efficiency of care. (Jha 2011: 880)

However, on a more encouraging note, the 2006 seminal study by Chaudhry and colleagues found that four benchmark institutions demonstrated the efficacy of health information technologies in improving quality and efficiency by (Chaudhry et al. 2006):

- Increased adherence to guideline-based care
- Enhanced surveillance and monitoring, and
- Decreased medication errors

The primary domain of improvement was preventive health, and the major efficiency benefit shown was decreased utilization of acute care. The study made a rather prophetic statement that “Whether and how other institutions can achieve similar benefits, and at what costs, are unclear” (Chaudhry et al. 2006: e-12). This seems to suggest that other health policy and organizational factors may be important in achieving benefits from EMR and EHR adoption.

The COACH White Paper title is e-Health Adoption, but the content of the paper is primarily focused on electronic records and to a lesser extent on controlled medical vocabularies. E-Health is of course a broader construct that goes beyond electronic records to include topics such as Computerized Physician Order Entry and Decision Support Systems, Technical Infrastructure and Networks, Health Information Exchange, Telehealth, Client/Patient Portals and Access, Consumer Health Informatics, Clinical User Interfaces, Public Health Informatics, Mobile and Remote Monitoring Technologies, PACS, Social Networking and Secondary Uses Services (Data Warehouses and Business Intelligence). Secondary use deserves special mention since it is not referred to in the COACH White Paper yet has been identified by the above-mentioned OECD group as a fifth indicator area for administrative and clinical uses. It is worthy of note that the above-mentioned four benchmark institutions are all known to have powerful enterprise data warehouses that, when business intelligence tools are used, enable behavioural change that drives continuous quality improvement.

Finding the best adoption model for Canada is going to be a challenge – particularly if a broad e-Health perspective is taken. The HIMSS Analytics™ hospital-base model clearly is the longest serving model, even if there are concerns about the so-called purity of the 7 levels. The Ontario MD EMRAM model referenced by COACH is but one Canadian example; the recently published Clinical Adoption Framework by Lau et al. is another (Lau et al. 2011). The above-mentioned work by the OECD has recently been supplemented by The Commonwealth Fund publication by Chan et al. entitled *The Development and Testing of EHR-Based Care Coordination Performance Measures in Ambulatory Care*. The latter work focuses on clinically relevant and face-validity measures of the referral coordination process that can be developed and implemented using electronic health records. The model tests measures of referral coordination for

clinical relevance and acceptability with practising primary care providers. The final set of measures includes three specific to the primary care setting and two evaluating specialist care. The model takes into account some aspects of the important Health Information Exchange (HIE) aspect of e-Health. HIE is a critical piece of integrated healthcare delivery that links multiple levels of care management, coordinates services and encourages professional collaboration across a range of care delivery. Integrated healthcare is about networks and connections – often between separate organizations – that focus the continuum of healthcare delivery around patients and populations. Integrated care manifests itself most dramatically in the management of chronic disease, which accounts for more than two-thirds of all medical costs in most nations of the world. If managing chronic disease is a top-level policy matter, then HIE should be at the heart of any adoption model.

COACH is to be acclaimed for putting forward a view of the importance of having a robust e-Health adoption model for purposes of benchmarking and comparison. Benchmarking is all about finding and adapting *Dantotsu* (a Japanese word that translates to “Best of the Best”). It is the continuous, systematic search and implementation of best practices, which leads to superior performance. It provides the opportunity to review and compare practices against agreed performance measures and criteria in internal and external settings. Benchmarking attempts to prevail over the “not invented here” syndrome. Benchmarking can be applied across a range of service deliveries, management and professional processes at strategic as well as operational levels. By encouraging benchmarking initiatives, the goal is to contribute to developing better practice and innovation. Instead of spending a tremendous amount of money testing different technologies and approaches, any organization can use benchmarking to better understand how others have used the same technologies and approaches to their advantage. As put by one author, “To beat the rest, learn from the best,” and clearly COACH agrees.

It is somewhat troubling that we are discussing a framework for measuring adoption after spending several billion dollars on e-Health over the past decade. Those investments have resulted in some major successes and some equally spectacular failures. It is a shame that we did not have the benefit of a robust framework that would have helped us to better document lessons learned along the way.

Anecdotally, it appears that those teams that managed to achieve clinical adoption on a wide scale were very focused on usage patterns of their user communities. Projects like Netcare in Alberta and eCHN in Ontario kept utilization statistics that detailed online activities of their users and what aspects of the available functionality they were using. This information was used to guide development efforts and training activities and to change management initiatives. Clearly the learning from those initiatives

should be incorporated into the Canadian adoption model.

The second key question asked by the COACH White Paper relates to the meaning of the “top” level of e-Health adoption. In that context, there is reference to the need to demonstrate that:

- The “right” functionality, breadth and outcomes are present; and
- The “right” (desired) return on investment from the electronic record or e-Health systems is achieved

Although a laudable objective, what constitutes “right” is unknowable with any precision. As business models and clinical practice change over time, the definition of “right” from a functionality perspective changes as well. As an example, what we think of today as the “right” functionality is driven strongly by the imperative to integrate care, increase safety and better manage chronic disease. Ten years from now, we have no doubt that the wide availability of affordable, interpretable genetic profiles; implantable, miniature monitoring devices; and new stem cell therapies will fundamentally change the “right” architecture and functionality of our e-Health infrastructure.

So what are we to do in the absence of a robust e-Health adoption model? Even if we had one, it seems destined to change over time. The practical solution to the absence of a framework is to maintain an obsessive watch on the behaviours of all of the user communities. The objective should be to steadily increase the number of users, the number of system log-ons by each user, the amount of time spent online, and span of functionality each user accesses. This is one of the best measures of progress of any e-Health initiative. For now, this is what system leadership should use to evaluate e-Health progress.

Clinicians are very busy people. If they perceive value in a system, they will use it. If the system offers more value over time, they will use it more. In the absence of a robust e-Health adoption model, this is the best proxy we have for clinical value.

Any adoption model will be an ever-evolving framework that will reflect our understanding of where we are trying to go in our e-Health journey. Nevertheless, we cannot use the absence of a model as an excuse not to put adoption at the top of our priority list for monitoring and analysis. Measurement of adoption need not be complex to be useful. Indeed, the simplest model that keeps us focused on our business and clinical objectives is the key to success. **EH**

## References

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