



EHR: Empty Health Record?

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The Quest for the EHR

Virtually all provinces are currently engaged in one way or another in planning and putting in place the province-level (and federal-level) system components needed to realize a universally accessible Electronic Health Record or EHR. These province/federal-level system components are called “superstructure” here, and include various databases, registries, repositories, and integration mechanisms. Although the definition of what an EHR is seems to vary widely, we can characterize it for our purposes as a comprehensive, patient-specific longitudinal record of all health-related information over a person’s life.

Getting the superstructural components in place to hold key centralized health data, such as medical images, lab reports, health facilities details, lists of authorized providers, etc. is challenging enough. But add to that the communications networks and the software infrastructure needed to move data from its origins in hospital information systems, physicians’ office systems and every other information system to these centralized elements, and the magnitude of the challenge becomes clearer, and let’s not forget other components of the infrastructure, the local information systems themselves.

Of course, the creation and deployment of the regional, provincial and federal superstructure and infrastructure to support the EHR is very expensive. Billions are, in fact, in the process of being spent and thousands of dedicated individuals are investing major effort and time to build out the required systems and utilities.

But what if we build the EHR superstructure, and the data needed to populate it doesn’t materialize, or is of poor quality?

The data for the EHR will come from the bedside, the lab and diagnostic imaging departments, the patient registration systems, the physicians’ offices, and the community centers. Most use the term “Electronic Patient Record” (EPR) to refer to hospital-sourced information, and “Electronic Medical Record” to refer to physician office-sourced information. How ready are all of these sources or “feeders” to capture quality

and terminologically consistent data and to upload it or otherwise make it available to the EHR superstructure?

The Ontario Hospitals eHealth Council (HeHC) is charged with addressing the role of the hospital in the realization of the benefits of ehealth and particularly of the EHR. The HeHC realized that the “readiness” of hospitals to both serve as feeders of information to the EHR and to access and utilize the information in the EHR was critical. The Council decided to actually measure this readiness through a survey of Ontario hospitals.

How the Survey was Done

The survey content was developed by a team of individuals (see below) with the assistance and guidance of Praxia Information Intelligence and the HayGroup. The survey comprised approximately 60 questions made available through a web-based tool. The capabilities needed for an EHR were derived from the HL7 EHR functional model. All of the approximately 150 Ontario hospitals were surveyed, with a response rate of 92%. Information was sought regarding:

- the institutions’ current capability to capture, manage, and make available information that represents a comprehensive Electronic Patient Record. The EPR is considered an information resource for utilization within the hospital with the potential of being shared among hospitals and with other health agencies;
- the organizational and human resources that are available to support an EPR; and
- the capability and readiness of the institution to participate in the actual dissemination and sharing of EPR information, thereby participating in a regional EHR.

The detailed questionnaire is available on request. Those completing the survey were assisted by a Help Desk. The survey took about 4 months to develop, 2 months to execute, and another 2 months for data analysis and report production. A number of reports have been produced, including one that allows

institutions to compare themselves to their peers and another report that gives an initial view of the overall situation in the emerging regional entities called Local Health Integration Networks.

What the Survey Found

The results of the survey are sobering.

- Firstly, there is a significant gap between the readiness of most hospitals and what is essential to realize an EHR.
- Secondly, this gap exists for hospitals of all types and in all locales, and it exists over all types of applications.
- Thirdly, in some instances the gap is enormous, and on average it is substantial.

What This Means

The significant provincial and federal investments that are being made assume that the data that will fill the superstructural systems is available, comparable, of adequate quality, and forthcoming. In Ontario, and we expect in other jurisdictions with similar profiles, the EHR will suffer because the feeder systems do not exist, are inadequate, do not adhere to common data standards, are unable to integrate with the EHR superstructure, or lack the data needed. The data standards issue includes things like a common clinical vocabulary, coding, etc.

What's more, even where institutional and other local systems currently exist, the lack of data standards brings into question the comparability of data and the ability to aggregate data. Implementing these standards will require widespread at least partial reimplementation of systems.

This means that we could arrive at a point where we have the equivalent of a fancy new car, but not enough gas to allow us to get anywhere with it.

What Needs to be Done

Without question, the current focus on the creation of the provincial and national EHR superstructure needs to be at least partially redirected to address the reality the survey has revealed. Ontario hospitals, and Canadian hospitals generally, appear to be significant

under-investors in ICT, dedicating on the order of 1.6% - 1.8% of their operating budgets to it, while hospitals in the U.S. and other knowledge industries invest 2 - 3 times this (more for knowledge industries generally). In Ontario, though, health system institutions are disincented from increasing their investment because ICT is considered an administrative expense and administrative expenses are tightly controlled. Other Canadian jurisdictions may be in similar financial management circumstances. Many have also argued that the lack of proven quantitative benefits from ICT and the failure IT leaders to develop credible business cases and to deliver on them are other reasons why investment is so anemic.

Given what we have seen from the survey, though, it would seem that the investment level and the focus of investment towards infrastructural capabilities must increase if we are to realize an EHR. In particular it seems essential that some of the dollars targeted for the superstructural systems are going to have to be invested in building institutional and regional capacity, both technical and human.

Increase investment or refocus...not the news everybody wants to hear! But, without this, we will still be waxing eloquent about an EHR a decade from now. We seem to have forgotten that we must build on strong and stable foundations. Institutional systems and their data are the foundation of the EHR and it is high time we realized that.

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