

Reflection on Digital Health in Ontario

Prepared by the Ontario Hospital Association for Ed Clark

The Ontario Hospital Association (OHA) is pleased to have the opportunity to provide reflections and recommendations regarding Ontario's digital health strategy, specifically, challenges and opportunities for the provincial health system, including hospitals.

There is wide consensus that digital health is a strategic imperative for achieving the goals of our health care system: more patient-centered care, greater clinical effectiveness and improved operational efficiencies. Optimizing Ontario's digital health infrastructure is an active challenge, and while the province has made significant progress in some facets of its digital health strategy, its enabling digital health assets and capability have a long way to go in terms of delivering on these stated health system goals.

Underinvestment in Digital Health for Health Provider Organizations

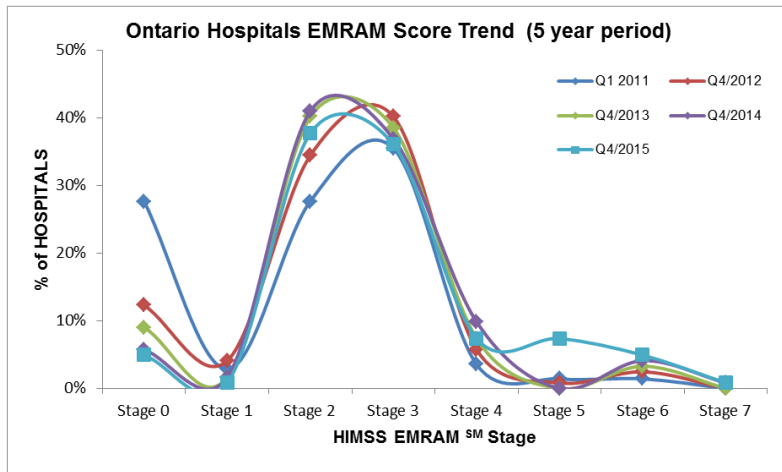
A big challenge for digital health in the Ontario context is that our system has been a constellation of care providers and administrators who have operated in siloes for decades. For some time now, and with great emphasis under the current Patients First strategy, leaders have sought to improve patient experience and outcomes by integrating these siloes. Digital health is a key enabler in bridging these divides.

Unfortunately, the achievement of this vision is impeded by a chronic underinvestment in digital health infrastructure and adoption. To truly and decisively move integration forward and unify providers around the needs of patients, government needs to make the bold investments that hospitals and their community partners cannot accomplish by relying on traditional funding strategies. The absence of investment as a unifying force will continue to leave the system vulnerable to a "divide and conquer" approach among the vendor community and leads to a slow, fragmented adoption of critical digital health solutions. This is an approach that Ontario cannot afford and one that has not served patients and taxpayers well.

Digital health is highly complex. For example, hospital digital health ecosystems are made up of numerous, disparate mini-systems (including an increasing array of digital diagnostic assets) each gathering diverse and critical data points that need to interconnect in order to deliver information for a wide variety of users and uses. Compound this with the requirement to standardize terminology and clinical practices, the potential impact of errors, and privacy concerns, and it is hard to imagine a more challenging task: achieving a seamless system for information exchange.

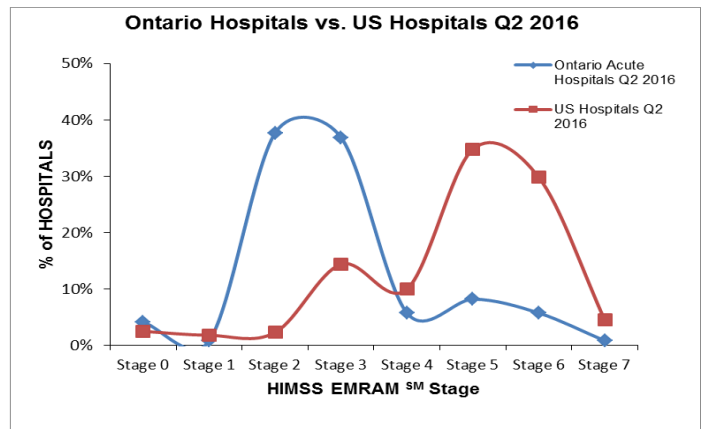
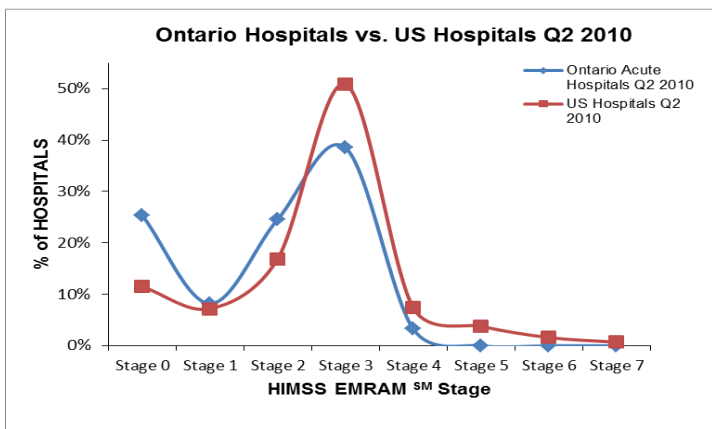
Evidence of the impacts of this challenge can be found in the state of digital health assets and systems in hospitals. For the past number of years, the OHA has tracked hospitals' acute inpatient digital health system maturity using the Electronic Medical Record Adoption Model (EMRAM) which provides a maturity score on a scale from 0 to 7¹. The average Ontario hospital currently sits at an EMRAM score of 3.0562 (Stage 3), which is only a modest increase from the average EMRAM score of 2.2672 (Stage 2) in Q1 2011. This trend in EMRAM scores reflects the marginal progress made within the sector over this period (see diagram below).

EMRAM Score Trend in Ontario (Five-year period)



Additionally, if we are to compare progress between Ontario and the U.S., the EMRAM data present a dramatic picture that demonstrates the impact of strategic investment in the adoption of digital health assets (see diagrams below).

ON vs. US – Q2 2010 and Q2 2016



¹ For a summary of the various EMRAM stages, please refer to the attached Appendix.

The graphs illustrate the effect of U.S. investment in HIS adoption over the period between 2010 and 2016, which is in contrast to Ontario where there has been an underinvestment in digital health infrastructure across health care, including in hospitals. Until now, no provincial government has made a strategic, targeted investment in these assets at hospitals, and traditional funding mechanisms have been inadequate.

While a few Ontario hospitals have found a way to make great strides in advancing their systems, most have found that the capital costs and change management barriers continue to hinder meaningful progress despite the well-known clinical and business benefits.

In fact, Ontario's hospitals have recently emerged from four years of 0 per cent increases to their base funding. The result has been a state of deteriorating revenue for the sector. Funding received and expected in 2016/17 will, for the most part, go towards maintaining existing services and supporting annual growth. These funds will also help offset emerging alternate-level-of-care/capacity issues. As such, we know that hospitals are facing extremely challenging budget decisions as hospitals work to balance their budgets. For these reasons, it is becoming increasingly difficult to invest in other important healthcare priorities.

Moreover, the magnitude of IT investments required – both capital and operating – are significant. For many hospitals, current planned capital investments are often narrowly focused on maintaining existing systems. Any prescription that directs hospitals to simply invest a greater share of their capital and operating budgets in digital health, underestimates the tremendous financial challenge hospitals face each day to maintain current services and staffing demands.

Notwithstanding this challenge, some hospitals are preparing to make the leap to a renewed HIS, pushed by increasingly inadequate systems, aging products that will no longer be supported by their vendor and, primarily, by a desire to offer better, safer care. These hospitals are moving forward knowing how critical these investments are to improving patient care, trusting that the downstream clinical and operational benefits will justify the current and future risks.

HIS Renewal Strategy: A Good Strategy in Need of a Unifying Catalyst for Action

In 2015, recognizing that aging, inadequate systems would lead many hospitals to renew core aspects of their digital health assets, the government struck a Hospital Information System (HIS) Renewal Expert Panel. The Panel's task was to provide advice on how the hospital sector could strategically leverage the opportunity presented by this common need in a way that could promote benefits for patients and value for money. The Panel's central recommendation is that hospitals pursue future upgrades and HIS operations in groups, with hospitals coming together in "clusters", and then eventually, into a few HIS shared service "hubs". This

recommendation is based on a sound rationale and has been received by the hospital community as an appropriate approach for reducing total installation costs, reducing future operating costs, and, perhaps most importantly, for standardizing clinical practice.

The creation of hospital clusters is not a new idea (a number of clusters already exist in some parts of Ontario), but its widespread adoption as a strategic direction for the sector, backed by LHIN and government approval for proceeding unilaterally, could create a new accountability mechanism that would encourage the desired collaboration. The strategy benefits from promoting a governance model that leaves the ownership and management of the assets and infrastructure in the hands of the care delivery organizations that directly depend on these assets for their clinical and business operations.

It is also important to note that, while the strategy's focus is on clusters of hospitals, the authors' longer-term vision includes digital health service hubs that are not just for hospitals, but have the potential, in terms of assets and capacity, to serve the digital health needs of other health service providers who are partners in care for shared patient populations. It is a strategy that can enable digital health maturity across many parts of the system.

Apart from the cluster strategies' benefits (economies of scale and the push for clinical practice standardization), the greatest barriers to its realization are the same as those that have plagued individual hospitals operating alone. Even with the reduced costs offered by this strategy at the individual organizational level, for most hospitals operating on thin margins, entry into a cluster and a major upgrade of existing digital health assets will still be out of reach.

One important component missing from the strategy is that it does not identify a lever that could drive hospitals to undertake the resource-intensive process of joining such a cluster. Where funding pressure is acute and there is insufficient internal capacity to take on organizational change, some hospitals may be reluctant to engage in the challenging work of building a business case, developing a governance structure, working with partners to establish common clinical protocols and, ultimately for many, giving up some of the self-determination that will come with no longer hosting their own HIS. This asymmetry of resources and readiness will present a challenge for prospective clusters and result in limited clarity on if and when hospitals would commit to participating. Supporting the HIS Renewal Strategy with solutions to address this gap can help motivate hospitals to join a cluster.

On its own, the HIS Renewal Strategy should provide some help to drive hospitals into clusters, but what it is missing, is an investment strategy that will accelerate fulfillment of this vision. Armed with a cluster strategy that should help avoid the risks of creating over a hundred independently procured and managed HIS initiatives, now is the time for the government to support dedicated investments in HIS infrastructure. Such an investment will help incent

hospitals to make a timely commitment to the desired collaboration and accelerate realization of the clinical and operational benefits.

Following the release of the strategy, a community of experienced hospital and health system leaders has come together to support the achievement of its vision; however, this desire and commitment is hindered by the knowledge that there are insufficient motivators to overcome traditional funding barriers. Dedicated HIS infrastructure funding from the government would serve as an important unifying catalyst to drive the strategy forward.

An example of where dedicated government investment achieved rapid digital health adoption was with the physician Electronic Medical Records (EMRs) initiative. A significant investment was made at the system level to support implementation and change management, even at the physician office level, to help incentivize adoption and its associated implementation costs. This well-supported implementation strategy was successful in promoting a fairly rapid adoption of EMRs to the point where 85 per cent of primary care physicians are now using EMRs. However, hindsight on that investment might suggest that the end results of 14 active vendors across thousands of individual instances, has left the system with some ongoing challenges with respect to plugging that cohort into a shared electronic health record. Underpinned by the HIS Renewal strategy and lessons-learned from existing experiences, strategic HIS investment can be designed to learn from the past.

It must be acknowledged that the amount of capital required to advance HIS renewal and digital health platforms at hospitals will be very large and, as such, it will be important to think about innovative ways to meet this need. This has been achieved in the area of infrastructure investment in hospitals with alternative financing and procurement (AFP) strategies. While the AFP model helped stimulate a much-needed rebuild of aging hospital buildings, non-traditional financing models appropriate for digital health infrastructure investment need to be identified and/or developed. Another more recent example of a non-traditional financing model used by hospitals over the past few years applies to capital equipment funding; the adoption of Managed Equipment Services strategies supports the need to renew fleets of diagnostic and medical device equipment.

One of the advantages of a dedicated HIS infrastructure funding strategy is that it supports voluntary participation by organizations, which will help to promote success. Governance structures that will require some organizations to become dependent on another for delivery and management of a core asset like an HIS are complicated and need to be built on trust and a commitment among all parties. Forced partnerships will always be less desirable and effective than voluntary, willing participation. For that reason, incentive-induced drivers are preferable to more prescriptive approaches.

Unlocking the Value of Digital Health Analytics

A discussion on hospital digital health would be incomplete without mentioning the capacity for hospitals to perform advanced analytics that can support the management and planning of healthcare delivery. Service delivery in hospitals and elsewhere generates vast amounts of data on everything from clinical care and facility operations, to patient movement and experiences. This data has enormous potential value for helping hospitals understand, plan and improve their practices and resource management. Investment in more digital health assets will undoubtedly generate even more information and make that information available for use by a wide community of stakeholders.

The growing field of Analytics and the concept of “big data” are a response to the enormous opportunity this rich array of data presents, but also a reminder that the system is typically as-yet unprepared to take full advantage of this opportunity. This is very much the case for Ontario’s hospitals. Currently, only a few hospitals have the tools, experience or expertise to quickly and effectively take this data and turn it into knowledge that can improve care delivery. Much of the data collected by the system finds its way to government, but is not quickly or practically made available to provider organizations for their own use. The OHA recommends that future investments in digital health assets include solutions to equip providers with the datasets, tools and resources to better unlock the valuable insights within our vast quantities of health data. A facet of this may be to enable an “open data” approach to some core data sets, allowing the development of a dynamic applications market of secure analytics solutions for use by providers and decision-makers.

Parallel Investment Required to Enable a Shared Electronic Record

The OHA has not taken a hard look at the eHealth Ontario agency and will leave it to others to comment on its effectiveness, value for money and future mandate. Instead, we have chosen to focus our comments on the HIS Strategy. That said, the OHA has always held the view that having centralized leadership is essential for achieving the vision of an interconnected digital health ecosystem, and for creating and managing these assets to enable the effective exchange of health information across providers.

Through the work of eHealth Ontario and others, there are numerous assets (registries, repositories, data standards, HIALS, etc.) that have been created and that can serve as foundations on which future digital health solutions will be built. Even now, to support the HIS Strategy, central leadership is required to identify the Point of Service Standards that will allow HIS clusters to plug into data exchange assets and enable the sharing of electronic health records across the system. HIS clusters alone, and even the future creation of digital health shared service hubs, will not deliver a shared provincial electronic health record. The current

“Connecting” projects (CSWO, CNEO and CGTA)² and HIAL (Health Information Access Layer) strategy, along with solutions to connect physician offices to the rest of the health care providers in the system, are essential complementary strategies that require ongoing leadership support and investment. If Ontario wishes to truly translate the “patients first” philosophy into the digital health realm, it will need to continue to ensure that there are minds and resources dedicated to completing the important work for capturing the full patient journey across their care.

Conclusion

The OHA appreciates the opportunity to provide its insights and recommendations on this important topic. With a majority of hospitals ready to renew their aging, inadequate digital health assets, this is a pivotal point in time to facilitate the advancement of the province’s digital health information strategy. Ultimately, these efforts will enable the government to achieve the goals of its Patients First agenda: improved access, better coordinated and integrated care, greater transparency – and most importantly, safer, higher quality care for Ontarians.

Summary of Recommendations

- Building on the HIS Renewal Strategy, develop a way to incent hospitals to undertake the process of joining a cluster.
 - Develop an investment strategy that will accelerate realization of the clinical and operational benefits of digital health system adoption and help avoid the risks of creating over a hundred independently procured and managed HIS initiatives.
- Develop and support innovative funding models specifically tailored for digital health infrastructure investment to enable significant capital and operational investments in hospitals and their health system partners.
- Equip providers with the datasets, tools and resources to better unlock the valuable insights within our vast quantities of health data.
- Ensure leadership and resources continue to be dedicated to completing the work of enabling a digitally connected system through a shared electronic health record.

² These projects are: Connecting Southwestern Ontario, Connecting Northeastern Ontario, and Connecting the GTA.