

November 2016



Digital Health and the Health Quality Agenda

Submission to Mr. Ed Clark
Premier's Business Advisor and
Chair of the Advisory Council on Government Assets

Health Quality Ontario (HQO) is the provincial advisor on the quality of health care. The agency's mandate is set out under the *Excellent Care for All Act, 2010*: to report to the public on the quality of the health care system, promote health care that is supported by the best available scientific evidence, and support quality improvement throughout the system.

Health Quality Ontario has a broad mandate and many points of intersection with health data. Much of the work of the agency is dependent on data and its analysis. There are significant opportunities to build on the province's digital health investments and achievements to date to advance the quality of health care across all aspects of the agency's mandate. Data drives improvement and, as the agency mandated to support improvement in the health care system, Health Quality Ontario should play a strategic role in the province's digital health agenda.

In October 2016 the Minister of Health and Long-Term Care, Dr. Eric Hoskins, asked the Premier's Business Advisor and Chair of the Advisory Council on Government Assets, Mr. Ed Clark, to assess and validate the value of the province's digital health assets and to recommend ways to take them to the next level. Mr. Clark has been asked to advise the government on two key issues. First, he has been tasked with completing a value assessment of Ontario's digital health assets and all related intellectual property and infrastructure. Secondly, he will recommend approaches to maximizing the value of these assets for Ontarians, which includes improving how care is delivered, enhancing the experience of patients when interacting with the health care system and, indirectly, improving the economic value created for Ontario's economy.

This request was made in a context of the expiry of the mandate of eHealth Ontario, which will occur at the end of the year. This represents an opportunity to renew the provincial vision for digital health, in particular as it relates to the Patients First strategy.

The Minister has stated that he believes moving to a digital health care system presents a growing opportunity. We concur that an important priority for the future needs to be patient- and consumer-focused tools and services. Patients need to be able to access their own health information in ways that engage them in managing their own health. They also place a high priority on using technology to make the health care system more responsive and easier to navigate, such as booking appointments online and renewing prescriptions electronically. The health quality agenda speaks to these priorities, and should be the driver of the provincial digital health agenda.

Health Quality Ontario is pleased to offer the following comments on maximizing the value of the investments made to date in building the province's electronic health assets, and to recommend where further investments should be made in order to improve health care quality in the province.

The health care system context

Today's patient receives care from many providers in a variety of settings; she wants access to her own health information; she expects that technologies that make up the fabric of her everyday life will also have a presence in her health care. A modern, high-performing health care system needs to support these expectations through effective and efficient sharing of clinical information. Patients are living longer with more complex conditions, and are faced with a growing array of available treatment options. To provide the care their patients need, clinicians must be supported with digital health assets that have been designed with quality in mind.

Integrated health records are essential to integrated health care and a seamless experience for patients.

The electronic health record is the foundation of digital health; continued progress on this initiative is essential to deriving true value from digital health investments. Data itself has little intrinsic value; it's what we do with it that generates a return. The true potential in digital health lies in its ability to deliver significant improvements in health outcomes to the people of Ontario.

Shortfalls in the current provision of health care have been well documented. Substantial variations in the quality of health care can be measured in almost every clinical area, and patients continue to experience an unacceptable incidence of harm. Providers can derive significant value from using timely local clinical data to inform their quality improvement efforts. Having the capability to do this within a practice environment is fundamental to the province's quality improvement agenda. The experience of leading health systems in other jurisdictions—for example, at Kaiser Permanente and Intermountain Healthcare in the United States—demonstrates how this can work at a system level to improve health care quality and deliver value.

Health Quality Ontario has adopted the Institute of Medicine's six aims of quality care as its definition of quality: safe, effective, patient-centred, timely, efficient, and equitable. This definition reflects the shift from viewing quality of care as the responsibility of individual providers and institutions to a system responsibility. Evidence supporting the ability of technologies to improve quality across all dimensions of quality is maturing, and tilting positively to indicate improvements in care and outcomes for patients. Four recently completed evidence syntheses point to this potential. Health Quality Ontario's framework for health system quality identifies technology as a key enabler of improvement in our system. Fundamentally, the health quality agenda should be the business driver for the provincial digital health strategy. Such an approach would place the needs of patients and providers at the centre of the next phase of investment in the digital health agenda.

Supporting improvement through health system performance monitoring and reporting

Health Quality Ontario's legislated mandate is to monitor and report to the people of Ontario about their health status and the performance of the health care system, to support continuous quality improvement, and to promote health care that is supported by the best available scientific evidence.

For the system performance component of our mandate, Health Quality Ontario has been tasked with monitoring and reporting on access to publicly funded health services, health human resources in publicly funded health services, consumer and population health status, and health system outcomes. The *Excellent Care for All Act, 2010* states that the purpose of such monitoring and reporting is to encourage and promote an integrated, person-centred health system; to make the Ontario health system more transparent and accountable; to track long-term progress in meeting Ontario's health goals and commitments; and to help Ontarians to better understand their health system.

Performance monitoring aims to track progress on, evaluate, and communicate the broad health system objectives of care that is safe, effective, patient-centred, efficient, timely, and equitable. Performance is frequently compared with an average, a target, or best-in-class performance. Performance can also be compared across different providers or jurisdictions, as well as over time.

Internationally, performance monitoring and public reporting are considered vital components of a high-performing health system. Public dissemination of accurate performance data leads to better accountability at all levels. This increased level of accountability is important, not only because the public has a right to know about the quality of publicly funded services, but also because public reporting has the potential to drive health care improvement. Change occurs in complex ways (e.g. corrective interventions, incentive schemes, restructuring of expectations, internal pressures, peer learning), many of which can be influenced by performance measurement.

Health system performance measurement provides patients and families with information they need to navigate and understand the care available to them. Health care providers can use the same or related measures to assess their own performance, including against peers, and to inform local quality improvement. Health system policy makers can use quality metrics to get a clearer picture of system performance, encourage improvement, and direct resources. Quality measurement also can support a population approach to health in that broader contributions to health can be assessed, such as health lifestyle, prevention, and other determinants.

Health Quality Ontario provides tailored performance reporting at different levels to inform the public and to guide system, regional, and local improvement priorities. Our releases include a yearly report on the overall performance of the health system, regularly updated online reporting, and specialized reports that more deeply examine specific issues of health quality, including safe care in long-term care homes, emergency department care, and the relationship between income and health. At its most granular, our reporting provides comparative performance data at the sub-region, organization, and individual practice levels. Individual clinician practice reports are designed to enable providers and organizations to identify local priorities and inform their approach to needed quality improvements. We currently rely on administrative datasets to populate our practice reports and much of our public reporting, such as physician billings or hospital discharge data.

Better data, better health

Rich clinical data from electronic health records (EHRs) would greatly enhance the state of information in Ontario's health system and benefit the work of agencies such as Health Quality Ontario, which could in turn provide more meaningful information to patients and providers. While administrative data is an appropriate source of data for certain quality issues (e.g. wait times, length-of-stay, procedures or services delivered), we rely too much on data that is not sufficiently rich to assess key aspects of the care delivered to patients and especially to determine the outcomes of that care. Key questions such as "was the procedure successful?" or "were there complications after the patient left hospital that caused harm or death?" are difficult or impossible to answer without clinical data of the type that resides in the EHR.

By better understanding care delivery and patient outcomes, we could improve evidence-based care and planning in the province. Benefits to the patient could be much more closely linked to the care provided, and clearer patterns of public health could be identified such as trends in smoking or inactivity and the impact on disease burden.

In particular, monitoring and reporting could evolve from primarily looking at process indicators (such as whether a physician gave her patients regular tests of blood sugar control) to outcome indicators (for example, whether changes in care and lifestyle were actually successful in improving sugar control and the health of the patient). This provides valuable and needed

insight into how effective our health system is in improving the care and lives of Ontarians. It can also support the identification of areas for innovation, improvement, and care standardization. Health Quality Ontario would be able to better provide the public with information on their health system, including how it performs overall and compared to others, whether care is effective and investments are helping, how we are doing in reducing inequity, who is providing the most effective care, and where are pockets of excellence that could be scaled or spread.

Another great benefit of clinical information pulled from electronic health records is the timeliness of data. Current administrative datasets typically rely on a data submission and verifying schedule that can take months or even longer after the point in time when a patient was seen. While this lag might be less problematic for assessing the overall performance of the health system year over year, data delay certainly limits our ability to provide health care providers with meaningful data on their own practice. Quality improvement science encourages rapid cycles of change and measurement to determine effect and improvements to care delivery, but we can only support that in a limited way when the performance data we return to sites is months out of date. Their past performance might not reflect current performance (post change), and knowing that can cause providers to disregard performance data. This lag could be severely reduced or even entirely eliminated if a robust provincial data set existed that pulled from live clinical electronic records.

The ability to draw on aggregated, physician-level electronic medical record (EMR) data would increase the relevance, timeliness, and impact of comparative performance reporting. By leveraging linked EMR and administrative datasets, as well as patient-reported experience and outcomes data, a much more comprehensive view of performance could be drawn, and health services providers would be enabled to identify more tailored improvement strategies to improve patient care.

Health Quality Ontario's recommendation is to liberate, to the greatest extent possible given the importance of patient privacy, the clinical data that resides in electronic health assets in Ontario so it can be used for reporting and improvement purposes. As the provincial agency tasked with developing evidence and clinical care standards, reporting, and supporting improvement in the health system, it is essential that the agency have broad access to this data.

Supporting the delivery of evidence-based care

Health Quality Ontario is working with partners to embed best practice (that is, practice based on the best available evidence) at the point of care. The first step in improving care is determining what good care looks like.

To that end, Health Quality Ontario has worked with physicians, patients, and a wide group of other experts to create quality standards. The goal of the Quality Standards Program is to help close the gap between what we know is good care and current practice. A quality standard is a concise list of statements that set out what care physicians should be providing and what care patients should expect.

Without thoughtful consideration paid to implementation, standards can often have a limited effect, so a comprehensive implementation plan will accompany each standard.

An important element of quality standards is that each standard has one or more quality indicators. A small number of health outcomes are chosen as the most important measures of

success of the entire standard and these are mapped to indicators that reflect the goals of the standard. Every statement within the standard is measurable for improvement and aids in achieving the chosen outcomes.

When it comes to achieving better outcomes for patients, we have three recommendations for ensuring that digital health assets are put to use in ways that support the delivery of evidence-based care.

First, systematically embedding evidence-based quality improvement tools such as reminders, alerts, prompts, and decision aids into the care process via technology can help clinicians provide care based on the best available evidence with greater consistency and ease.

Second, automating data collection could significantly reduce the effort required for measurement. Measurement is important for a variety of reasons, including quality assurance, quality improvement, and accountability.

Third, feedback loops built into technology can provide real-time information to clinicians and patients, helping clinicians monitor their performance and patients self-manage their health.

Considerations for the future

In order to realise their potential, promoters of technological innovations need to take into account human factors issues and the local culture, which affects whether innovations successfully diffuse and embed themselves into health care organisations. As an improvement organization, Health Quality Ontario has significant expertise in implementation science and evidence-based change management practices.

To improve the odds that the full value of the digital health assets created to date will be realized, Health Quality Ontario has two further recommendations. First, systems need to solve the problems of the user. This does not mean simply doing things on computers that we used to do on paper. Reimagining processes and using technology to deliver on them is essential. This is where the true value will be found. Going forward, Ontario needs to invest in proven change management processes in as focused a manner as we invest in technology. Incorporating a network of clinical leaders who understand clinical decision making and processes will also be a necessary condition of success.

Second, a solid investment in analytics will also be required. The true value in the data is what you do with it. This is what will drive improvement in patient outcomes, population health, and resource optimization.

The province should explore investment in predictive analytics to support efficient resource allocation, reduce variation, anticipate demand, and manage patients earlier. Failure to spot warning signs in patients in community and hospital settings results in significant numbers of avoidable admissions and deaths. Some reports indicate there is significant potential to reduce cost by using analytics to inform early intervention through more proactive and targeted care. From a population health perspective, populations can be risk-stratified and managed proactively.

High priority areas for investment should fulfil the quadruple aim: delivering improved outcomes, better value, and enhanced patient and provider experience.

Conclusion

A high-performing health care system invests in its digital health assets strategically to improve the delivery of high quality care and to support patients and families in navigating the health system and managing their own health.

We are confident that the province's investments to date provide a strong foundation for delivering health care that is more safe, timely, effective, efficient, patient-centred, and equitable.

By linking EMR or EHR data and administrative datasets (which record transactional information), as well as patient-reported experience and outcomes, a much more comprehensive view of performance could be drawn. This would inform any number of important questions, such as the extent to which care is being delivered according to a specific evidence-based standard, how particular populations are being served, or whether local quality improvement strategies are appropriately tailored given the performance of a particular practice.

The next phase of the digital health agenda needs to pay particular attention to two areas. First, we must address the human factors that will affect acceptance, adoption, and adherence. Support for organizational change, including fostering a culture that enables the reimagining of work processes and the diffusion of innovation, should be key activities in the next phase of the provincial digital health strategy. Second, we must focus on analytics. The path to better health care relies on better data. The value of data collected through the EHR lies in how we use it to deliver better outcomes for Ontarians.

Summary of Recommendations

- 1) The health quality agenda should drive the provincial digital health agenda.
- 2) Given its mandate Health Quality Ontario should play a strategic role in the province's digital health agenda.
- 3) Liberate, to the greatest extent possible, the clinical data that resides in electronic health assets in Ontario so it can be used for reporting and improvement purposes. As the provincial agency tasked with developing evidence and clinical care standards, reporting, and supporting improvement in the health system, it is essential that Health Quality Ontario have direct access to this data.
- 4) Systematically embed evidence-based quality improvement tools such as reminders, alerts, prompts, and decision aids into the care process via technology to help clinicians provide care based on the best available evidence with greater consistency and ease.
- 5) Automate data collection to reduce the effort required for measurement.
- 6) Build feedback loops into technology to provide real-time information to clinicians and patients, helping clinicians monitor their performance and patients self-manage their health.
- 7) Invest in proven change management processes in as focused a manner as we invest in technology, including building a robust network of clinical leaders.
- 8) Invest in analytics, with a focus on predictive analytics to drive improvement in patient outcomes, population health, and resource optimization.
- 9) High priority areas for investment should fulfil the Quadruple Aim: delivering improved outcomes, better value, and enhanced patient and provider experience.