

# Electronic Health Records' Implementation Status

Follow-Up on VFM Section 3.03, 2016 Annual Report

RECOMMENDATION STATUS OVERVIEW						
	# of Actions Recommended	Status of Actions Recommended				
		Fully Implemented	In Process of Being Implemented	Little or No Progress	Will Not Be Implemented	No Longer Applicable
Recommendation 1	1		1			
Recommendation 2	2		1	1		
Recommendation 3	3	1	2			
Recommendation 4	2		1	1		
Recommendation 5	2		2			
Recommendation 6	1		1			
Recommendation 7	2		2			
Recommendation 8	2		2			
Recommendation 9	1		1			
Recommendation 10	1		1			
Recommendation 11	3	3				
Recommendation 12	3	2	1			
<b>Total</b>	<b>23</b>	<b>6</b>	<b>15</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>%</b>	<b>100</b>	<b>26</b>	<b>65</b>	<b>9</b>	<b>0</b>	<b>0</b>

## Overall Conclusion

As of October 31, 2018, the Ministry of Health and Long-Term Care (Ministry) and eHealth Ontario have fully implemented 26% of the actions we recommended in our 2016 Annual Report and have made progress in implementing an additional 65% of the recommendations.

The Ministry and eHealth Ontario have fully implemented recommendations such as establishing and communicating a consistent definition of “active user” across the province. They also have examined the reasons for the low rate at which health-care professionals adopted electronic health records and prepared a plan to address the root causes of the low usage rates.

As well, the Ministry and eHealth Ontario were in the process of phasing in recommendations such as updating a budget of the costs to complete the overall electronic health record initiative, identifying any lab information that should be uploaded to the Ontario Laboratories Information System, and requiring health-care organizations and health-care professionals to upload all lab information.

However, the Ministry and eHealth Ontario had made little progress on 9% of the recommendations, including publicly reporting on all costs incurred to date and the status of these costs compared to the updated budget and plans.

The Ministry indicated that it would align its actions to implement our recommendations with the new government's direction on digital health.

The status of actions taken on each of our recommendations is described in this report.

## Background

The Ministry of Health and Long-Term Care (Ministry) began developing the Smart Systems for Health Agency in 2002 to start a provincial electronic health system. The functions of this agency, as well as a Ministry branch that previously worked on Electronic Health Record (EHR) application and clinical data management projects, were amalgamated into eHealth Ontario when it was created in 2008.

eHealth Ontario's mandate is to create a system that, in addition to providing an EHR for every Ontarian, includes a data network that stores EHR data and makes it quickly and securely available to health-care providers.

An EHR is defined as "a secure and private lifetime record of an individual's health and health-care history, available electronically to authorized health-care providers." EHRs are intended to replace physical records (on paper and x-ray film, for example) that are not always up to date or readily accessible to health-care providers.

In 2008, and again in 2010, the Ministry set 2015 as the target year for eHealth Ontario to have a fully operational EHR system across Ontario. By then, although some EHR projects were up and partially running, a fully operational province-wide EHR system was not in place. The Ministry did not formally extend the 2015 deadline, but eHealth Ontario continued its work and expected to complete the remainder of its project-build work by March 2017. It was unclear at the time of our audit when a fully operational EHR system would be available in Ontario.

We found that while some individual systems had been developed to collect and provide specific types of patient health information, there was still no provincially integrated system that allowed easy and timely access to all this information. This meant that it was still not possible for all authorized health-care professionals to access complete health information (for example, lab tests, drug information or x-rays) about a patient regardless of where in Ontario the patient received health services. As well, not all physicians who used Electronic Medical Record systems could connect to the provincial databases because of incompatible technology.

While the Ministry had a good understanding of the spending on EHR projects managed directly by eHealth Ontario, it had not tracked the total spending on the EHR initiative incurred by other health-care organizations. Spending on projects not managed directly by eHealth Ontario included, for example, systems used in hospitals and family doctors' offices that contain patient health information.

We used information that the Ministry maintained, along with data we gathered directly from a sample of health-care organizations, to estimate that the cost incurred from 2002/03 to 2015/16 to complete EHRs across the province was approximately \$8 billion.

Because the EHR initiative was still not fully complete and lacked an overall approved strategy and budget (the Ministry only established a budget for eHealth Ontario's portion of the initiative), the Ministry did not know how much more public

funding was needed before the initiative was considered effectively implemented.

Our specific findings included:

- Although approximately \$8 billion had been spent to enable a functional EHR, parts of the EHRs were still not completely in use and others were only partially functional. This spending covered a 14-year period between 2002/03 and 2015/16, and included eHealth Ontario's project costs and EHR-related costs incurred in the broader health sector. Of the total \$8 billion, eHealth Ontario and its predecessor agency spent \$3.2 billion, the Ministry and its funded projects such as the Ontario Telemedicine Network and Cancer Care Ontario spent \$1.5 billion, and Local Health Integration Networks–funded health-care organizations such as hospitals spent \$3.7 billion.
- The Province had not established an overall strategy to guide the work of eHealth Ontario and all other health-sector organizations to enable a fully functioning EHR system in Ontario. As well, there was no overall budget for all EHR projects and EHR-related activities undertaken in Ontario.
- As of March 2016, a year after its deadline passed, seven core projects managed by eHealth Ontario were still within budget but only about 80% complete. eHealth Ontario said it expected to fully complete its work within budget to build the EHR systems by March 2017.
- A significant factor for eHealth Ontario's difficulty in completing projects on time was that it had no control over what most health-care organizations did with their own data systems. In effect, eHealth Ontario was mandated to connect these systems, but it was not given the authority to require organizations to upload necessary clinical information into its EHR systems.
- The EHR system included four regional Diagnostic Imaging databases across the

province to store images, such as x-rays and CT scans, and related reports. However, 60% of privately owned imaging clinics did not use digital equipment and so were unable to upload the approximately 5.4 million patient images they create each year.

- As part of the EHR project, eHealth Ontario and the Ministry spent \$71 million on a province-wide Diabetes Registry, which was to contain information to help treat the growing number of Ontarians with diabetes. However, eHealth Ontario terminated the project in 2012 before it was complete.
- The drug information system is used to track dispensed and prescribed medications of all Ontarians. eHealth Ontario was originally responsible for this project, but did not complete it. The Ministry assumed direct responsibility for the project in 2015. By March 2015, the Ministry and eHealth Ontario had spent a combined \$50 million on the project. The Ministry redesigned the project and expected to complete it by March 2020, but had no cost estimate for completing the entire project.

Our report contained 12 recommendations, consisting of 23 actions, to address our audit findings.

We received commitment from eHealth Ontario and the Ministry that they would take action to address our recommendations.

## Status of Actions Taken on Recommendations

We conducted assurance work between April 1, 2018, and June 6, 2018, and obtained written representation from the Ministry of Health and Long-Term Care and eHealth Ontario that effective October 31, 2018, they have provided us with a complete update of the status of the recommendations we made in the original audit two years prior.

## Lack of Provincial Strategy and Leadership to Guide Ongoing eHealth Work

### Recommendation 1

*To ensure that all parties are held accountable for their responsibilities, the Ministry of Health and Long-Term Care should clarify and document the roles and responsibilities of all parties in the development of relevant projects in the next version of its Electronic Health Record strategy.*

**Status:** In the process of being implemented by April 2020.

### Details

In our 2016 audit, we found that the Ministry had not defined the roles and responsibilities of all partners involved in the EHR strategy.

During our follow-up, we found that the Ministry published the Digital Health Action Plan in March 2018. This plan had 10 initiatives and spelled out how the Ministry intended to prioritize investments in digital health over the next few years. The plan documented the roles and responsibilities of digital health partners in the delivery of each of the 10 initiatives. The Ministry plans to review the plan annually to ensure that roles and responsibilities are evaluated on an ongoing basis and expects to have the plan in place by April 2020.

Also, the Ministry put in place a governance framework that is led by the Digital Health Board. The Digital Health Board is composed of the Chief Executive Officers (CEOs) of selected Local Health Integration Networks, Associate Deputy Ministers from the Ministry, the eHealth Ontario CEO, and representatives from the health sector (such as health-care providers). The Digital Health Board provides advice on how digital health can be improved and funding best used.

In addition, the Ministry issued mandate letters in July 2017 to provincial digital health delivery partners, such as eHealth Ontario, the Ontario Telemedicine Network and OntarioMD (a subsidiary of the Ontario Medical Association.) The mandate letters set out expectations for meeting the objectives

of the plan, including specific deliverables, targets and timelines. The Ministry plans to continue issuing mandate letters to other delivery partners, such as the electronic Child Health Network, by December 2018.

## Significant Funding Provided to Implement Electronic Health Records

### Recommendation 2

*To ensure that the full costs of implementing the Electronic Health Records Initiative are transparent, appropriate and reasonable, the Ministry of Health and Long-Term Care should:*

- *prepare an updated budget of the costs to complete the overall initiative, including estimated costs of all EHR projects to be developed by taxpayer-funded health-care organizations—not just eHealth Ontario—along with its revised EHR strategy;*

**Status:** In the process of being implemented by March 2019.

### Details

Our 2016 audit found that the government lacked sufficient information on the cost to all organizations connecting to and using the EHR system. Without such information, the government could not monitor overall spending on the EHR initiative.

In our follow-up, we found that the Ministry approved an annual budget of \$292.6 million to eHealth Ontario for the 2017/18 fiscal year. In December 2017, the Ministry hired a consultant to assess the current financial state of digital health in Ontario and recommend best practices for future financial management of the digital health system. The Ministry was still awaiting the consultant's report when we completed the follow-up. Upon receiving this consultant's report, the Ministry will consider the recommendations and develop a plan accordingly, including updating the forecast of digital health expenditures, by March 2019.

- *publicly report, at least annually, on all costs incurred to date and the status of these costs compared to the updated budget and plans.*

**Status: Little or no progress.**

#### Details

As mentioned above, the Ministry will consider the recommendations made in the consultant's report and develop a plan accordingly. The Ministry will consider public reporting as part of the plan.

#### Recommendation 3

*To ensure Electronic Health Record (EHR) projects are completed on time and comprise the anticipated functionalities, eHealth Ontario should:*

- *make clinical data available without patient identifying information in the Ontario Laboratories Information System;*

**Status: In the process of being implemented by December 2019.**

#### Details

When we conducted our audit in 2016, we found that the Ontario Laboratories Information System was supposed to allow authorized researchers working on health-care planning and policy-making to access data that was free of patient-identifying information by March 2013. However, we found that there was no database free of patient-identifying information at the time of our audit.

The Ministry and eHealth Ontario had made Labs System data available to the Institute for Clinical Evaluative Sciences since February 2016. They also made it available to Cancer Care Ontario, after our audit, in March 2017.

Also since our audit, eHealth Ontario has been working with the Ministry and the Information and Privacy Commissioner of Ontario to more efficiently share EHR data that does not contain patient identifying information with other organizations, such as research institutes. In September 2017, eHealth Ontario initiated a forum of stakeholders from the research community, public health and

others interested in advanced analytics to look at the potential of EHR patient data for secondary use—that is, to conduct research for the purpose of streamlining health-care service delivery or keeping track of health-care costs. The Ministry expects to make clinical data available to these groups by December 2019.

- *set timelines for completing all phases and functionalities of all EHR projects;*

**Status: In process of being implemented by March 2021.**

#### Details

In 2016, our audit found that the Ministry directed eHealth Ontario in 2010 to focus on 12 projects essential to completing the EHR initiative, seven of which were considered core. It set March 2015 as the target completion date.

We found that eHealth Ontario cancelled the Diabetes Registry project in 2012, which was one of the core projects. In May 2015, the Ministry took over another of the core projects, the Drug Information System, from eHealth Ontario. This system would allow physicians to electronically prescribe new medications directly to a pharmacy, and doctors, nurses and pharmacists could view patient medication information on a database. In July 2016, the Ministry entered into an agreement with Canada Health Infoway for an ePrescribing service that was expected to be in place by March 2018.

The status of the remaining five non-core projects was as follows in 2016: Physician eHealth and Chronic Disease Management were in progress; the Ministry had no finalized plans yet for Consumer eHealth (to let patients view their health information on their personal computers); Panorama (the provincial immunization project) focused on immunization records of school-aged children; and Technology Services (to ensure that EHR systems and databases functioned reliably) was completed.

The Ministry advised us during our follow-up that Canada Health Infoway is leading the ePrescribing service project and the implementation is

currently under way. In addition, eHealth Ontario completed the remaining five core EHR projects as of March 31, 2017. The five projects are: the Ontario Laboratories Information System; Diagnostic Imaging; Integration Services; Client, Provider, and User Portals; and Client, Provider, and User Consent Registries. eHealth Ontario submitted final reports and lessons-learned documents to the Treasury Board Secretariat for formal close-out.

Progress made on the other non-core EHR projects that were not yet completed at the time of our 2016 audit, which were the responsibility of the Ministry and its delivery partners, including eHealth Ontario, was as follows at the time of our follow-up:

- The Digital Health Action Plan includes metrics on the Physician eHealth project, such as increasing the number of community-based physicians using value-added features, such as point-of-care alerts, in the Electronic Medical Records systems. The Ministry aims to have 95% of community-based providers use this feature by March 2021 (up from 40% in 2018).
- The Digital Health Action Plan includes initiatives focused on Chronic Disease Management. For example, the Ministry plans to support 100,000 patients in managing their chronic conditions through digital self-care solutions, such as Telehomecare, by March 2021. Telehomecare allows patients to input and transmit their vital health information electronically from their home to a clinician who provides health education and coaching support.
- The Ministry has pursued a number of initiatives on Consumer eHealth, including the SPARK project, Digital Yellow Card and patient digital access channels. The SPARK project provides consumers with secure access to their health information on their mobile devices and personal computers; the Ministry expects to complete this work by March 2019. Digital Yellow Card, which

the Ministry launched as a pilot in October 2016, captures immunization records digitally. Patient digital access channels include patient portals and consumer apps that enable patients to digitally access their health records from specific health-care providers. The Ministry indicated that it was working with a number of these providers to create ways to enable patients to use these channels to access data, such as drug records and lab test results, from the provincial repositories.

- The Ministry submitted final reports and lessons-learned documents for Panorama to the Treasury Board Secretariat for formal close-out in November 2016.

- *monitor that progress is made according to established timelines.*

**Status: Fully implemented.**

#### Details

As noted above, the core EHR projects were completed as of March 2017 and are now being monitored for their operations. To monitor the core projects' operations, eHealth Ontario updated its electronic information report, which provides staff with key information on the projects, such as the number of registered and active users, frequency of use and type of data accessed. On a quarterly basis, the report shows the progress toward targets related to the use of digital health records, increasing the volume of provincial data accumulated in the EHR, and whether the technology services are performing reliably and smoothly, with minimal unplanned down time.

#### Recommendation 4

*To ensure complete and accurate information is available in the Ontario Laboratories Information System (Labs System) for health-care professionals to provide better care for patients, eHealth Ontario should:*

- *regularly work with the Ministry of Health and Long-Term Care to help identify any lab*

*information that should be uploaded to the Labs System, and require health-care organizations and health-care professionals to upload all lab information;*

**Status: In the process of being implemented by March 2021.**

#### Details

Our audit in 2016 found that the Labs System did not contain data from about a quarter of the province's active labs, which meant 33 million test results were not sent to the Labs System. The system also did not contain tests performed in physicians' offices, accounting for a further 10 million tests in 2015/16. As well, lab tests not covered by the provincial health insurance plan (OHIP), such as prostate cancer screening, were not sent to the Labs System.

For the 2017/18 fiscal year, eHealth Ontario targeted that 94% of total provincial community and hospital lab test volumes would be captured in the Labs System. As of June 30, 2018, 93% of lab tests were in the Labs System. Activities are under way to connect remaining labs.

eHealth Ontario is also conducting an internal audit of lab data submission quality and practices. After this work is completed, eHealth Ontario will develop remediation plans in response to any issues identified in the assessment by December 2018.

The target is that 98% of lab tests from community and hospital labs in the province will be stored in the Labs System by March 2021. The Digital Health Board, which was discussed in **Recommendation 1**, monitors progress toward this target via the monthly Digital Health Scorecard, which identifies which initiatives are on track, require further monitoring or require intervention. eHealth Ontario also monitors progress through its online information report.

- *confirm that individual laboratories do not exclude more tests than specified in their contractual agreements with eHealth Ontario.*

**Status: Little or no progress.**

#### Details

We noted in our 2016 audit that, due to sensitivity or other factors, eHealth Ontario may specify the types of tests that the labs can exclude from the Labs System. eHealth Ontario did not have a listing of the types of excluded lab tests by lab, and had not verified that labs had in fact excluded the right types and numbers of tests as set out in these agreements.

eHealth Ontario informed us during our follow-up that it will work with the Ministry to design and put into effect contractual requirements, including monthly reporting that assesses the accuracy and completeness of lab test contribution, by March 2021.

#### Recommendation 5

*To ensure complete and accurate information is available in the Diagnostic Imaging central repository for health-care professionals to provide better care for patients, eHealth Ontario, in conjunction with the Ministry of Health and Long-Term Care, should:*

- *require all currently operating independent health facilities to upload diagnostic images and reports to the repository;*

**Status: In the process of being implemented by March 2021.**

#### Details

We found in 2016 that many independent health facilities were not able to provide diagnostic images, such as x-rays, MRIs, CT scans and mammograms, to the repository because they did not use digital equipment. eHealth Ontario identified that 5.4 million images were taken at these facilities in 2011.

At the time of our follow-up, eHealth Ontario had added 400,000 exams from independent health facilities to the digital imaging repository by June 2018. The five-year target for the period 2016/17 to 2020/21 is to have 80%–90% of independent health facilities contributing to the diagnostic imaging repositories.

The Digital Health Scorecard, which identifies which initiatives are on track, includes a target for completeness of the diagnostic imaging repositories, including bringing in independent health facilities. As noted in the Digital Health Scorecard, the Ministry targets to have 98% of relevant images stored in the diagnostic imaging repositories by March 2021.

- *require diagnostic images and reports conducted for specialty areas such as cardiology and ophthalmology to be uploaded to the repository, and identify the need to include any other specialty reports.*

**Status:** In the process of being implemented by March 2019.

#### Details

We found in 2016 that all images and reports for specialty areas, such as cardiology and ophthalmology, were available from hospitals but were not included in repositories because the Ministry did not specify them to be included.

The Ministry and eHealth Ontario are developing an updated provincial imaging strategy in support of the Ministry's digital health strategy. This work will include assessing the costs, digital readiness and the clinical value associated with integrating the images and reports from specialty areas such as ophthalmology, cardiology, endoscopy, dentistry and wound care. The Ministry and eHealth Ontario held multiple meetings with relevant stakeholder groups throughout 2017 and 2018 to discuss ways to improve the images contribution rate and the merits of additional specialist images, and expected to complete this work by March 2019.

#### Recommendation 6

*To ensure that health-care professionals can electronically access all necessary information to obtain a complete medical profile of their patients and deliver timely and quality patient care, eHealth Ontario should monitor the regional hospital administrators*

*for connecting systems to ensure that all health-care organizations in their regions contribute required data to the central database.*

**Status:** In the process of being implemented by March 2021.

#### Details

During our audit in 2016, we found that hospitals and other health-care organizations had been given a target of March 2014 to load specific types of patient health information into a central repository, including hospital discharge summaries, reports on emergency visits, community agency reports and patient consent notices.

However, as of May 2016, only about 60% of the targeted health-care organizations in the Greater Toronto Area had loaded their patient information. In the other two regional hubs—South West Ontario and the North East Region—only about 30% and 15% respectively of targeted health-care organizations had loaded their patient health information. In 2016, eHealth Ontario expected the targeted number of sites within the three regional hubs would have added all the required patient information to the central database by March 2017.

We found in our follow-up that for the year ending March 31, 2018, 60% of patient data captured by health-care organizations in all three regions was included in the clinical data repository. This percentage rose to 67% by the end of May 2018 according to eHealth Ontario. The target by March 2021 is that 98% of clinical data captured by health-care organizations in Ontario will be added to the data repository. The Digital Health Board, which was discussed in **Recommendation 1**, monitors progress toward targets to see which initiatives are on track, require further monitoring or require intervention. eHealth Ontario also monitors progress through its electronic information report.

#### Recommendation 7

*To ensure health-care professionals can access complete drug information about their patients so that potential adverse drug interactions, drug poisoning*



and other drug-related problems can be reduced, the Ministry of Health and Long-Term Care should:

- include all medication information for all Ontarians in the central drug repository;  
**Status: In the process of being implemented by March 2020.**

#### Details

The Ministry, which took over the responsibility of the drug information system from eHealth Ontario in May 2015, was still in the process of developing a central repository of all drug information for Ontarians when we completed our audit in late spring 2016.

We found in our follow-up that the Ministry launched the Digital Health Drug Repository after our audit in 2016. It represents the first part of the Ministry's Comprehensive Drug Profile Strategy. The drug repository currently includes about 200 million records on all dispensed monitored drugs (narcotics and controlled substances) and about 1.4 billion records on dispensed publicly funded drugs and pharmacy services for eligible recipients of the Ontario Drug Benefit program, including children and youth aged 24 and under.

The Ministry expects to improve the drug repository by adding information that will support the Strategy to Prevent Opioid Addiction and Overdose. According to the Ministry's plans, in September 2019 community dispensing agencies will voluntarily begin contributing the additional clinically relevant dispensed drug information for publicly funded drugs and pharmacy services, as well as monitored drugs, for all Ontarians to the drug repository.

The Ministry plans to have all medication information for all Ontarians included in the drug repository by March 2020.

- set targets to connect all health-care professionals across the province to the central drug repository.  
**Status: In the process of being implemented by December 2019.**

#### Details

In 2016, we found in our audit that many health-care professionals did not, or could not, access centralized drug information, while others could access only some medication information of their patients.

In our follow-up, we found the drug repository as of May 2018 was available to over 112,500 authorized health-care providers (up from 12,500 in 2016) from 412 sites across Ontario. Access to the drug repository is provided through clinical viewers. Multiple pilot projects are assessing whether the drug repository information can be shared through means other than the viewers. These pilot projects include integrating the drug repository with the following: hospital information systems; Electronic Medical Record Systems used by primary-care providers; and consumer portals to let patients see their dispensed drug and pharmacy service information. The Ministry and eHealth Ontario plan to assess roll-out priorities in consultation with health-system partners by December 2019.

## Many Factors Delayed Full Implementation of Electronic Health Records

### Recommendation 8

*To ensure participation of all health-care agencies, organizations and providers in the Electronic Health Record initiative, and to confirm interoperability of systems, the Ministry of Health and Long-Term Care should:*

- amend service agreements to require participation in, and contribution of, information to projects within the Electronic Health Record initiative;

**Status: In the process of being implemented by March 2020.**

#### Details

The Ministry informed us during our follow-up that it has, where appropriate, amended agreements

to require support of the Ministry's digital health plans. The Ministry plans to continue amending agreements to require participation and contribution in the EHR where appropriate by March 2020.

- *establish interoperability standards where necessary.*

**Status: In the process of being implemented by December 2019.**

#### Details

In our 2016 audit, we found that many hospitals and primary care physicians had invested in their own electronic systems to manage their patients' records prior to the Province announcing the EHR initiative. Once the initiative was launched, the LHINs did not require health-care organizations they fund to adopt common technical systems. Similarly, the Ministry did not require family doctors to use standardized Electronic Medical Record (EMR) software. Initial standardization could have made connection of the various systems easier and possibly cheaper.

At the time of our follow-up, the Ministry and eHealth Ontario were developing an inventory of the Province's digital health systems (for example, Labs System and diagnostic imaging repositories) and their corresponding technical standards, which are required to address interoperability requirements across the many systems in Ontario.

The Ministry has developed a draft provincial framework for provincial Hospital Information Systems services. It is also negotiating procurement and master service agreements with Hospital Information Systems suppliers in Ontario. The framework identifies emerging requirements that the suppliers will be expected to meet for interoperability and contribution of information to projects. The provincial framework is expected to be finalized by December 2018.

In addition, the Ministry is developing an information exchange policy that will direct the Province's digital health delivery partners to make connections available to their digital health systems via a common standard so that these systems

may exchange data. The policy is scheduled to be endorsed by December 2019.

#### Recommendation 9

*To ensure that all functions of the Ontario Laboratories Information System can be operational, and for all future work on Electronic Health Record systems to be successfully implemented, the Ministry of Health and Long-Term Care should first identify policy and regulatory implications, and then work to amend them within the project timelines.*

**Status: In the process of being implemented by December 2021.**

#### Details

We found during our audit in 2016 that policy and legislative issues may have delayed full use of some EHR projects. In one case, physicians were unable to electronically order lab tests in the Labs System because the regulation required doctors to physically sign lab-test requisitions; they could not electronically sign them.

Effective January 2017, eHealth Ontario enabled electronic ordering in cases where hospitals refer patients to receive tests from community labs. eHealth Ontario indicated that this functionality will assist with confirming the value of electronic ordering and support the development of a more comprehensive solution in the future. The Ministry plans to complete this work by December 2021.

The Ministry plans to continually identify any policy and legislative requirements in support of digital health initiatives and implement the appropriate solutions.

#### Recommendation 10

*To ensure service-delivery partners comply with contractual requirements, eHealth Ontario should revise agreements to include outcome-based performance measures and related targets for the various Electronic Health Record projects, and collect this information to assess achievement of project objectives.*

**Status: In the process of being implemented by December 2018.**

### Details

In 2016, we noted that eHealth Ontario had entered into agreements with about 30 health-care organizations to deliver various aspects of the province's EHR initiative. We found that eHealth Ontario did not require these organizations to report on any outcome-based indicators, such as measures of user satisfaction, reduced repeat emergency department visits, reduced number of unnecessary repeat tests, and reduced adverse drug interactions. These indicators could help eHealth Ontario evaluate whether project objectives were met. As well, eHealth Ontario had conducted an internal audit in 2015 of oversight agreements that noted issues such as eHealth Ontario having paid health-care partners without reviewing invoices or confirming that the outcomes were achieved.

Since our audit, in the 2017/18 fiscal year, eHealth Ontario completed two follow-up audits that concluded the action items from the original internal audit were completed. Also, eHealth Ontario entered into an agreement with OntarioMD that changed the performance measure from registered users to active users. The agreement also changed the definition of an active user to someone who accessed the system at least six times within the last three months. In addition, the agreement requires OntarioMD to analyze and report on usage below this target so that improvements can be made.

eHealth Ontario also has updated its electronic information report to increase focus on user experience measures for the technology services provided.

In addition, eHealth Ontario and the Ministry are evaluating whether the diagnostic imaging repositories are achieving their project benefits. This evaluation is scheduled for completion by December 2018.

## System Usage Below Expectation and Needs to Be Better Measured

### Recommendation 11

*To ensure efforts to promote the Electronic Health Record projects are appropriately directed and to increase system adoption, eHealth Ontario should:*

- *establish and communicate a consistent definition of active user to be applied across the province;*

**Status: Fully implemented.**

### Details

Our audit in 2016 found that eHealth Ontario did not initially set a specific definition of active user, so health-delivery partners used a variety of definitions. This made it difficult to understand usage of the EHR systems. Only in 2015 did eHealth Ontario ask the four diagnostic imaging repositories to apply the definition approved by Canada Health Infoway, an organization created by the federal government in 2001 to help provinces develop EHRs. That definition set an active user as someone who used the system at least three times in the last three months.

Our follow-up found that eHealth Ontario has established a consistent definition of active user, based on the Infoway definition. eHealth Ontario currently follows this definition, specifically for its electronic information report and for information it provides to the Ministry's Digital Health Scorecard, which were discussed in **Recommendation 1**.

As the EHR continues to evolve, eHealth Ontario plans to adjust usage targets accordingly based on an analysis of usage patterns, industry standards and initiatives to support increased usage. These targets will be posted on its electronic information report to ensure consistency in reporting. For example, in 2017/18, eHealth Ontario entered into an agreement with OntarioMD that changed targets from focusing on registered users to active users. The agreement also changed the definition of active use from the old standard (which had various definitions) to six times within the last three months.

The agreement also requires OntarioMD to analyze and report on usage below this target, which will help identify an appropriate action plan.

- *establish growth targets for active usage of each project as more registered users are given authorized access;*

**Status: Fully implemented.**

#### Details

Our audit found in 2016 that eHealth Ontario did not track usage rates for the entire Labs System or for any of the four diagnostic imaging repositories.

Our follow-up found that eHealth Ontario established growth targets for registered users and active users of the provincial EHR systems for the 2017/18 and 2018/19 fiscal years. As of March 31, 2017, eHealth Ontario reported that 104,625 users were registered, of whom 30,075 were actively using the systems. Based on these numbers, eHealth Ontario established a target of 115,000 registered users and 37,000 active users for 2017/18; and up to 245,000 registered users, with 40% considered active users, by 2021.

- *collect actual usage data by unique user and by access points, and regularly compare this data against established targets to identify areas of under-utilization that require further action.*

**Status: Fully implemented.**

#### Details

In 2016, we found that eHealth Ontario did not always collect active usage data by health-care setting or by type of health-care professional. The lack of consistency in types of data collected made it difficult to conduct analysis or to identify trends or patterns of usage to determine where greater adoption and usage efforts are needed so that physicians can provide better quality of care to patients.

Our follow-up found eHealth Ontario monitors and reports on registered users and active users, both actual and target, in its electronic information report and in its contributions to the Digital Health Scorecard, which was discussed in **Recommendation 4**.

**tion 4.** For instance, eHealth Ontario reported that for the fiscal year ending March 31, 2018, 122,200 users were registered (of whom 33,450 actively used the systems), compared to a target of 115,000 registered users (of whom 37,000 would actively use the systems). As of May 31, 2018, the number of registered users has increased to 154,600 users. eHealth Ontario reviews the scorecard on a monthly basis to identify usage below target and addresses it with an appropriate action plan.

#### Recommendation 12

*To improve uptake of existing and new Electronic Health Record projects such that health-care professionals can provide better care to patients, eHealth Ontario, and the Ministry of Health and Long-Term Care (in the case of the drug information system) should:*

- *examine the reasons for the low uptake rates and prepare an action plan to address the root causes of the low usage rates;*

**Status: Fully implemented.**

#### Details

In 2016, we interviewed and surveyed a random sample of physicians in Ontario to gauge their awareness and usage of EHR projects. Only 12% of the physicians who responded to our survey indicated that they fully used the available systems.

Since our audit, eHealth Ontario has increased its communication and outreach activities to align with the work of the Digital Health Board, which was discussed in **Recommendation 1**. eHealth Ontario has done this to better understand the challenges affecting adoption and usage and to develop ways to improve EHR services.

For example, eHealth Ontario is participating in an increased number of site visits and participating on more advisory councils and boards, including the Digital Health Board, in order to gather more information on users and user experiences, such as user satisfaction.

In addition, the eHealth Ontario 2018/19 Annual Business Plan includes a communications plan with the following objectives: increasing use of digital health data by informing health-care professionals of the patient information available, and how it benefits clinicians and patients; and using success stories to build credibility and demonstrate benefits.

eHealth Ontario also has improved the EHR services to help get more health-service providers to use them. Examples include:

- streamlining the registration process for physicians;
- increasing the functionality available, such as the Labs System practitioner query (explained in the action item below);
- providing direct access of repository data with systems used at hospitals and clinics to improve workflow;
- conducting surveys to understand areas for improvement;
- conducting a review of the Digital Health Drug Repository to understand areas to focus for improved adoption; and
- establishing agreements, such as the recent agreement with OntarioMD, to identify the reasons for lower-than-target usage and using that information to find ways to increase usage.

- *update the communication strategy to define roles and responsibilities for each project and timelines;*

**Status: In the process of being implemented by December 2018.**

#### Details

The 2016 audit found that eHealth Ontario had a province-wide communications strategy, but the strategy lacked details on areas of responsibility by specific parties and the required timelines for completion.

Subsequent to the audit, as noted in **Recommendation 1**, the Ministry issued mandate letters

in July 2017 to provincial digital health delivery partners, such as eHealth Ontario, the Ontario Telemedicine Network and OntarioMD. The mandate letters set out expectations for meeting the objectives of the Digital Health Action Plan, including specific deliverables, targets and timelines linked to the Digital Health Scorecard, which shows which initiatives are on track, and which need more monitoring or intervention. The Ministry plans to continue issuing mandate letters to other delivery partners, such as the electronic Child Health Network, by December 2018.

In addition, the Ministry is working with LHINs and health-service providers to identify regional variations in digital health delivery. Where appropriate, LHIN-specific targets are set as part of the annual planning process to confirm expectations and document the roles and responsibilities of regional digital health partners.

- *implement the practitioner query function in the Ontario Laboratories Information System.*

**Status: Fully implemented.**

#### Details

In 2016, the health-care professionals we interviewed said that retrieving test results from the Labs System took longer because they must first enter individual patient names, and then locate a specific test from all the results provided, including some ordered by other physicians. This concern could be addressed by making available a practitioner query function, which was not initially included in the system due to privacy, legal and technical concerns identified during pilot testing.

Since the audit, in December 2017, eHealth Ontario made the practitioner query function available in the Labs System. The function enables physicians to receive Labs System data directly into the Electronic Medical Records (EMR) systems in their offices. However, full implementation of this function is contingent on EMR vendors making necessary revisions to physicians' EMR systems, which was not yet completed at the time of our follow-up.