

IM/IT Strategic Plan 2017 – 2022

April 2018



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BACKGROUND

2012-17 Accomplishments (Slide 1 of 2)

- Improved user experience by streamlining and enhancing clinical documentation screens, tools and order sets
- Implemented a pharmacy generated medication administration record.
- Implemented cardiac monitors with centralized monitoring
- Implemented cardiology system
- Implemented a learning management system
- Refresh servers, network and user devices

2012-17 Accomplishments (Slide 2 of 2)

- Refreshed internal and external websites
- Implemented single sign-on with “follow me” capability for users
- Developed interfaces to provincial Wait Time Information System, Clinical Connect, Ontario Lab Information System.
- Supported case costing implementation
- Implemented new operating room system
- Planning for capital redevelopment needs

2017-22 Consultations to Develop Plan

- Meeting with Connecting Southwest Ontario (cSWO) leads to review their roadmap
- WW LHIN Digital Health Lead meeting
- Medical Advisory Committee meeting
- Patient and Family Advisory Committee meeting
- Senior Management discussion
- Survey of managers, directors, clinical educators
- IT planning session December 2017 engaging stakeholders (Physicians, select managers, directors, educators, allied health)

2017-22 Themes from Consultations

- Focus on patient safety
- Enhance communication of patient information both internally and externally
- Invest in efficiencies
- Enhance patient and staff experience
- Change management needs to be improved
- Electronic self-service options for patients such as self registration and self scheduling
- Patient portal
- Privacy auditing software

Current State - Usability

- Meditech usability can be a challenge for new or infrequent users to learn.
- Need more consistent education and training
- Two email systems (Meditech and Microsoft) challenge communications
- System is stable, reliable
- Support from IT department is knowledgeable and very responsive

Current State – Scope and Functionality

- Need better display of patient test results and trending
- Vital signs monitors are not interfaced

Current State – Workflow

- A lot of manual processes being used, particularly by physicians
- Patient information displays are not customized to the role of the user, creating inefficiencies for some users
- Communication between/across organizations is not adequately supported

Current State – What's Missing?


- Lack of clinical decision support tools (CDS)
- Lacking some key clinical functionality
 - Coded Allergies
 - Emergency Department Information System (EDIS)
 - Electronic Signature
 - Computerized Physician Order Entry (CPOE)
 - Medication reconciliation
 - Closed loop medication management
- Lacking patient experience tools (ED wait time clock, self registration, patient portal)
- Lacking non-clinical functionality (staff scheduling, enhanced privacy audit capability)

Current State – Implementation Challenges

- Lack of a robust and consistent project methodology and management.
- Challenges adjusting the plan to respond to externally driven projects
- There is a need for concerted change management for projects to ensure we are maximizing the benefits of the new system and changing processes to leverage the new technology

Electronic Medical Record Model

The Electronic Medical Record Adoption Model (EMRAM) is a standard methodology for comparing how organizations are progressing toward a complete electronic medical record

STAGE	 EMR Adoption Model Cumulative Capabilities
7	Complete EMR, Data Analytics to improve care
6	Physician Documentation (templates), Full CDSS, Closed Loop Medication Administration
5	Full R-PACS
4	CPOE; Clinical Decision Support (clinical protocols)
3	Clinical Documentation, CDSS (error checking)
2	CDR, Controlled Medical Vocabulary, CDS, HIE Capable
1	All Three Ancillaries Installed — Lab, Rad, Pharmacy
0	All Three Ancillaries Not Installed

CMH EMRAM Score Comparison

Hospital or Group	Average EMRAM Score
Cambridge Memorial Hospital	3.0790
Acute Care Hospitals	3.1234
Community Hospitals	3.3953
WW Lhin (Including small & Specialty hospitals)	2.1775
Guelph General Hospital	3.087
St. Mary's General Hospital	3.196
Grand River Hospital Corporation	3.238

IM/IT STRATEGIC PLAN (2017-2022)

Priorities Driving the Plan

- Support optimization of clinical care to enhance quality of care, patient safety, patient experience, and continuity of care across geography and continuum of care.
- Facilitate effective, streamlined and responsible care delivery, hospital administration, and management
- **Objectives:**
 - Enhance quality of care and patient safety through new/improved medication safety systems
 - Improve operational effectiveness and efficiency to address manual, labour intensive processes
 - Support continuity of care within and beyond the hospital
 - Leverage technology to improve patient experience



Prioritization Criteria for IM/IT Strategy

- **Ministry or Accreditation Mandated Requirements**
- **Return on Investment:** Higher priority given to projects with a high value contribution and shorter return on investment
- **Patient Safety:** Risks associated with non-implementation, including quality, safety, and impacts to specific programs or customer experience
- **Strategic Fit:** Aligns strategically with one or more CMH strategic plan priorities
- **Ease of implementation**
- **Extent of Change Management:** One department vs organization wide
- **Resource Needs:** FTE and dollars required to implement the project
- **Level of Support:** Stakeholder consultation and support
- **Increase in EMRAM Score:** Projects that further advance our journey toward a complete electronic medical record.

Key Assumptions

- Committed to remain in a Meditech Magic environment for duration of this plan, and then will explore a new system in partnership with others.
- Projects that have dedicated funding or a rapid return on investment will be able to move ahead earlier in the plan.
- Computerized Physician Order Entry identified as a future need that will be deferred until we move to a new system.

IT Plan Funding and Commitments

- Total funding available for IT Strategic Plan is \$11.5 million dollars.
- Funding needs to support the refresh of existing systems, as well as new projects.
- **Dollars required to maintain existing systems:**

Existing Systems	Refresh \$ Needed
Network refresh and security updates	\$2.00M
Servers & Storage refresh (Meditech and Windows)	\$2.78M
Phone system replacement	\$0.77M
Software upgrades	\$0.57M
Computer and laptop refresh	\$1.28M
Contingency	\$0.40M

- **Dollars remaining for new projects after refresh costs = \$3.70M**

Requirement for Success of New Projects

- Adequate and sufficient resources and skillsets
- Ownership and accountability for projects (initial & ongoing)
- Effective governance (focus and sustainability)
- Business and clinical champions for initiatives
- Change management
 - Transparent communication on an ongoing basis
 - Ensuring understanding of initiatives, objectives and target outcomes (i.e., selling it)
 - Communication of a clear value proposition for end-users
- Successful project handoffs upon completion
- Ongoing monitoring and evaluation (of projects and outcomes)

2017/2018

Draft Strategy/Roadmap

Objectives

- Focus on Capital Redevelopment Infrastructure and new applications
- System Changes to support Capital Redevelopment

Major Activities

Internal

- Set up new computer room in new building
- Install network infrastructure and wireless network in new building
- New Phone System Installed
- Identify end user device needs for new systems
- Implement Medication Administration/Workstation carts
- Planning for new systems being implemented as part of CRP (Real Time Location System, new Nurse Call System, Panic Alarm System, Patient Wandering System)

External

- Clinical Connect Upgrade
- Digital Health Drug Repository (DHDR) available through Clinical Connect

Enablers

- Project management
- CRP requirements and planning

2018/2019

Draft Strategy/Roadmap

Objectives	<ul style="list-style-type: none">• Enhance current systems• Pursue foundational capabilities for the fully electronic EHR	
Major Activities	Internal	<ul style="list-style-type: none">• Coded Allergy module within Meditech• Planning/development “Closed Loop Medication Management” System including an electronic medication administration record (EMAR), and bedside medication verification (BMV)• ED Wait Time Clock to improve patient experience• New Dietary Software• Diagnostic Imaging Foreign Exam Management• New systems being implemented as part of CRP
	External	
	Enablers	<ul style="list-style-type: none">• Establish project management office• Change management• Education and training

Rationale for 2018/19 Projects:

- Coded Allergies is foundational software to support other projects such as Medication Reconciliation
- ED Wait Time Clock has funding for the initial capital cost
- Dietary Software addresses a significant risk as our current software is no longer supported
- Foreign Exam Management is dependent on timing/resources available from regional system

2019/2020 Draft Strategy/Roadmap

Objectives	<ul style="list-style-type: none"> • Continue to advance medication management • Plan capital redevelopment needs with new building and renovations 	
Major Activities	Internal	<ul style="list-style-type: none"> • Implementation “Closed Loop Medication Management” System (BMV and EMAR); • Endoscopy PACS • Appointment Reminder Software • Planning/development Emergency Department Information System
	External	<ul style="list-style-type: none"> • Clinical Data Repository implementation • Ongoing external initiatives as appropriate
	Enablers	<ul style="list-style-type: none"> • Project management office • Change management • Education and training

Rationale for 2019/20 Projects:

- EMAR/BMV enhances medication safety and builds on coded allergy implementation
- Appointment Reminder Software improves efficiency by reducing no-shows and manual calling
- Endoscopy PACS expected to be a CCO requirement for endoscopy funding

2020/2021 Draft Strategy/Roadmap

Objectives	<ul style="list-style-type: none"> Continue pursuing advanced clinical functionality 	
Major Activities	Internal	<ul style="list-style-type: none"> Medication Reconciliation System Emergency Department Information System Staff Scheduling System
	External	<ul style="list-style-type: none"> Ongoing external initiatives as appropriate
	Enablers	<ul style="list-style-type: none"> Project management office Change management Education and training

Rationale for 2020/21 Projects:

- Medication Reconciliation is an Accreditation Canada Requirement and enhance patient medication safety. Deferred until after our 2019 Accreditation as we have not yet been able to identify an acceptable solution, so will proceed with a more manual process in the interim
- Emergency Department Information System will improve communication to primary care, and will enhance documentation of ED patients, with documentation carrying over to their inpatient stay.
- Staff Scheduling will improve efficiency

2021/2022 Draft Strategy/Roadmap

Objectives	<ul style="list-style-type: none">Plan move to a new system in partnership with others	
Major Activities	Internal	<ul style="list-style-type: none">Define Requirements for new HIS SystemExplore potential partnerships or joining existing HIS hubsCompletion of any unfinished projects from earlier years
	External	<ul style="list-style-type: none">Additional external initiatives as applicable...
	Enablers	<ul style="list-style-type: none">Change managementEducation and training



Project Management

- Project charter will need to be developed and approved by IM Steering Committee prior to a project moving forward
- Project charter will detail support of key stakeholders, and commitment of needed resources to ensure project success
- Create a project manager position reporting to the Director of IT, funded through IT capital funds, to assist with the management of the identified projects, coordinate workflow, track project plans, facilitate decision making and to track project budgets.
- Escalation to project sponsors if there are challenges obtaining needed resources, or other unanticipated issues that the project manager and project team can not resolve.

Financial Cost of Proposed Strategy

- 2017/18: \$1.12 M
- 2018/19: \$1.93 M
- 2019/20: \$4.081 M
- 2020/21: \$3.645 M
- 2021/22: \$1.735 M

Costs include Project Manager for years 2018/19 to 2020/21

\$12.51 M

Total \$11.5M

Recommendation to address \$1M gap:

- Project costs are rough estimates at this time. Over the next year, refine cost estimates and benefits for hardware and projects with goal to ensure we are within budget while balancing needs for capital equipment vs software investment.
- In parallel, develop a detailed 3 year corporate capital equipment plan with the intent of identifying any available resources to offset any funding gaps in the IT plan and/or facilitate a discussion regarding possible trade offs between the two plans

Strengths and Weaknesses of the Plan

Strengths

- New patient safety and functionality enhancements to our existing electronic medical record
- Quality gains related to reduced medication errors
- Implements operational efficiencies in a number of areas
- Improved project implementations and outcomes

Weaknesses

- Extended period of EMAR operation in absence of CPOE
- Excludes enhanced functionality available with newer HIS Systems
- Functionality limitations with Meditech Magic
- Reduced period of software benefit as future HIS investment may require replacement and/or upgrade of existing software platforms
- Limited monetary resources and staff capacity to pursue increased investment in the short term.

Questions/Discussion