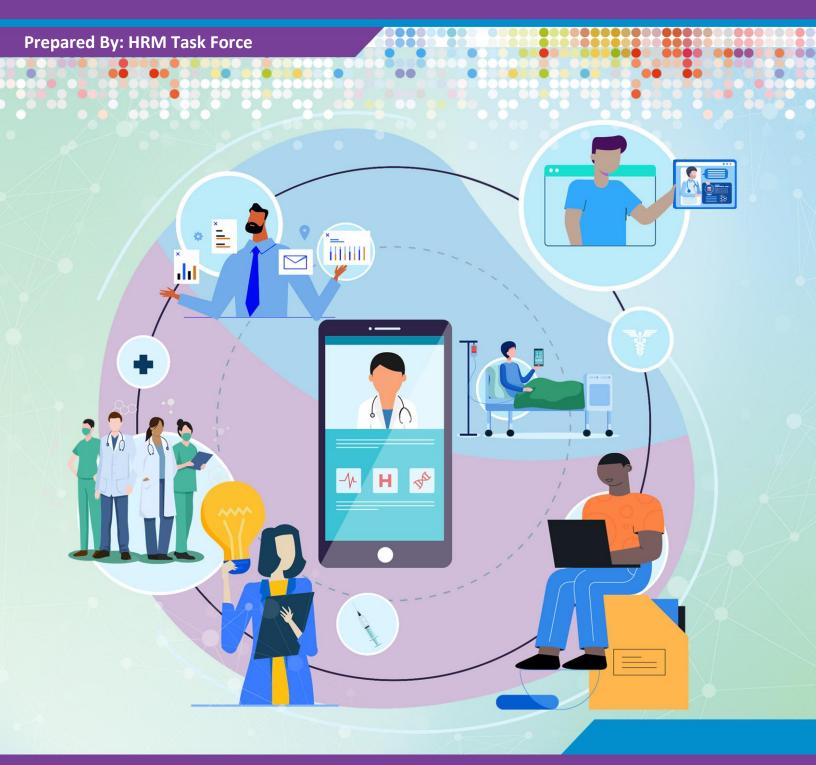


Health Report Manager (HRM®) Task Force EMR Usability Report



Date: September 2023 Version 3.0



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Version History

Version	Date	Description of Change
1.0	July 2023	Initial draft
2.0	August 2023	Feedback from Task Force
		members incorporated
3.0	September 2023	Final report combining current
		state assessment,
		recommendations and proposed
		execution plan.

With gratitude to all Task Force members, contributors and supporters:

"Administrative burden has been linked to patient safety and clinician burnout.

With this in mind, I want to thank the HRM Task Force members and organizations that "showed up" and worked hard over the past year to develop these recommendations to reduce some of the administrative burden. They are listed at the end of this report.

A heartfelt thank you to the family physicians who volunteered; they are in large part the drivers for this work and the backbone of our health system. The time they spent away from their practices and patients providing invaluable input over the last year is greatly appreciated.

Special thanks to Ontario Health who will play a key leadership role in overseeing the Task Force recommendations. OMD looks forward to providing ongoing support and advice.

Let's reduce the administrative burden and get some time back for patient care and for finding that lost joy in medicine."

- Chandi Chandrasena, MD, CCFP, FCFP



Executive Summary

HRM Experience Improvement Task Force

OntarioMD (OMD) established the HRM Task Force in March 2022 to address key clinician concerns related to the delivery of reports through HRM and to recommend standards for sending facilities and usability improvements for electronic medical record (EMR) vendors. The HRM Task Force was supported by a broad array of health system stakeholders, partners, vendors, and clinicians, required to fulsomely assess and develop strategies to mitigate these concerns. The Task Force had two working groups: Sending Facility (SF) Standards and EMR Usability, with governance provided by an Advisory Circle.

This report focuses on the **EMR Usability** workstream and its findings. The issues examined are attributed to the downstream usability of HRM in receiving systems, particularly OMD-certified EMRs.

For more information related to the HRM SF Standards workstream, refer to the 'Health Report Manager (HRM) Task Force – SF Standards Report'.

HRM Background

Health Report Manager (HRM®) is a provincial digital health solution facilitating the secure electronic delivery of patient reports from 600 participating hospitals and specialty clinics to more than 14,000 clinicians using OntarioMD (OMD)-certified Electronic Medical Records (EMRs). This service enhances patient care continuity and streamlines workflow for both sending facilities and clinicians. While HRM was designed to replace fax report delivery, the ease of electronic report transmission by hospitals has led to a significant increase in the volume of reports transmitted over time. This volume, coupled with related report delivery concerns (such as duplication of reports and lack of standardization) have been identified by community-based clinicians as a contributor to administrative burden and has led to the need for improvements.

Current State and Progress Toward Objectives

The HRM Task Force recognized the need to assess downstream EMR usability concerns and develop recommendations to improve the clinician experience, specifically as it relates to HRM. By improving EMR usability for clinicians, advancing workflow efficiencies (e.g., fewer clicks in the EMR to review and manage reports) and enhancing ease of use for report management, these recommendations could reduce the administrative burden and cognitive load on community-based clinicians.

This EMR Usability Working Group (WG) assessed the top usability concerns faced by clinicians and developed a series of recommendations to support EMR vendors to improve the end-user experience with reports received through HRM. The EMR Usability WG was comprised of a broad array of stakeholders and included representation from three EMR vendors as well as community-based clinicians who leverage those systems. The findings and recommendations were ultimately endorsed by this group and are an articulation of their collective input.



Through the HRM Task Force, participating EMR vendors assessed the EMR usability pain points, provided input into the usability recommendations (to further inform feasibility from a vendor context and to refine the scope of the usability recommendations) and provided endorsement on the path forward. These EMR vendors leveraged the vendor-agnostic recommendations and assessed them against the context of their systems. They also prioritized the advancement of several usability recommendations to be addressed over the next year (and aligned to their internal 1-year software development roadmaps).

As outcome of the collaborative engagements with EMR vendors was a recommendation to define high-level user stories to support vendors' understanding of clinician pain points so that they may leverage those findings and apply lessons learned into their EMR context (design, data models, user interfaces, etc.). This will be advanced as a key outcome of the EMR usability recommendations.

OntarioMD is committed to a continuous improvement process, therefore engagement with the initial set of participating vendors will be ongoing. Updates will ensure usability improvements align with vendor capabilities and continue to meet user preferences.

Approach for EMR Usability Working Group Current State Assessment and Recommendations

The EMR Usability WG identified and prioritized key EMR vendor agnostic HRM usability themes related to HRM workflow processes that could be applied across all EMR vendor solutions. Feedback from community-based clinicians, internal and external resources were analyzed to inform these findings. A survey was also conducted to collect feedback from the EMR Usability WG membership to further prioritize usability themes to guide vendors in their understanding of the priority concerns from clinician users. The average priority ranking was determined from the member survey using a scale from 1 to 10, with 1 being the highest priority, and 10 being the lowest priority. The findings are summarized in the table below.

Vendor Agnostic HRM Usability Themes

Key Themes	Average Priority Ranked Order
PDF Reports - Searchability: Users face difficulties searching within PDF attachments.	1
PDF Reports - Workflow: Opening PDF attachments requires additional steps and external applications.	1
Autocategorization of HRM Reports: Default autocategorization fields lack specificity, leading to manual adjustments.	1
Inconsistency of HRM Report Service Date vs. Received Date: Differences between these dates cause confusion.	1
Searchability - Lack of Inbox Filters: The lack of filters hampers efficient report prioritization.	3



Key Themes	Average Priority Ranked Order
Duplication of Reports: Difficulty distinguishing draft and final reports poses challenges related to volume and data currency.	4
Prioritization - Inability to See Relevant Clinical Information: High report volumes make it difficult to identify relevant information.	7

Summary of EMR Vendor Workshops:

The Task Force employed a collaborative approach to assessing EMR usability themes and devising recommendations. The EMR vendor workshops provided insights into HRM use cases, product roadmaps, and challenges. It is notable that all three participating EMR vendors strongly endorsed the standardization of report naming conventions, specifically as it relates to the use of Logical Observation Identifiers, Names & Codes (LOINC) for HRM report categorization. Each vendor provided a letter of support for further alignment of these codes recognizing the benefits for data usage, patient safety, and clinician efficiency.

Recommendations for EMR Usability Improvements

The EMR Usability Working Group developed a series of recommendations to improve the user experience for community-based clinicians receiving HRM reports:

- PDF Reports Workflow: Enable an embedded PDF viewer.
- Autocategorization of HRM Reports: Eliminate manual mapping.
- Inconsistency of HRM Report Service Date vs. Received Date in Inbox: Define and display both Service Date and Received Date.
- Searchability Lack of Inbox Filters: Create specific searchable fields and a free text search.
- **Prioritization Inability to See Relevant Clinical Information:** Create a one-step workflow for flagging relevant HRM Reports.

Note: The EMR Usability WG determined that the Sending Facilities Working Group was better suited to addressing PDF Reports – Searchability and Duplication of Reports. Therefore, the EMR Usability Working Group did not advance recommendations on these themes. For additional details on the key concerns related to PDFs and report duplication, please refer to the 'Health Report Manager (HRM) Task Force – SF Standards Report'.



1. Background

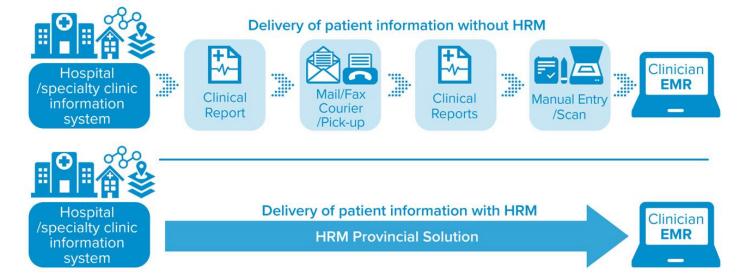
1.1. About HRM

Health Report Manager (HRM®) is a digital health solution that has enabled more than 14,000 clinicians using OMD-certified Electronic Medical Records (EMRs) to securely receive patient reports electronically from 600 participating hospitals and specialty clinics.

HRM electronically delivers Medical Record reports (e.g., Discharge Summary) and narrative Diagnostic Imaging (excluding image) reports from sending facilities directly into patients' charts, within the clinician's EMR.

Sending facilities, such as hospitals, generate reports and control what and when to send through HRM. As a receiving facility, a community-based practice relies on their EMR vendor to provide an interface enabling the EMR to receive reports via HRM.

Figure 1 – Paper vs. HRM Report Delivery



1.2. Clinician and Patient Benefits

 Contributes to continuity of patient care, as community-based clinicians can follow up with patients more quickly if they receive reports from sending facilities sooner. This allows for better transitions of care.



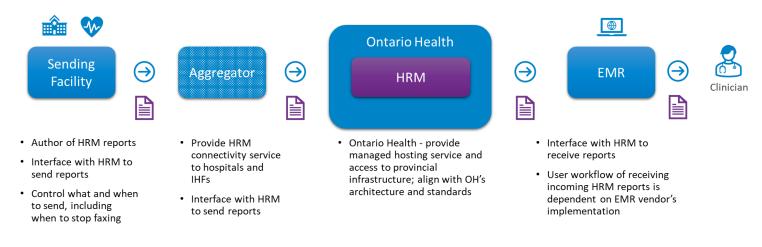
- Facilitates more informed clinical decisions¹ and expedites creation and communication of treatment plans
- Enables clinicians to easily search for a specific sending facility report electronically
- Delivery of electronic, text-based reports directly to the EMR makes it possible for clinicians to run queries more easily on patient population data or search for specific patient information
- Generates administrative and operational savings by streamlining workflow to avoid a significant
 portion of the manual processes (printing, filing, scanning) associated with paper reports, while
 potentially reducing filing errors by posting reports directly to the patient chart (eliminating possible
 posting to incorrect charts).

1.3. Sending Facility (SF) Benefits

- Requires a single interface to the HRM instead of multiple proprietary interfaces to clinician EMRs
- Generates administrative and operational savings by reducing manual processes associated with report distribution (e.g., printing, filing, mailing)
- Provides a secure alternative to manual report distribution
- Audit records available reflecting when reports are retrieved by the clinician's EMR
- Strengthens the privacy and security of patient information through audit trails

1.4. HRM Report Flow - from origin (SF) to destination (EMR)

Figure 2 – HRM Report Flow



The following steps outline how HRM works:

- 1. Sending facility (SF) author creates a report, the report is labelled by the SF, SF determines the appropriate report recipients (either manually or through an automated process) and transmits the report through HRM (either directly or through an aggregator).
- 2. HRM converts the report to an EMR standard format, encrypts and deposits the report to a secure folder for each recipient's EMR.

¹ OntarioMD HRM, Post Implementation Evaluation Report, July 2010



3. The clinician's EMR retrieves the report, decrypts, and posts the report (attached to the patient record) into the clinician's inbox for review and sign-off.

1.5. Report Delivery Concerns

While HRM brings tremendous value in the proactive and timely delivery of reports from acute care settings to community-based clinicians, users of HRM, specifically community-based clinicians, have experienced issues with reports while using HRM. Overview of the key concerns identified:

- High volume of reports
- Duplicate reports
- PDF report limitations,
- Standardization and specificity of report categories,
- Lengthy reports, and
- Absence of location-based report delivery (i.e. delivery of all reports for all patients at each location associated with an HRM-enabled practice location)

Please refer to the 'Health Report Manager (HRM) Task Force – Sending Facility (SF) Standards Report' for the fulsome descriptions and related analysis of these concerns.

Additional downstream concerns were brought forward from an EMR Usability standpoint. There have been seven EMR vendor-agnostic HRM usability themes that have been identified that have presented challenges for clinician workflows and added to administrative burden. These concerns relate to:

- Inbox Prioritization of HRM Reports
- Inbox Searchability Filters
- Duplication of Reports
- HRM PDF Attachment Reports Workflow to Open Attachments
- HRM PDF Attachment Reports Searchability of Content
- HRM Report Labelling, Autocategorization
- Inconsistency of HRM Report Service Date vs. Received Date in Inbox

1.6. The Genesis of the HRM Experience Improvement Task Force

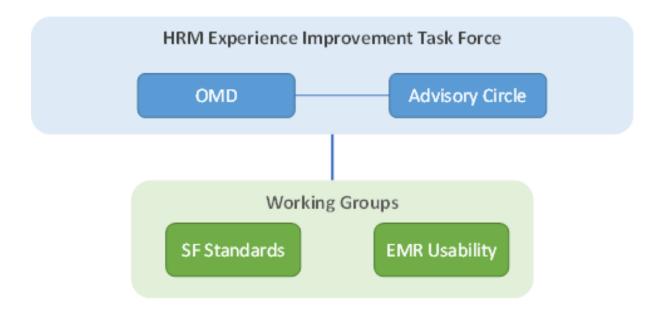
In March 2022, the HRM Experience Improvement Task Force was established to assess the report delivery and usability concerns associated with the transmission of reports through HRM that contribute to administrative burden. The Task Force assessed the issues and formulated recommendations in the form of Standards that would be adopted by Sending Facilities and EMR Usability Recommendations to be adopted by EMR vendors. The Task Force meetings concluded in April 2023.



The Task Force was comprised of health system stakeholders, HRM contributors and receivers and OntarioMD's partners. It included a broad cross-section of stakeholders, including primary care physicians, hospital CMIOs, EMR vendors, Ontario Health (OH), the Ontario Medical Association (OMA), the Ontario Hospital Association (OHA), and was facilitated by OntarioMD. See Appendix F, for full Task Force membership list.

The Task Force was necessary to navigate the complexities involved in addressing the key concerns raised by community-based clinicians. The Task Force relied on clinician experts for feedback and advice, both through its membership and through active consultations with community-based clinicians throughout the term. The participation of all stakeholders was crucial in assessing issues, endorsing recommendations, and for continued alignment and advocacy around their implementation.

The Task Force had 2 Working Groups: **The SF Standards Working Group** and the **EMR Usability Working Group**. Governance and oversight were conducted through an **Advisory Circle**.





1.7. HRM Task Force – Key Deliverables

	01 Current State Assessment	02 Standards & Recommendations	03 Execution Plan	04 Final Report
Sending Facility Standards	OMD to draft Current State Assessment Review Current State Assessment with Working Group Prioritize pain points Finalize Current State Assessment and obtain approval by Advisory Circle	OMD to draft SF Standards document Review SF Standards document with Working Group Finalize SF Standards document and obtain approval by Advisory Circle	OMD to draft proposed Execution Plan to implement HRM SF standards in HRM Sending Facilities Review Execution Plan recommendations with Working Group (e.g., seek funding) Finalize Execution Plan recommendations and approval by Advisory Circle	Final conclusions of the Taskforce including next steps, opportunities, and any remaining challenges/barriers/gaps
EMR Usability	OMD to draft Current State Assessment Review Current State Assessment with Working Group Prioritize pain points Finalize Current State Assessment and obtain approval by Advisory Circle	OMD to draft EMR Usability Improvement recommendations Review EMR Usability Improvement recommendations with Working Group Finalize EMR Usability Improvement recommendations document and obtain approval by Advisory Circle	OMD to draft proposed Execution Plan for engaging EMR vendors on recommendations Review Execution Plan recommendations with Working Group (e.g., seek funding) Finalize Execution Plan recommendations and approval by Advisory Circle	

2. EMR Usability Current State Assessment

This report focuses on assessing the **downstream** usability concerns experienced by clinicians receiving reports through HRM. It is important to note that the user experience is a vital component of the end-to-end flow of reports.

The EMR Usability Working Group (WG) was established to identify and prioritize usability issues related to HRM workflow processes that could be leveraged across EMR offerings. This report outlines the approach used for the current state assessment, the vendor-agnostic HRM usability themes identified, and their priority ranked order.

For additional information on issues related to upstream report delivery concerns, please refer to the 'Health Report Manager (HRM) Task Force – SF Standards Report'.

2.1. Objective, Methodology and Scope

2.1.1. Objective

The objective of the current state assessment for EMR usability (downstream) concerns was to validate the key concerns as identified at the outset of the HRM Task Force and validate the optimized user experience for clinicians. By understanding these usability concerns, a more informed and comprehensive set of



recommendations could be developed with consideration for all impacted stakeholders (i.e., impact to EMR vendors and impact to community practice).

2.1.2. Methodology

The EMR Usability WG reviewed feedback from community-based clinicians collected from various sources including feedback and consultations with Ontario Primary Care Council (OPCC) members, the HRM Advisory Group, and the HRM Sending Facility (SF) Standards Working Group, as well as feedback collected from community-based clinicians, to validate key EMR usability concerns. OntarioMD Advisors also provided additional insights gained through engagements with clinicians. These highly skilled and experienced staff provided unparalleled insight through front-line exposure to the challenges that clinicians face on a daily basis managing HRM Reports in OMD-certified EMRs. Additionally, internal and external resources related to HRM workflow processes across certified EMRs, such as user guides and video tutorials, were reviewed.

Consultations were conducted with each of the three EMR vendors who participated in HRM Task Force to better understand their approach towards HRM report functionality within their certified EMRs and provide their perspectives on their software development lifecycle processes.

The approach was to assess all feedback and group findings into vendor-agnostic themes. The usability issues were replicated in OntarioMD's EMR Lab to further validate these findings. The Task Force members then prioritized the pain points and provided ideal state usability recommendations.

Disclaimer:

Note to the reader: This document reflects the varied experiences of clinicians, EMR vendors and health system stakeholders who contributed their feedback and perspectives through the HRM Task Force consultations. While every effort was made throughout the term of the Task Force to consider the breadth of workflows and care patterns across the province, some viewpoints were undoubtedly missed. Other clinicians who receive reports through HRM may have different priorities in terms of HRM challenges.

2.1.3. Scope

The scope of the EMR Usability WG was to focus on the clinician workflow associated with management of HRM reports in the clinician inbox. Usability was considered as it relates to how the HRM reports are viewed, categorized, prioritized for review, and searched, to improve the user experience for document management of HRM reports.

Topics that were not in scope for this WG:

- Workflow for acknowledging or reviewing a HRM report as each certified EMR has a slightly different workflow.
- Location management where HRM reports are sent to all locations where a clinician practices.
- Short-term workarounds to address the vendor-agnostic usability themes.



Also out of scope were the upstream report delivery concerns that were assessed through the Sending Facility Standards Working Group. This workstream focused on determining the root causes of report delivery concerns including report type standardization, the format in which reports are transmitted through HRM (either text-based or PDF attachment), the report content structure, and nature of duplicate reports. For further information, please refer to the 'Health Report Manager (HRM) Task Force – Sending Facility Standards Report'.

2.2. Vendor-Agnostic HRM Usability Themes

Table 1: List of vendor-agnostic HRM usability themes without member ranking

Key Themes

Prioritization:

Inability to see relevant clinical information/action items of the HRM Report in the Inbox

Due to the high volume of HRM reports received by primary care clinicians, it is extremely difficult to identify relevant clinical information in the Inbox. This makes it impossible to prioritize review of these documents without opening each report.

Searchability:

Lack of advanced inbox filter criteria

Additional filter criteria would help to prioritize critical documents for review and would support workflows to enable clinicians to prioritize document review and spend less time searching through documentation.

Duplication of Reports:

Inability to group draft and final reports together

Duplicate reports are difficult to assess and it is challenging to quickly identify which clinical information has changed and whether it needs to be actioned by the clinician. This could impact patient safety as information could be missed.

PDF Reports:

Inability to search the contents of HRM report PDF attachments easily

PDF attachment contents cannot be easily searched or queried within the EMR.

PDF Reports:

Workflow associated with opening the PDF attachment

Additional clicks are required to open a PDF attachment to review the contents within the report. In some cases, additional applications are also required to view the content (e.g., Adobe Reader).

Autocategorization of HRM Reports:

Administrative burden

Lack of specificity associated with default autocategorization fields requires a significant amount of manual entry to customize the fields for each Sending Facility (SF).

Inconsistency of HRM Report Service Date versus Received Date in Inbox:

Difficult to identify the difference between the service date of the report and when the report was received. There can be a delay between the service date and date received.



2.2.1. Inbox Prioritization of HRM Reports

One of the many EMR usability themes that were identified as priority themes through the initial assessment was the ability to easily prioritize reports for action or review. For instance, an administrative assistant may screen reports received electronically and identify priority reports for clinical review to support the clinician with report management. The ability to flag priority reports for review or action was seen as an important feature to support an efficient workflow in the practice setting. This lack of prioritization functionality limits clinicians' ability to prioritize higher urgency reports, resulting in additional time spent opening and closing reports, adding to cognitive load and time spent on administrative tasks. During a typical clinic day, the extra time needed to skim through the HRM reports multiple times per day quickly grows to be unsustainable and adds to the clinician workload.

2.2.2. Inbox Searchability – Filters

Another important EMR usability theme identified was the ability to easily see and search relevant clinical information within the HRM report through the clinician Inbox. Due to the overwhelming number of reports clinicians receive on a daily basis, it is extremely difficult to quickly identify relevant clinical information in the Inbox. An absence of advanced search criteria limits the clinician's ability to quickly locate information without opening each report, adding to administrative time managing reports. Across all certified EMRs, there continues to be differences in the availability of filters to easily identify HRM report attributes (e.g., by date, report type, received date, etc.). Additional filters would help clinicians with prioritizing critical documents for review and reduce the amount of time clinicians spend searching through unrelated documentation in the Inbox. This usability theme closely relates to the Inbox prioritization of HRM reports as the improvement in Inbox searchability would reduce the clinician's administrative burden.

2.2.3. Duplication of Reports

Many sending facilities send multiple versions of a report for the same patient. This occurs when a sending facility creates multiple draft HRM reports before the final HRM report is sent to the primary care clinician. Aside from the process challenge of delivering draft reports, which was identified by the Sending Facility Working Group, the EMR that the primary care clinicians use has a limited ability to easily identify draft and final HRM reports. For text-based HRM reports, EMRs are required to identify a duplicate report. However, as more sending facilities transmit PDF attachment HRM reports, EMRs do not have the ability to review the content within the static PDF attachment. Therefore, this adds an additional administrative burden for primary care clinicians to search through their Inbox to find the final HRM report. Due to the medical-legal implications of missing a critical finding, this adds not only to the administrative burden of clinicians, but can also impact patient safety.

2.2.4. HRM PDF Attachment Reports – Workflow to Open Attachments

As sending facilities are transmitting PDF attachment HRM reports more frequently, the workflow for a primary care clinician to view the contents of the PDF attachment is laborious and can require the use of an external PDF viewer, such as Adobe Acrobat Reader. To open these PDF attachment HRM reports, it requires additional clicks compared to text-based HRM reports. Each additional click is extra time a primary care clinician must spend on administration before being able to access the clinical content. This leads to physician frustration and burnout. If an external PDF viewer is needed to view the content of the PDF attachment HRM reports outside the EMR, this presents a risk to patient privacy and the security of patient information.



2.2.5. HRM PDF Attachment Reports – Searchability of Content

With increased numbers of PDF attachment HRM reports being sent to primary care clinicians, not only is it difficult to open these types of reports within the EMR, but it is also not possible to search the content contained within the PDF as these documents act like an image. To search the contents of a PDF, the document must be converted to a searchable PDF with the use of specialized software. This specialized software is not integrated with the EMR. Currently, the only way to leverage the search functionality that is embedded within certified EMRs is to change the title of the PDF attachment HRM report to make it more descriptive or add a note or addendum with more clinically relevant information. However, this requires the primary care clinician to type in this additional information, which adds to the administrative burden, leads to more unstructured data within EMRs due to different naming conventions, and presents a challenge to find useful clinical data for continued patient care within the chart.

2.2.6. HRM Report Labelling, Autocategorization

Sending facilities must identify if a HRM report is text-based or a PDF attachment and if the report has Medical Records (MR) or Diagnostic Imaging (DI) as the class and the sub-class (ex: Diagnostic Imaging – X-ray, Medical Records – OR Report). However, each sending facility has its own processes for identifying the sub-class for the HRM reports, which causes multiple sub-class types to be used from each sending facility. Frequently, these sub-classes are vague and do not contain the specialty. This results in a lack of specificity associated with the default autocategorization fields in the EMR. The primary care clinicians are then responsible for manually entering the sub-class to each incoming HRM report to better identify the clinical relevance of the report. Since categorizing these HRM reports is a manual process, this introduces discrepancies into how these reports are identified within the EMR as each clinician uses their own method of classification. This can result in inconsistency in the naming of HRM reports.

There is an administrative feature within the EMRs where the sub-class can be customized for each sending facility to maintain more consistent categorization, however it is a complex manual process as there are hundreds of sending facilities and countless sub-classes. For a primary care clinician, this process takes too much time, so they instead opt to manually change the sub-class on a report-by-report basis. This not only adds a significant amount of extra administration time to each HRM report for the clinician, but it also reduces data quality within the EMR as the categorization can be quite different due to differences in classification nomenclature between clinicians. Since this discrepancy in nomenclature reduces data quality, this in turn makes it more difficult to perform accurate queries for population health management. As roster sizes continue to grow for primary care clinicians, this presents an additional patient safety concern.

2.2.7. Inconsistency of HRM Report Service Date vs. Received Date in Inbox

There are multiple dates listed in HRM reports which can complicate finding the relevant information within the report. It can also cause increased frustration for the primary care provider to find this report within the Inbox if they are unable to acknowledge the report at the time they review it. Presenting conflicting date information in the Inbox compared to the dates in the HRM reports adds to primary care clinicians' increased irritation of managing an already overflowing Inbox. It also add to their feeling of being overwhelmed by having to manage additional reports for large and growing patient rosters.



2.3. Summary of EMR Vendor Workshops

The goal of the EMR vendor workshops was to discuss potential recommendations for the HRM usability themes to better understand the possibilities and challenges. OntarioMD (OMD) met individually with TELUS Health, QHR Technologies, and WELL Health for two 1-hour workshops. The collaborative sessions were productive and improved the shared understanding of HRM use cases, vendors' unique product roadmaps, and clarified the intended HRM functionality within certified EMRs. These sessions also provided additional context to how difficult it is for vendors to make changes to their EMR, and the amount of effort involved with UI/UX development. Despite these challenges, there was a consensus from the vendors to address the HRM report autocategorization usability theme and that using LOINC codes for HRM report categorization would be the ideal solution. Furthermore, there was agreement on the definition and identification of service date vs. received date.

2.3.1. Vendor Support for the use of Logical Observation Identifiers, Names & Codes (LOINC) for HRM Report Categorization

Each vendor was asked three questions to help provide external stakeholders with a better understanding of the benefits of using LOINC codes from a vendor perspective, and the overall value to primary care.

The questions for the vendors:

- 1. What is the value for the vendor to use the consistent LOINC code standard? How can this lead to more meaningful data usage within the EMR?
- 2. How would the use of LOINC codes benefit clients? (e.g., increased patient safety, reduced clinician burnout)
- 3. What are the challenges from a client/user perspective if LOINC codes are not adopted?

The response was overwhelmingly positive in support of the adoption of LOINC codes to categorize lab and diagnostic reports, consultant reports, and other types of reports. These codes enable EMRs to perform various functions, such as tracking ordered tests, reminding clinicians to order tests, and extracting data for research. The use of LOINC codes also benefits clients by increasing patient safety and reducing the clinician administrative burden.

If LOINC codes are not adopted, clinicians will have to continue to manually categorize reports and risk errors when doing so. The vendors support this implementation as it improves consistency in the use of nomenclature standards, reduces the burden on clinics and individuals to reconcile information between systems, increases patient safety, and facilitates meaningful use of data in clinical decision making.

2.4. Next Steps

To better identify which usability themes would have the most impact if solved, a survey will be sent to the EMR Usability WG membership to collect their feedback. The average priority ranking is used to reflect the highest priority usability themes that would inform the recommendations. The priority ranking is based on a scale from 1 to 10, with 1 being the highest priority and 10 being the lowest priority.

The goal of this survey is to help guide the vendors to classify which of the highest impact usability themes they could address more easily in their software development lifecycles. As each vendor has a different



approach to their software development lifecycle, availability of resources, and how each of the different modules within the EMR interact, this approach provides a fair evaluation.

3. EMR Usability Recommendations

3.1. Purpose

The Health Report Manager (HRM®) EMR Usability Working Group Recommendations were developed and endorsed by the HRM Task Force and represents recommendations broadly applicable to all vendors of certified EMRs to ensure a positive user experience for primary care providers. The Task Force represented a cross-section of health sector stakeholders, including three EMR vendors. The EMR vendors worked on primary care providers' key concerns about the use of HRM reports from sending facilities, and their HRM user experience in certified EMRs.

3.2. Recommendations for EMR Usability Improvements

The recommendations for the EMR usability improvements were based on the average priority ranked order of the key themes listed below. The average priority ranking was informed by the EMR Usability WG membership to reflect the highest priority challenges. The priority ranking is based on a scale from 1 to 10, with 1 being the highest priority and 10 being the lowest priority.

Key Themes	Average Priority Ranked Order
PDF Reports: Inability to search contents of HRM report PDF attachments easily PDF attachments cannot be searched/content cannot be queried within the EMR.	1
PDF Reports: Workflow associated with opening PDF attachments To open the PDF attachment to review the information within the document, there are additional clicks required and potentially the need for additional applications to view the content (e.g., Adobe Acrobat Reader).	1
Autocategorization of HRM Reports: Administrative burden Lack of specificity associated with default autocategorization fields requires a significant amount of manual entry to customize the fields for each Sending Facility (SF).	1
Inconsistency of HRM Report Service Date versus Received Date in Inbox: Difficult to identify the difference between the service date of the report and when the report was received. There can be a delay between the service date and date received.	1



Searchability: Lack of Inbox filter options and information that can be used to filter Additional filters would help to prioritize critical documents for review. Additional information that can be used as filters would help clinicians spend less time searching unrelated documentation.	3
Duplication of Reports: Inability to group draft and final reports together Difficult to determine which clinical information has changed and whether it needs to be actioned by the primary care clinician. This can mpact patient safety as information can be missed.	4
Prioritization: Inability to see relevant clinical information/action items of the HRM report in the Inbox Due to the high volume of HRM reports received by primary care clinicians, it is extremely difficult to identify relevant clinical information in the Inbox. This makes it impossible to prioritize documents without opening the report.	7

PDF Reports – Inability to search contents of HRM report PDF attachments easily

The Sending Facilities Working Group will determine the appropriate recommendations.

PDF Reports – Workflow associated with opening PDF attachment

Provide an embedded PDF viewer in the EMR to easily see the contents of HRM PDF attachment reports without using an external application.

Autocategorization of HRM Reports – Administrative burden

Users will not be required to manually map report categories within the EMR.

Inconsistency of HRM Report Service Date versus Received Date in Inbox

Availability and display of both Service Date and Received Date for HRM reports.

Searchability - Lack of Inbox filter options and information that can be used to filter

1. Create specific fields for the Class and Subclass for HRM reports in the Inbox that can be used for increased searchability.



2. Include a free text box search in the Inbox.

Duplication of Reports

The Sending Facilities Working Group will determine the appropriate recommendations.

Prioritization – Inability to see relevant clinical information/action items of the HRM report in the Inbox

Create a one-step workflow for the user to flag HRM reports with priority status within the Inbox.

4. EMR Usability Proposed Execution Plan

4.1. Purpose

The Health Report Manager (HRM®) EMR Usability Working Group Proposed Execution Plan was developed by OntarioMD in collaboration with the HRM Experience Improvement Task Force and represents the established milestones for incorporating the recommendations to improve the workflow of HRM text-based and PDF attachment reports within the EMR.

4.2. Proposed Execution Plan Milestones

The proposed Execution Plan contains three phases.

4.2.1. Phase 1

The first phase of the Execution Plan involves engaging the EMR vendors to discuss recommendations for addressing the vendor-agnostic HRM usability themes. The vendors have already expressed willingness to advance several established recommendations. Endorsement from the EMR Usability WG for the recommendations and proposed Execution Plan will be sought to proceed to the next phase.

4.2.2. Phase 2

The second phase of the Execution Plan involves engaging EMR vendors to discuss the implementation of the recommendations. This phase will help to ensure that the recommendations are feasible from an EMR implementation standpoint and address the needs of clinicians.

4.2.3. Phase 3

The third phase of the Execution Plan involves creating high-level user stories for additional functionality requested by clinicians related to HRM EMR usability themes. This phase will help to identify the evolving functionalities that are required by clinicians to improve the usability of the EMR software. The user stories will be distributed to all vendors, and an engagement strategy will be developed to present user preference



recommendations through vendor workshops. The engagement strategy will ensure that all vendors are actively involved in the process of improving the EMR usability of HRM.

4.2.4. Ongoing

The Execution Plan includes ongoing updates to user preference recommendations as dependencies are confirmed. For example, the usage of LOINC codes for report categorization is an important dependency that needs to be confirmed from the Sending Facilities Standards Working Group. The EMR vendors will continue to release software updates that address the user preference recommendations in accordance with their product roadmap, and OMD will continue to refine the vendor engagement strategy for continual UI/UX improvements.

4.3. Progress Towards Recommendations

- As part of the EMR vendor workshops to better understand the vendor-agnostic HRM usability themes, each vendor has already identified certain recommendations that they will incorporate into their 1-year software development roadmap.
- The EMR Usability WG members have reviewed and agreed to the recommendations and proposed Execution Plan.



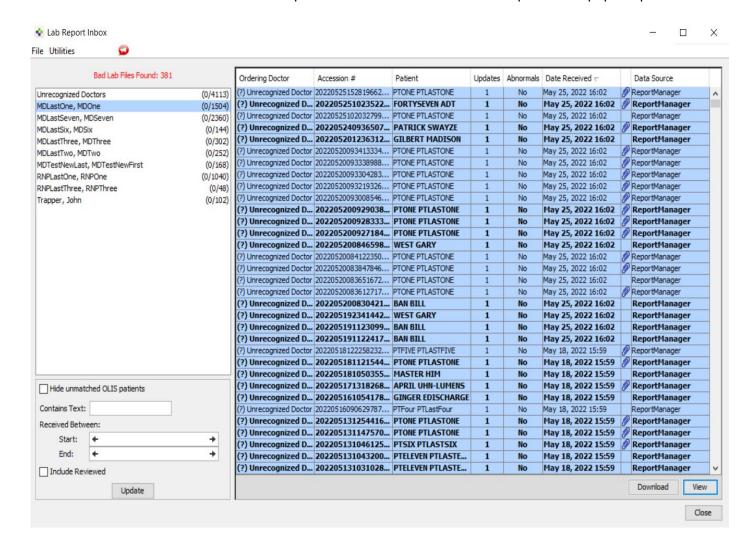
Appendix A: EMR Vendor Specific Examples

All screenshots have been taken from the OntarioMD EMR Lab, which is a sandbox environment that does not contain any patient health information. This is a fully supported sandbox with fictitious patient information for demonstrative, training, and advocacy purposes.

Inbox Prioritization of HRM Reports

TELUS PSS

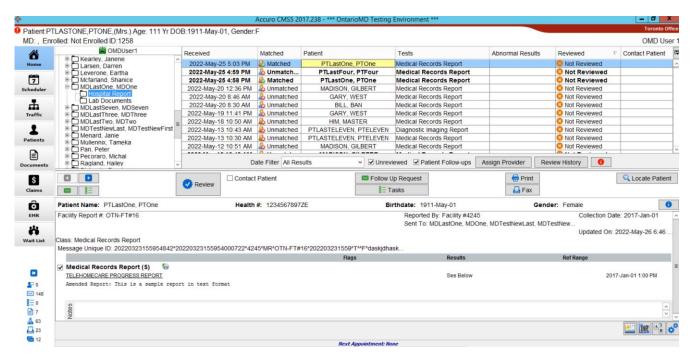
- Data Source only shows ReportManager
- Differentiation between HRM text reports and HRM PDF attachment reports with paperclip

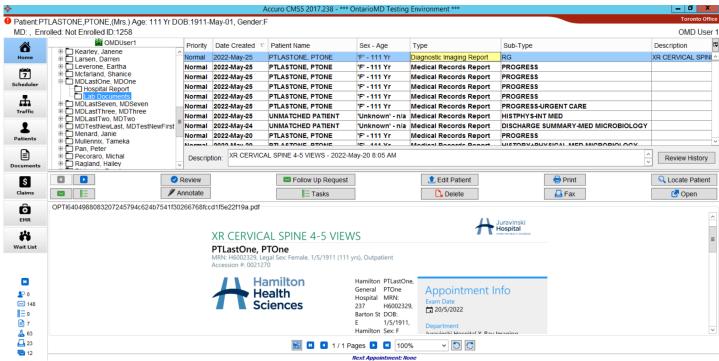




QHR Accuro®

- Two Inbox Views Hospital Report & Lab Documents
 - Hospital reports are HRM text-based reports that do not include the Sub-Type
 - Lab documents are HRM PDF attachment reports







WELL OSCAR Pro

- All HRM reports are listed as HRM in Discipline
- No differentiation between HRM text reports versus HRM PDF attachment reports

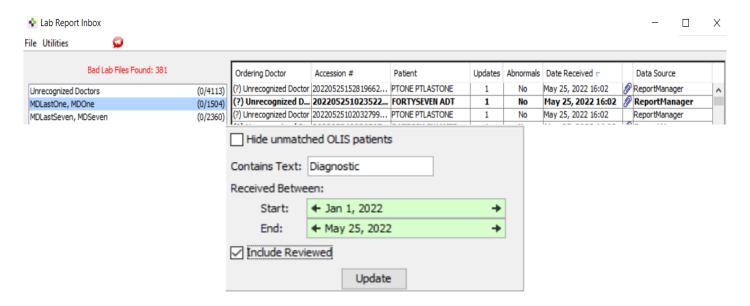




Inbox Searchability - Filters

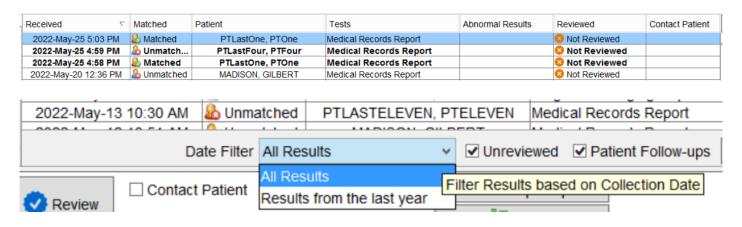
TELUS PSS

- Column headers can be used to filter documents
- Text and Date filters



QHR Accuro®

 Hospital Report Inbox can be filtered using all column headers and Date Filter with Unreviewed and Patient Follow-ups criteria



Lab Documents Inbox can be filtered using all column headers

Priority	Date Created ▽	Patient Name	Sex - Age	Туре	Sub-Type	Description
Normal	2022-May-25	PTLASTONE, PTONE	'F' - 111 Yr	Diagnostic Imaging Report	RG	XR CERVICAL SPIN
Normal	2022-May-25	PTLASTONE, PTONE	'F' - 111 Yr	Medical Records Report	PROGRESS	
Normal	2022-May-25	PTLASTONE, PTONE	'F' - 111 Yr	Medical Records Report	PROGRESS	



WELL OSCAR Pro

- Column headers highlighted in blue can be used to filter
- Can filter based on Documents, HRMs, HL7, Normal, Abnormal and by patient name



	Patient Last Name:
	Patient First Name:
<u>All (36)</u>	Patient Health Number:
Documents (5) HRMs (30)	Start Date:(yyyy-mm-dd)
HL7 (1)	End Date:(yyyy-mm-dd)
<u>Normal</u> <u>Abnormal</u>	Physician: O All O Unclaimed
+ ANDREW, HARMON	Maheshwari, Anil
+ LILY, TEST (1) Nathanael, Mayton	Report status: O All New Acknowledged Filed
(1). + SALLY, JOHNSON	Abnormal Status: All Abnormal Only Normal Only
(1) + <u>WENDY, KROY (1)</u>	Search

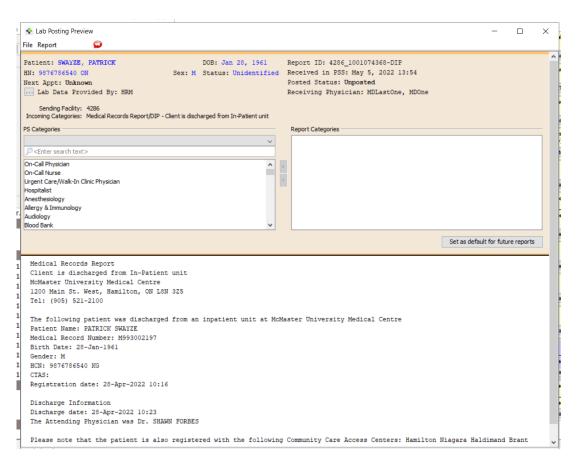


Duplication of Reports

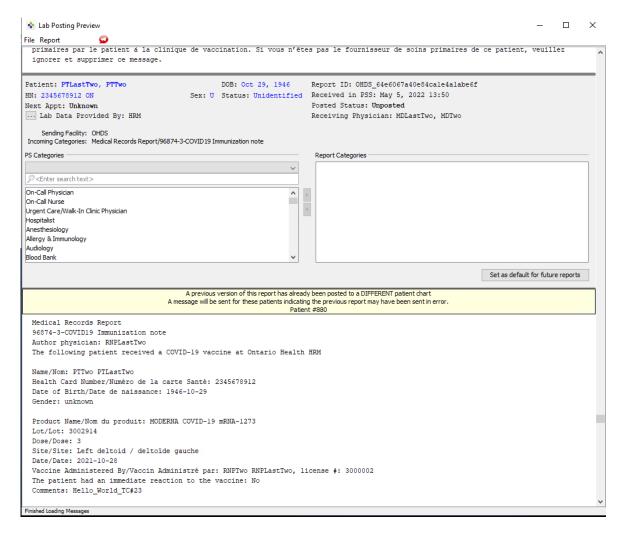
TELUS PSS

• The Inbox does not clearly identify which HRM reports are duplicates until the user opens the report. There is a notice within the report that states if it is a duplicate.

(?) Unrecognize	2022042810381	PATRICK SWAYZE	1	No	May 5, 2022 13:54	ReportManager
(?) Unrecognized	20220428103332	PATRICK SWAYZE	1	No	May 5, 2022 13:54	ReportManager
(?) Unrecognized	20220428103142	PATRICK SWAYZE	1	No	May 5, 2022 13:54	ReportManager
(?) Unrecognized	20220428103003	PATRICK SWAYZE	1	No	May 5, 2022 13:54	ReportManager
(?) Unrecognized	20220428102359	PATRICK SWAYZE	1	No	May 5, 2022 13:54	ReportManager
(?) Unrecognized	20220428101716	PATRICK SWAYZE	1	No	May 5, 2022 13:54	ReportManager
(?) Unrecognized	20220428101459	PATRICK SWAYZE	1	No	May 5, 2022 13:54	ReportManager
(?) Unrecognize	2022042810141	PTFIVE PTLASTF	1	No	May 5, 2022 13:54	ReportManager
(2) Unvocagniza	2022042010141	DTETVE DTI ACTE	1	No	May E 2022 12:E4	DonoutManager



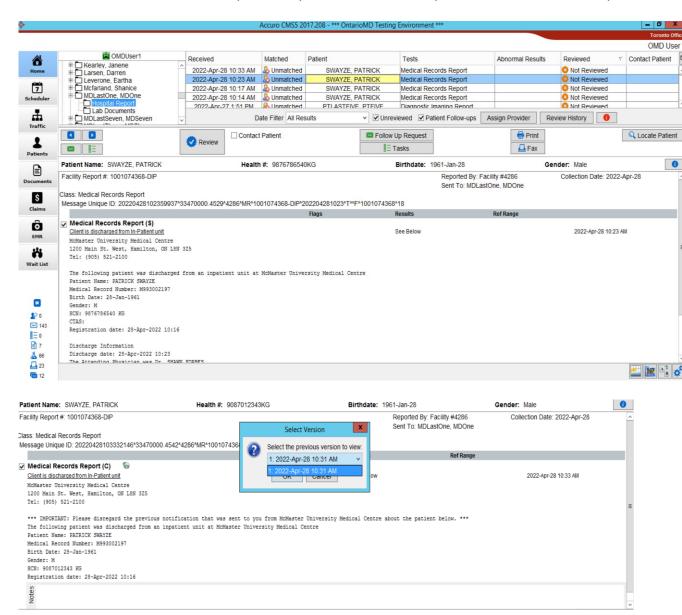






QHR Accuro®

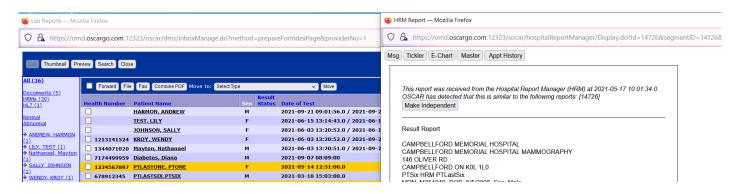
• The Inbox does not clearly identify which HRM reports are duplicates until the user opens the report. There is a notice within the report that provides a list of the previous versions of the report.





WELL OSCAR Pro

• The Inbox does not clearly identify which HRM reports are duplicates until the user opens the report. There is a notice within the report that states if it is a duplicate.

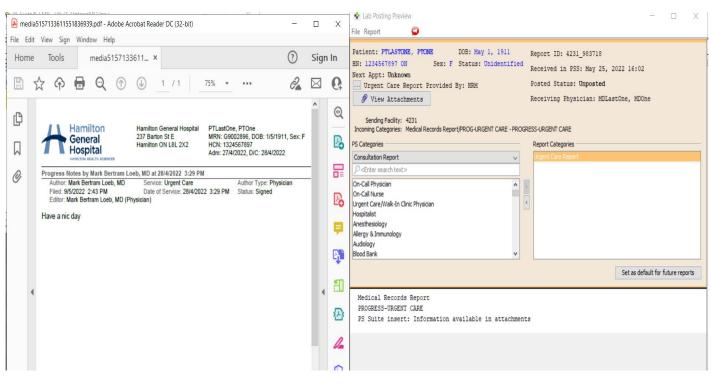


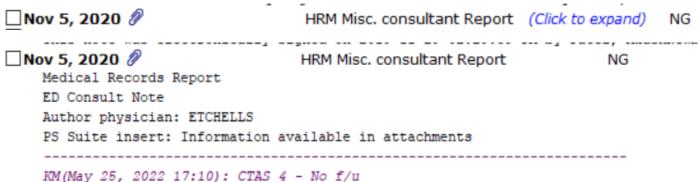


HRM PDF Attachment Reports – Workflow to Open Attachments and Searchability of Content

TELUS PSS

- HRM reports must be opened from the Inbox using an external PDF viewer outside of PSS and the user cannot see the contents of the HRM PDF Attachment in the Lab Posting Preview.
- Once the HRM PDF Attachment report has been posted to the patient chart, the user cannot search the
 contents of the PDF Attachment within the patient chart. Therefore, the user must add an annotation to
 the report to be able to search for relevant information contained in the report.

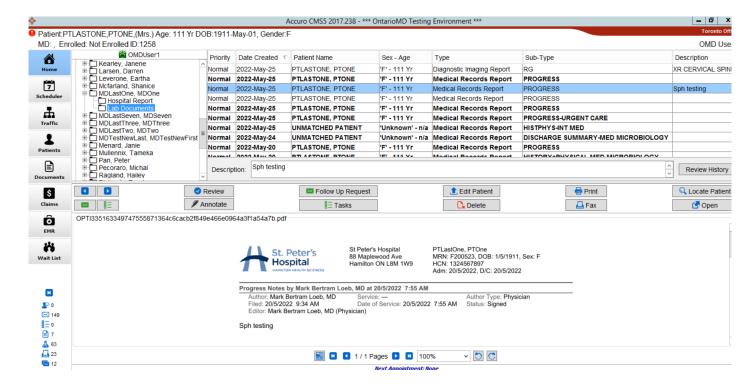






QHR Accuro®

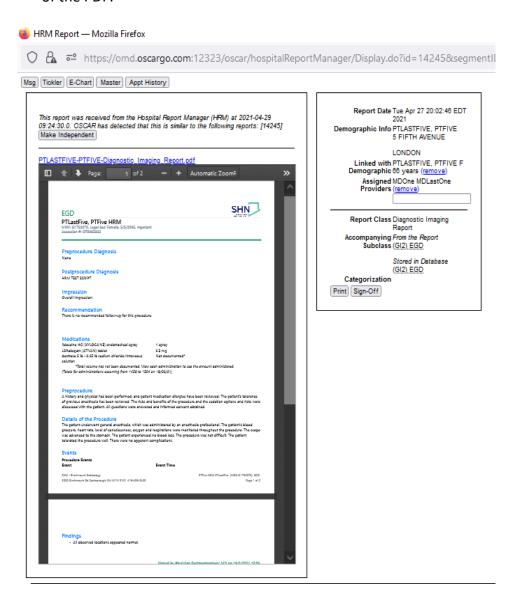
When a PDF attachment HRM Report is selected in the Lab Documents folder of the Inbox, there is an
embedded PDF viewer to see the contents of the PDF attachment HRM Report. However, Accuro®
cannot search the contents of the PDF.



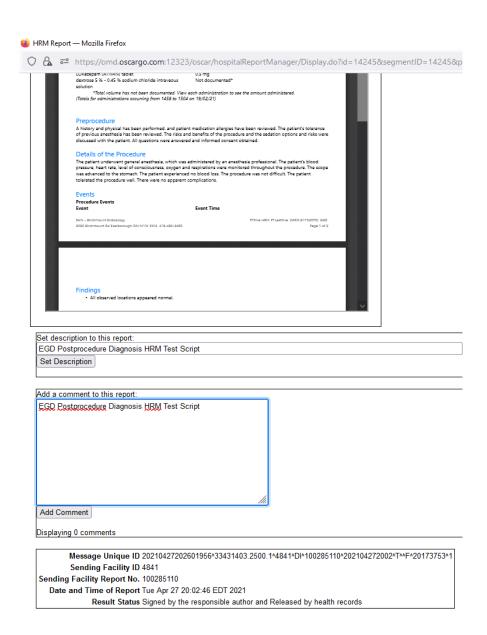


WELL OSCAR Pro

 When a PDF attachment HRM report is selected from the Inbox, there is an embedded PDF viewer to see the contents of the PDF attachment HRM report. However, OSCAR Pro cannot search the contents of the PDF.







HRM Documents

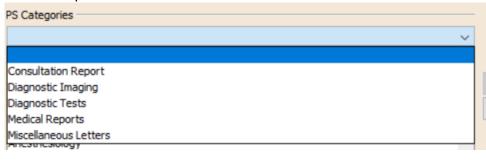
EGD Postprocedure Diagnosis HRM Test Script



HRM Report Labelling, Autocategorization

TELUS PSS

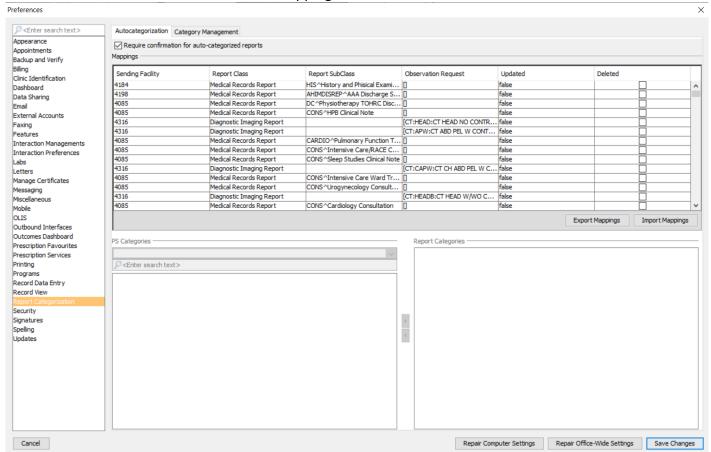
PSS Lab Report Inbox







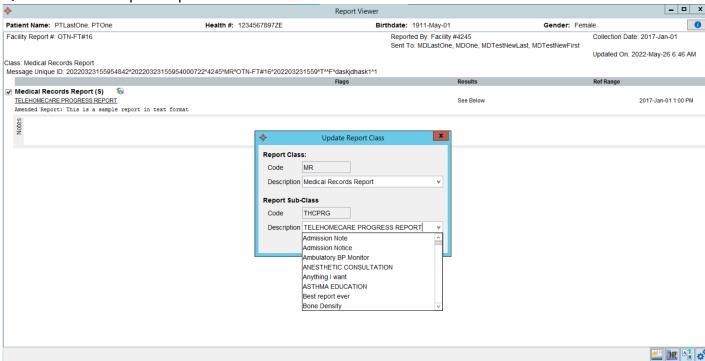
TELUS PSS Administration Panel for HRM Mapping



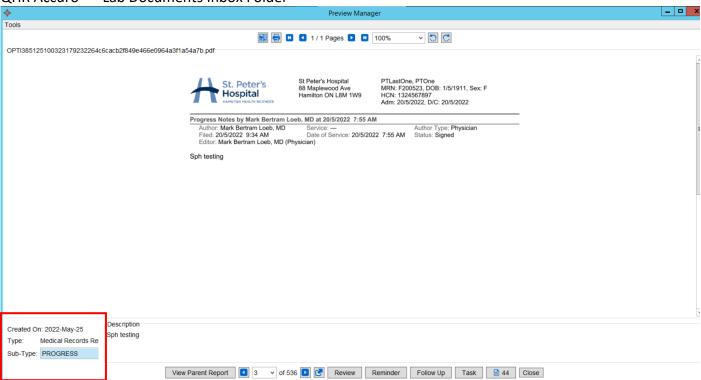


QHR Accuro®

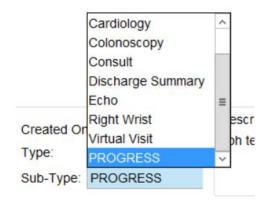
QHR Accuro® – Hospital Report Inbox Folder



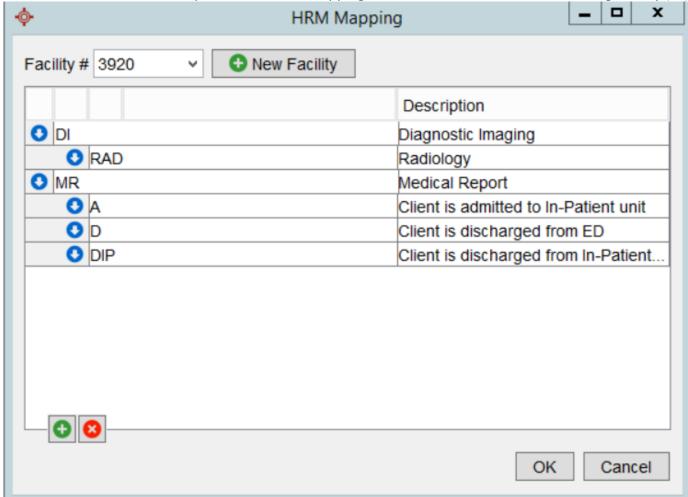
QHR Accuro® – Lab Documents Inbox Folder







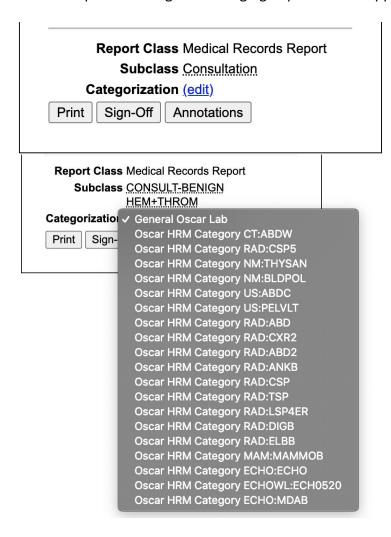
QHR Accuro® Administration panel for custom mapping of HRM connections for each Sending Facility (SF)





WELL OSCAR Pro

Examples of Medical Records Report and Diagnostic Imaging Report HRM mappings:





Report Date Wed May 05 09:18:00 EDT 2021

Demographic Info PTLASTTEN, PTTEN

Linked with PTLASTTEN, PTTEN U 21

Demographic years (remove)

Assigned Providers MDOne MDLastOne

(remove)

MDSix MDLastSix (remove)
MDLastThree, MDThree

(D20003)

Report Class Diagnostic Imaging Report

Accompanying From the Report

Subclass (PFT13) PFT-PULMONARY

FUNCTION TEST

Stored in Database (PFT13) PFT-PULMONARY

FUNCTION TEST

Categorization

Print | Sign-Off

OSCAR Pro Administration panel to configure HRM mappings

Administration Panel	
User Management	>
Billing	>
Labs/Inbox	>
Forms/eForms	>
Reports	>
eChart	>
Schedule Management	>
System Management	>
Faxes	>
System Reports	>
Integration	>
API/Connections REST Clients	
Integrator Status	
Integrator Preferences	
Send data electronically to another OSCAR	

HealthChain Configuration

Hospital Report Manager

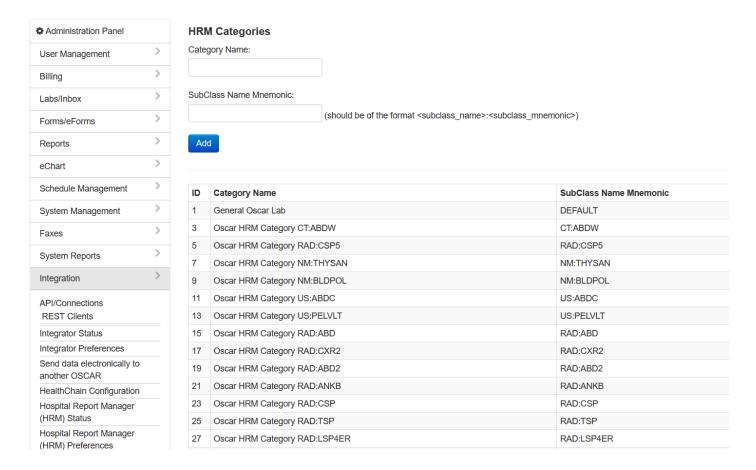
Show Mappings		
+ Add a class mapping		

SubClass Name Mnemonic Mnemonic Description Category Sending Facility Class Name 4192 MILFN^FINAL NOTE FINAL NOTE Medical Records Report MILFN General Oscar Lab Delete OAKHP^HISTORY AND HISTORY AND PHYSICAL Oscar HRM Category CT:ABDW 4138 Medical Records Report OAKHP Delete PHYSICAL 4192 Medical Records Report OAKOR^OPERATIVE RECORD Ops Report General Oscar Lab OAKOR Delete 2003 Diagnostic Imaging XRAY J13077 XR Toe Bilat Oscar HRM Category XRAY:J13077 Delete Report St. Joseph's CT:J40101 2003 Diagnostic Imaging CT J40101 CT St. Joseph's ND Delete Report Oscar HRM Category 4044 Diagnostic Imaging RA RAAB2CH Testing Abdomen Delete DI:RA:RAAB2CH Report 4657 Medical Records Report VIRTUAL VISIT TESTING AC Virtual Visit Oscar HRM Category MR Diagnostic Imaging Phys find Abd TESTING AC Phys Abd 1241 10191-5 Oscar HRM Category DI Delete Report TESTING AC R Wave 1322 Diagnostic Imaging R wave dur L-AVR 10000-8 Oscar HRM Category DI Delete TESTING AC US Abd 1237 Diagnostic Imaging US Abd Aorta 69276-4 Oscar HRM Category DI Delete 1571 Diagnostic Imaging US Abd Aorta 69276-4 Testing 2nd US Abd Oscar HRM Category DI Delete Report

Help | About | License



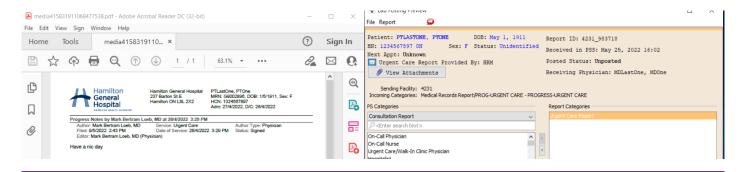
OSCAR Pro Administration panel to configure HRM categories



Inconsistency of HRM Report Service Date vs. Received Date in Inbox

TELUS PSS

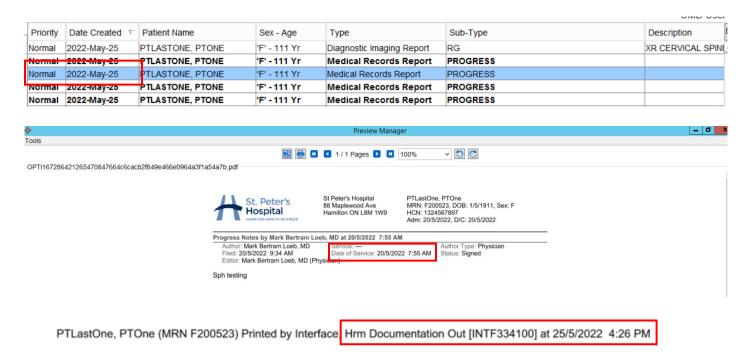
There are multiple dates listed in the PDF attachment HRM report, which can be confusing for the
primary care provider to find this report within the Lab Report Inbox if they are unable to post the
report to the patient's file at the time of reviewing the PDF attachment.





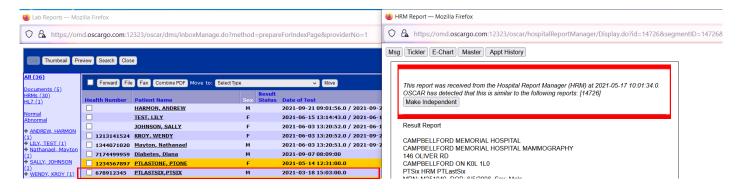
QHR Accuro®

The inconsistency of Service Date vs. Received Date in the Inbox occurs with the Lab Documents folder,
 which contains the HRM PDF Attachment reports



WELL OSCAR Pro

There is no clear definition of what the Date of Test is referring to in the Inbox and there can be multiple
dates listed in this field of the Inbox.





Appendix B: EMR Vendor Statements in Support of LOINC

TELUS Health

TELUS Health's responses to questions about the benefits of using LOINC codes from its perspective:

"1. What is the value for the vendor to use the consistent LOINC code standard? How can this lead to more meaningful data usage in the EMR?

EMRs receive lab reports, diagnostic imaging reports, consultant reports and many other types of reports. If these reports are categorized accurately, the EMR can do many valuable functions to save the practitioners time and markedly improve patient safety. These are some of the functions:

- Graph similar numeric lab values together even if they come from different labs;
- Show in tabular displays similar lab results together even if they come from different labs;
- Track ordered tests so any missing results can be brought to the attention of a practitioner;
- Remind practitioners at regular intervals to order tests as needed for screening;
- Remind practitioners at regular intervals to order tests as needed for ongoing care for chronic disease management;
- Extract data across thousands of EMRs for research to improve patient care in Canada.

2. How would the use of LOINC codes benefit clients? (e.g.,: increased patient safety, reduced clinician burnout)

Here is how this contributes to increased patient safety:

- Patients will be screened by mammograms and stool testing and Pap tests to reduce breast cancer, bowel cancer and cervical cancer deaths.
- Patients with chronic health conditions will get timely testing as recommended by best evidence to avoid complications of their disease. Examples are kidney failure from diabetes and stroke/hemorrhage from atrial fibrillation.
- Test results that are lost or sent to the wrong site will be tracked and reported as missing. Every year "lost" results lead to deaths reported by the College of Physicians and Surgeons and the Canadian Medical Protective Association. Example: a breast lump biopsy report will be reported as missing if it is not received back in a timely fashion.

Here is how this contributes to reduced clinician burnout:

- Chasing down tests because the practitioner cannot trust the EMR to report missing tests is a
 huge stress source. Missing a test result can kill a patient, lead to litigation, cause
 severe depression and ruin a career.
- Failing to alert a patient to a recommended screening can also cause the same terrible outcomes.
- Inadvertently failing to follow guidelines for a complicated chronic disease can also cause the same terrible outcomes.
- Reviewing a chart to see similar reports (e.g., a sequence of chest x-rays) can miss showing a
 critical report if the search criteria cannot find all such reports because they were
 categorized differently.



3. What are the challenges from a client/user perspective if LOINC codes are not adopted?

If LOINC codes are not adopted, practitioners will have to spend time manually categorizing reports and risk errors doing so. They will have to use an EMR that has a large synonym dictionary of lab tests as named by dozens of different labs. This dictionary will constantly be behind the curve as new tests are added and new naming changes appear. Similarly, the reports coming from hospitals will each need individual categorization. The current methods of mapping the thousands of different descriptions provided by hospitals into standard categories is laborious and prone to user error. The names provided by hospitals can change arbitrarily. LOINC was invented to fix this very problem 30 years ago.

<u>Please note that there can be dozens of LOINC codes for the same test (from the practitioner's perspective)</u>. An effort should be taken to use a reduced standard set of LOINC codes that uniquely identify a report or test."

QHR Accuro®

QHR's 's responses to questions about the benefits of using LOINC codes from its perspective:

"QHR Technologies is a Canadian healthcare technology company, and our flagship product is the Accuro® EMR system. Our platform is in use in six Canadian provinces and integrates with a variety of differing systems within and across those jurisdictions. Existing healthcare systems in Canada are fragmented and overburdened, and largely because relevant information to inclusively support a patient is siloed, and not accessible to others across the continuum of care. To reduce this burden, QHR strongly encourages and supports consistency in use of nomenclature standards for relevant data exchange.

In context of HRM specifically, Logical Observation Identifiers, Names & Codes (LOINC) is international, clinical terminology; a nomenclature standard that facilitates the interoperable exchange of laboratory tests and results, clinical care and observations, as well as the management of better patient outcomes.

Use of LOINC:

- Ensures consistent mapping of information from disparate sources, given its granularity
- Reduces redundant and duplicative testing
- Reduces the burden (time and cost) on clinics and individuals to reconcile information between systems, subsequently reducing burnout caused by largely administrative tasks
- Supports better aggregate reporting and data analysis
- Increases patient safety
- Facilitates meaningful use of data in context of clinical decision making, at the point-of-care, and regardless of the tools/integrations providers use (e.g., EMRs, EHRs, CIS systems, etc.)



From a business perspective, this allows us to better support our users in their commitment to better health management and outcomes for all Canadians. Our company mission is to unite Canadian healthcare by connecting providers to information, their patients, and each other, and use of LOINC (as well as other interoperability standards like FHIR and SNOMED), will help to support and realize that ambition.

Thank you for the opportunity to collaborate within this space, and to offer our perspective as a national EMR vendor."

WELL Health (OSCAR Pro/Indivicare)

WELL Health's responses to questions about the benefits of using LOINC codes from its perspective:

"I feel that we could provide valuable tools to end-users in terms of report triaging and management if there were a standardized set of categories, tags, or keywords in a set portion of the HRM report data we received. It seems to me that leveraging the existing LOINC values, which already serve a similar purpose for electronic labs, may be an easy way to get this standardization moving.

For example, when reports come in today the only way we could implement a search function aimed at finding specific report contents would be to search the entire document, which may be inaccurate due to language and format differences from different sending facilities, and would be somewhat more performance-intensive. If we had one or more static keywords associated with each report, we could create inbox filters or reports that show only relevant results, with more granular options depending on the breadth of valid keywords.

If a clinic wanted to see which patients had hospital reports listing COVID with a comorbidity, they'd currently have to look for all COVID reports (which they may have to categorize themselves depending on content) and decide which other keywords in the body of the text were valid comorbidities (diabetes, COPD, etc.). If each report had LOINC tags, we may be able to create a report filter that looks for code 75618-9 (comorbidity) and one of a list of commonly used COVID codes (there are 159 at present, so there's still some challenge there filtering useful data.) This obviates the need for standardization of report text or terminology, which is harder to police.

Alternatively, we could implement a smaller standard list of keywords/codes not tied to LOINC, which is attractive given the breadth of unused or niche LOINC values, but would require frontloaded and coordinated effort as opposed to picking up the 'out of the box' LOINC list. In practice, we may only end up seeing a couple hundred commonly used codes of the tens of thousands of LOINC values."



Appendix C: Referenced Documentation

Referenced Documentation	
Implementation, spread and impact of the Patient	https://bmchealthservres.biomedcentral.com/articles/
Oriented Discharge Summary (PODS) across Ontario	<u>10.1186/s12913-021-06374-8</u>
hospitals: a mixed methods evaluation	
CPSO's Transitions in Care (Continuity of Care) Policy	https://www.cpso.on.ca/Physicians/Policies-
	Guidance/Policies/Transitions-in-Care
Taking Action Against Clinician Burnout: A Systems	https://www.ncbi.nlm.nih.gov/books/NBK552615/
Approach to Professional Well-Being.	
IPC Circle of Care Guideline	https://www.ipc.on.ca/resource/circle-of-care-
	sharing-personal-health-information-for-health-care-
	purposes/



Appendix D: Task Force Members

EMR Usability Working Group

Jim Brown, Director, Client Services & Engagement, OntarioMD
Simon Ling (optional), Executive Director, Products & Services, OntarioMD
Aidan Lee, Director, EMR Certification Program, OntarioMD
Rohan Thareja, Manager, EMR Validation, Technology & Integration, OntarioMD
Ivica Pavic, Implementation Lead, Ontario Health - Primary Care
Karine Baser, Manager, Clinical Improvement and Informatics, Ontario Health - Quality
Dr. Colin Wilson, Clinical Quality Lead, Ontario Health East, Ontario Health - Digital
Dwight Yorke (designate for Jennifer Strul), Team Lead, Technical Client Integration, Ontario Health - Digital
Dr. Payal Agarwal, Medical Director, Digital, Centre for Effective Practice (CEP)
Dr. Kevin Samson , Waterloo - Wellington, OntarioMD Physician Peer Leader, Clinician Representative (PSS)
Dr. Gord Schacter, London, Clinician Representative (PSS)
Dr. Karima Khamisa , Ottawa, Clinician Representative (QHR)
Dr. John Erb, Thousand Islands, Clinician Representative (WELL)
Dr. Brian Hart, Gananoque, Clinician Representative (WELL)
Bassem Youssef, Vendor Representative, TELUS Health
Dr. James Kavanagh, Vendor Representative, TELUS Health
Alison Cooney, Vendor Representative, QHR Technologies
Namrata Jain, Vendor Representative, QHR Technologies
Chris Owens, Vendor Representative, WELL Health
Brent Shanks, Vendor Representative, WELL Health
David Gill, Vendor Representative, WELL Health



Sending Facility Standards Working Group

Dr. Chandi Chandrasena, Chief Medical Officer, OntarioMD
Cynthia MacWilliam, Executive Director, Client Services & Engagement, OntarioMD
Peter Barrotti, Executive Director, Technology Solutions & Operations, OntarioMD
Janet Dang / Beth Bosiak (designates for Zahra Ismail) Senior Manager, Primary Care, Ontario Health
Dr. David Kaplan , Vice President, Quality, Ontario Health
Cindy Jiang and Roberta Cardiff/Rita Pyle (designates for Sue Schneider) Standards, Ontario Health
Dwight Yorke (designate for Jim Scott) Business Systems Lead, Ontario Health
Lilian Vasilic, Manager of IDS Operations, Ontario Hospital Association
Jainita Gajjar (designate for Dara Laxer) Senior Policy Advisor, Ontario Medical Association
David Stankiewicz , CMIO/CIO Hospital Representative or Dr. Chris Hayes , Chief Health Information Officer, Trillium Health Partners (Diamond Watson-Hill, designate for David)
Tony Meriano, CMIO/CIO Hospital Representative (Cerner)
Tim Pemberton, CMIO/CIO Hospital Representative (Meditech)
Dr. Kellie Scott, OntarioMD Physician Peer Leader
Pippy Scott-Meuser (designate for Tupper Bean), Centre for Effective Practice
Karine Baser (designate for Dr. David Kaplan), Ontario Health
Dr. Marie Claude Gagnon, OntarioMD Physician Peer Leader, Ottawa, Clinician Representative
Ms. Gurjit Kaur Toor, South East CHC, Clinician Representative
Dr. James Lane, CMIO, Collingwood General and Marine Hospital, Clinician Representative
Dr. Kristianna Martiniuk / Dr. Kiran Cherla, Halton OHT, Clinician Representatives



Dr. Sharon Domb, OntarioMD Physician Peer Leader, Sunnybrook Health Sciences Centre, Clinician Representative

Bob Molloy / Allie Marks, HIS Vendor Senior Representative (Meditech)

Sergio Carmona, HIS Vendor Senior Representative (Cerner)

Katie Elliott, HIS Vendor Senior Representative (Epic)

Dr. Kevin Samson, OntarioMD Physician Peer Leader, Waterloo – Wellington, Clinician Representative

Advisory Circle

Dr. Chandi Chandrasena, Chief Medical Officer, OntarioMD

Simon Ling, Executive Director, Products & Services, OntarioMD

Andrew King, Chief Technology Officer (Aidan Lee - delegate), OntarioMD

Zahra Ismail, Senior Director, Primary Care and Social Determinants, Ontario Health

Dr. David Kaplan, Vice President, Quality, Ontario Health

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