



## Third Party IHealth Review - Status Report

February 3, 2017

## Background and Report Contents

A Third Party Review of IHealth was commissioned by the Ministry of Health and Island Health in July 2016 in response to concerns related to the safety of the advanced EHR tools, and end user confidence in using the new tools safely. The review was led by Dr. Doug Cochrane, BC Patient Safety and Quality Officer, and the IHealth Review report was published in November 2016.

The report concluded that the advanced EHR tools should continue to be used while refinements are made, and included 26 recommendations to guide re-engagement and improvement efforts. Through the report, Dr. Cochrane recommended that a functional revalidation of the advanced EHR toolset be completed as an initial step to confirm where the EHR is working as designed, and where priority improvements or changes are required.

The table below provides an 'at a glance' view of the 26 IHealth Review recommendations, by lead and primary category/type. This report provides a status summary on the priority Functional Revalidation efforts, and 19 other active recommendations.

Recommendation	Lead	EHR Review/Refinement	Monitoring, Quality Assurance	Policy, Practice, Education	Future Oriented	Page
<b>Priority – Initial Focus</b>						
23. Functional Revalidation	Island Health/MoH	●				5
<b>Active</b>						
1. Limit maximum range doses	Island Health	●				6
2. Dose checking for high risk medications	Island Health	●				
9. Patient summary	Island Health	●				7
10. Validate device association	Island Health	●				8
14. Simplify user interface	Island Health	●				9
15. Canadian terminology	Island Health	●				10
3. Monitor high risk medications	Island Health		●			11
7. Monitor results distribution	Island Health		●			12
8. Monitor message centre	Island Health		●			13
11. Ensure system performance	Island Health		●			14
22. Clarify/refine issue reporting	Island Health		●			15
4. Medications at transfer	Island Health			●		16
5. Multiple narcotics	Island Health			●		17
6. MRP and copies to	Island Health			●		18
12. Refresh downtime processes	Island Health			●		19
17. CPOE in urgent situations	Island Health			●		20
21. Refresh Training/education	Island Health			●		21
25. Commit to working through conflict	Island Health			●		22
26. Action Island Health policy as required	Island Health			●		23
<b>Future Reporting</b>						
16. Future activations - staffing	Island Health				●	
18. Staffing for NRGH ED – CPOE Meds	Island Health				●	
19. Meds ordering in the NRGH ED and ICU	Island Health				●	
20. Workflow redesign	Island Health				●	
24. Go-forward plan	Island Health				●	
<b>Ministry of Health Led</b>						
13. PharmaNet Redesign	MoH					

The draft accountability structure for all of the recommendations is summarized in the Appendix.

## Report Highlights – February 1, 2017

Since the IHealth Review report was released on November 17, 2016, efforts have been focused on:

- 1. Initiating Functional Revalidation:** initiating the Functional Revalidation process as the recommended initial step to support re-engagement of NRGH end users and to identify priorities for changes and improvements
- 2. Engaging Experts and Assessing Peer Design:** completing due diligence related to the EHR related recommendations, and engaging peer experts from other Canadian health systems on their design and experience
- 3. Refreshing Decision Making Structures:** engaging HAMAC and the Combined Quality Structure on accountabilities for decision making on EHR, practice and policy changes; and defining the new EHR Quality Council as an authoritative body on EHR related priorities and design decisions
- 4. Actioning the Recommendations:** assigning recommendations for action to the responsible parties, and initiating efforts against plans

### 1. Initiating Functional Revalidation

The Revalidation Oversight Committee has been established and held three meetings to-date. Dr. Doug Cochrane joined the first meeting to confirm the purpose of the functional revalidation. The Committee has confirmed its Terms of Reference and membership, and agreed on a high level approach and focus for the revalidation activities. In response to discussions with NRGH physicians and staff on the need to address challenges related to medication management, and in keeping with the medication safety theme identified in the IHealth Review report, the initial revalidation efforts will be focused on medication orders management.

An invitation for expressions of interest by physicians and staff has been distributed to all end users to identify participants for specialty work teams. The Revalidation Oversight Committee will meet again on February 8, 2017 to confirm the composition of the teams. Team members will then be engaged in preparation for the revalidation sessions, including confirmation of the scenarios and scripts. In addition, peer experts from other Canadian health systems will be participating in the revalidation activities, and will be on-site at NRGH to gain first-hand experience with the current EHR toolset in preparation. The revalidation sessions are scheduled to begin the week of February 20, 2017.

### 2. Engaging Experts and Assessing Peer Design

In delivering the IHealth Review report to the Island Health Board, Dr. Cochrane noted that some of the specific EHR related recommendations were directional, and had not been assessed for feasibility. On receipt of the report, the IHealth team completed an assessment of available EHR functional capability and engaged peer Canadian health systems on their design and experience.

Since receipt of the IHealth Review report, meetings have been held with colleagues from Prince Edward Island, London Health Sciences Centre, North York General Hospital, Mount Sinai Hospital, the Toronto Centre for Addictions and Mental Health, Cornwall Community Hospital, and the BC Lower Mainland Health Authorities. The use of additional algorithms and alerts to support medication safety; and the tools and approach for documenting and communicating the patient story through the nursing narrative were reviewed in detail and have informed the corresponding recommendation action plans.

### 3. Refreshing Decision Making Structures

The IHealth Review report highlighted the need to ensure that going forward there is stronger medical and clinical engagement, ownership, and depth of understanding of the EHR design and related practice, policies, and workflow changes. In response, the role of the Health Authority Medical Advisory Committee and Combined Quality Structure in the implementation of the IHealth Review report recommendations and go-forward planning has been reviewed and is being refreshed.

Using the principle that decision-making authority should be established as close to clinical practice as possible, the recommendations have been assigned a primary accountable body in addition to the teams responsible for completing the work. Through this process, the need to establish an EHR Quality Council, with both regional and local (NRGH, Dufferin and Oceanside) representation was identified. Several recommendations have been assigned to the EHR Quality Council as the accountable body, including Recommendation 14: Simplify the User Interface, and Recommendation 9: Patient Summary.

The proposed accountabilities for the EHR Quality Council have been drafted, and include accountability for ensuring responsive action related to the safe and efficient use of the EHR, monitoring progress of changes and improvements, and creating a transparent process for communicating decisions and changes. In response to recent engagement with NRGH physicians, the EHR Quality Council will be asked to prioritize concerns related to provider efficiency, and assess options for changes and improvements that can be made in the immediate, near and long term.

### 4. Actioning the Recommendations

In addition to efforts related to Recommendation 23: Functional Revalidation, there are 19 other recommendations that have been assigned and initiated. Priority decision/actions completed to-date:

- Policies and procedures to support dose range checking have been updated. A *Free Text* dose warning has been turned on and education has been provided.
- The seven priority high risk medications for activation of dose range checking have been confirmed, and built and tested in the system. (Hydromorphone, Fentanyl, Morphine, Heparin, Dalteparin, Enoxaparin, Digoxin). Range dose checking for one high risk medication will be prototyped to secure feedback on the sensitivity and impact of the alerts prior to full deployment.
- A new Nursing Handoff and patient timeline view has been built to support nurse to nurse handoff and the patient story - and will be reviewed by the EHR Quality Council for decision.
- Device association updates have been made for devices in the PACU, ICU, NICU and the ED.
- Monitoring reports for all key system changes, planned and unplanned downtime/failures, hardware maintenance and turnover have been published on the intranet for transparency.
- Downtime tools updated to address gaps identified. Education and communication completed.
- Completed workflow analysis for select specialty areas to identify opportunities for improvement with focus on the user interface. Recommendations will be brought forward to the EHR quality council for prioritization and decision.
- Identified Canadian terminology changes completed. An audit of remaining non-Canadian terms has been completed and terminology changes are being addressed on a case-by-case basis.
- Reviewed organizational practice and policy supports for CPOE. Developed scenario specific use cases with clear processes and communication plans for CPOE in urgent situations; educated across interdisciplinary teams.

## Recommendation 23: Functional Revalidation

Third Party IHealth Review Recommendation	That the NRGH medical staff and Island Health join in a process to revalidate the order entry and clinical documentation capabilities of the IHealth system and test the ability and suitability of the implemented functionality to meet the clinical care needs of patients based on current clinical workflow. The revalidation process will be supervised by an oversight committee. This committee will receive the results of the clinical reviews and will develop options to address situation(s) where the functionality as provided, does not address the clinical needs in the Island Health context.	
Island Health Response and Action Plan Summary	<p>In collaboration with the Ministry of Health and Island Health will support the formation of the Revalidation Oversight Committee, and participate in the functional revalidation activities.</p> <p>Work teams for each specialty will assess the current EHR toolset, and support the identification of priorities for change and improvement. Physicians and staff from NRGH, Dufferin and Oceanside Health Centre will be invited to participate in the revalidation work teams through an invitation for expressions of interest. The first wave of revalidation efforts will focus on medication orders management. A detailed analysis of clinical documentation will follow.</p>	
Oversight and Accountabilities	Oversight	Island Health Board through President and CEO
	Accountable	Revalidation Oversight Committee
	Report Out	NRGH, Dufferin, OHC sites; Program Quality Councils as Required
	Responsible (Lead)	Revalidation Work Teams

### Progress and Plans

#### Activities Completed

- Revalidation Oversight Committee established, three meetings held since January 12, 2017 to confirm purpose, Terms of Reference, and revalidation approach.
- Invitation for Expressions of Interest sent to all NRGH, Dufferin and Oceanside Health Centre physicians and staff.
- Peer experts from BC Lower Mainland on site at NRGH during February 1-3 to gain first-hand experience with current EHR toolset.
- Regular site wide communications on revalidation activities to support awareness and transparency.
- Initiated planning for first week of revalidation activities, scheduled to begin February 20, 2017.

#### Activities Planned

- Revalidation Oversight Committee meeting on February 8, 2017 to confirm composition of specialty work teams.
- Engagement of work team leads and members to confirm scripts and scenarios.
- Detailed planning for revalidation sessions, including resources and processes to support rapid change and improvement cycles based on output from revalidation sessions.
- Continued communications on revalidation activities.

### Recommendation 1: Limit Maximum Dose Ranges

### Recommendation 2: Dose Range Checking for High Risk Medications

Third Party IHealth Review Recommendation	<ol style="list-style-type: none"> <li>1. Island Health analyze and correct the medication ordering process that allows medication doses exceeding accepted dose ranges to be ordered.</li> <li>2. Island Health implement a dose checking algorithm for high risk medication orders to ensure that prescribers are alerted to excessive doses or frequencies. Dispensing doses above recommended levels should require an explanation from the prescriber and be covered by a clinical care policy.</li> </ol>	
Island Health Response and Action Plan Summary	<p>Recommendations 1 and 2 relate to the prevention of medication errors due to incorrect and excessive dosing, and will be addressed by:</p> <ul style="list-style-type: none"> <li>• Reducing risk of ordering medication doses exceeding acceptable ranges through expanded order sentence content, and reducing instances of dose manipulation</li> <li>• Implementing dose range checking for select high risk medications</li> <li>• Implementing a high risk medication flag in the EHR</li> <li>• Implementing duplicate RN signature on administration of high risk medications where appropriate</li> </ul>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	Primary: Therapeutics Stewardship and Safety (TSS) Council
		Secondary: EHR Quality Council
	Report Out	Combined Quality Operations Committee, HAMAC
Responsible (Lead)	Medication Safety, Pharmacy, Informatics	

### Progress and Plans

#### Activities Completed

- Canadian Cerner peer approaches and use of advanced EHR tools incorporated into action plan.
- Order sentence content expanded with the addition of over 5000 new order sentences to decrease the risk that may occur when an ordering provider needs to modify a dose.
- Policies and procedures to support dose range checking have been updated. A *Free Text* dose warning has been turned on; users have been educated.
- The seven priority high risk medications for activation of dose range checking have been confirmed, and built and tested in the system. (Hydromorphone, Fentanyl, Morphine, Heparin, Dalteparin, Enoxaparin, Digoxin). Range dose checking for one high risk medication will be prototyped to secure feedback on the sensitivity and impact of the alerts prior to full deployment.

#### Activities Planned

- Review action plan with EHR Quality Council, and provide feedback to TSS Council as required.
- Engage target pilot specialty area to prototype dose range checking.
- Implement dose range checking for remaining high risk medications.
- Implement high risk medication flag.
- Engage NRGH nursing leadership to implement duplicate RN signature on administration of high risk medications where appropriate.

## Recommendation 9: Patient Summary

Third Party IHealth Review Recommendation	Island Health implement a process that consolidates nursing and other observations and displays this information on the patient summary layouts for every type of user.	
Island Health Response and Action Plan Summary	Island Health will optimize views of nursing and allied health documentation through: <ul style="list-style-type: none"> <li>• Review of Nursing documentation best practices/policies to clarify use of nursing progress notes and other forms of nursing textual documentation such as annotations.</li> <li>• Implementation of a 'Patient Summary' view in the EHR consolidating nursing documentation and other care provider observations.</li> <li>• Future engagement with peer organizations and Cerner architects on innovative and intuitive patient summary views.</li> </ul>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	EHR Quality Council
	Report Out	Combined Quality Operations Committee, HAMAC, Practice and Operations Committee
	Responsible (Lead)	Professional Practice Quality Systems - Clinical Informatics, Health Information Management, Clinical Applications

### Progress and Plans

#### Activities Completed

- A new patient timeline view has been built as a prototype, and consolidates nursing documentation and observations from other care providers.
- Initiated analysis of opportunities to consolidate and customize views for various roles and care providers.

#### Activities Planned

- Engage in dialog at NRGH site on nursing documentation practices to clarify use of nursing progress notes and other forms of nursing textual documentation.
- Review new patient timeline and supporting practices with EHR Quality Council, and incorporate feedback.
- Incorporate any additional changes that result from the revalidation process (see recommendation 23).
- Educate and communicate on practice and EHR related changes.

### Recommendation 10: Validate Device Association

Third Party IHealth Review Recommendation	Island Health ensure that the ability to match a monitor and/or ventilator to a patient is restricted to designated users and that bar coding or other technology be used to ensure the integrity of the patient/monitor (ventilator)/location match.	
Island Health Response and Action Plan Summary	Island Health will ensure accurate association between ventilators, monitors and patients, and provide tools to support the integrity of the association.	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	Quality Systems (IM/IT)
	Report Out	EHR Quality Council
	Responsible (Lead)	Quality Systems – Clinical Applications

### Progress and Plans

#### Activities Completed

- Analysis completed to locate specific areas of concern, and device association updates completed in Emergency, Critical Care and Neonatal Intensive Care Unit.
- A review has been initiated to evaluate the processes and education materials across all teams involved with monitors/computers, ventilators and patients.

#### Activities Planned

- Complete audit of Emergency, Critical Care and the Neonatal Intensive Care Unit devices/monitors to confirm no occurrence of mismatches.
- Report out to EHR Quality Council, and close-out reporting on this recommendation.

## Recommendation 14: Simplify User Interface

Third Party IHealth Review Recommendation	Island Health simplify the user interface to include only the clinically required parts of a process or workflow and base these design changes on human factors, interface design principles and user co-design.	
Island Health Response and Action Plan Summary	<p>The EHR tools and associated workflow processes will be simplified where possible to improve usability. The action plan includes:</p> <ol style="list-style-type: none"> <li>1. Engage EHR Quality Council on approach for engaging end users in improvement process. <ul style="list-style-type: none"> <li>• Anticipate need to align with Functional Revalidation process, where the requirements for usability-related changes will also be identified.</li> <li>• Recommend that priority be placed on changes that simplify the display of orders (e.g. order entry formats and quick orders)</li> </ul> </li> <li>2. Engage Canadian Cerner peer health systems to leverage any efforts undertaken to improve usability and incorporate learnings into plans.</li> <li>3. Complete process as directed by EHR Quality Council, including implementation and evaluation of improvements.</li> </ol>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	EHR Quality Council
	Report Out	Combined Quality Operations Committee, HAMAC, Practice and Operations Committee
	Responsible (Lead)	IHealth, Local Work Teams

### Progress and Plans

#### Activities Completed

- Completed detailed workflow analysis and report for select NRGH specialties to identify opportunities for change and improvement, based on actual use of current EHR tools and feedback provided by physicians in context of current workflow.
- Initiated discussions with Canadian peer health systems on design approaches and efforts to improve usability.
- Initiated NRGH site discussions on role of EHR Quality Council as an authoritative body to direct responsive actions in support of the safe and efficient use of the EHR.

#### Activities Planned

- Share learnings from peer Canadian health systems and workflow analysis completed for select NRGH specialties with EHR Quality Council to inform plan for initiating improvement process.
- Initiate improvement process as directed by EHR Quality Council.

## Recommendation 15: Canadian Terminology

Third Party IHealth Review Recommendation	Island Health correct errors in terminology and ensure Canadian context is reflected throughout the EHR (e.g. Celsius vs Fahrenheit).	
Island Health Response and Action Plan Summary	<p>Terminology will be corrected to ensure the Canadian context is reflected throughout the EHR. This action plan includes:</p> <ol style="list-style-type: none"> <li>1. Complete audit to determine what remaining non-Canadian terms exist in the EHR.</li> <li>2. Address non-Canadian terms on a case by case basis (some instances support current practices, e.g. measurement of wheelchair dimensions in inches).</li> <li>3. Document preventative maintenance and testing for when new software packages are uploaded to the EHR.</li> </ol>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	Quality Systems (IM/IT)
	Report Out	EHR Quality Council
	Responsible (Lead)	Quality Systems - Clinical Informatics, Clinical Applications

### Progress and Plans

#### Activities Completed

- Audit of all non-Canadian terms completed.
- Terminology errors identified in Third Party review corrected to reflect Canadian context.
- Follow up on all remaining terms initiated to confirm which terms are visible to end users, and if there is rationale for continued use of non-Canadian terminology.

#### Activities Planned

- Complete follow up on audit results and document outcome.
- Report out to EHR Quality Council and close out reporting on this recommendation.

### Recommendation 3: Monitor High Risk Medications

Third Party IHealth Review Recommendation	As part of the quality assurance measurement system for medication use, Island Health concurrently monitor high risk medication dosing, timing of administration, route of administration and duplicate orders for the same medication in a patient.	
Island Health Response and Action Plan Summary	Island Health will complete the following to support monitoring of high risk medications: <ol style="list-style-type: none"> <li>1. Evaluate existing reports and complete any changes required.</li> <li>2. Share quality assurance reports and exceptions with clinical leaders to support local awareness and quality improvement efforts.</li> </ol>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	Therapeutic Safety and Stewardship Quality Council
	Report Out	EHR Quality Council, Quality Operations Committee, HAMAC
	Responsible (Lead)	Pharmacy

#### Progress and Plans

##### Activities Completed

- Existing reports tested and validated to ensure accuracy. Custom reports created to support collection of additional data.
- Therapeutic Safety and Stewardship Quality Council reviewed recommendation and plan, will oversee engagement of clinical leaders in refining reports and/or reporting processes to ensure local relevance and to support improvement efforts.

##### Activities Planned

- Review and monitor the following medication reports:
  - Utilization
  - Audit Alerts Numbers
  - Early/Late Administration
  - Identification Issues
  - Overdose/Underdose Alert
  - Patient Mismatch
  - Pharmacy Verify @ Administration
  - Utilization - Nurse Unit
  - Personnel
  - Med Compliance
- Engage clinical leaders to confirm reports and reporting processes.
- Report out through Combined Quality Structure, and operationalize this recommendation.

## Recommendation 7: Monitor Results Distribution

Third Party IHealth Review Recommendation	Island Health ensure that diagnostic imaging, laboratory and other test results, provided by NRGH or other Vancouver Island facilities are being received by the providers responsible to take action on them.	
Island Health Response and Action Plan Summary	<p>Monitoring and reconciliation processes are in place for both paper and electronic distribution of documents to external providers. Automated alerting mechanisms exist to identify any exceptions.</p> <p>Documentation that explains how, and under what circumstances, documents are distributed will be completed to support provider education and communications.</p>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	EHR Quality Council
	Report Out	Quality Operations Committee, HAMAC
	Responsible (Lead)	Quality Systems – Operations

### Progress and Plans

#### Activities Completed

- Review and validation of the existing paper distribution reconciliation mechanism that tracks transactions from the source to the destination (e.g., a printer), and provides an alerts when results do not get to their intended recipient
- Review and validation of the existing electronic distribution reconciliation mechanism that tracks transactions from the source to the destination (e.g. an EMR) and provides an alerts when results do not get to their intended recipient

#### Activities Planned

- Document how report distribution works, in both electronic and paper-based environments, to ensure care providers understand the process, responsibilities in the receipt of results, and what do if there is an exception in the process.
- Bring documentation forward to EHR Quality Council as agenda allows, secure guidance on timing and approach for communication.
- See Recommendation 6 for details on education plans.

## Recommendation 8: Monitor Message Centre

Third Party IHealth Review Recommendation	Island Health monitor the EHR messaging system to ensure that the correct responsible individual(s) are receiving communications.	
Island Health Response and Action Plan Summary	<p>Messages within the EHR (via an application called Message Center) are monitored to ensure that messages are sent, received, acknowledged and actioned by the appropriate providers and/or other recipients. This includes the management of misdirected or refused messages. The action plan includes:</p> <ol style="list-style-type: none"> <li>1. Development of a Message Center policy.</li> <li>2. Implementation of processes for monitoring and reporting against the policy.</li> <li>3. Educate providers on use of Message Centre, including use of pools and proxies.</li> </ol>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	EHR Quality Council
	Report Out	Quality Operations Committee, HAMAC
	Responsible (Lead)	Quality Systems – Health Information Management

### Progress and Plans

#### Activities Completed

- Initiated validation of existing workflows and procedures for use of Message Center, including how messages are sent, received, acknowledged and actioned by the appropriate care providers
- Initiated documentation of suggested requirements for Message Center use policy.

#### Activities Planned

- Complete validation and identify opportunities to refine or improve existing workflows and procedures.
- Engage EHR Quality Council as agenda allows to review any recommended improvements to existing Message Centre workflows or procedures, and review of draft Message Centre Use Policy.
- Update education materials for providers and incorporate into education of all Message Centre users.

## Recommendation 11: Ensure System Performance

Third Party IHealth Review Recommendation	Recognizing the dependency of the all care processes on the IHealth system, Island Health provide an analysis of system failures (network outages, system and machine hang-ups, peripheral failures and peripheral mismatches) and upgrade hardware where the network and work stations are underpowered for the demands placed on them.	
Island Health Response and Action Plan Summary	Processes and reporting to support analysis of system performance and system issues are in place. This action plan includes: <ol style="list-style-type: none"> <li>1. Review and refresh operational reports as necessary for key system changes, planned and unplanned downtime/failures, hardware maintenance and turnover.</li> <li>2. Publish reports on the Intranet to support transparency to end users and other stakeholders.</li> <li>3. Proactive shadowing to validate system data and reports, and identify any preventative actions that can be taken.</li> <li>4. Take action as necessary to ensure system performance.</li> </ol>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	Quality Systems (IM/IT)
	Report Out	EHR Quality Council
	Responsible (Lead)	Quality Systems - Operations

### Progress and Plans

#### Activities Completed

##### *Proactive System Performance Review*

- Shadowing of several users has been completed to help proactively identify system issues.
- Computer device settings have been reviewed to ensure the correct policies and software has been applied.
- Ongoing device maintenance and refresh will ensure computers are sufficiently powered.

##### *Responsive System Enhancements*

- System upgrades and enhancements have been put in place to increase the EHR transaction speed.
- New network components have been introduced to address a manufacturer's defect.
- Dragon Naturally Speaking has undergone an upgrade and enhancements to further improve microphone connections.

##### *Auditing and Reporting*

- Reports for all system changes are recorded and disseminated weekly.
- Planned and unplanned downtime/failures reports are available to leadership for review.
- System issues, planned system work activity and system performance measures have been posted to the intranet.

#### Activities Planned

- Continue activities above as priority operational processes. Report out to EHR Quality Council and discuss any further preventative and/or proactive steps required from a local perspective.

## Recommendation 22: Clarify/Refine Issue Reporting

Third Party IHealth Review Recommendation	Island Health clarify for all users the reporting methods, processes and expectations for IHealth related events, both technical and sociocultural to ensure learning from the observations of users and to ensure that the review processes have the highest integrity. Feedback on the status of an issue should be provided directly to the reporter(s) if known, within a specified period of time known to the reporter.	
Island Health Response and Action Plan Summary	<ul style="list-style-type: none"> <li>Island Health will clarify reporting mechanisms and processes for IHealth related events, and ensure feedback is provided to the reporter on actions taken to address issues and concerns.</li> <li>Methods to increase transparency and tracking on the status of reported issues will be pursued</li> <li>New mechanisms to share information about issues identified and resolved will be established, with focus on clinical relevancy and consumability.</li> </ul>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	IHealth, Operations, Quality and Safety
	Report Out	EHR Quality Council Quality Operations Committee, HAMAC
	Responsible (Lead)	IHealth, Quality Systems – Clinical Applications, Clinical Informatics, Quality and Safety

### Progress and Plans

#### Activities Completed

- Inventory and analysis of all reporting mechanisms/channels and processes for IHealth related events, and confirmed that feedback is being provided directly to reporters where known.
- Initiated analysis of opportunities to link/automate processes between various reporting channels to simplify feedback processes and reduce redundancies.

#### Activities Planned

- Initiate planning for easy to access, transparent issue tracking for reporters, and an Intranet-based status board with clinically relevant descriptions of all reported issues, and status of investigations/actions.
- Initiate new methods of communicating items that have broad applicability or interest, including clinically relevant site wide communications and visibility boards.
- Engage EHR Quality Council on processes for reporting on actions and tracking through completion.

## Recommendation 4: Medications at Transfer

Third Party IHealth Review Recommendation	To remove the risk of missed medication doses when patients are transferred, Island Health create an algorithm that alerts pharmacy and the ward that medications have not been given when a patient is transferred.	
Island Health Response and Action Plan Summary	<p>At the time of the review, an interim workflow to support patient transfers was in place; this involved the cancellation and re-ordering of medications. This workflow has since been changed and now involves a transfer reconciliation process.</p> <p>In addition to this updated workflow, further actions are planned to ensure staff are notified when medications have not been administered at the time of transfer, including:</p> <ol style="list-style-type: none"> <li>1. Ensure standardized nursing practice to include review of orders and previous documentation (included in the Medication Administration Record) during nurse handover.</li> <li>2. Evaluate potential for new Nursing Handover and patient timeline view to support handover processes (see recommendation 9)</li> </ol>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	Nanaimo Local Quality Operations Council
	Report Out	EHR Quality Committee, Quality Operations Committee, HAMAC, Practice and Operations
	Responsible (Lead)	Practice, Informatics

### Progress and Plans

#### Activities Completed

- Interim workflow replaced with transfer reconciliation process.
- Initiated review of 'transitions of care' standards to identify any gaps in education and supports.

#### Activities Planned

- Review real-time documentation, overdue task, and early/late warning reports, and establish a monitoring plan.
- Engage Nanaimo Local Quality Operations Council in oversight of standardized nursing practice at handover, and identification of any education or supports required.
- Support handover processes with new tools such as the new Nursing Handover and patient timeline views (see recommendation 9)

## Recommendation 5: Multiple Narcotics

Third Party IHealth Review Recommendation	Island Health address the issue of medication orders persisting on the Medication Administration Record (MAR). In this context, Island Health review its policy permitting multiple narcotics and multiple routes to be ordered concurrently for any patient. A patient specific algorithm should be developed that allows for patients who require concurrently administered narcotics by different routes. Health care providers for all other patients should be alerted when multiple orders and routes are placed.	
Island Health Response and Action Plan Summary	<p>To address this complex issue with region-wide implications, a sub-committee of the TTS council will be formed to amend policies and procedures as required to support the new EHR enabled workflows. The subcommittee will:</p> <ol style="list-style-type: none"> <li>1. Review Canadian peer sites to gather information on policy, procedures and safety mechanisms for the ordering of multiple narcotics and multiple routes.</li> <li>2. Review Clinical Decision Support (mCDS) functionality to support ordering of multiple concurrent narcotics and medications.</li> <li>3. Develop guidelines on when mCDS functionality use is appropriate.</li> <li>4. Implement a second check process for narcotics, where appropriate</li> <li>5. Determine whether new policy is required for permitting multiple narcotics.</li> <li>6. Complete any related education on orders management.</li> </ol>	
Oversight and Accountabilities	Oversight	Quality Operations Committee
	Accountable (Decision Making)	Therapeutic Stewardship and Safety Quality Council
	Report Out	EHR Quality Council, HAMAC
	Responsible (Lead)	Pharmacy, Medication Safety, Practice, Informatics

### Progress and Plans

#### Activities Completed

- Reviewed Canadian peer health systems for relevant policy, procedures and safety mechanisms to inform plan.
- Initiated review of system design for multiple concurrent narcotics and Clinical Decision Support functionality.

#### Activities Planned

- TSS sub-committee to review options and make recommendations for any changes in policy, procedures, and safety mechanisms. Engage EHR Quality Council to discuss proposed changes.
  - Develop mCDS functionality guidelines.
  - Validate use of second check process for narcotics as per policy and where appropriate.

## Recommendation 6: MRP and Copies to

Third Party IHealth Review Recommendation	To ensure that reports are provided to the physicians who are responsible to take action upon them, Island Health review their education curriculum to ensure that users are aware of the processes to designate an individual as the most responsible physician for all or part of a patient’s care and how to flag other individuals for copies of results and information.	
Island Health Response and Action Plan Summary	<p>The education curriculum will be reviewed and updated to address this recommendation; and users will be trained on the relevant functionality. This action plan includes:</p> <ol style="list-style-type: none"> <li>1. Develop a shared understanding of the roles and responsibilities for ‘Most Responsible Service,’ ‘Most Responsible Provider,’ and ‘Ordering Provider’. <ul style="list-style-type: none"> <li>• Input from the College of Physicians and Surgeons and the Canadian Medical Protective Association will be incorporated and associated policies will be reviewed.</li> </ul> </li> <li>2. Review policies and practices related to automated primary care provider copy distribution.</li> <li>3. Provide education on Message Center use (see recommendation #8); copying providers and when automated primary care distribution occurs.</li> <li>4. Review and update all care provider education materials.</li> <li>5. Incorporate education materials into Medical Affairs physician onboarding/orientation process.</li> </ol>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	HAMAC
	Report Out	EHR Quality Council
	Responsible (Lead)	Quality Systems – Education

### Progress and Plans

#### Activities Completed

- Educational supports, tips and tricks and rounding activities initiated to support Message Centre use.

#### Activities Planned

- Engage EHR Quality Council and HAMAC regarding the roles and responsibilities of Most Responsible Service, Most Responsible Provider, and Ordering Provider; review policies/practices and update education material as required.
- Incorporate education into physician onboarding.

## Recommendation 12: Refresh Downtime Processes

Third Party IHealth Review Recommendation	Island Health review down time procedures and the function of “down time computers,” and establish a preventative maintenance and testing schedule.	
Island Health Response and Action Plan Summary	<p>Downtime procedures and tools will be reviewed to ensure reliability of the processes, and maintenance of downtime computers. This action plan includes:</p> <ol style="list-style-type: none"> <li>1. Identification of deficiencies and gaps within existing downtime tools and procedures; implement updates to address identified issues/gaps.</li> <li>2. Education regarding resource and process changes.</li> <li>3. Documentation of preventative maintenance and testing (including hardware items).</li> </ol>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	Operations – Quality Systems (IM/IT)
	Responsible (Lead)	Quality Systems (IM/IT) – Clinical Informatics

### Progress and Plans

#### Activities Completed

- Education materials for downtime procedures have been reviewed, validated and updated; education has been provided to responsible staff at NRGH.
- Initiated discussions with clinical leads on requirements for more detailed unit-based processes for a Code Grey (system failure) event.
- Implemented new, more frequent preventative maintenance and testing process to ensure downtime computers are working as intended.
- Mock system downtime event planned for March 2, 2017 to practice downtime processes and procedures, and to identify opportunities for improvement.

#### Activities Planned

- Complete mock system downtime event and make improvements based on learnings.
- Audit new preventative maintenance process and provide feedback to responsible parties.
- Create an accessible inventory of clinical resources on the Island Health Intranet, available during both ‘uptime’ and ‘downtime’, and communicate to end users.

## Recommendation 17: CPOE in Urgent Situations

Third Party IHealth Review Recommendation	Island Health review their current practices with respect to paper ordering and how that process uses the team (physicians, nurses, support personnel, pharmacy and other departments) and develop a policy and process for computerized order entry in urgent situations that optimizes the process by fully utilizing the team and the system.	
Island Health Response and Action Plan Summary	<p>Ordering practices in urgent situations will be reviewed to ensure the policy and processes for Computerized Provider Order Entry (CPOE) are optimized, fully utilizing the team and the system. It is anticipated that the revalidation process will also inform actions related to this recommendation.</p> <p>The Orders Management and Decision Support Committee (a sub-committee of the TSS Council) will engage stakeholders from Critical Care and ED to discuss practice requirements and options to optimize roles and/or the tools, and identify recommended changes to policy, process and/or the CPOE toolset. Recommendations will be shared with the respective Critical Care and ED Program Quality Councils, and across other Program Quality Councils as appropriate. Approved changes will be implemented.</p>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable	Combined Quality Structure - TBD
	Report Out	EHR Quality Council, HAMAC, Quality Operations Committee
	Responsible (Lead)	Critical Care, ED, Practice, Informatics

### Progress and Plans

#### Activities Completed

- Consulted Canadian peer health systems on current practices as input to Island Health discussions.
- Discussed draft action plan with the Quality Operations Committee Task Force, and agreed to move forward with initial discussions at the Orders Management and Decision Support Committee.

#### Activities Planned

- Invite stakeholders from Critical Care and ED to Orders Management and Decision Support Committee to discuss requirements and options.
- Communicate activities to Critical Care and ED Program Quality Councils, and engage with Council Chairs to discuss timeframe and approach for discussions at the Council meetings.

## Recommendation 21: Refresh Training/Education

<p>Third Party IHealth Review Recommendation</p>	<p>Island Health incorporate the following into the education plan being developed for NRGH and future implementations:</p> <ol style="list-style-type: none"> <li>Provide clarification of the strategic goals of IHealth for users and reconcile differences in these goals with those of front-line care providers;</li> <li>Provide the rationale for workflow changes that will shift work between users (e.g., data collection, parameters for ordering or administrative tasks such as registration);</li> <li>Explain to every user, based on the work they do, how the system is organized, describe underlying assumptions, terminology, what background rules exist and how and when they are triggered and what they do to the data;</li> <li>Clarify the auditing functions that are operational in the background so that users are aware of when and how tracking of changes in data entry and orders is done and who has access to the audit trail;</li> <li>Develop a curriculum that provides individual training and knowledge for the trainee's role;</li> <li>Train teams so that members understand their roles and how the system will affect these roles and their interactions;</li> <li>Develop post-go live training for individuals and teams who want to optimize the system for their work (power users).</li> </ol>	
<p>Island Health Response and Action Plan Summary</p>	<p>Island Health will incorporate the recommendations into a revised training curriculum, including emphasis on the strategic aims and increasing understanding of the EHR at the individual and team level. Refresh training for providers, with a focus on medication orders management, will continue to be offered. Specialty-specific scripts will be developed to support Recommendation 23: Functional Revalidation, and future education activities. The curriculum will also be updated based on learnings from the revalidation process. It is anticipated that the timing and approach for any focused refresh training efforts will be informed through the revalidation efforts.</p>	
<p>Oversight and Accountabilities</p>	<p>Oversight</p>	<p>Island Health Executive Leadership Team</p>
<p></p>	<p>Accountable (Decision Making)</p>	<p>IHealth</p>
<p></p>	<p>Report Out</p>	<p>HAMAC, Practice and Operations Committee</p>
<p></p>	<p>Responsible (Lead)</p>	<p>Quality Systems – Education</p>

### Progress and Plans

#### Activities Completed

- Education material modified to include background on the rationale for specific EHR functionality, workflow changes, and the impact on interdisciplinary roles.
- Processes and resources established to support ongoing refresher education for all roles.

#### Activities Planned

- Continue to provide refresh training, including education on medication orders management.
- Support Recommendation 23: Functional Revalidation with development of additional speciality-specific scripts for medication orders management.

## Recommendation 25: Commit to Working Through Conflict

Third Party IHealth Review Recommendation	All parties re-commit to working through areas of conflict.	
Island Health Response and Action Plan Summary	<p>In support of this recommendation, the engagement of third party facilitation will be explored to support a healthy workplace culture across the NRGH site, and relationships and trust with medical staff.</p> <p>The Functional Revalidation process also provides an opportunity for all parties to come together with a shared purpose and to begin working together through areas of concern.</p>	
Oversight and Accountabilities	Oversight	Island Health Executive Leadership Team
	Accountable (Decision Making)	NRGH Clinical and Medical Leadership, others as required
	Responsible (Lead)	NRGH Clinical and Medical Leadership, Organizational Development, Medical Affairs

### Progress and Plans

#### Activities Completed

- NRGH site leadership, in collaboration with Organizational Development, drafted a Statement of Work for third party expertise to support building a workplace culture that reflects well-being in the healthcare setting.
- In person engagement between Island Health leadership and NRGH medical staff, including on-site shadowing, and discussions with a wide range of practicing physicians.
- In person meeting with the Nanaimo Medical Staff Advisory Committee and Island Health President and CEO, where the potential role of third party facilitation was explored. Invitation to discuss next steps sent to the Nanaimo Medical Staff Association (MSA) Executive.

#### Activities Planned

- NRGH site leadership, in collaboration with the broader site leadership team, finalize Statement of Work and post Request for Proposal (RFP) to secure third party expertise to support NRGH site workplace culture
- Engage with Nanaimo MSA Executive on next steps regarding the potential to engage third party facilitation.

## Recommendation 26: Action Island Health Policy as Required

Third Party IHealth Review Recommendation	Where violations of Island Health organizational policies are revealed, actions should be taken as defined by the relevant policy.	
Island Health Response and Action Plan Summary	<p>Island Health is committed to ensuring a safe and respectful workplace, and the related organizational policies apply to all Island Health employees, physicians, contractors, students and volunteers.</p> <p>Island Health values the opinions of all of these stakeholders, and encourages direct and open communication. Stakeholders are encouraged to resolve concerns at an early opportunity and in an informal way to maintain positive work relationships, which in turn, allow us to provide the best patient care possible.</p> <p>Where policies are violated, appropriate actions will be taken as defined by the relevant policy.</p>	
Oversight and Accountabilities	Oversight	Island Health Executive
	Accountable (Decision Making)	All Island Health Leaders
	Report Out	N/A
	Responsible (Lead)	All Island Health Leaders

### Progress and Plans

#### Activities Completed

- Third Party IHealth Report and recommendations shared and discussed with Island Health leaders through established forums, including Executive Leadership Team, expanded Executive Leadership Team (including all Executive Directors and Executive Medical Directors), the Health Authority Medical Advisory Committee, the Combined Quality Oversight Committee and Quality Operations Committee.

#### Activities Planned

- Operationalize this recommendation as part of Island Health’s ongoing commitment to a safe and respectful workplace.
- Action violations of policy as required, with focus on resolving concerns in at an early opportunity and in an informal way where possible.
- Close out reporting on this recommendation in the next reporting period.

## Appendix: Draft Accountability Structure for Recommendations<sup>1</sup>

Island Health					MoH
Combined Quality Structure	IHealth	Operations	HAMAC	Revalidation Oversight	
1. Limit maximum range doses					
2. Dose checking for high risk medications					
3. Monitor high risk medications					
4. Medications at transfer					
5. Multiple narcotics					
7. Monitor results distribution				6. MRP and copies to	
8. Monitor Message Centre					
9. Patient summary		10. Validate device association			
		11. Ensure system performance			
		12. Refresh downtime processes			13. Redesign PharmaNet
14. Simplify user interface	15. Canadian Terminology	16. Future activations - staffing			
17. CPOE in urgent situations		18. Staffing for NRGH ED – CPOE meds			
19. Medication ordering in the NRGH ED and ICU					
20. Workflow Redesign	21. Refresh training/ education				
	22. Clarify/refine Issue reporting				23. Revalidation
24. Go-Forward Plan		25. Commit to working through conflict			
		26. Action Island Health policy as required			

<sup>1</sup> \* Accountable Structure approves the action plans developed by responsible parties, and monitor progress against plan