Digital Health is Here To Stay:
Accelerating Electronic Health Records in Newfoundland and Labrador
March 31, 2015
Ian Hodder, B.Sc (HE), B.Ed, M.Ed – NLCHI
Heather Rumsey, RN, NP – LTC EH
Agenda

1. Introductions
2. NLCHI, Vision & Mandate
3. Digital Health and Nursing Practice
4. Electronic Health Record
5. HEALTHe NL Viewer & Nursing Practice, Uses & Benefits
6. Discussion
NL Centre for Health Information

- Board of Directors includes representation from the Boards and senior management of the Regional Health Authorities as well as other key representatives from the health care sector, MUN, Government, Health Professional Associations (NLMA, ARNNL, PANL), special interest groups/public.
The NL Centre for Health Information

Vision:

Improved health through quality health information.

Mandate:

To assist individuals, communities, health service providers and policy makers at federal, provincial and regional levels in making informed decisions to enhance the health and well-being of persons in the province by providing a comprehensive province-wide information system.
“I want you to find a bold and innovative way to do everything exactly the same way it’s been done for 25 years.”
Digital Health & Nursing Practice
CNA/CHI Survey


The survey sought to understand nurses’ perception and use of electronic health records.

*Nurses identify digital health can support quality of care by:*

- **Timely Access** to accurate and reliable information
- **Better** decision support and workflow
- **Enhanced** collaboration and communication
- **Increased** efficiency and avoided duplication
- **Improved** information management and education
Perceived benefits relate to improved patient care

Q21. In your opinion, what are the potential benefits associated with use of electronic record/clinical information systems in nursing practice: Check all that apply

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve continuity of patient care</td>
<td>78%</td>
</tr>
<tr>
<td>Improve communication between the care team</td>
<td>78%</td>
</tr>
<tr>
<td>Improve how nursing care is reported</td>
<td>72%</td>
</tr>
<tr>
<td>Improve patient safety</td>
<td>72%</td>
</tr>
<tr>
<td>Decrease in redundant data capture</td>
<td>72%</td>
</tr>
<tr>
<td>Improve turnaround time for lab/diagnostic results to make clinical decisions</td>
<td>71%</td>
</tr>
<tr>
<td>Improve clinical decision making</td>
<td>63%</td>
</tr>
<tr>
<td>Improve communication with external providers</td>
<td>59%</td>
</tr>
<tr>
<td>Improve operational efficiency</td>
<td>58%</td>
</tr>
<tr>
<td>Improve overall quality of care you provide</td>
<td>55%</td>
</tr>
<tr>
<td>Reminder to provide screening/preventive care for patient consultation</td>
<td>53%</td>
</tr>
<tr>
<td>Decrease the burden of administrative work</td>
<td>52%</td>
</tr>
<tr>
<td>Help you identify needed lab tests</td>
<td>50%</td>
</tr>
<tr>
<td>Reminder to provide care meeting clinical practice guidelines</td>
<td>50%</td>
</tr>
<tr>
<td>Enables continuous quality improvement</td>
<td>49%</td>
</tr>
<tr>
<td>Help you order fewer tests due to better availability of lab results</td>
<td>48%</td>
</tr>
<tr>
<td>Provide information for clinical quality improvement initiatives</td>
<td>47%</td>
</tr>
<tr>
<td>Facilitate patient education by using the computer screen information</td>
<td>45%</td>
</tr>
<tr>
<td>Improve capacity to assess clinical performance</td>
<td>44%</td>
</tr>
<tr>
<td>Facilitate direct communication with a patient</td>
<td>32%</td>
</tr>
</tbody>
</table>

Base: All respondents in clinical practice providing direct care (n=950)
Excludes those who responded: Not applicable - no electronic systems in place
Note: Only 3 respondents checked the category: No benefits associated with use in nursing practice
CNA/CHI Survey

Barriers

• Lack of consultation on ehealth use & system development
• Need for multiple log-ins
• Lack of training
NLCHI Initiatives

- **Telehealth** – utilization of telehealth applications and technology to assist in the delivery of equitable health care/services to the residents of NL, regardless of where they live.
- **Telepathology** – creation of a Provincial network enabling secondary consultation within NL and across jurisdictions.
- **Electronic Health Record** – comprehensive view of a patient’s medical history.
Electronic Health Record
Electronic Health Records (EHRs) are digital records of patients' medical history, stored and shared across healthcare systems. 

(Canada Health Infoway 2010)
### What about the EHR vs. EMR vs. EPR?

<table>
<thead>
<tr>
<th>Differentiating Factor</th>
<th>EHR</th>
<th>EMR</th>
<th>EPR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perspective</strong></td>
<td>Patient-centric</td>
<td>Provider-centric</td>
<td>Facility or system-centric</td>
</tr>
<tr>
<td><strong>End User</strong></td>
<td>Variety of health care providers</td>
<td>Primarily used by physicians and office staff</td>
<td>Primarily used by nurses, pharmacists and allied health professionals</td>
</tr>
<tr>
<td><strong>Setting</strong></td>
<td>Shared across the continuum of care</td>
<td>Typically contained within a clinic in a community setting</td>
<td>Typically contained within a facility (acute or continuing care setting) or pharmacy</td>
</tr>
<tr>
<td><strong>Time span</strong></td>
<td>Longitudinal – in theory, birth to death</td>
<td>Periodic – bounded by the length of the patient-provider relationship</td>
<td>Periodic – bounded by encounters with the facility or health region</td>
</tr>
<tr>
<td><strong>Level of detail</strong></td>
<td>Selected information (typically includes basic demographics; history; drug, laboratory and diagnostic imaging results) that can be shared across settings for a range of clinical purposes</td>
<td>Highly detailed – typically includes clinical notes to support physician decision-making</td>
<td>Highly detailed – typically includes clinical notes to support practitioner decision-making</td>
</tr>
</tbody>
</table>
## Vision

**DI Reports + more!**

**Community Medication**

**Physician EMR (future)**

**Lab Results**

**Immunizations (future)**

**Hospital Reports/Encounters/Clinical Reports**

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### Vision Diagram

- **Help**
  - **Logon**
- **Patient Details**
  - **Name:** GME00000
  - **Health:** Smith, Caroline
  - **Address:**
    - 100 Provincial Rd.
    - Edmonton, AB
    - T6E 1V5
  - **Phone:** 333-455-5945
  - **Email:**
    - caroline.smith@ghc.com
    - carolinesmith89@gmail.com

### Laboratory Test Results

- **Diagnosis:**
  - **Test:** Creatinine
  - **Result:** 0.95 mmol/L
  - **Date:** 12/30/2022
- **Diagnosis:**
  - **Test:** Calcium
  - **Result:** 2.50 mmol/L
  - **Date:** 12/30/2022

### Medications

- **Medication:**
  - **Name:** Enalaprilat
  - **Dosage:** 25 mg
  - **Frequency:** 1 x 1 daily
  - **Start Date:** 05/01/2023
  - **Stop Date:**

### Immunizations

- **Vaccine:**
  - **Name:** MMR
  - **Dosage:** 1st dose
  - **Date:** 02/12/2023

### Physician EMR (future)

- **Consultation:**
  - **Name:** Dr. Smith
  - **Date:** 05/10/2023
  - **Reason:** Annual Checkup

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### Community Medication

- **Prescription:**
  - **Name:** Allopurinol
  - **Dosage:** 300 mg
  - **Frequency:** 1 x 1 daily
  - **Date:** 05/01/2023

### Laboratory Test Results

- **Test:** Creatinine
  - **Result:** 0.95 mmol/L
  - **Date:** 12/30/2022
- **Test:** Calcium
  - **Result:** 2.50 mmol/L
  - **Date:** 12/30/2022

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### Immunizations

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### Physician EMR (future)

- **Consultation:**
  - **Name:** Dr. Smith
  - **Date:** 05/10/2023
  - **Reason:** Annual Checkup
Putting Individuals at the Centre of Care

NL EHR at the Individual Patient Level

The EHR is a critical component to help Individuals navigate a health system where quality information can better inform decision-making.

Adapted from: Cowell J; Alberta Health Quality Council, 2008
HEALTHe NL Viewer
Nursing Practice
Use & Benefits
HEALTHe NL VIEWER

Comprehensive Medical Information at Point of Care

- Medication profiles
- Clinical Documents
- Discharge Summaries
- Laboratory Data
- Medical Imaging Reports
- Encounters
The HEALTHe NL Viewer Release 2 – Patient Demographic Search
**CDV Tree**

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**BARRY_R2TEST, Preston Ehr_r2_us**

- **DOB**: 1961-Apr-22 (53 years)
- **SEX/GENDER**: Male
- **MCP**: 139611131679
- **Unit**: HCONS 000101088999
- **Postal Address**: 30351 BAYVIEW AVE, BOX 1103, ST DAVIDS, NL, CA, A0N 1X0
- **Phone**: (709) 639-9347 (Home)

### Demographics

- **Identifiers**: 139611131679
- **Sex/Gender**: Male
- **Date of Birth**: 1961-Apr-22 (53 years)
- **Postal Address**: 30351 BAYVIEW AVE, BOX 1103, ST DAVIDS, NL, CA, A0N 1X0
- **Phone**: (709) 639-9347 (Home)

### Allergy Summary

<table>
<thead>
<tr>
<th>Agent</th>
<th>Severity (Reactions)</th>
<th>Created Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLARITHROMYCIN</td>
<td>High</td>
<td>2014-Sep-19</td>
</tr>
<tr>
<td>NSAIDS (NON-STEROIDAL ANTI-INFLAMMATORY DRUG)</td>
<td>Moderate</td>
<td>2014-Sep-19</td>
</tr>
</tbody>
</table>

**Results 1-2**

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**Adverse Drug Event Summary**

<table>
<thead>
<tr>
<th>Agent</th>
<th>Severity (Reactions)</th>
<th>Onset Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>SULFA (SULFONAMIDE ANTIBIOTICS)</td>
<td>High (Conductive hearing loss, unilateral with unrestricted hearing on the contralateral side)</td>
<td>2014-Sep-19</td>
</tr>
</tbody>
</table>

**Results 1-1**
Document List

Patient Summary

Clinical Document (11 / 12)
- Magnesium (MAGNE) (1) SUSSEX, Dr. Bruce
- Lipid panel (FASTING) (LIPIDS(FASTING)) (1 / 1) SUSSEX
- Calcium (1 / 1) SUSSEX, Dr. Bruce
- Digoxin (1 / 1) SUSSEX, Dr. Bruce
- Uric acid panel (URINE PANEL) (2) SUSSEX, Dr. Bruce
- Sodium (SODIUM) (1 / 1) SUSSEX, Dr. Bruce
- Potassium (1 / 1) SUSSEX, Dr. Bruce
- Chloride (1 / 1) SUSSEX, Dr. Bruce
- Troponin cardiac (TRO1C) (1 / 1) SUSSEX, Dr. Bruce
- Glucose tolerance 2h (GLU.TOL.TEST) (1 / 1) SUSSEX
- Hepatic function panel (HEPATIC PANEL) (1 / 1) SUSSEX

Discharge Summary (2 / 2)

Laboratory (37 / 41)
- Blood Bank (18 / 18)
- Chemistry (10 / 12)

Hematology (2 / 3)
- Microbiology (5 / 5)
- Pathology (2 / 2)
- Medical Imaging (22 / 23)
Medication Profile

**Medication Summary (4 months)**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Prescriber</th>
<th>Prescribed Date</th>
<th>Status</th>
<th>Directions</th>
<th>Prescribed Quantity</th>
<th>Dispensed Quantity</th>
<th>Dispensed Days Supply</th>
<th>Dispensed Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep-Eze V Natural Caplets 100mg</td>
<td>BALL, Justin</td>
<td>2014-Sep-19</td>
<td>completed</td>
<td>TAKE AS DIRECTED</td>
<td>100</td>
<td>100</td>
<td>50</td>
<td>2014-Sep-19</td>
</tr>
<tr>
<td>Ventolin Inhaler 100mcg</td>
<td>BALL, Justin</td>
<td>2014-Sep-19</td>
<td>completed</td>
<td>INHALE 2 PUFFS UP TO FOUR TIMES DAILY AS NEEDED</td>
<td>900</td>
<td>200</td>
<td>30</td>
<td>2014-Sep-19</td>
</tr>
<tr>
<td>Apo-Furosemide 40mg</td>
<td>BALL, Justin</td>
<td>2014-Sep-19</td>
<td>completed</td>
<td>TAKE 1 TABLET ONCE DAILY</td>
<td>360</td>
<td>90</td>
<td>90</td>
<td>2014-Sep-19</td>
</tr>
<tr>
<td>Apo-Metoprolol 50mg</td>
<td>BALL, Justin</td>
<td>2014-Sep-19</td>
<td>completed</td>
<td>TAKE 1 TABLET TWICE DAILY</td>
<td>360</td>
<td>180</td>
<td>90</td>
<td>2014-Sep-19</td>
</tr>
<tr>
<td>Vicks Formula 44 Liq 30mg</td>
<td>BALL, Justin</td>
<td>2014-Sep-19</td>
<td>active</td>
<td>TAKE AS DIRECTED</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paracetamol 10mg</td>
<td>BALL, Justin</td>
<td>2014-Sep-19</td>
<td>active</td>
<td>TAKE 2 TABLETS ONCE DAILY</td>
<td>720</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other Medication Summary (4 months)**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Reported Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asaphan E.C. 81mg</td>
<td>2014-Sep</td>
</tr>
</tbody>
</table>

IMPORTANT: HEALTHN NL consolidates information from various source systems provinc-wide. While efforts are made to ensure accuracy and completeness, HEALTHN NL is not exhaustive and should not be relied upon as a sole information source in providing care. Patient data may exist in other health databases.
LIPID PANEL (FASTING) (6 months ago)

LIPID PANEL (FASTING) Cumulative

Information is available from 2014-Mar-26 to 2014-Dec-04

CHOLESTEROL (mmol/L) Showing from 2014-May-26 to 2014-Nov-28

TRIGLYCERIDE (mmol/L) Showing from 2014-May-26 to 2014-Nov-28
HEALTHe NL Users

By Provider

- **Total** HEALTHe NL Users as of February 14th, 2015 is **563**.

- Nurses and Nurse Practitioners total **442** of these users.
Feedback received from HEALTHe NL user surveys.

**Patient Safety/ Outcomes/ Care**
“I find this to be a CRUCIAL part of my work because it is important to have an accurate med profile for patients admitted to hospital. This system helps me clarify patient’s name, doses and decipher whether or not a patient is actually taking a certain medication (if they are unsure) by allowing me to see the last time it was re-filled.”  
*Hospital Pharmacist*

**Workflow Efficiency**
“It literally cuts the process from five steps down to one. You just log on, find the patient if they’re there, print off as opposed to having to call a pharmacy, ask to talk to a pharmacist, ask them to fax it over, waiting for the fax, get the fax and then give it to them. It definitely cuts down on a lot of steps.”  
*Nurse*

**Optimizing Clinical Decisions**
“A lot of patients come in without meds on file or they don’t bring in their list of meds. I’d have to get their medications quickly. They’d come in and they weren’t sure of what they were taking so I was using it pretty much every shift. I loved it. It’s excellent, it’s great.”  
*Nurse*
What Users Are Saying

• The RN went to give medication to an admitted patient in the ER and questioned the dosage the Doctor had ordered. She used the HEALTHe NL Viewer to check patient’s medication profile. -St. Clare’s Mercy Hospital, Emergency

• One of the patients that was admitted overnight had recently been discharged from the unit. The patient went to the drug store when he was discharged and picked up a medication that was previously ordered for him that no one at the hospital was aware he had an old prescription for. -Janeway Children's Health and Rehabilitation Centre - Psychiatry Unit

• “This is great, it will save time calling to Pharmacies”-Janeway Children's Health and Rehabilitation Centre - Psychiatry Unit
Additional Feedback

• “I was impressed! It showed the meds prescribed within the institution and the meds prescribed by the community pharmacy. This is great news for long-term care as we often have to go to multiple sources to get accurate drug information and this adds another safety dimension.”

• Utilizing the HEALTHe NL Viewer leads to improved efficiencies in filling medication orders! Without the EHR, if there is a question around a patient’s medication order/dosage the hospital pharmacist has to call the RN responsible and request verification of the correct information with the patient. This necessitates a relative bringing in the medications or the RN calling the patient’s pharmacy to request a medication profile, which often leads to delays in the prescription being filled and the patient receiving their medications.
HEALTHe NL Video

https://www.youtube.com/watch?v=7sOBSWkg5nU&feature=player_embedded

http://www.nlchi.nl.ca/
Discussion

• Can you recall a situation where as a nurse you wished you had more information, or you experienced a gap in information, which would have been resolved by accessing the HEALTHe NL Viewer?
THANK YOU!!!