PharmaNet Inter-Jurisdictional Collaboration: Connecting Provincial Pharmacy Data in Health Authority Systems

eHealth Conference
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Panel

Paul Squires, BC Ministry of Health
Project Director, Strategic Projects Branch

Cindy Convey, Fraser Health
Director, Corporate and eHealth Services

Todd Kinnee, Interior Health
Regional Manager, Health Information Standards and Exchange

Dr Mary Lyn Fyfe, Island Health
Chief Medical Information Officer
Coming together is a beginning.
Keeping together is progress.
Working together is success.

- Henry Ford.
## Organization Overview

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<th>Snapshot</th>
<th>Interior Health</th>
<th>Fraser Health</th>
<th>Island Health</th>
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<tr>
<td>Population Served</td>
<td>0.75 Million</td>
<td>1.7 Million</td>
<td>0.77 Million</td>
</tr>
<tr>
<td>Annual Operating Budget</td>
<td>$2.0 Billion</td>
<td>$3.3 Billion</td>
<td>$2.2 Billion</td>
</tr>
<tr>
<td>Hospitals</td>
<td>6 Regional Acute 16 Rural Acute</td>
<td>13 Acute 1 OP Centre</td>
<td>12 Acute</td>
</tr>
<tr>
<td>Residential Care Beds</td>
<td>6,584</td>
<td>7,760</td>
<td>6,426</td>
</tr>
<tr>
<td>Employees</td>
<td>19,000</td>
<td>25,900</td>
<td>19,600</td>
</tr>
<tr>
<td>Physicians</td>
<td>1,500</td>
<td>2,500</td>
<td>2,150</td>
</tr>
<tr>
<td>Volunteers</td>
<td>4,800</td>
<td>6,500</td>
<td>6,500</td>
</tr>
<tr>
<td>CIS Platform</td>
<td>Meditech v6.14</td>
<td>Meditech v5.66</td>
<td>Cerner Millennium®</td>
</tr>
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</table>

**Ministry of Health**

Provides funding & oversight.

Administers PharmaNet, the province-wide database that links all B.C. pharmacies to a central set of prescription data.
The PharmaNet Integration project supports the provincial vision to improve the delivery of patient care in British Columbia by expanding the use of electronic medication information management to facilitate seamless care.

Accreditation Canada – A Required Organization Practice (ROP).

It is a multi-year initiative implemented in a phased approach:

- Phase 1 includes the transmission of the medication profile from PharmaNet to participating Health Authority’s clinical information system to support electronic Best Possible Medication History (BPMH).
- Phase 2 includes the transmission of discharge medication reconciliation profile from Health Authority’s clinical information system to PharmaNet.
Project Background

- Electronic medication reconciliation is an identified interoperability priority of Canada Health Infoway and the BC Health Sector
- BC Health Sector IMIT common and shared interest initiative
- BC’s province wide PharmaNet system makes it possible
- Fraser Health, Interior Health & Island Health are early adopters
  - Island Health have two pilots in progress at its Oceanside Clinic and Nanaimo Regional General Hospital using Cerner
  - FH & Interior - Meditech CIS is deployed across both organizations
  - FH, Interior & Island Health - Actively integrated with the provincial electronic master patient index
  - NH and VPP have expressed interest in joining the provincial project
Understanding BPMH and Medication Reconciliation

Best Possible Medication History (BPMH)

**REVIEW (≥1)**
- Pill containers
- Patient’s list (+ non-Rx)
- Internal record
- External record

**VERIFY**
- Still taking?
- How much and when?

**DOCUMENT**
- Relevant items for each medication: name, dose, route, frequency in correct data fields

**RECONCILE**
- Initiate, modify, discontinue medications

**Medication Reconciliation**
A Required Organizational Practice

“Medication reconciliation requires a systematic and comprehensive review of all the medications a patient is taking to ensure that medications being added, changed, or discontinued are carefully evaluated.”

INSTITUTE FOR SAFE MEDICATION PRACTICES CANADA
Why are we doing this?

**Medication Use**
- Two thirds of seniors age 65 and older take 5+ medications.
- 40% of Canadians age 85 and older take >10 medications.

**Medication Reconciliation**
- 50% of patients have one or more medication discrepancy on admission.
- The most frequent discrepancies are drug omissions and ‘unordered’ drugs.

- Seniors hospitalized due to ADEs: 1 in 200
- Canadians hospitalized due to ADEs: 1 in 1,000
- 27,000 people 65 and over hospitalized each year due to ADEs.
Why are we doing this?

Prescribing 39% of Errors
- 38% Wrong Dose
- 19% Wrong Choice
- 12% Known Allergy
- 6% Wrong Frequency
- 4% Drug-Drug Interaction
- 2% Wrong Drug

Transcribing 12% of Errors
- 78% Illegible Signature
- 58% Time Missing
- 24% Order Incomplete
- 20% Order Illegible

Dispensing 11% of Errors
- 37% Decimal point error
- 23% Calculation error
- 19% Dosage misdivided
- 12% Dosage Not divided

Administering 38% of Errors
- 6,561 combinations of drug compatibilities
How is MedRec Completed Today?

- Electronic and Manual Processes
  - Printed PharmaNet Record
  - Island Health Piloting Electronic process
- BPMH and compliance is done on paper
- Reconciliation is done on paper
  - Stop, modify, continue
- New orders added
- Process is repeated upon discharge
Challenges with Manual BPMH and Medication Reconciliation

Care providers spend considerable time ‘assembling’ picture of current medications from multiple sources.

Patients and families are asked to provide information that they expect care providers already know.

Can be difficult to remember details of medications being taken.

Value/quality of medication reconciliation is highly dependent on BPMH inputs.

Manual transcription of medication details is time-consuming and error-prone.
How Would We Like To Complete It?

- Use PharmaNet dispensed medication information to complete a BPMH screen within the Clinical Information System
Best Possible Medication History

PharmaNet data is pulled into the EHR in a side-by-side view.

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Details for **warfarin (warfarin 2.5 mg oral tablet)**

- **Dose**: Oral
- **Route of Administration**: Daily
- **Frequency**: Daily
- **Duration**: 30 days
- **Dispense**: 30 tablets
- **Refill**: 30 tablets

**Drug Forms**: Tab

**Special Instructions**:

**Requested Refill Date**: 21-Sep-2015

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Additional_labels: Best Possible Medication History, PharmaNet data, EHR, side-by-side view, warfarin, warfarin 2.5 mg oral tablet.
### Electronic Medication Reconciliation

**Patient:** Pathnet, Lawrence E  
**PHN:** 0930146411  
**Encounter Number:** S02014277635  
**Gender:** Male  
**MRN:** 109760792  
**Age:** 54 years  
**DOB:** Jan-1961  
**LocUC-OhC:**  
**Allergies Not Recorded**

<table>
<thead>
<tr>
<th>Home Medications</th>
<th>Status</th>
<th>Orders Prior to Reconciliation</th>
<th>Status</th>
<th>Orders After Reconciliation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALPRAZOLAM (Xanax 0.25 mg oral tablet)</strong></td>
<td>Documented</td>
<td></td>
<td>Documented</td>
<td></td>
</tr>
<tr>
<td>1 tab, oral, TID, PRN for anxiety</td>
<td></td>
<td></td>
<td>1 tab, oral, TID, PRN for anxiety</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; Notes for Patient &gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>500 mg oral, BID</td>
<td>Documented</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; Notes for Patient &gt;</td>
<td></td>
</tr>
<tr>
<td><strong>chloralhydrate/PREXIDE-liquidum (chloralhydrate/prexide-liquidum 5 mg-2.5 mg oral ... oral, DAILY, Take two every day, discontinue if you experience side-effects such as...)</strong></td>
<td>Discontinue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ethchlorvynol</td>
<td>Prescribed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Piscadyl 200 mg oral capsule)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>200 mg, oral</td>
<td>ONCE, 30 tab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ethchlorvynol</td>
<td>Prescribed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Piscadyl 200 mg oral capsule)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See instructions. To be taken once daily(2) at approx the same time... &lt; Notes... &gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>naloxone-oxideCODONE (Targin 5 mg-10 mg oral tablet, extended release)</td>
<td>Documented</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>To be taken (twice) daily... &lt; Notes for Patient &gt;</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>warfarin (warfarin 2.5 mg oral tablet)</td>
<td>Documented</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 tab, oral, DAILY, 30 tab - Still taking, not as prescribed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 tab, oral, DAILY, 30 tab</td>
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Change Management

- Multidisciplinary Change Management Team
- Active, visible Clinical Executive Sponsorship
- Physician Participation, Engagement and Leadership
- Clinical workflow Redesign
- Emergency Department Time Pressure
- Coordination and Usability of IT Infrastructure is critical
- Evaluation and Benefit Assessment / Realization
Our Strategy

- “Big 5”
- Standing Committee on IM/IT Action Plan
- Primary Care Home
- Integrated project plan
- Connecting Phase 2 with ePrescribing
Collaborative Governance
Enablers to Working Inter-Jurisdictionally

- Patient wellbeing & clinical need
- Sense of shared goals
- Formal structures
- Subject Matter Experts
- Collaboration technologies
- Executive support in each organization
- Canada Health Infoway support
- Strong vendor relationships
Challenges & Opportunities

- Collaboration technologies
- Perspectives: clinical practice vs. policy
- Decision making ability and formal communication
- Overall project schedule coordination
- Standards
- Different clinical workflows
- Different Health Authority technical approaches
Experience/Learnings to Date

- Importance of pilot implementations (Island Health)
- Periodic face to face meetings
- Clinical demonstrations of current state within the Health Authority to understand workflows
- PharmaNet limitations/ HA proposed resolutions to address clinical workflow
- Complexity of coordinating technical and development changes
- No simple integration projects
Next Steps

- Vendor conformance testing
- Pilot sites Go Live in Interior Health
- Third pilot site Go Live in Island Health
- Pilot sites Go Live in Fraser Health
- Pilots across the continuum of care
- Rollout across acute care facilities
- Reach out to other health authorities
- Canada Health Infoway Checkpoint
- Benefits evaluation & lessons learned
Questions