



Strategies Used in Canada to Implement EMR Standards to Support Quality Improvement and Health System Management

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Outline

1. CIHI Overview

- Background
- PHC EMR Content Standard and Clinician Friendly Pick Lists

2. Jurisdictional Insights and Implementation Strategies

- Manitoba
- Nova Scotia

3. Conclusion

CIHI's Vision



Better data.
Better decisions.
Healthier Canadians

Background

- CIHI active in the Primary Health Care (PHC) space since 2008:
 - PHC VRS prototype[†]
 - EMR Content Standard Development
 - Primary Care Indicators, Surveys and Analytical Reports

[†] The PHC VRS was decommissioned in December 2013.

Strategic Review Findings

- EMR implementation and data collection proceeding at jurisdictional pace, with variation in readiness and potential for adoption
- EMR data is non-standard, unstructured and mostly free text
 - Process to extract, manipulate and analyze data very labour intensive and not sustainable
- Support for PHC EMR Content Standards (PHC EMR CS)
 - Smaller set of data elements (from 106 to 45)
 - Focus on delivering highest Health System Use value (e.g. health concern, reason for visit)
 - Need for smaller, constrained clinician-friendly pick lists (i.e. term and code values for data elements such as health concern)

Overview of EMR CS Priority Subset

- **45** priority data elements; support 24 CIHI PHC indicators
 - Response to environmental scan
 - Accelerate implementation
 - Aligned to jurisdictional priorities
- **Endorsed** by the Jurisdictional Advisory Group
- **Primary Objective:** Jurisdictions include the pan-Canadian PHC EMR CS priority subset in their EMR vendor requirements (to support improvements in care delivery and health system management)
- **Updated Products** (Business View, data models, technical guide):
<https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC2576&lang=en>

PHC EMR Content Standard

Priority Subset and Clinician-friendly Pick lists

DE #	Data Element Name	DE #	Data Element Name
A1	Patient Identifier	E29	Height Unit of Measure
A2	Patient Identifier Type	E30	Weight
A3	Patient Identifier Assigning Authority	E31	Weight Unit of Measure
A4	Patient Date of Birth	E34	Clinician Assessment
A5	Patient Gender	F1	Intervention (Treatment)
A9	Patient Status	F2	Intervention (Treatment) Date
A14	Patient Postal/Zip Code	G1	Lab Test Ordered
B4	Clinician Identifier	G2	Lab Test Ordered Date
B5	Clinician Identifier Type	H1	Lab Test Performed Date
B6	Clinician Identifier Assigning Authority	H2	Lab Test Name
B7	Clinician Role	H3	Lab Test Result Value
C1	Service Delivery Identifier	H4	Lab Test Result Unit of Measure
C4	Service Delivery Postal Code	I1	Diagnostic Imaging Test Ordered
D1	Appointment Creation Date	I2	Diagnostic Imaging Test Ordered Date
D2	Reason for Visit	J1	Diagnostic Imaging Test Performed Date
D3	Visit Date	K1	Referral
D4	Visit Type	K2	Referral Requested Date
E11	Health Concern	L1	Referral Occurred Date
E12	Health Concern Date of Onset	M1	Prescribed Medication
E14	Social Behaviour	M2	Prescription Date
E23	Systolic Blood Pressure	O1	Vaccination Administered
E24	Diastolic Blood Pressure	O2	Vaccination Administered Date
E28	Height		

Clinician-Friendly Pick Lists (CFPLs)

CFPLs: 8 constrained lists of common clinical terms used in practice by clinicians; terms will be mapped to an appropriate code system

Objective: Accelerate jurisdictional adoption of EMR CS Priority Subset and structured data capture at the point of care for priority data elements:

- *Health Concern*
- *Clinician Assessment*
- *Reason for Visit*
- *Intervention*
- *Social Behaviour*
- *Referral*
- *Diagnostic Imaging Test Ordered*
- *Vaccine Administered*

CFPL Validation (Mar 2014): Clinicians, Nurse Practitioners, Decision Support Specialists and Canada Health Infoway engaged

Context

- Electronic Medical Records (EMR)
 - Three Manitoba-approved products
 - 70% adoption by family physicians

- EMR data for Health System Use
 - using EMR data to measure PHC indicators since 2006 (Physician Integrated Network) and for Chronic Disease Management payments 2+ years
 - Approximately 150 clinics currently submitting data extracts to a central repository

Next Steps & Challenges

Move from:

- EMRs support clinics working in isolation
- EMRs that are primarily physician-oriented
- EMRs that place a high value on flexibility – e.g. configurability and free text
- Current data extract designed specifically for certain PHC indicators

To:

- EMRs support Patient Medical Homes working in a network
- EMRs that are interprofessional team-oriented
- EMRs that balance flexibility with standardization to support clinical information exchange and consistent meaning for CQI
- Extract that is more general, extensible and reusable for multiple purposes

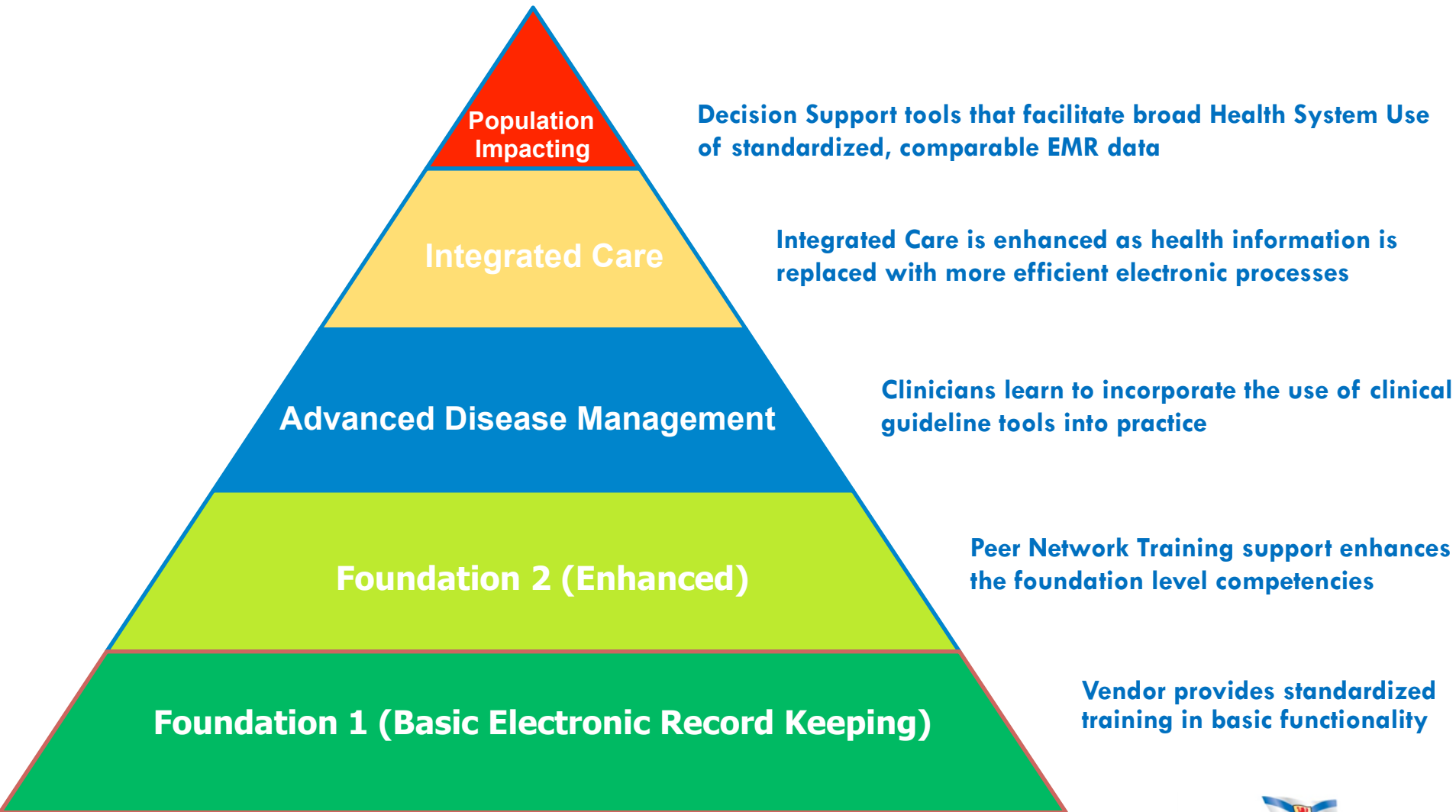
Strategic Approach to EMR Evolution

- ✓ Involvement of practicing clinicians (e.g. Peer Leader group)
- ✓ Priority on clinical care – HSU should be a by-product
- ✓ Emphasis on clinician CQI needs – at clinic and network level – as well as provincial use
- ✓ Clear three-way communication among clinicians, vendors and health system leaders
- ✓ Feedback loop to improve data quality: clinicians must use data in order to care about quality
- ✓ Support for multi-jurisdictional standardization where practical
- ✓ Incremental approach to increasing breadth and standardization of data
- ✓ Trust through transparency: explain **why** data is being collected and in what form; the **how** can follow

Nova Scotia Context

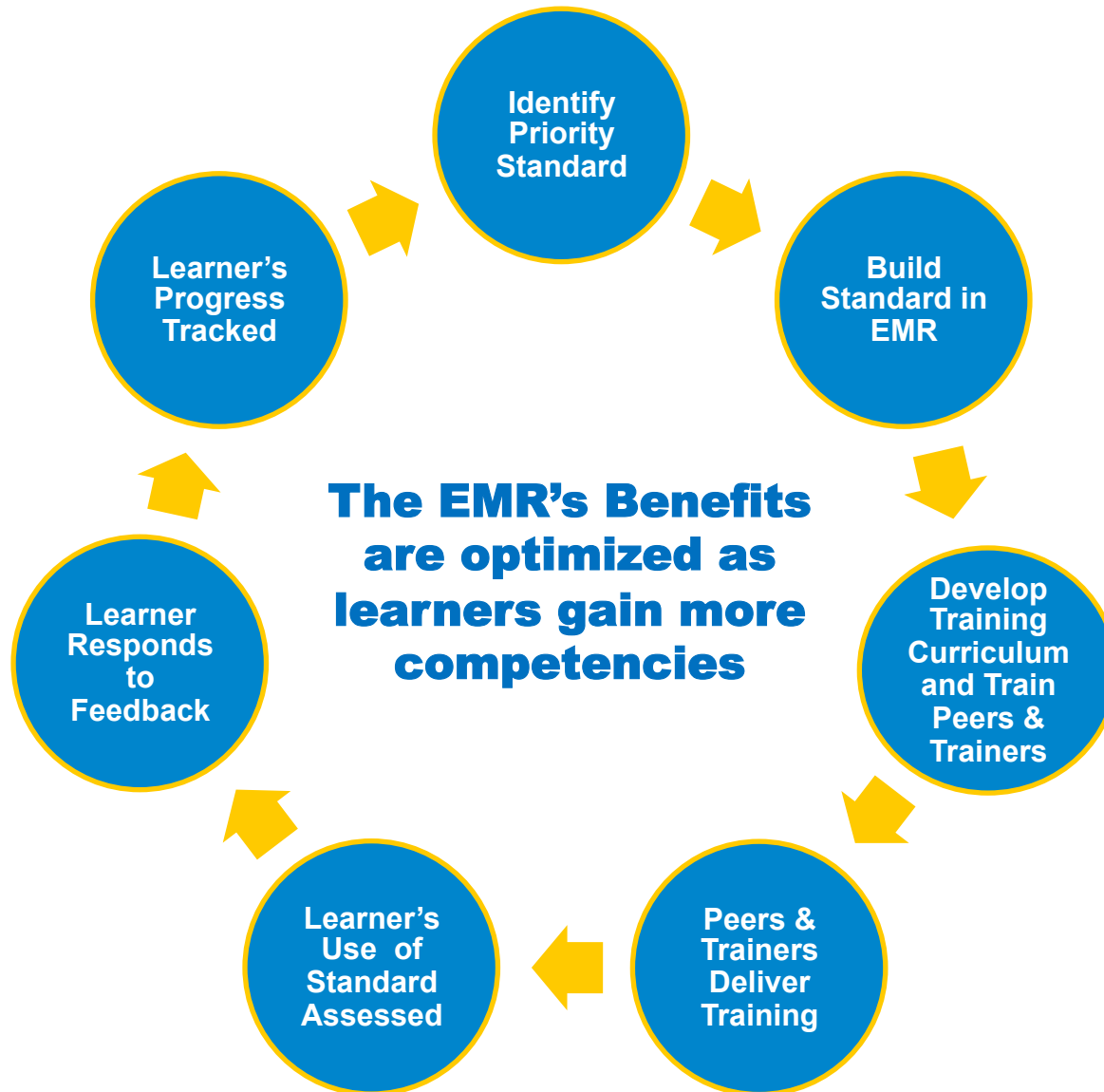
- 940,000 Citizens
- 9 District Health Authorities (DHAs) plus IWK into one
- More than 40 Healthcare Facilities:
 - Tertiary Care Hospitals
 - Regional Hospitals
 - Community Hospitals
 - Community Health Centres
 - Collaborative Emergency Centres
- Over 3000 Acute Care Beds
- More than 350 clinical software applications
- 2481 Physicians:
 - 1026 General Practitioners
 - 1455 Specialists
- 5.4 million Office Visits/year
- 425,000 Clinic Visits/year
- 124,000 Day Surgeries/year
- 573,000 Emergency Department Visits/year
- 4.3 million Hospital Registrations annually (Admissions/Discharges/Transfers)
- 31.5 million DI and Lab test results yearly

NS Adoption & Integration Maturity Model*



*Based on COACH Maturity Model

NS Model Builds Capacity to Capture Standardized Structured Comparable EMR Data



NS Model Builds Capacity to Capture Standardized Structured Comparable EMR Data

Clinician Drivers

Using standards helps clinicians know how they are doing

- improving access to care, quality of care, outcomes, overall patient care.
- Improving practice efficiency



Health System Drivers

Improves System Planning & Accountability



CPCSSN - Maritime Family Practice Research Network

**51 family physicians, 7 NPs
(N= 55,693 based on 2 year contact group)**

66% recorded BP in the past 24 months

65% Full fasting lipid profile measured

65% Full fasting lipid profile measured

94% Patients with Diabetes visit in the past 12 months

80% HbA1C done in past 12 months

78% LDL done in past 12 months

87% BP checked in past 12 months

94% Patient with hypertension visit in the past 12 months

60% AC glucose measured in non diabetics in past 12 months

34% BMI checked in past 12 months

51% ACR done in past 12 months

NS Opportunities

- Continue to increase EMR adoption and maturity of use
- Teach clinicians how to use their own data for practice based population health
- Socialize the benefits of HSU of data
- Expand access to data beyond health research (CPCSSN) to include using data for clinical program planning, population health management and health system management
- Engage vendors in discussion on standards to enhance the consistency and accuracy of data and improved query/reporting functionality
- **NS research demonstrates that clinicians who see their data are motivated to improve the capture of structured comparable data**

Next: Renewed EMR Strategy & alignment with vision for OPOR

Conclusion

1. The PHC EMR CS Priority Subset and CFPLs are the foundation to enable high quality, standardized EMR data for point of service and health system use needs
2. CIHI is collaborating with jurisdictions and clinicians to ensure that the Priority Subset and CFPLs are aligned to priorities and information needs

3. Other implementation enablers needed

*jurisdictional and clinician leadership
collaborative partnerships,
capacity-building*

*data governance
change management
engagement*



Thank You

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