Enabling Learning Health Systems in Quebec through Electronic Medical Records

Institut national d'excellence en santé et en services sociaux Québec

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Presenter Disclosure

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How EMR (Electronic Medical Records) can support a LHS (Learning Health System)

Relevant Activities in Quebec

Recommendations

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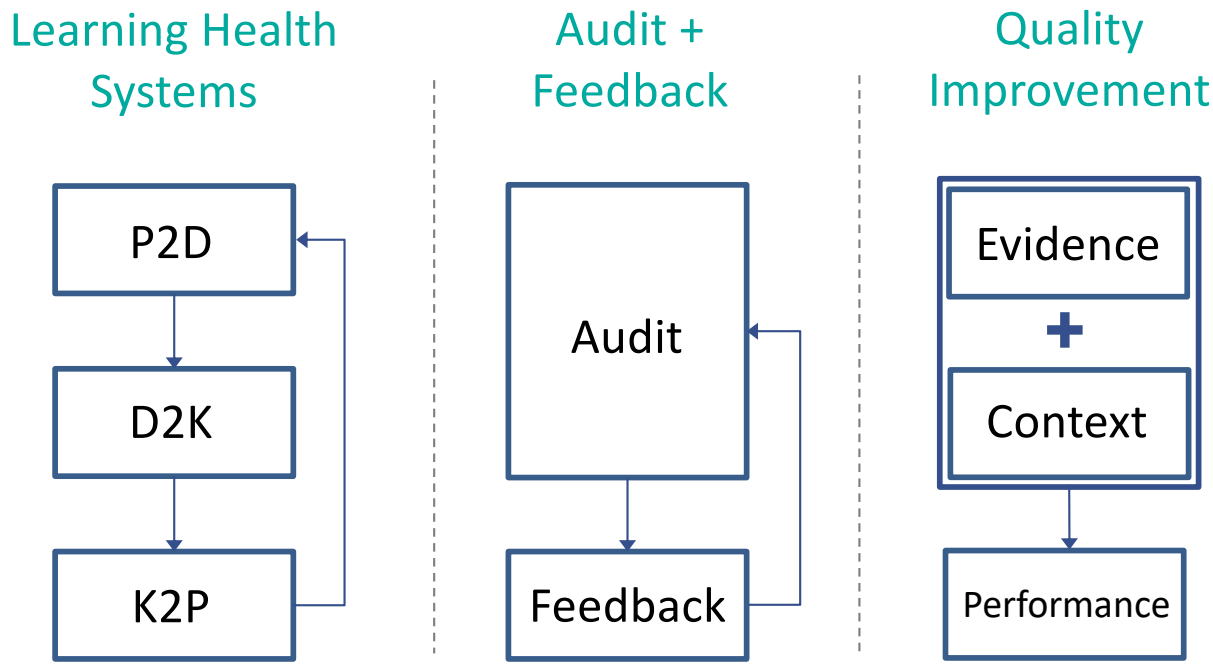
LHS and Related Theories



P2D: Performance-to-Data; D2K: Data-to-Knowledge; K2P: Knowledge-to-Performance

EMR Opportunities for LHS

P2D: Enables routine completion of learning cycles; data collected as care delivered

D2K: Manner of data collection determines inference possible from data

K2P: Routine use of EMR ensure platform for feedback

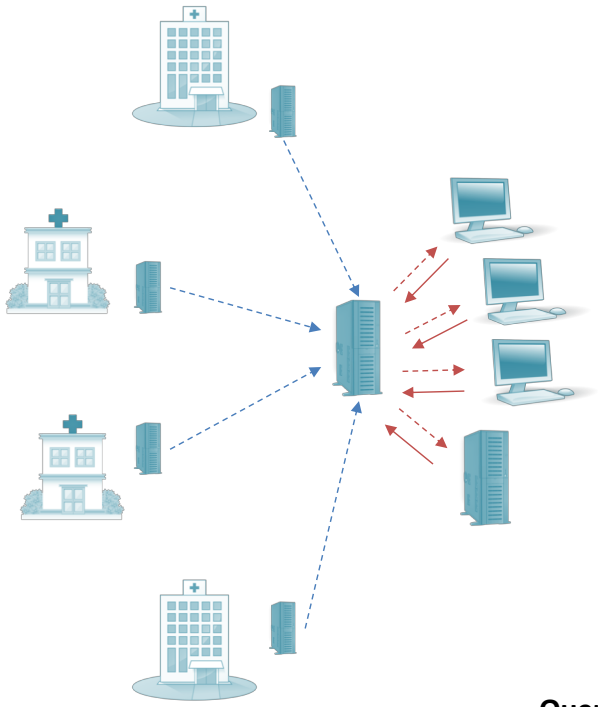
EMR Challenges for LHS

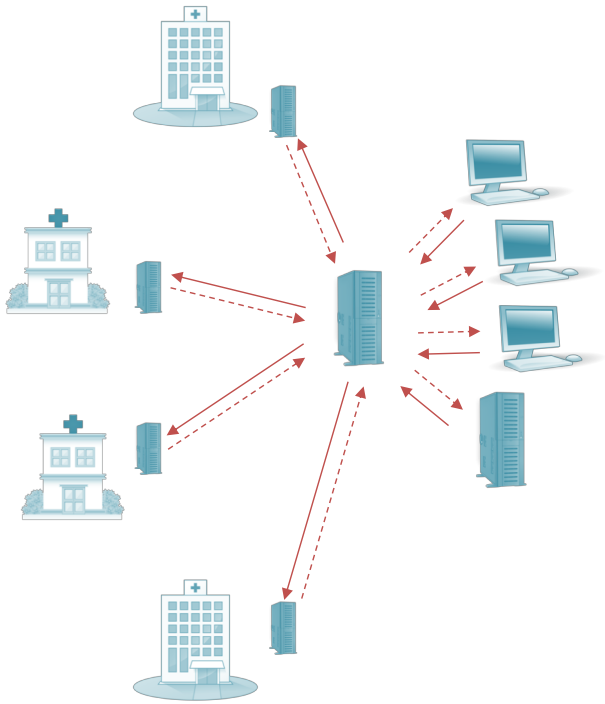
P2D: Performance data not always captured by EMR; difficult to extract data from EMR

D2K: Information lost in extraction; data structure and meaning differ across EMRs

K2P: Feedback difficult through commercial systems; evidence for safe behavior change

Centralized vs. Distributed Approach





Data centralization

Query or analysis request

Query or analysis response

Centralized

Distributed

International Examples

Distributed

PopMedNet in USA; Transform in Europe.

Implementation mainly for or as research.

Centralized

Leading vendor in USA with mappings to > 60 EMR.

Simple, effective technology based on public cloud.

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Approach to Assessment

Framework

- Project and system
- LHS functions
- Use in Quebec

Literature Review and Interviews

Validation

CPCSSN

Project and System: Initial focus primary care research, now quality; Centralized approach, Canada-wide.

LHS Functions: Extracting data from three types of EMR in Quebec; dashboards for feedback.

Use in Quebec: Two PBRN (UdeM and McGill), 80K patients; funded by research grants.

Reflet

Project and System: Supports quality improvement in primary care in Quebec; Centralized approach.

LHS Functions: Extracts data from one type of EMR; Variety of mechanisms for feedback.

Use in Quebec: Ten GMF in one region with 123K patients; funded by MSSS and INESSS.

$PARS_3$ (Plateforme apprenante pour la recherche en santé et services sociaux au Québec)

Project and System: Technology intended to support many uses of distributed EMR data; Based on approach used in Transform project.

LHS Functions: Sophisticated extraction approach; Other functions under development.

Use in Quebec: Pilot implementations underway; supported by SPOR Support Unit.

Synthesis of Activities in QC

Project and System: Reflet closest to LHS concept; CPCSSN Canada-wide and moving towards quality; PARS3 has broadest scope, but least mature.

LHS Functions: Specialized extraction software challenging; D2K developed within each project; Increasing attention to K2P.

Use in Quebec: Reflet and CPCSSN implemented broadly through research, pilots; PARS3 at pilot.

Challenges Scaling to All of Quebec

No clear path to rapidly scale to province-wide EMR data access for LHS

Prominent barriers include

- Data extraction from EMR
- Consent model
- Technology development and adoption

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Strategic Recommendations

Enable Access to EMR Data

- Clarify and communicate legal context
- Implement incentives / requirements
- Establish data standards

Establish a Shared Vision for Learning from EMR

- Consider successful models at scale
- Create vision, timeline
- Establish priorities for infrastructure, legislation

Operational Recommendations

Examine Potential of Existing Infrastructure

Leverage extensive investment in centralizing clinical and administrative data (RAMQ, DSQ) in Quebec to enable provider and clinic feedback about quality of care.

Support Projects that Foster Learning Culture

CPCSSN and Reflet continue to generate important advances in community culture and methods for LHS.

PARS3 technology has great potential if adopted widely within a sustainable governance model.