Interoperability to Support a Learning Health System

HL7 Learning Health Systems Workgroup
The Triple Aim

- Improving the experience of care
- Improving the health of populations
- Reducing per capita cost of healthcare

~

Donald Berwick, 2008
Burning Platform: Overwhelming Complexity

- Proteomics and other effector molecules
- Functional Genetics
  - Gene expression profiles
- Structural Genetics
  - e.g. SNPs, haplotype
- Decisions by Clinical Phenotype

Sets of Facts per Decision

- Human Cognitive Capacity

The Origin of the Concept

Best Care at Lower Cost: The Path to Continuously Learning Health Care in America

~ Institute of Medicine, 2012
What system?

Learning Healthcare System
Capabilities in a Learning Health System

- Data mining administrative and clinical data captured in the course of care to monitor drugs, devices, & immunization safety
Capabilities in a Learning Health System

- Point of care trials and other methods of comparative effectiveness research
Capabilities in a Learning Health System

- Point of care identification of individual risk
- Evaluation of potential benefit of different courses of treatment
Capabilities in a Learning Health System

- Clinical guidelines and clinical decision support as part of a continuous feedback loop with iterative improvement
Capabilities in a Learning Health System

- Clinical guidelines allow deviation from established standard, capture logic for deviation as well as outcomes from different treatments
Capabilities in a Learning Health System

- Rules based real-time analytics in environments which generate large collections of data, such as intensive care settings, to combat information overload for clinicians
Capabilities in a Learning Health System

- Large collaborative networks share data, allow researchers to study the effects of differing local health policies & differing payment design
Characteristics of a Learning Health System

- Seamless interoperability
- Rapid transfer of new knowledge to care setting
- Reuse of data for multiple purposes
- Feedback of data from individuals to system
HL7 Learning
Health Systems Workgroup

Focus: domain analysis from a system level of a learning health system
Where do we start?

Domain analysis model for the patient-centered care team.

- Everyone who touches the patient
- Family members and community services
- What are the care team members relationship to this individual patient
- Information flow
- Consent management
Questions