Positively Affecting Patient Care with Interoperable Systems: Lessons from the Bedside

Intermountain Healthcare
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Intermountain Healthcare

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No conflicts to disclose
Learning Objectives

- Discuss the value proposition for the implementation of interoperable systems at Intermountain Healthcare
- Identify the various interoperable technologies in place at the bedside
- Articulate the challenges and opportunities encountered when implementing technologies that communicate with one another
Intermountain Healthcare

- Investment in interoperability
- Improved care through connectivity
- Learning from our sharing community
Possible metaphors

• Journey of continuous refinement
• Territorial boundary dispute
• Quixotic mission
“Helping people live the healthiest lives possible”
STEPS model for value

HiMSS
• Satisfaction
• Treatment/Clinical
• Electronic Information/data
• Prevention/Patient Safety
• Savings

Clinical Programs at IH
• Identify outcome or process variability
• Evidence-based interventions
• Data capture and analytics
• Measured outcome
• Cost impact
In Pursuit of Coordinated Care
Continuum of interoperability

Device integration
- Common medical terminology
- Data reuse and analytic support
- Longitudinal patient records
- Document-based exchange
- Discrete data exchange
50 years seeking Interoperability

Intermountain can only provide the highest quality, lowest cost health care with the use of advanced clinical decision support systems integrated into frontline clinical workflow.

Dr. Homer Warner
30,000 babies each year
45 minutes to locate prenatal data
Transition to Pediatrics
Eradicating neonatal hyperbilirubinemia

Point of care labs
Community care plan
One step ordering
Intermountain: SMART Neonatal Bilirubin Alerts

**SMART Bilirubin Tool**

**Hour Specific Bilirubin Risk Chart for Term & Near-Term Infants with NO Additional Risk Factors**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Result</th>
<th>Age (Hrs)</th>
<th>Value: Test</th>
<th>Risk Zone</th>
</tr>
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<tbody>
<tr>
<td>11/21/2005 06:00</td>
<td>4.5</td>
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<td>Bill Meter</td>
<td>High Intermediate Risk Zone (75-95%)</td>
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</tbody>
</table>
SMART on FHIR – Open EHR Platform (HIMSS Demo)

SOA Orchestration

mHealth

OAuth

Clinical Element Models & FHIR Data Profiles

Exhibiting Health IT Systems

Cerner
Booth# 6965

Intermountain Healthcare
Booth# 3903

HARRIS
Booth# 1164

HP
Booth# 1949

http://smartplatforms.org/smart-on-fhir/
Ski town EHR Connectivity
60% of admissions have external EHR data, 30% have relevant data.
Anticipating where health data are needed for timely decisions

The audacious HIE challenge
**Anticipating where health data are needed**

- *All* relevant data contribute regardless of source
- Delivery specifics may change midstream
- Data must move on the open networks
Newborn Data Bundle

- Linked results from state laboratory screenings
- Demographic changes
- Relevant data from prenatal and delivery care
- Relevant data from family history
- New pediatrician
- High admission and readmission rates
Newborn Care Coordination

- Person disambiguation, record link
- Demographic update
- Data get for prenatal and delivery care
- Data get for family history
- Provider schedule link
- Provider attestation link through search
Calls to the Poison Control Center

• Demographic ambiguities
• Referral uncertainties
• Lab result consultation
• Case resolution
Poison Control Care Coordination

- Person disambiguation, record link
- Provider attestation link through search
- Lab result Push/Subscriber
- Administrative closure
Essential Services for Coordinated Care

Disambiguation for persons
Delivery preferences for provider
Discovery of a patient’s care team
Determination of patient’s legal proxies
Digital policies for anticipating data moves
Discussion