Using Technology to Improve Care Transitions: The IMPACT Project

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DISCLAIMER: The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of HIMSS.
Conflict of Interest Disclosure
Craig Schneider, Ph.D
Lawrence Garber, MD

Have no real or apparent conflicts of interest to report.
Learning Objectives

• Express the goals and objectives of the IMPACT project

• Explain the tools that convert the paper transfer form to electronic, and that translate clinical data into consumer-friendly language

• Discuss the system for enabling providers across the continuum of care to participate in the health information exchange

• Evaluate the success of the project to date and the role of the learning collaborative

• Analyze the replicability of this model to other communities
Mathematica Policy Research

• Mission is to improve public well-being by bringing highest standards of quality, objectivity, and excellence to our information collection and analysis

• About 1000 employees across 6 offices, HQ in Princeton

• Research affiliates:
  – Center for Studying Health System Change
  – Center for Studying Disability Policy
  – Center for Improving Research Evidence
  – Center on Health Care Effectiveness
  – Center for International Policy Research & Evaluation
Reliant Medical Group formerly known as Fallon Clinic

• 300+ provider multi-specialty group practice
• 30 specialties, 23 sites in central Massachusetts
• 200,000 patients with over 1 Million visits/year
• Not-for-profit
• Member of Atrius Health (1000+ physicians)
The Post-Acute Care Problem
PAC costs rising faster than acute care costs

Source: MedPAC, 2008

DeJong 2010
Transitions With PAC Are Costly

- 15% of ER admissions and $8b wasted annually from ADEs could be avoided if outpatient information known
- 1.5m preventable adverse events annually nationwide from discharge treatment plans not followed
- 20% of patients readmitted within 30 days. Preventable readmissions waste $577m in MA and $25b US annually
Solving The
Post-Acute Care
Problem
Care Transitions Forum

- Co-chairs: MCPME, DPH, MHDC
- 230 members, over 150 orgs
- Developed Strategic Plan for state
- Coordinate multiple CT projects being implemented in MA
Strategic Plan

Principles

• Timely feedback and feed forward of information
• Communication Infrastructure to support efforts to improve CT
• Patient and Family Engagement is essential
• Accountability for care during transition remains with sending providers until receiving providers acknowledge responsibility
• Provider and Practice Engagement are essential
• Improvement in CT assessed using standardized process and outcome measures
• Payment should evolve towards approach that aligns incentives of providers, insurers, and patients to maximize accountability and minimize adverse events
Care Transitions Projects in MA

- STAAR
- INTERACT II
- MOLST
- LifeBox
- BOOST
- RED
Care Transitions
Projects in MA (2)

- Partners
- Pressure Ulcer Collaborative
- GBAF4Q
- ADRCs and SCOs
- CCTP
- IMPACT
February 2011 – HHS/ONC awarded 1 of 4 $1.7M HIE Challenge Grants to Mass. (MTC/MeHI):

**Improving Massachusetts Post-Acute Care Transfers (IMPACT)**
• Facilitate developing a national standard of data elements for transitions across the continuum of care
• Develop software tools to acquire/view/edit/send these data elements (LAND & SEE)
• Develop software to transform summary into a consumer-friendly format
• Integrate and validate tools into Worcester County using Learning Collaborative methodology – building on cross-continuum teams (STAAR)
• Measure outcomes
Why Worcester County?

• 2 STAAR initiatives
• 11 INTERACT nursing facilities
• 7 MOLST sites
• 6 PCMH sites
• 4 UTF pilot sites
• Experience with HIEs, including SAFEHealth
• 85% of healthcare stays within county
• Pilot sites will be able to study:
  – 90k patient xfers/yr (45k unique patients)
  – 50k commercial pts with all claims data
  – 20k Medicare Advantage pts with all claims data
  – 12k Medicaid patients with all claims data
Developing National Standards to Support Long Term and Post-Acute Care (LTPAC) Needs
• **Traditionally** – What the *sender* thinks is important to the receiver

• **Future** – Also take into account what the *receiver* says they need
Stakeholders/Contributors

• State (Massachusetts)
  – MA Universal Transfer Form workgroup
  – Boston’s Hebrew Senior Life eTransfer Form
  – IMPACT learning collaborative participants
  – MA Coalition for the Prevention of Medical Errors
  – MA Wound Care Committee
  – Home Care Alliance of MA (HCA)

• National
  – NY’s eMOLST
  – Multi-State/Multi-Vendor EHR/HIE Interoperability Workgroup
  – Substance Abuse, Mental Health Services Agency (SAMHSA)
  – Administration for Community Living (ACL)
  – Aging Disability Resource Centers (ADRC)
  – National Council for Community Behavioral Healthcare
  – National Association for Homecare and Hospice (NAHC)
  – Transfer of Care & CCD/CDA Consolidation Initiatives (ONC’s S&I Framework)
  – Longitudinal Coordination of Care Work Group (ONC S&I Framework)
  – ONC Beacon Communities and LTPAC Workgroups
  – Assistant Secretary for Planning and Evaluation (ASPE)/Geisinger MDS HIE
  – Centers for Medicare & Medicaid Services (CMS)(MDS/OASIS/IRF-PAI/CARE)
  – INTERACT (Interventions to Reduce Acute Care Transfers)
Single dataset for all transitions?

- 175 element CCD
- 325 element IMPACT for LTPAC needs
- 480+ elements for Longitudinal Coordination of Care

Many transitions don’t need all data → unnecessary sender work
### Transitions From (Senders) to (Receivers)

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<tr>
<th>Transitions From (Senders)</th>
<th>In Patient Acute Care Hospitals</th>
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<th>Outpatient Services</th>
<th>Behavioral Health Inpatient</th>
<th>LTAC</th>
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<th>SNF/ECF</th>
<th>HHA</th>
<th>Hospice</th>
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### Prioritize Transitions by Volume, Clinical Instability, and Time-Value of Information

**Transitions to (Receivers)**

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**Legend**
- Black circles = highest priority
- Green circles = high priority
“Receiver” Data Element Survey

- 1135 Transition surveys completed
- Largest survey of Receivers’ needs
- 46 Organizations completing evaluation
- 12 Different types of user roles

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<th>From Acute Care Hospital</th>
<th>From Emergency Department</th>
<th>From Skilled Nursing Facility</th>
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<td>72</td>
<td>Chief Complaint</td>
<td>Required</td>
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<td>73</td>
<td>Reason Patient is being referred</td>
<td>Required</td>
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<tr>
<td>74</td>
<td>Reason for Transfer</td>
<td>Not needed/No</td>
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<td>75</td>
<td>Sequence of events proceeding patient's disease/condition</td>
<td>Optional</td>
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<td>76</td>
<td>History of Present Illness</td>
<td>Required</td>
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</table>
12 User Roles

- Patient, 4
- OT, 16
- PT, 23
- MD, 17
- Case Manager, 20
- EMT, 3
- Care Transitions, 2
- Admin, 29
- Social worker, 19
- ST, 16
- Tech, 2
- RN, 37
Findings from Survey

• Identified for each transition which data elements are required, optional, or not needed
• Each of the data elements is valuable to at least one type of Receiver
• Many data elements are not valuable in certain care transition
• A single paper form can’t represent this variability in data needs
• Can be grouped into 5 types of transitions
1. **Report from Outpatient testing**, treatment, or procedure

2. **Referral to Outpatient testing**, treatment, or procedure (including transportation)

3. **Shared Care Encounter Summary** (Office Visit, Consultation Summary, Return from the ED to the referring facility)

4. **Consultation Request** Clinical Summary (Referral to a consultant or the ED)

5. Permanent or long-term **Transfer of Care** to a different facility or care team or Home Health Agency
Shared Care Encounter Summary:
- Office Visit to PHR
- Consultant to PCP
- ED to PCP, SNF, etc...

Consultation Request:
- PCP to Consultant
- PCP, SNF, etc... to ED

Transfer of Care:
- Hospital to SNF, PCP, HHA, etc...
- SNF, PCP, etc... to HHA
- PCP to new PCP
## Five Transition Datasets

<table>
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Testing the IMPACT Datasets
Pilot Sites to Test the Datasets

- 9/2011 – Applications sent to 34 organizations
- Selection Criteria:
  - High volume of patient transfers with other pilot sites
  - Experience with Transitions of Care tools/initiatives
- 16 Winning Pilot Sites:
  - St Vincent Hospital and UMass Memorial Healthcare
  - Reliant Medical Group (formerly known as Fallon Clinic) and Family Health Center of Worcester (FQHC)
  - 2 Home Health agencies (VNA Care Netwk, Overlook VNA)
  - 1 Long Term Acute Care Hospital (Kindred Parkview)
  - 1 Inpatient Rehab Facility (Fairlawn)
  - 8 Skilled Nursing and Extended Care Facilities
Nursing Facility Pilot Sites

- Beaumont Rehabilitation of Westborough
- Christopher House of Worcester
- Holy Trinity Nursing & Rehab
- Jewish Healthcare Center
- LifeCare Center of Auburn (+EMR)
- Millbury Healthcare Center
- Notre Dame LTC
- Radius Healthcare Center Worcester
IMPACT Learning Collaborative: Testing the Care Transitions Datasets

16 organization, 40 participants, 6 meetings over 2 months, and several hundred patient transfers...
Learning Collaborative Surveys

- Surveys directly on envelopes carrying IMPACT packet, filled out by sender as well as receiver.

- Online survey at completion of pilot
Analyzing data elements helped

Comparing the IMPACT data elements to what we typically send was informative

Yes 92%
No 8%
Senders found the data

I was able to send all of the requested IMPACT data elements

- Yes: 93%
- No: 7%
Receivers got most of their needs

- Yes: 92%
- No: 8%
Home Care needed even more!

Data Elements Not in IMPACT Dataset (Home Health)

- Specific orders for PT/OT/ST/Skilled Nursing: 31%
- Home Health Setting Evaluation Date: 25%
- Social Security #: 19%
- D/C Summary from Hospital prior to SNF: 16%
- O2 and other supply Vendor Info: 6%
- Home Health Face-to-Face Encounter certification: 3%
“While we knew what EDs and hospitals required, we didn't realize Home Health Agencies needed much more than what we typically sent.”

-Skilled Nursing Facility
New World of Standards Development

National Coordinator for Health IT (ONC)

Office of the Deputy National Coordinator for Programs & Policy
Office of the Deputy National Coordinator for Operations
Office of the Chief Privacy Officer
Office of Economic Analysis & Modeling
Office of the Chief Scientist

Office of Policy & Planning

Office of Science & Technology (formerly known as the Office of Standards and Interoperability (S&I))

Office of Provider Adoption Support
Office of State & Community Programs

HIT Policy Committee
Defines “Meaningful Use” of EHRs

S&I Framework
convenes public and private experts, and proposes HIT/HIE standards

HL7 ballots standards

Secretary of HHS makes standards part of “Meaningful Use” and EHR Certification

Secretary of HHS makes standards part of “Meaningful Use” and EHR Certification
Timeline for Standards Development

- October 2012 - MA HIway go-live in 10 large sites with CCD and LAND

- February 2013 - Preliminary Implementation Guide completed

- May 2013 - Pilot electronic Transfer of Care Datasets between 16 central Massachusetts organizations using MA HIway, LAND & SEE

- July 2013 - Finish Implementation Guide using the S&I Framework incorporating pilot feedback

- September 2013 - HL7 Balloting of Implementation Guide for inclusion in Consolidated CDA
Getting Connected: LAND & SEE
• Sites with EHR or electronic assessment tool use these applications to enter data elements

  – **LAND** ("Local” Adapter for Network Distribution) acts as a data courier to gather, transform, and securely transfer data if no support for Direct SMTP/SMIME or IHE XDR

• Non-EHR users complete all of the data fields and routing using a web browser to access their “Surrogate EHR Environment” (SEE)
Surrogate EHR Environment (SEE)

- Acts as destination for routed CCD+ documents
- Software hosted by trusted authority, accessed via web browser
- SEE is accessed via the HIE’s web mailbox
- Non-EHR users able to use SEE to view, edit, send CDA documents via HIE or Direct to next facility
- Can select document type (e.g. Transfer of Care or INTERACT) to display section flags indicating their optionality
- Can reconcile 2 documents to create a third
- SEE users able to locally print or fax copies of the documents or subsets of the documents
Using SEE for LTPAC Workflows

• SNF patient getting sicker
  – Subset of Transfer of Care dataset that is in INTERACT is flagged for completion by nurse online
  – Can re-use data received from hospital
  – Can re-use clinical assessment data (function, cognition, wound) from last MDS
  – Completed INTERACT printed for chart

• Patient transfer to Emergency Department
  – Can re-use hospital, MDS, OASIS or INTERACT data
  – Multiple users (nurse, social worker, clerk, etc...) can work on different sections online at same time
  – Completed dataset sent electronically to ED
  – Subset can be printed for ambulance & patient
LTPAC Communication Today – Paper!

- Hospital
- Home Health
- Non-standard EHR OASIS
- Billing Program MDS
- Nursing Facility
- PCP
LAND & SEE fill in gaps

- Hospital
- Home Health
- Nursing Facility
- PCP

Non-standard EHR
- OASIS
- MDS
- CCD+

LAND

Billing Program
- MDS
- CCD+

SEE
- OASIS
- CCD+
- MDS

LTPAC Communication with LAND & SEE
Advantages of LAND & SEE

• Most role-based authentication uses EHR, using work that local organizations have already done
• Most users (docs & nurses) only work out of 1 system
• Data re-used whenever possible
• No blended central clinical data repository
• Case/discharge managers or nurses can control when and where to route documents because they’re the ones that know when and where!
• Non-EHR users get same HIE transport functionality as EHR users
• Relatively low-cost to deploy and support
• Easily scalable and replicable
Measuring Outcomes
Measure outcomes

Evaluate pre- and post-implementation:

- Efficiency of transfer process
- Adoption of the Care Transitions Datasets: content and process
- Satisfaction with transfer process: patients, families, senders, receivers
- Total cost of care (c/w prior year and cohort)
- Emergency Department (ED) visits, admissions, readmissions
• Data sources will include:
  – Surveys of senders, receivers, pts, families
  – Utilization data of Fallon CHP Medicare Advantage, commercial, Medicaid
  – State Hospital Utilization Database
• Build evaluation into work flow
  – Evaluation as part of the hand-off process
  – Low intensity, high frequency survey method
Dissemination
• LAND
  – Orion Health’s Rhapsody Integration Engine
    http://www.orionhealth.com/solutions/packages/rhapsody
  – We’ll make some standard configurations available
• SEE
  – Written in JAVA
  – Baseline functionality software and source code that can connect to Orion’s HISP mailbox via API available for free starting summer 2013 (Apache Version 2.0 open source license)
  – Innovators can develop and charge for enhancements, for example:
    • Integration with other vendors’ HISP mailboxes
    • Automated CDA document reconciliation
Disseminating the Seeds

IMPACT Advisory Committee
Massachusetts Care Transitions Forum
Massachusetts QIO (MassPRO)

Worcester Galaxy
- Pilot Sites
  - Core IMPACT Team

Another Galaxy
- Pilot Sites
  - Core Project Team

Core IMPACT Team

Another Galaxy
- Pilot Sites
  - Core Project Team
Conclusion

- Desired impact of IMPACT:
  - Enable all providers (regardless of HIT) to participate in HIE to improve care transitions
  - Improve communication between sending/receiving facilities
  - Develop a model that is easily replicable in other communities in MA and US
  - Inform the national standards for care transitions data elements
  - Achieve Triple Aim: Improve care, better health, reduce costs
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