HIE and Post-Acute Care Transitions

Dori A. Cross and Julia Adler-Milstein, PhD

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Presentation Overview

- Research Context and Motivation
  - IT and Care Transitions
  - Post-acute Care (PAC) Transitions
  - IT and PAC Transitions
- Study Questions and Methods
- Key Findings
- Discussion and Ongoing Work

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Area of Focus: IT and Care Transitions

- As patients transition across care settings, information transfer is often:
  - Incomplete
  - Inaccurate
  - Not timely
  - Not usable
- This results in quality and safety concerns
  - Lapses in treatment plans
  - Medication errors
  - Incomplete medical decision-making

Area of Focus: IT and Care Transitions

- IT-enabled care transitions (EHRs + HIE) should improve information:
  - Completeness
  - Accuracy
  - Timeliness
  - Standardization
- Desired result: Enhanced usability of information on receiving end of a transfer

Area of Focus: IT and Care Transitions

- Mixed evidence of the impact of IT-enabled care transitions on quality and utilization outcomes
  - Strongest evidence for reduced laboratory and imaging utilization in the ED
  - 2014 evaluation found association between community-based HIE effort and lower hospital readmissions

Area of Focus: IT and Care Transitions

- Context for current body of evidence:
  - Hospital to Primary Care Transitions
  - Unplanned Care Transitions (i.e., ED)
- What about transitions from hospital to post-acute care settings?

New Area of Focus: IT and *Post-acute* Care Transitions

- Post-Acute Care Transitions are:
  - Frequent (8 million patients/year)
  - Involve a complex patient population
  - Have critical deficits in patient quality and safety
    - Worse outcomes in PAC setting
    - Increased likelihood of re-hospitalization

- Numerous recent policy efforts likely to promote interest and investment in improved hospital-PAC transitions

Promoting Improvement in Hospital-PAC Transitions

- Particular focus on reducing avoidable readmissions, particularly between hospitals and skilled nursing facilities (SNFs)
- Specific Policy Initiatives:
  - **For SNFs**: Updates to SNF prospective payment system, introduction of value-based payment
  - **For Hospitals**: Medicare readmission penalties
  - **For Systems of Providers**: Accountable Care Organizations, Bundled Payments

Promoting Improvement in Hospital-PAC Transitions

- Reason to believe demonstrated benefits of HIE could extend to post-acute care transitions
- Yet, we know relatively little about:
  - HIE capabilities among post-acute care providers
  - Impact of HIE on post-acute care outcomes

Health IT in Post-Acute Care Settings

- What is the current state of health IT capabilities among SNFs and other PAC providers?
  - IT for mandated standardized assessments and reporting (IMPACT Act of 2014)
  - Less is known about adoption of “voluntary” IT: clinical EHR and HIE capabilities
    - State-based Studies
    - Office of the National Coordinator for Health IT
    - National Study of Long-Term Care Providers

State-based Estimates of EHR Adoption among LTCs

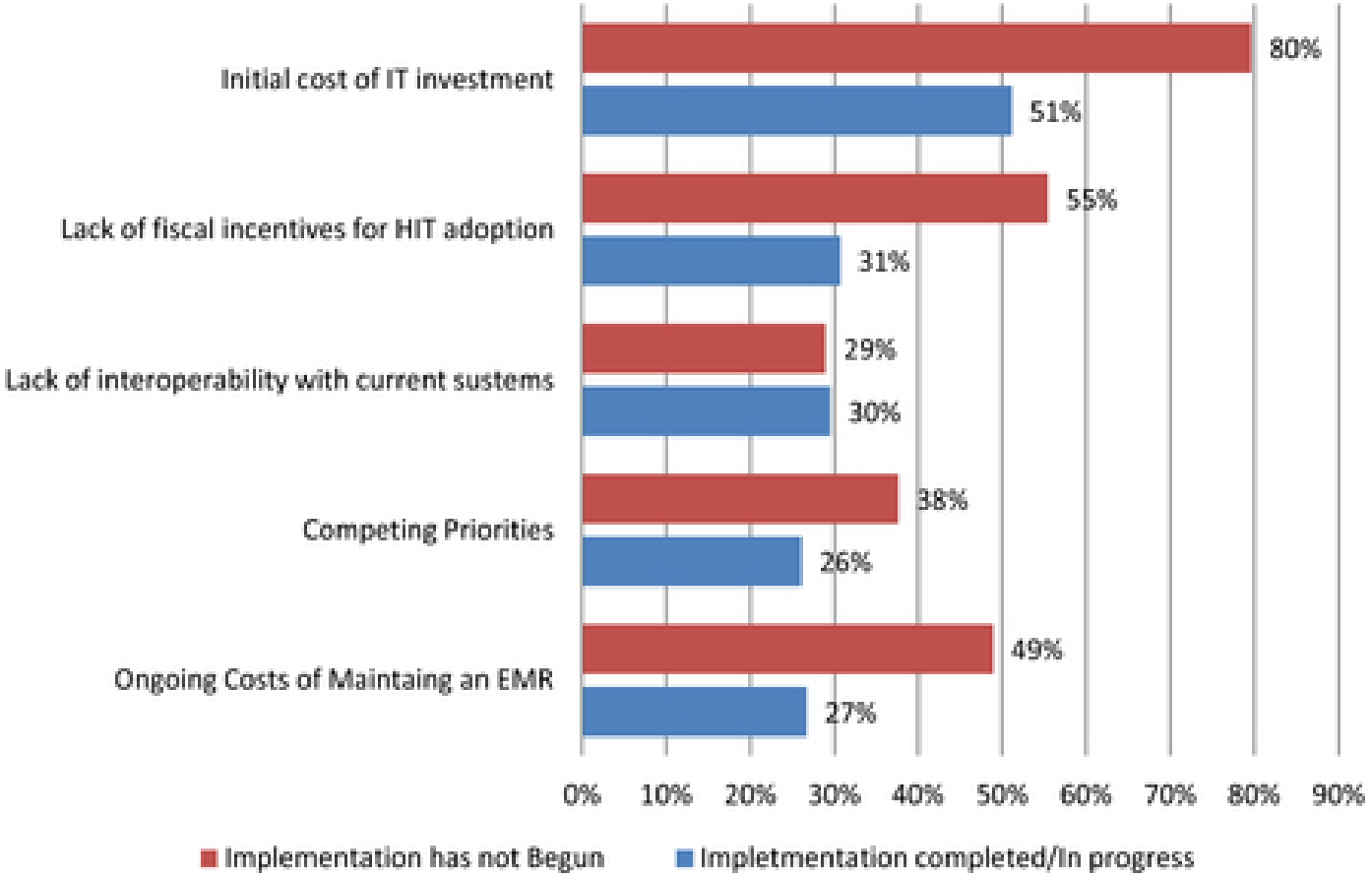
- Texas (Wang and Biederman, 2012)
  - 8% fully implemented; 29% partially implemented
  - 15% not planning on implementing

- New York (Abramson et al., 2014)
  - 18% fully implemented; 30% partially implemented and operational
  - 11% not planning on implementing

Challenges to EHR Adoption among LTC Providers

- LTC Providers Ineligible for Meaningful Use Incentives under the EHR Incentive Programs (HITECH Act)
  - No $$$
  - No aligned product certification with acute care providers
- LTC Information needs and workflows different than other healthcare providers

Challenges to EHR Adoption among LTC Providers



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Abramson et Al., 2014

Challenges to EHR Adoption among LTC Providers

Barriers	Survey Respondents
Lack of capital resources to invest	**46.0%**
Lack of proven benefit	15.3%
Lack of technical infrastructure (servers, etc.)	**35.0%**
Insufficient time to select, contract, install technology	**29.2%**
Lack of technical support staff	21.2%
EHR product factors	
Difficulty finding HIT products that meet needs	20.4%
User interfaces are not user friendly	16.1%
Inability to easily input historic medical record data into software/technology system	**27.0%**
Risk of new state/federal requirements	18.2%
Not part of the strategic planning	15.3%
Unclear benefits in improving quality	15.3%

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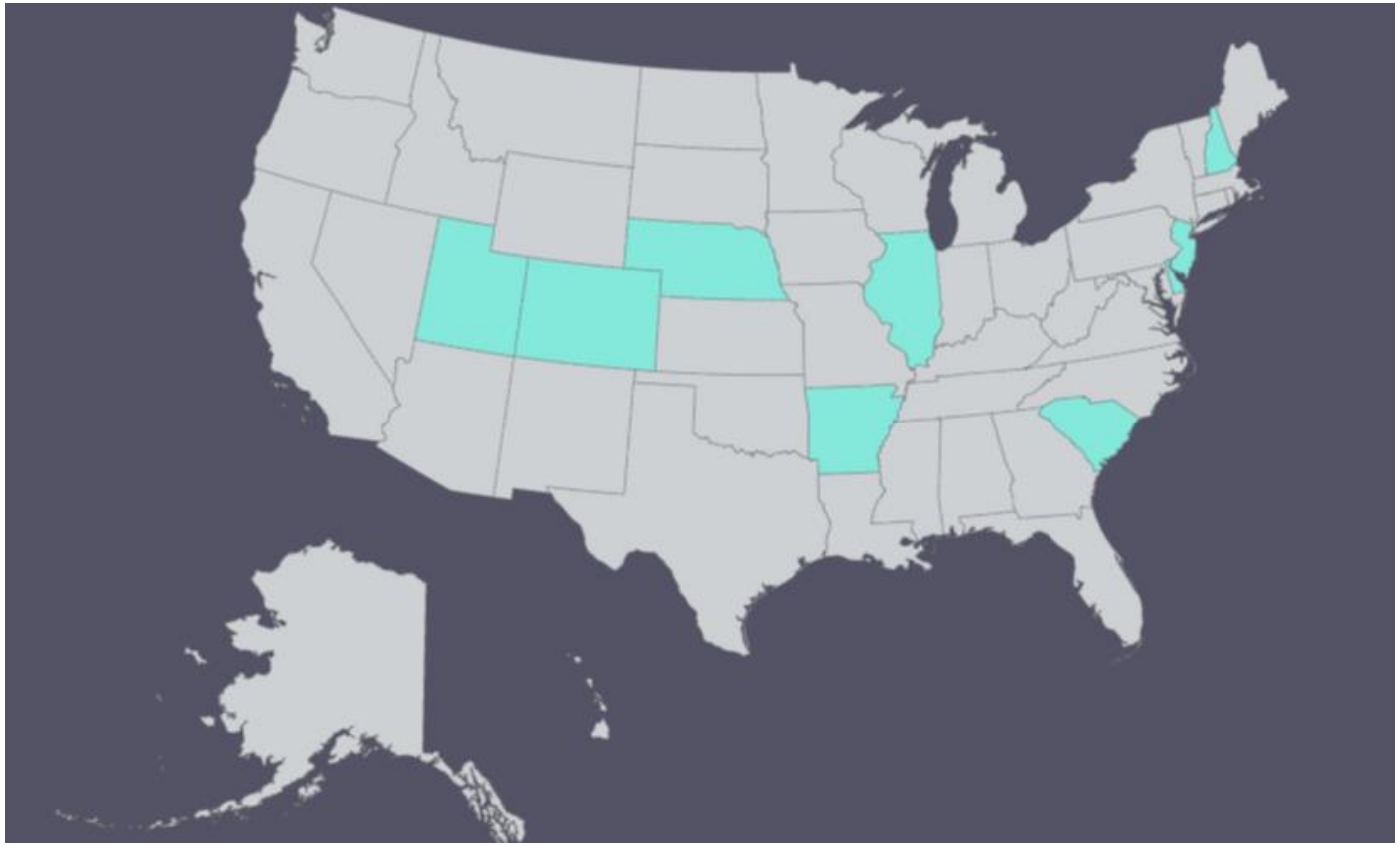
Wang and Biederman, 2012

ONC-Reported Engagement of LTCs by Regional HIOs



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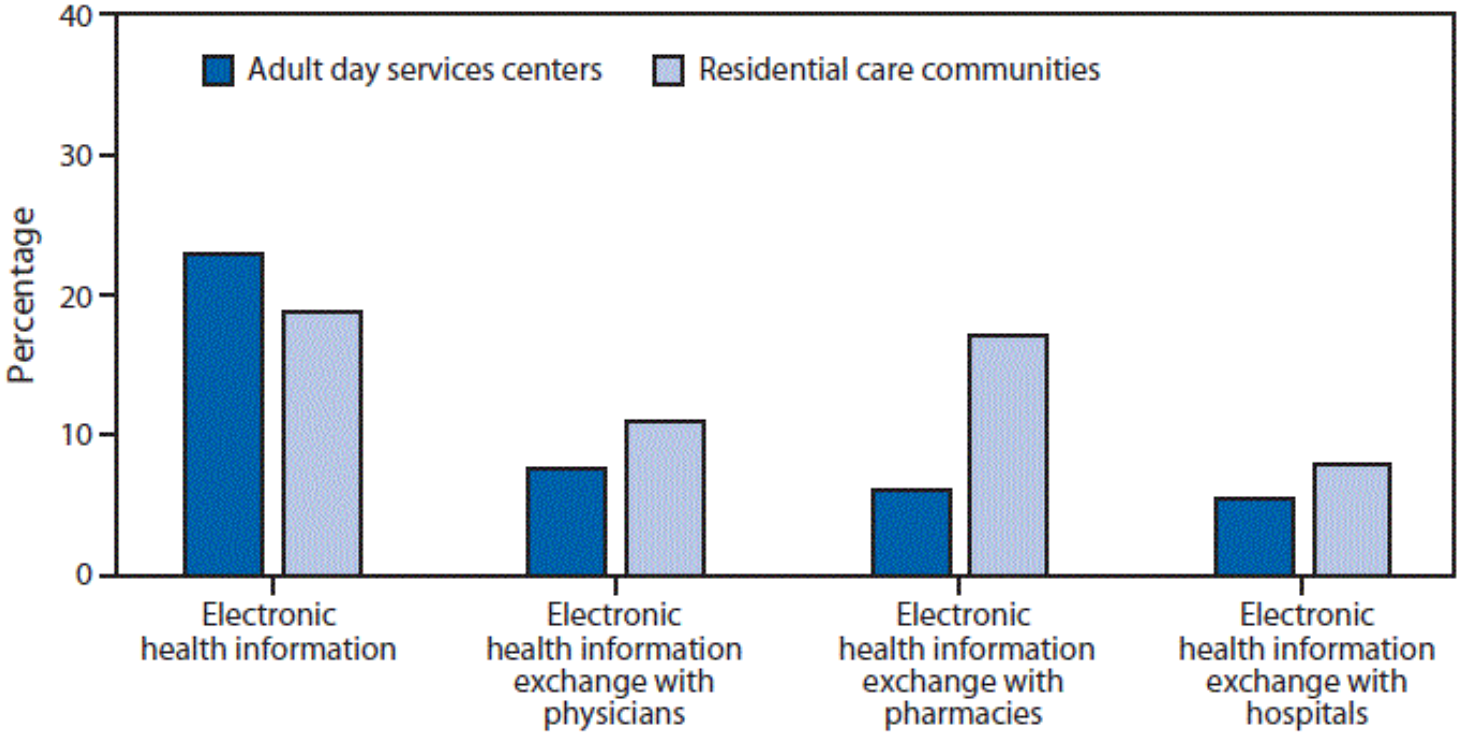
National Study of Long-Term Care Providers (CDC)



- 19% of residential care communities used EHRs in 2014
  - 11% had a computerized system that supported electronic health information exchange with physicians, 8% with hospitals.

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Review of the Evidence

- Current policy focus on improving LTPAC Transitions
- Moderate levels of HIE overall involving LTC Settings
  - Some key infrastructure (e.g., HIOs) and policies (e.g., incentives) appear to influence whether providers engage
- HIE between Hospitals and LTCs particularly low
  - We understand little about when hospitals are making decisions to engage in HIE with LTC providers and what motivates their decisions

Specific Research Questions

1. What proportion of US hospitals engage in HIE with LTC?
2. What are the IT and policy characteristics associated with hospital-LTC HIE?
3. What characteristics differentiate send-only versus bi-directional HIE?

Methods

- Three key sources of data
  - American Hospital Association (AHA) IT Supplement, 2014
  - AHA Annual Survey, 2014
  - CMS publicly available data
- Bivariate and multivariate logistic regression to determine association of hospital-LTC HIE with:
  - Key hospital IT characteristics
  - Policy motivator characteristics

Measure of LTC HIE

Survey Questions

- Do you routinely send structured Summary of Care Records (SCRs) to LTC Settings?

- Do you routinely receive structured Summary of Care Records (SCRs) from LTC Settings?

Number of hospitals (with LTC HIE capability reported)	N=1,991
No activity	852 (42.8%)
Sending only	674 (33.9%)
Receiving only	10 (0.5%)
Sending and Receiving	455 (22.8%)

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Hospital IT Characteristics of Interest

1. Meaningful Use Attestation
   - Stage 1 Only
   - Stage 1 and Stage 2

2. HIO Participation

3. SCR transmission with unaffiliated hospitals or ambulatory care providers

Policy Measures of Interest

1. 2013-2014 Hospital 30-day all-cause readmission score
2. Delivery Reform Activity
   - Bundled payments
   - Accountable care organizations
3. Formal organizational relationship with a SNF(own, affiliated, joint venturing)

Other Hospital Characteristics

- **General Demographics**
  - Size
  - Ownership
  - Teaching status
  - Urban/rural location

Results

	Model 1: Any LTC HIE Activity (N=1,981)	
	Odds Ratio	SE
IT Characteristics		
Meaningful Use Attestation (ref: no attestation)		
Stg. 1 MU Attestation Only	**1.87****	0.24
Stg. 1 and 2 MU Attestation	**2.05*****	0.24

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Participation in HIO	**1.34****	0.13
Reports exchange of information with other hospitals or ambulatory care providers	**4.54*****	0.18

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Participation in HIO	*1.34***	*0.13*
Reports exchange of information with other hospitals or ambulatory care providers	*4.54****	*0.18*
Policy Motivators		
Presence of BPCI in the market	1.14	0.13
Involvement in ACO	1.07	0.17
30-day all-cause readmission score	**1.19****	0.07
Own/affiliate/joint venture with a SNF	**1.29****	0.13

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Results

	Model 2: Bidirectional HIE, Compared to Send-only (N=1,129)	
	Odds Ratio	SE
IT Characteristics		
Meaningful Use Attestation (ref: no attestation)		
Stg. 1 MU Attestation Only	0.71	0.45
Stg. 1 and 2 MU Attestation	0.60	0.46

Results

	Model 2: Bidirectional HIE, Compared to Send-only (N=1,129)	
	Odds Ratio	SE
IT Characteristics		
Meaningful Use Attestation (ref: no attestation)		
Stg. 1 MU Attestation Only	*0.71*	*0.45*
Stg. 1 and 2 MU Attestation	*0.60*	*0.46*
Participation in HIO	0.75	0.18
Reports exchange with other hospitals or ambulatory care providers	**3.31*** **	0.36

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Results

	Model 2: Bidirectional HIE, Compared to Send-only (N=1,129)	
	Odds Ratio	SE
IT Characteristics		
Meaningful Use Attestation (ref: no attestation)		
Stg. 1 MU Attestation Only	*0.71*	*0.45*
Stg. 1 and 2 MU Attestation	*0.60*	*0.46*
Participation in HIO	*0.75*	*0.18*
Reports exchange with other hospitals or ambulatory care providers	*3.31****	*0.36*
Policy Motivators		
Presence of BPCI in the market	0.81	0.17
Involvement in ACO	**1.73*****	0.19
30-day all-cause readmission score	0.92	0.09
Own/affiliate/joint venture with a SNF	0.87	0.18

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Summary of Findings

- 23% of hospitals were engaged in bidirectional hospital-LTC HIE
  - Additional 34% engaged in send-only
- Investment in LTC HIE appears to be motivated by:
  - "Rising tide lifts all ships" – incentivized IT investment spillover to LTC HIE
  - Changing inter-organizational relationships
    - Formal system integration; changing financial incentives

Limitations

- Hospital data is self-reported
- Measure of “hospital HIE with LTCs” is limited
  - Question only asks about SCRs
  - Breadth of exchange unknown
    - With one SNF? With many?
    - With who?
- Analyses are associational (only one year of data available at time of study)

Implications

- Findings indicate important policy levers to advance HIE activity
  - New insights on where to most efficiently target enhanced resources to achieve broad connectivity
- To motivate bi-directional HIE, need better understanding of:
  - SNF information & IT needs
  - Current facilitators and barriers to HIE workflow/usage

Ongoing Work

1. How does HIE use between hospitals and LTCs affect patient outcomes?
   - Assembling longitudinal data for causal inference
   - Looking at dyadic hospital-SNF relationships
     - Able to calculate dyad-specific near-term readmissions

Ongoing Work

2. Analyzing HIE audit log data to:
   - Describe current patterns of information retrieval through HIE
   - Assess variation in use and associated impact on patient care
3. Complemented by in-depth interviews for:
   - interpreting variation in use patterns
   - identifying facilitators and barriers to integrating HIE into workflow and care decisions

Questions and Feedback Welcomed

dacross@umich.edu

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