Current Approaches to Patient Matching: Will We Ever Get Anywhere?

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Noam H. Arzt, PhD, FHIMSS
President, HLN Consulting, LLC
Agenda

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- Key Questions
- Approaches to a Nationwide Strategy
- Recent Public and Private Sector Efforts
- Implications for Shared MPI
- Conclusions
- Resources
Introduction

- Patient matching continues to be a key obstacle to data quality, interoperability
- Linked to patient *identity*
- Lack of a national patient identifier (1998 “ban”)
- No national strategy
- Decentralized HIT infrastructure makes the effect more pronounced, challenging

“One of the largest unresolved issues in the safe and secure electronic exchange of health information is the need for a nationwide patient data matching strategy ensuring the accurate, timely, and efficient matching of patients with their healthcare data across different systems and settings of care.” (Lee Stevens, ONC, 2/14)
Approach 1: “Traditional”

- Use deterministic and probabilistic tools by setting “thresholds”; avoid false positives/negatives
- Often involves local customization
- Often involves “manual review” of ambiguous matches
- Lots of commercial products; some Open Source products
- PH has lots of experience
Approach 2: Unique Identifier

- Many believe this is the only way
- Not deterred by Congressional ban on “promulgating or adopting”
- Some advocate voluntary adoption (e.g., GPII)
- SSN used for years as *de facto* ID
- Demographics still required for corroboration
Approach 3: Health Record Bank

- Puts the patient in charge
- Central “bank” similar to financial bank
- No traction in the marketplace
Approach 4: Biometrics

- Core of the issue is patient identification
- Biometrics can’t be “faked”

But...
- Hardware not in place
- Children provide some unique challenges
- Some visual representations *can* be faked
Approach 5: Innovation

- Novel techniques beginning to emerge
- One notion: “Referential Matching”
- Don’t compare records to each other, compare them each to records in a national reference database
Recent Public Sector Efforts

- ONC Nationwide Interoperability Roadmap (2015)
  - Section L: Accurate Individual Data Matching
  - Background, suggested EHR data elements
  - 10-year milestones, calls for action

  - Small, ONC-led group, 2014-2015
  - Developed data quality maturity model
  - Released two documents

- ONC Patient Matching Aggregation & Linking (PMAL, 2015)
  - Federal PCORnet IDIQ procurement awarded to Kaiser Foundation Research Institute
  - Work ongoing
Recent Private Sector Efforts

- Sequoia Project/Care Connectivity Consortium (Winter 2016)
  - Draft “Framework for Cross-Organizational Patient Identity Management”
  - Empirical discussion of strategies; 5-level organizational maturity model; “level 1” principles

- CHIME National Patient ID Challenge
  - Challenge to identify best strategies
  - 5 first-round winners announced
  - Second round underway

- HIMSS (ongoing)
  - Innovator-in-Residence focused on this issue
  - Various task forces and work groups, some sun setting some continuing
Implications for Shared MPI

- May be cross-program, even agency-wide, or HIE-related
- MPI used to improve matching within and between systems/programs
- Could be loosely coupled or tightly coupled
- Some challenges:
  - “Flow down” of record merges/linkages
  - “Flow up” of record merges/linkages
  - Vital records challenges
  - Data ownership issues
- HIE can magnify some of these challenges, including false matches which can have deeper ramifications
Conclusions

- Still no clear strategy
- Public sector showing limited leadership
- Private sector trying to pick up the slack with limited success
- Public health needs to continue to work on this and share its activities more broadly
Key Questions

- Which of the nationwide initiatives discussed most warrant watching or active participation?
- Are there unique aspects of public health record matching that would justify not aligning to national models and standards, when and if one emerges as a national standard?
- What are the potential costs of not aligning with national standards? Of doing so?
- Where do we look for the most appropriate metrics on matching to inform system assessment?
- What benefits and risks may need to be considered in linking PH system with a jurisdictional MPI or similar data set?
Resources

- CHIME National Patient ID Challenge: https://herox.com/PatientIDChallenge
- CDC NCIRD Patient De-duplication: http://www.cdc.gov/vaccines programas/iis/interop-proj/ehr.html#patient
- Global Patient Identifiers: https://www.gpii.info/
- Health Record Banking Alliance: http://healthbanking.org/
- ONC Nationwide Interoperability Roadmap: https://www.healthit.gov/policy-researchers-implementers/interoperability
Contact Information

Noam H. Arzt
President, HLN Consulting, LLC
858-538-2220 (Voice)
858-538-2209 (FAX)
arzt@hln.com
http://www.hln.com/noam/