

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

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# Agenda

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



# Introduction

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- 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”

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- 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

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- 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

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



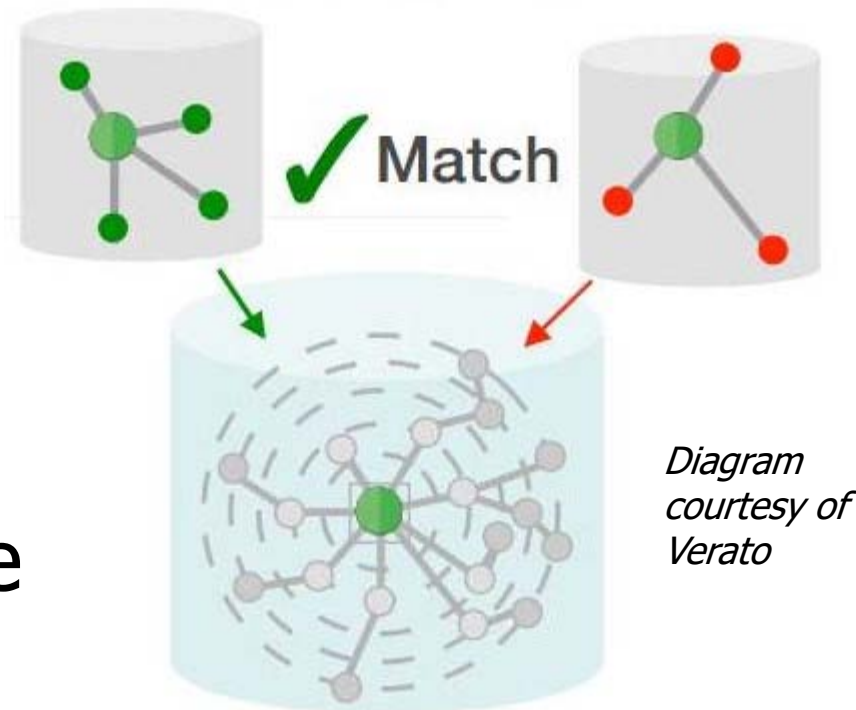
# Approach 4: Biometrics

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- 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

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

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- 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

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- 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

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- 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

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- CHIME National Patient ID Challenge: <https://herox.com/PatientIDChallenge>
- CDC NCIRD Patient De-duplication:  
<http://www.cdc.gov/vaccines/programs/iis/interop-proj/ehr.html#patient>
- *Developing and Testing a Data Management Model and Maturity Scale Tailored to Improving Patient Matching Accuracy*, ONC Patient Matching CoP, Sept 2015:  
<https://www.healthit.gov/sites/default/files/ptmatchwhitepaper.pdf>
- Global Patient Identifiers: <https://www.gpii.info/>
- *Guidelines for Pilot Testing of Data Management Maturity<sup>SM</sup> Model for Individual Data Matching*, Sept 2015: <https://www.healthit.gov/sites/default/files/pilottestingpm.pdf>
- Health Record Banking Alliance: <http://healthbanking.org/>
- ONC Nationwide Interoperability Roadmap:  
<https://www.healthit.gov/policy-researchers-implementers/interoperability>
- *Framework for Cross-Organizational Patient Identity Management*, Sequoia Project, Jan 2016:  
<http://sequoiaproject.org/framework-for-cross-organizational-patient-identity-matching/>
- *Patient Identification and Matching Final Report*, Audacious Inquiry for ONC, Feb 2014:  
[https://www.healthit.gov/sites/default/files/patient\\_identification\\_matching\\_final\\_report.pdf](https://www.healthit.gov/sites/default/files/patient_identification_matching_final_report.pdf)



# Contact Information

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