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# **Patient Matching – What’s in the Pipeline for 2014?**

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# Reminder

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*(\* 6 to mute, \*7 to unmute)*



# About eHealth Initiative

- Since 2001, eHealth Initiative is the only national, non-partisan group that represents all the stakeholders in healthcare. Represent over 15 different stakeholder groups and 39 states across the nation.
- Mission to promote use of information and technology in healthcare to improve quality, safety and efficiency.
- Last year, over 4500 individuals attended our events and 500+ individuals participated in our national councils and workgroups
- eHealth Initiative focuses its research, education and advocacy efforts in four areas:
  - Data and Analytics
  - IT Infrastructure to Support Accountable Care
  - Technology for Patients with Chronic Disease
  - Data Exchange & Interoperability



# Agenda

## **4:00 – 4:05 PM** Welcome and Introductions

- Moderator: Mark Segal, Vice President of Government and Industry Affairs, *GE Healthcare IT*

## **4:05 – 4:40 PM** eHI's accomplishment and what's Next in Meaningful Use, Health IT

- Beth Just, President & CEO, *Just Associates Inc.*
- Craig York, Program Director, *Argo Data*

## **4:40 – 4:55 PM** Q&A Discussion

## **4:55 – 5:00 PM** Updates and announcements of eHI future events.

## **5:00 PM** Adjourn



# Beth Just, MBA, RHIA, FAHIMA



CEO

*Just Associates, Inc.*



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# Craig York



Program Director, Healthcare  
*ARGO Data*



# **Industry Update on Patient Matching ONC's Preliminary Report**

January 16, 2014  
eHealth Initiative Webinar

# Agenda

- ◆ Introduction of Speakers
- ◆ ONC's Patient Matching Initiative
- ◆ Industry Challenges
- ◆ ONC's Initial Findings
- ◆ Recommendations to the ONC
- ◆ Industry Solution(s)

# Guiding Principles<sup>1</sup> of ONC's Patient Matching Initiative

- Patient safety is driving force for improvement in patient matching
- The real-world impacts on the workflow of administrative and clinical personnel must be carefully considered
- Patient matching is a complex problem; therefore, improvements will be multifaceted and incremental with no single solution or step that is final
- Potential improvements should apply to all sizes and types of provider settings, a range of health IT adoption levels and a broad set of “use cases”
- Building a solid foundation for patient matching across institutions will ease the implementation burden of Meaningful Use Stage 3, while allowing for future innovation

<sup>1</sup>ONC's **Update on Patient Identification and Matching Activities**, HIT Standards Committee, December 18, 2013

# Goals<sup>2</sup> of ONC Patient Matching Initiative

- Improve patient matching based on an assessment of current best outcomes from a cross section of entities performing patient matching or that have a stake in the effectiveness of patient matching
- Identify key identifying attributes which can be standardized and consistently relied on for matching patients
- Identify processes and/or best practices to support improved patient matching
- Pursue improvements that will have the broadest impact against a range of matching scenarios / use cases

<sup>2</sup>ONC's Update on Patient Identification and Matching Activities, HIT Standards Committee, December 18, 2013

# Project Overview<sup>3</sup> ONC Patient Matching Initiative

The project was designed to be an inclusive and transparent review of the spectrum of works to date. It included an in-depth formal environmental scan and informal discussions with a broad set of stakeholders.

The key project components included:

- ◆ Literature review
- ◆ Environmental scan
- ◆ Initial draft recommendations
- ◆ A series of review and feedback loops

<sup>3</sup>ONC's Update on Patient Identification and Matching Activities, HIT Standards Committee, December 18, 2013

# The Identity Challenge



## Blood Work

Name: Hexom, Elizabeth  
Sex: F  
DOB: 11/03/1981  
ID: D234501



## Orthopedics

Name: Hexom, Liz  
Sex: F  
DOB: 03/11/1981  
ID: D495611



## Pharmacy

Name: Hexom, Elizabeth  
Sex: F  
DOB: 03/11/1981  
ID: IA23573312



## Pediatrics

Name: Hexom, Baby Girl  
Sex: F  
DOB: 03/11/1981  
ID: D234112



Name: Barton, Elizabeth H  
Sex: F  
DOB: 03/11/1981  
SSN: 218-92-4694



## Maternity

Name: Barton, Beth H  
Sex: F  
DOB: 03/11/1981  
ID: D20245356



## Burn Unit

Name: Hexom, Elizabeth  
Sex: F  
DOB: 03/11/1981  
ID: K10345621



## Podiatry

Name: Hexom, Liz  
Sex: F  
DOB: 03/11/1981  
ID: G236451



## Surgery

Name: Hexom, Liz  
Sex: F  
DOB: 04/12/1981  
ID: K10789341

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# Most Common MPI Integrity Issue

- ◆ Duplicate — more than one entry or file for the same person in a single facility level MPI.
- ◆ Often “multiples” exist



**Baby Girl  
Hexom**



**Liz  
Hexom**

Duplicate

.01 – 57%



**Beth  
Hexom**



**Beth H  
Barton**

Multiple

“Building an Enterprise Master Person Index” (AHIMA Practice Brief) January 2, 2004

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# ... and also

- ◆ **Overlap** — more than one MPI entry or file for the same person in two or more facilities within an enterprise



**Elizabeth  
Hexom**



**Liz  
Hexom**



**Beth  
Hexom**



**Beth H  
Barton**

4 – 74%

“Building an Enterprise Master Person Index” (AHIMA Practice Brief) January 2, 2004

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# Most Severe MPI Issue

- ◆ **Overlay** — one MPI entry or file for more than one person (i.e., two people are erroneously sharing the same identifier)



Bill Scott  
**05/04/1960**

William Scott  
**04/05/1990**

"Building an Enterprise Master Person Index" (AHIMA Practice Brief) January 2, 2004

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# Overlaid Records

- ◆ On the increase
  - ◆ Anecdotally found
    - ◆ Bills sent to wrong patient
    - ◆ Caught during MPI Cleanup
    - ◆ Clinician (or patient) identifies during subsequent treatment



Maria  
Bonita  
Garcia  
10/18/1999

Maria  
Bernice  
Garcia  
10/18/1999

"Building an Enterprise Master Person Index" (AHIMA Practice Brief) January 2, 2004

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# Preliminary Patient Matching Recommendations

- ONC's patient matching initiative launched in Sept. 2013
- Hired Audacious Inquiry to complete the study
- Preliminary results presented on Dec. 16, 2013 in Washington DC
  
- Speakers are not representing ONC or Audacious Inquiry

# Audacious Inquiry's Preliminary Recommendations to the ONC

- ◆ Standardization of Patient Identifying Data Attributes
  - ◆ Standardize format
  - ◆ Complete population of key data attributes
- ◆ Certification criteria for EHR technology
  - ◆ Require consistent format/data capture of key attributes; e.g. historical addresses
- ◆ Additional, non-traditional data attributes for patient matching
  - ◆ Such as email address, mother's/father's name, place of birth, driver's license, eye color

# Audacious Inquiry's Preliminary Recommendations to the ONC

- ◆ Record Matching Algorithm for Benchmarking
  - ◆ Open source algorithm for vendors to test their algorithm
  - ◆ Utilize by vendors without an algorithm
- ◆ Identifying Duplicates
  - ◆ EHR Certification criteria to require vendors to generate usable duplicate reports
- ◆ Convene Stakeholders – Develop Best Practices for
  - ◆ Identity Verification
  - ◆ Patient Matching Process
  - ◆ Data Governance

# Audacious Inquiry's Preliminary Recommendations to the ONC

- ◆ Consumer Engagement
  - ◆ Raise Awareness among Patients of Importance of Correct, Current Demographics
- ◆ Develop and Disseminate Education and Training Materials on Patient Identity Management Best Practices
  - ◆ Work with Healthcare Professional Association and Safety Assurance Factors for EHR Resilience (SAFER) Guide

# Additional Recommendations to Consider

- ◆ **Additional Patient Identity Data Elements**
  - ◆ Use in record matching algorithms
  - ◆ Last 4 of SSN
  - ◆ Weight last 7 digits of SSN; Higher weight if all 10 digits match
  - ◆ All available phone numbers
  - ◆ Previous names (not only maiden name)
  - ◆ Insurance ID; NOK/Guarantor names
- ◆ **Eliminate auto-linked false positive matches**
  - ◆ Getting it wrong is worse than not getting it all

# Additional Recommendations to Consider

## ◆ HIO Responsibilities

- ◆ Data sharing agreements include data governance requirements and monitoring/reporting accountabilities
- ◆ Train HIO staff on data management responsibilities and duplicate record validity techniques
- ◆ Report same-system duplicates to Data Trading Partners
- ◆ Duplicates/overlays – correct in source system and electronically communicate to HIO system

## ◆ Certification criteria of EHR systems won't address many patient identity issues

- ◆ Many providers use registration/scheduling systems that are separate from their EHR

# Additional Recommendations to Consider

- ◆ Advanced Algorithms are needed – basic and intermediate algorithms won't catch most duplicate records
  - ◆ Over half of all duplicate records have a discrepancy in more than one of the following key patient identity data fields:
    - ◆ Last Name; First Name; Middle Name
    - ◆ Date of Birth; Gender; SSN
- ◆ Providers and HIO's complete periodic analysis of their data to identify duplicates missed by their current algorithm
- ◆ Support congress lifting ban to study effectiveness of a unique patient identifier

# Summary

- **ONC has identified patient matching as a national problem**
  - Majority of systems today do not do a good enough job matching patient records
  - Proper patient identification is a key stone of patient safety, analytics, fraud prevention and reducing waste
- **2014 is a year for further study and policy planning to determine the extent for inclusion in MU Stage 3 (2016)**
  - ONC appears to favor having some form of matching requirement
  - Standardized fields in EHRs for use in matching seems likely
  - Matching performance (accuracy) benchmarking seems likely
  - Advanced algorithms are available but traditionally have been fairly expensive – ONC looking for balance between driving improved performance at a cost that can be widely adopted

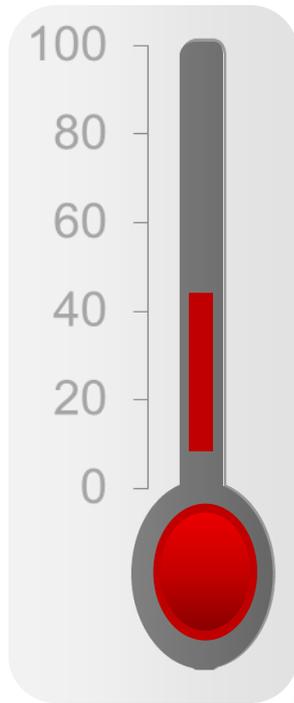
# Summary

## ◆ What you should do

- ◆ Examine advanced algorithm options which can reduce waste and risk in your organization today
- ◆ Ensure your vendors are committed to meeting Stage 3 requirements
- ◆ Build a strong data governance program within your organization
  - ◆ Create a data governance committee to oversee program
  - ◆ Hire credentialed & experienced staff to manage program
  - ◆ Measure data integrity error rates
  - ◆ Follow up!
- ◆ Consider process improvements in registration and scheduling areas – educate and train
- ◆ Continue to monitor ONC progress

# Record Matching Algorithms

(10% Average Duplicate Rate)



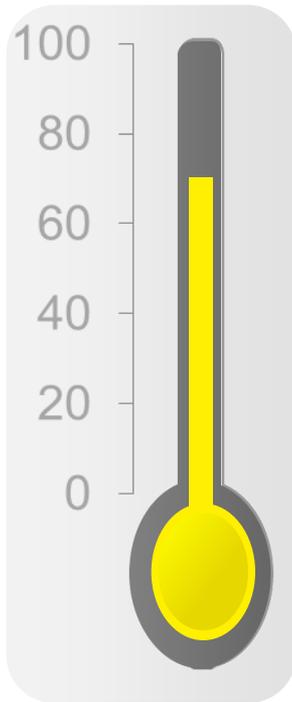
- **Basic Duplicate Detection**

- Only finds up to 30% of existing duplicates
- Missing 70% of existing duplicate records
- Most financial (registration & scheduling) systems

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# Record Matching Algorithms

(10% Average Duplicate Rate)



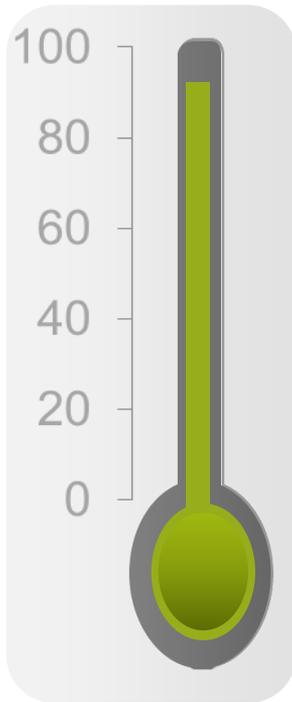
## ■ **Intermediate Duplicate Detection**

- Un-tuned finds up to 50% of existing duplicates
- With tuning finds up to 70% of existing duplicate records
- Missing 30% to 50% of existing duplicates
- Many of the integrated clinical and financial systems

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# Record Matching Algorithms

(10% Average Duplicate Rate)



- **Advanced Duplicate Detection**
  - Self-tuning finds up to 99% of existing duplicates
  - Misses very few existing duplicates
  - Best of breed EMPI systems

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# Thank you!

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# Discussion

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**eHI MEMBER-ONLY EVENT.**

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- Register here: <http://ehidc.org/events-landing/gar-2014>
- Questions? Contact [nadeen.siddiqui@ehidc.org](mailto:nadeen.siddiqui@ehidc.org)



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