PATIENT IDENTIFIERS WITHIN RADIOLOGY

2018

Brisbane
Presentation Goals

THE HISTORY
IDENTIFY THE PROBLEMS
DEALING WITH PATIENT IDS
A PERFECT WORLD
ACHIEVING A PERFECT WORLD?
The History

- Australia 1987 National ID card failed
- German ID card failed
- USA President Clinton health plan “Health security cards” failed 1996 to pass through congress
- Australian My Health Record ????
The History

- Ireland Individual Health Identifier
- Denmark, Norway, Sweden, Finland
- Dutch BSN
- Scotland CHI number
- England, Wales, Isle of Man NHS number
The History

- Improve Patient safety
- Increase efficiency for Healthcare providers
- Counties where Unique Patient ID’s work generally accept data collection and retention by the government and Healthcare providers
- Medical researchers can link into government medical data bases
The History

In Australia every citizen has a unique patient ID and it's not your medicare number

- Approved 2008 COAG Council of Australian Governments (COAG)
The History

- Healthcare Identifier (IHI) 16 character numerical number.
  - N1-N2 80=Health
  - N3-N5 Country 036=AU
  - N6 Number Type 0=IHI
  - N7-N15 Individual account
  - N16 Check Digit
“One of the day to day issues we face is accurate patient identification across multiple patient identifiers”
Identify the problems

- Before 2008 No Unique National or State Identifier for a patient
- No or limited cross reference or master patient database
- Identifying patients accurately with external priors
- Misidentifying patients
Identify the problems

A common way to match and collect health records is by using a person’s name and birthdate.

“In a health database of 3.5 million Houston-area residents, 70,000 instances existed where two people share the same first name, last name, and birthdate.”

The patient identifier debate

BY ERIN MCCANN FEBRUARY 18, 2013
Identify the problems

- Issuing and implementing Unique patient Identifier
- Private and public uptake of the unique patient identifier
- How do we access and store the data against the unique patient identifier?
- Utilising the unique patient identifier
Dealing with Patient ID’s

How many ID’s does a Patient Potentially need?

- Unique patient ID
- Company ID
- External Patient ID
- Other Patient ID
Dealing with Patient ID’s

Scenarios (Not for reporting)

1. Importing external Patients images for a patient that already exist in your database
2. Importing external Patients images for a patient that doesn’t exist in your database
Dealing with Patient ID’s

Scenarios (For reporting)

3. Importing external Patients images generating a HL7 order but retaining the patient’s external ID

4. Report a study and imbedding a second patient ID into the study
A Perfect World

- HL7 and DICOM alignment PACS and Modalities in versioning and development
- Multiple patient ID matching in RIS and DICOM databases, cross database matching and searching, MPI and EMPI?
- HL7 and DICOM database multiple Patient ID search, update and store on ingestion for external studies
## A Perfect World

<table>
<thead>
<tr>
<th>SEQ</th>
<th>LEN</th>
<th>DT</th>
<th>OPT</th>
<th>RP/#</th>
<th>ELEMENT NAME</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>SI</td>
<td>O</td>
<td></td>
<td>Set ID - Patient ID</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>CX</td>
<td>O</td>
<td></td>
<td>Patient ID</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
<td>CX</td>
<td>R</td>
<td>Y</td>
<td>Patient Identifier List</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td>CX</td>
<td>O</td>
<td>Y</td>
<td>Alternate Patient ID</td>
</tr>
</tbody>
</table>
A Perfect World

- The 3 main patient identification segments in HL7
- PID-2 Patient ID (external ID), backward compatibility, EMPI
- PID-3 Patient ID (internal ID, 0010,0020) all Patient ID’s and
- PID-4 Alternative Patient ID, backward compatibility only
- Patient’s medical record number (MRN), IHI etc in PID-3
A Perfect World

PID | | | 1234^^^^SR~123412^^^^LR~00725^^^^MR^ | | Doe^John^Fitzgerald^JR^L | | 20001007 | M | | 2106-3^White^HL70005 | 123 Peachtree ST^APT 3B^Atlanta^GA^30210^M^GA067 | | (678)555-1212^PRN |

This Example identifies the patient:
State registry number 1234
Local registry number 123412
Medical record number 00725
A Perfect World

- (0010,0020) Patient ID
- (0010,1002) Other Patient IDs Sequence
  - (0010,0020) Patient ID
  - (0010,0021) Issuer of Patient ID
  - (0010,0022) Type of Patient ID
  - (0010,0024) Issuer of Patient ID Qualifiers Sequence
A Perfect World

- (0010,0020) PatientID  LO  # 8  1 [HIT123456]
- (0010,1002) Undefined  SQ  # 64 1
  - (0010,0020) PatientID  LO  # 8  1 [NEW78910]
  - (0010,0021) IssuerofPatientID  LO  # 4  1 [RIS]
  - (0010,0022) Undefined  CS  # 4  1 [TEXT]
### A Perfect World

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0010,0010</td>
<td>PN</td>
<td>Patient's Name</td>
<td>Example 1</td>
</tr>
<tr>
<td>0010,0020</td>
<td>LO</td>
<td>Patient ID</td>
<td>AUS1234</td>
</tr>
<tr>
<td>0010,0021</td>
<td>LO</td>
<td>Issuer of Patient ID</td>
<td>HIG</td>
</tr>
<tr>
<td>0010,0030</td>
<td>DA</td>
<td>Patient's Birth Date</td>
<td>19791011</td>
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<tr>
<td>0010,0040</td>
<td>CS</td>
<td>Patient's Sex</td>
<td>F</td>
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<tr>
<td>0010,1002</td>
<td>SQ</td>
<td>Other Patient IDs Sequence</td>
<td>Sequence Item Count=1</td>
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<tr>
<td>&gt;[1] 0010,0020</td>
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<tr>
<td>&gt;[1] 0010,0021</td>
<td>LO</td>
<td>Issuer of Patient ID</td>
<td>RIS</td>
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<tr>
<td>&gt;[1] 0010,0022</td>
<td>CS</td>
<td>Type of Patient ID</td>
<td>TEXT</td>
</tr>
</tbody>
</table>
A Perfect World

- Patient in RIS should have a catalogue of all there known Patient ID’s, make them searchable and send them in PID 3.
- Send PID 3 data imbedded in the DICOM header and updated in the DICOM database make them searchable
Achieving a Perfect World?

- Work with IHE Australia
- EMPI and MPI tools PACS, VNA or RIS
- EMPI external tools like Next gate if unavailable with current supported infrastructure.
Achieving a Perfect World?

- Look at current HL7 and DICOM standards for best fit, function and future development HL7 FHIR, DICOMweb, DICOM 2018c
  eg white paper Dutch National Patient ID (Burger Service Nummer, BSN)
- HL7 FHIR, DICOMweb XML, JSON RESTful API requests, OAUTH 2.0 authorization framework
Achieving a Perfect World?

- Standards
  - HL7 International (Version 2, FHIR)
  - NEMA (DICOM 2018c, DICOMweb)
- Legislation
  - Government eHeath QLD, NSW
  - Australian Digital Health Agency
  - RANZCR
Achieving a Perfect World?

- Implementation/Integration
  - IHE Australia and Integration Profiles
  - IMIA, HISA (International Medical Informatics Association) (Health Informatics Society of Australia) HISA aims to improve health through health informatics
  - MSIA (Medical Software Industry Association)
  - EMPI, MPI and EHR
Achieving a Perfect World?

- Implementation/Integration
  - IHE Australia Integration Profiles
    - XDS Cross-enterprise Document Sharing
    - XDS-I.b Cross-enterprise Document Sharing for Imaging
  - PIX Patient Identifier Cross Reference
  - XCA Cross-Community Access
  - XCA-I Cross-Community Access for Imaging
Achieving a Perfect World?

MPI vs. EMPI

- MPI deals with data within a database HL7 or DICOM
- EMPI deals across databases and across Enterprise environments
- EMPI’s should be able to query multiple Electronic Health Record databases and cross reference with Healthcare provider databases
Achieving a Perfect World?

Players in the EHR and EMPI space

- EPIC Systems EHR, EMPI
- Cerner Corporation EHR, EMPI
- MEDITECH EHR, EMPI
  - Nextgate EMPI
  - IBM EMPI
Questions?

- Recommended reading
  - Australia’s National Digital Health Strategy