PATIENT IDENTIFIERS WITHIN RADIOLOGY

2018

Brisbane

Presentation Goals

THE HISTORY

IDENTIFY THE PROBLEMS

DEALING WITH PATIENT IDS

A PERFECT WORLD
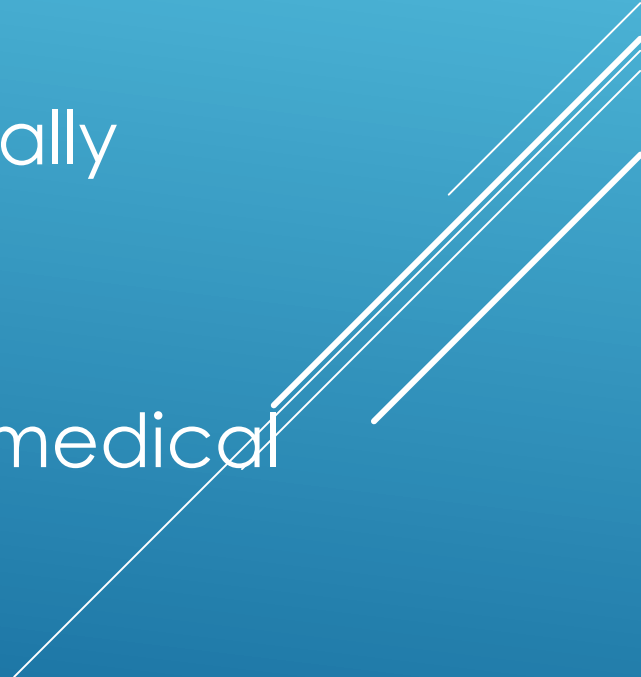
ACHIEVING A PERFECT WORLD?

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 its 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

Identify the problems

"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
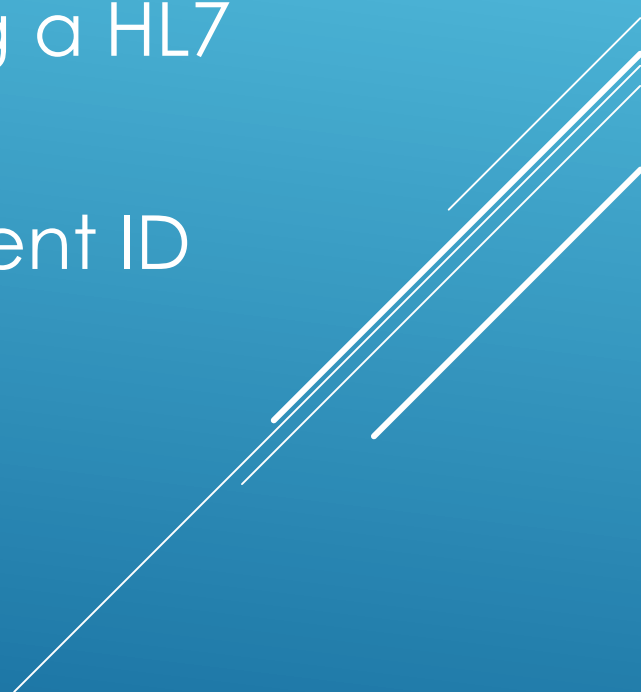
Dealing with Patient ID's

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

SEQ	LEN	DT	OPT	RP/#	ELEMENT NAME
1	4	SI	O		Set ID - Patient ID
2	20	CX	O		Patient ID
3	20	CX	R	Y	Patient Identifier List
4	20	CX	O	Y	Alternate Patient ID

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

0010,0010	PN	Patient's Name	Example 1
0010,0020	LO	Patient ID	AUS1234
0010,0021	LO	Issuer of Patient ID	HIG
0010,0030	DA	Patient's Birth Date	19791011
0010,0040	CS	Patient's Sex	F
0010,1002	SQ	Other Patient IDs Sequence	Sequence Item Count=1
>[1] 0010,0020	LO	Patient ID	RBH5678
>[1] 0010,0021	LO	Issuer of Patient ID	RIS
>[1] 0010,0022	CS	Type of Patient ID	TEXT

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 v's 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**