# The Incidental Implementer
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## Austin Health

# About Austin Health

- 600+ bed, tertiary level hospital

- 3 campuses

- Mix of existing informatics
  - ED
  - ICU
  - Specialist databases
  - Discharge Summaries

# Clinical System

- State build, shared domain
- Key functions of implementation
  - Pathology / Radiology Orders
  - Pathology / Radiology Results
  - Discharge / Outpatient Medications

**SNOMED Terms used for Discharge Summaries**

# Project Team

- ROMeO- **R**esults **O**rders **Me**dications **O**nline

- Project Team approx 24 EFT

    – Mix of nurses, pharmacists, HIMs

- 18 month implementation phase

    – Learning the system

    – Understanding clinical workflows

    – Testing / Change Requests

    No local / state SNOMED expert

# Implementation @ Austin Health

- Go live – 15th June 2011
- 5000+ staff to be trained
- Training commenced 14 weeks out
- Junior doctors had 2 hours training
- Consultants had 1:1 post go live

No time to explain SNOMED

# Where is our SNOMED used?

- Diagnosis

- Problems

- Procedures

- Past medical / surgical history


- Available for all clinical staff to use

# How do we use it?

- Not linked decision support
- No reporting system for SNOMED data

….yet

# The search

# The results

| Term △ | Code | Terminology | Terminology Axis |
|---|---|---|---|
| Type II diabetes mellitus with hypoglycaemic coma | 459169018 | SNOMED CT | Finding |
| Type II diabetes mellitus with multiple complications | 292576013 | SNOMED CT | Finding |
| Type II diabetes mellitus with neuropathic arthropa... | 459312014 | SNOMED CT | Finding |
| Type II diabetes mellitus with peripheral angiopathy | 459306016 | SNOMED CT | Finding |
| Type II diabetes mellitus with ulcer | 292581016 | SNOMED CT | Finding |
| Type II diabetes mellitus without complication | 457330012 | SNOMED CT | Finding |
| Unstable insulin dependent diabetes mellitus | 429972014 | SNOMED CT | Finding |
| Unstable type 1 diabetes mellitus | 429971019 | SNOMED CT | Finding |
| Unstable type I diabetes mellitus | 429970018 | SNOMED CT | Finding |
| Vasopressin-resistant diabetes insipidus | 101642014 | SNOMED CT | Finding |

The maximum number of results was reached. Please refine your search.

Add to Favorites          OK          Cancel

# How it looks for recipients of the summary

**PAST PROCEDURE HISTORY**

DHS - Dynamic hip screw primary fixation of neck of femur (358600013) in 2011 at 86 Years
Tonsillectomy with adenoidectomy (48410019) in 1975 at 50 Years.
Liver lobectomy (506832018) in 1975 at 50 Years.
Appendicectomy (132973012) in 1943 at 18 Years.
Catheterisation (494127014).

# But how would you record these?

Sepsis secondary to Cellulitis of Lower Limbs and necrotic L hallux



| | Annotated Display ▽ | Code |
|---|---|---|
| ⓘ | Sepsis | 151281010 |
| ⓘ | Hallux | 1234299018 |
| ⓘ | Cellulitis of lower limb | 357327018 |
| ⓘ | Bone necrosis | 359831010 |

| | Annotated Display ▽ | Code |
|---|---|---|
| ⓘ | Sepsis secondary to cellulitis of lower limbs and necrotic L hallux | |

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**Hospital Course**

### PRINCIPAL DIAGNOSIS

Sepsis - Principal Dx.

Hallux - Principal Dx.

Cellulitis of lower limb - Principal Dx.

Bone necrosis - Principal Dx.

**Hospital Course**

### PRINCIPAL DIAGNOSIS

Sepsis secondary to cellulitis of lower limbs and necrotic L hallux - Principal Dx.

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## Imagine this…

Sepsis, duodenal cutaneous fistula, R paracolic gutter abscess with faecal contamination, wound infection, deconditioning, pressure ulcers, anaemia secondary to bile duct perforation

# How to add more structure

**Alerts, Problems, Dx**

Mark all as Reviewed

Diagnosis (Problem) being Addressed this Visit

+ Add    Modify    Convert    | Display: Active ▾  ...

| | Annotated Display △ | Code | Dx Type | Date |
|---|---|---|---|---|
| ⓘ | 1. chest pain | | Principal Dx | 16/09/2011 |
| ⓘ | 2. hypertension | | Principal Dx | 16/09/2011 |
| ⓘ | 3. diabetes | | Principal Dx | 16/09/2011 |
| ⓘ | 4. Lichen planopilaris | 107259017 | Principal Dx | 01/08/2011 |
| ⓘ | 5. Hypoxic brain damage | 1495634010 | Principal Dx | 12/09/2011 |
| ⓘ | Carcinoma in situ of bronchus and lung | 290788018 | Principal Dx | 01/08/2011 |
| ⓘ | Hypoxic brain damage | 1495634010 | Principal Dx | 16/09/2011 |
| ⓘ | Major depressive disorder, single episode | 61592011 | Principal Dx | 13/09/2011 |
| ⓘ | this is how a user can change the display | 415690016 | Principal Dx | 01/08/2011 |

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# Which direction to make it easier?

# What we thought might help

- Subsets / Favourites
  - Specialty
  - General Comorbidities
  - Post Op Complications
  - Mimic a pre-admission form

- Preliminary work
  - Based on ICD-10 codes

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# What we did

- ## General Comorbidities (10 folders, 250 terms)

  - Acute Coronary Syndrome
    - Angina, Angina Pectoris, NSTEMI, STEMI, Unstable Angina
  - Arrhythmia
    - Acute subendocardial infarction, AF, AV Block, Bradycardia, Heart block, Sick sinus syndrome, Sinus tachycardia, tachycardia, VT
  - Electrolyte imbalance      Gastroenterology      Hypotension
    Infection      Nutritional Deficiency      Overdose
    Renal      Respiratory

## What we did (cont)

- Post Op complications (28 terms)
  - Postop nausea, postop shock, postop ileus, postop infection, post op confusion

- Pre-admission form (80 terms)
  - Grouped by body system
  - Mix of finding and past procedures

- No specialty subsets
  - Little time &exposure prior to go live

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# Pre-Admission Form

| SYSTEM ISSUES | If yes - ✓ box or specify in other<br>If no - ✓ NAD (or N / A) | DOCTOR's NOTES / DETAILS |
|---|---|---|
| **CARDIOVASCULAR** ☐ **NAD**<br>☐ Hypertension ☐ Valve Disease ☐ Orthopnoea<br>☐ Myocardial Infarction ☐ Murmur ☐ PND<br>☐ Angina / Chest Pain ☐ Rheumatic fever ☐ Swollen ankles<br>☐ Cardiac Failure ☐ Peripheral vascular disease<br>☐ Pacemaker<br>☐ Arrhythmia<br><br>Other | | |
| **RESPIRATORY** ☐ **NAD**<br>☐ Cough ☐ Dyspnoea ☐ URTI / LRTI (current / resolving)<br>☐ Wheeze ☐ Asthma ☐ Obstructive Sleep Apnoea<br>☐ Sputum ☐ COAD (on CPAP ☐ )<br><br>Other | | |
| **GASTROINTESTINAL** ☐ **NAD**<br>☐ Liver Disease (specify) ☐ Hepatitis (specify)<br>☐ Reflux / PUD ☐ Bowel Disease (specify)<br><br>Other | | |
| **HAEMATOLOGICAL** ☐ **NAD**<br>☐ Warfarin ☐ DVT / PE in past ☐ Anaemia<br>☐ Clopidogrel ☐ Abnormal bleeding ☐ Blood transfusion reaction<br>☐ Ticlopidine ☐ FHx Bleeding disorder ☐ Jehovah's witness<br>☐ NSAIDs<br>☐ Aspirin | | |

# Why we're not sure if it will help

- Did we pick the right code to include?

| Term | Terminology Axis |
|---|---|
| MRSA infection of postoperative wound | Finding |
|     Methicillin-resistant Staphylococcus aureus (MRSA) infection of postoperative wound | Finding |
| MRSA infection | Finding |
|     Methicillin resistant Staphylococcus aureus infection | Finding |
|     Infection due to Methicillin resistant Staphylococcus aureus | Finding |
| MRSA - Multi-resistant staphylococcus aureus screening | Procedure |
|     Multi-resistant staphylococcus aureus screening | Procedure |
| MRSA - Multiple-resistant Staphylococcus aureus infection | Finding |
|     Multiple-resistant Staphylococcus aureus infection | Finding |
| MRSA | Organism |
|     Methicillin resistant Staphylococcus aureus | Organism |
| HA MRSA | Organism |
|     Hospital associated methicillin resistant Staphylococcus aureus | Organism |
| Community-acquired MRSA (methicillin-resistant Staphylococcus aureus) infection | Finding |
|     Community-acquired methicillin-resistant Staphylococcus aureus infection | Finding |
|     Community acquired meticillin resistant Staphylococcus aureus infection | Finding |
| CA MRSA | Organism |
|     Community associated methicillin resistant Staphylococcus aureus | Organism |

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# Why we're not sure if it will help (cont)

- Reducing selection for users
- Putting terms in the mouth?
- Is it too fiddly for end users?
- Is there a best / standard approach for subset development

*Is freetext easier and quicker?*    **Yes!**

# User experience

- Mostly junior staff using SNOMED
- Training is intense
- Documentation is least important
- Want to create the summary… quickly!
- Look up is fiddly
- Building a personal favourite subset
  - 5 rotations per year!

## Where to now

- Need our SNOMED data to analyse use
- Senior clinical understanding: how / why
- Clinical staff leading design

SNOMED to be part of decision support

for greatest impact

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