A new era of opportunity: informatics for Allied Health

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Executive Director Allied Health
Healthcare Funding Models

1984 Medicare

1990s

Casemix Models
DRGs to distribute capped hospital grants

Patients are costs
Measure your inputs

5yr funding agreements
Block Grants
Historically based
Some indexation

2001 AH Minimum Dataset

2009

ABF
Output based funding

Patients are revenue
Know your production
Funding linked to service utilisation

2015+

Hybrid Models

+ Outcome measures

Outcome based
Funding for safety and quality
So the system is aiming to stimulate

Increasing financial sustainability and quality by evolving funding models and making other complementary changes to focus more on value.
Healthcare Funding Models

1984 Medicare

- **Casemix Models**
  - DRGs to distribute capped hospital grants
  - Patients are costs
  - Measure your inputs
  - 5yr funding agreements
  - Block Grants
  - Historically based
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- **Casemix Models**
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- **Output based funding**
- Patients are revenue
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- Funding linked to service utilisation

2015+

- **Outcome measures**
- Hybrid Models
  - Outcome based
  - Funding for safety and quality
Meanwhile...when we were developing ways of measuring Allied Health activity....
Metrics that matter to hospitals...

Financial and Output Metrics
• Operating Position
• Activity Targets measured in WAU

Outcome Based Measures
• Hospital Acquired Complications
• Avoidable Readmissions
• Length of Stay
• Relative Stay Index

Metrics Allied Health measure...

Input based measures:
• FTE
• Time spent on each event
• Number of events
• How we spend our day
About Townsville

• Largest Tertiary Hospital in Northern Australia. 600 beds.
• Specialist services in Adult, Paediatric, Neonatal, Mental Health, ED, Maternity and Cancer Care.
• Comprehensive Allied Health Service managed as an internal service Division.
• Implemented ieMR in March 2015.
• Evolving platform of informatics capability, including for allied health.
1. Activity documentation in Separate System

20mins/day/clinician
200 x clinicians
7% confidence in accuracy

2. Clinical documentation in ieMR

The Starting Point
Unlocking Data

Unstructured Handwritten notes

Structured digital data

Released analytics
Clinical documentation in ieMR

No separate activity system
Every service event has a corresponding note/entry

Outcomes
~ 8.0 FTE
~ $1M pa released capacity
Reliable, trusted, transparent data
(Near) realtime access

Data mined from ieMR

Automated informatics
Care – by Profession

Clinician Console

Data released on 29/05/2019 08:18
Selected Date Range: 01-Mar-2019 - 31-Mar-2019

Total Interventions: 11,219
Number of Patients: 1,692
### Allied Health Patient Intervention Log

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Gender</th>
<th>Age</th>
<th>Last Ward</th>
<th>Problems</th>
<th>Diagnosis</th>
<th>Intervention DT</th>
<th>Intervention Ward</th>
<th>Performed By</th>
<th>Position</th>
<th>Length of Stay (in Days)</th>
<th>Service Group</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

- **Care by Day**

- **Clinician Console**

- **Data retrieved on**: 29/05/2019 08:18
- **Selected Date Range**: 01-May-2019 - 31-May-2019

### Total Interventions

- **11,219**

### Number of Patients

- **1,692**

### Interventions by Month

<table>
<thead>
<tr>
<th>Month</th>
<th>Interventions</th>
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<tbody>
<tr>
<td>Mar-2019</td>
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<tr>
<td>Apr-2019</td>
<td>836</td>
</tr>
<tr>
<td>May-2019</td>
<td>836</td>
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</tbody>
</table>

### Service Group

- **Health**
  - Wellbeing Service Group
  - Mental Health Service Group
  - Inclusion Health Service Group
- **Audiology**
- **Asthma**
- **Breathing**
- **Blood**
- **Cardiovascular**
- **Diabetes**
- **Emergency**
- **Endoscopy**
- **Gastroenterology**
- **Headache**
- **Hepatitis**
- **Infectious Disease**
- **Injury**
- **Malaria**
- **Pain**
- **Pathology**
- **Psychosurgery**
- **Radiology**
- **Surgery**
- **Trauma**
- **Urology**
- **Vascular**

### Diagnosis

- **Cold**: 332
- **Acute**: 333
- **Obstructive**: 345
- **Obstructive, mixed**: 346
- **Restrictive**: 347
- **Restrictive, mixed**: 348
- **Chronic obstructive pulmonary disease**: 490

### Problems

- **AAA**: Abdominal aortic aneurysm
- **Acute bleed**: Severe blood loss
- **Anaphylaxis**: Immediate allergic reaction
- **Asthma**: Airway obstruction due to swelling
- **Blood pressure**: Elevated blood pressure
- **Cardiac arrhythmia**: Irregular heart rhythm
- **Cough**: Persistent or recurrent
- **Diabetes**: High blood sugar levels
- **Dysphagia**: Difficulty swallowing
- **Fever**: Body temperature above normal
- **Gastroenteritis**: Inflammation of the stomach or intestines
- **Hypothyroidism**: Underactive thyroid gland
- **Hypertension**: High blood pressure
- **Infection**: Presence of harmful microorganisms
- **Irritable bowel syndrome**: Abnormal function of the colon
- **Liver failure**: Severe liver disease
- **Mastitis**: Inflammation of the breast
- **Meningitis**: Inflammation of the meninges
- **Optic neuritis**: Inflammation of the optic nerve
- **Pain**: Sensation of discomfort
- **Pneumonia**: Inflammation of the lung
- **Pyelonephritis**: Inflammation of the kidney
- **Raynaud's disease**: Vasospasm of the arteries
- **Renal failure**: Loss of kidney function
- **Seizure**: Uncontrollable electrical activity in the brain
- **Sickle cell anemia**: Blood disease
- **Stress**: Negative emotional experience
- **Ulcerative colitis**: Inflammation of the colon
- **Urinary tract infection**: Infection of the urinary system
- **Vasculitis**: Inflammation of the blood vessels
- **Wound**: Common trauma
- **Zollinger-Ellison syndrome**: Overactive pancreas

### Current Patients

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<tr>
<th>Position</th>
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<td>APRN</td>
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### Interventions by Ward

<table>
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<tr>
<th>Ward</th>
<th>Interventions</th>
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### Allied Health Patient Intervention Log

- **Arrival DT**: 08/03/2019 12:00 AM
- **Discharge DT**: 08/03/2019 12:00 AM
- **Patient Name**: [Redacted]
- **Gender**: [Redacted]
- **Age**: [Redacted]
- **Last Ward**: [Redacted]
- **Problems**: [Redacted]
- **Diagnosis**: [Redacted]
- **Intervention DT**: 08/03/2019 12:00 AM
- **Intervention Ward**: [Redacted]
- **Performed By**: [Redacted]
- **Position**: [Redacted]
- **Length of Stay (in Days)**: [Redacted]
- **Service Group**: [Redacted]
Next Phase

Patient outcomes (coded)
LOS; HACs; PPHs; avoidable readmissions

Patient details (PAS)
Demographics; admission details; DRG

Inputs (around the patient)
profession(al); events; date

Mega-Data
Data Matching and Mining
654,000 AH events

Allied Health Performance and Value
AHP impact on HACs
“sweet spot” for optimising ALOS DRG/ALOS/events
Correlation between AHP events and HACs
Influence of AHP events on readmission rates
Clinician level outcomes
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