Patient Centric Data

Analysing Chronic Conditions

APAC Conference
September 2015
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**APAC Abstract**

**Introduction:**
Casemix narrows our thinking to episodes, DRGs and LOS. But most of our patients will have multiple hospital visits often for a series of chronic complaints, intermixed with other health issues. Patient Centric Analysis seeks to look at the patients’ total hospital journey giving a deeper and more accurate picture of hospital effectiveness. For instance, for renal patients with other comorbidities do multiple short stays give a better outcome than fewer but longer episodes?

**Methods:**
The Health Round Table dataset has 6+ years of data from 130+ hospital facilities covering 70% of Australia’s population. The data has been linked so we now have a complete patient journey, covering multiple ED, Inpatient episode, Allied, Surgical and other events over many years. Identifying key chronic diagnoses with multiple episodes for each patient forms the basis of our patient centric analysis. Special attention was made to the change in diagnoses and procedures over time as each chronic condition developed.

**Results:**
A typical disease journey has been developed for a number of chronic conditions. Each journey has the identification of early, mid and late stage diagnoses and procedures. We are seeking hospital partners to identify best practise within each phase using a combination of HRT data and clinical approach.

**Discussion:**
We questioned whether analysis of the some typical chronic diagnoses such as renal, diabetes, and cellulitis at the episode level was appropriate. The HRT joined patient dataset gives a detailed time series view of the care given. We suggest that variance in care/LOS can be better examined and explained by looking at the journey better than the individual episodes of care.
Summary

• Patients with multiple comorbidities are the norm in hospitals
• Episodic analysis doesn’t capture the experience of those patients
• New analysis can be used to create patient segments for analysis
• Previous episode history is a good indicator of future episodes
• We’d like your input into this process
What is The Health Roundtable doing?

- Continuum – a linked database of Inpatient, ED, and costing data
- 120 Hospitals, over 6 years of data
- Other data sources (Allied, Mental Health, Hospital KPIs, Patient Safety) have been integrated

See the website for information about Health Roundtable data  https://www.healthroundtable.org/
Patient A goes from Acute -> Subacute -> Acute – a ‘bounce back’
Basic Results – 30 month sample

Looking at Acute Diabetes – 37738 Patients, with 1.36 acute diabetes K60 episodes

– Same Patients, average 3.2 episodes each when looking at all DRGs but excluding dialysis

– Top other DRGs present with K60
  • L68Z PERITONEAL DIALYSIS
  • R63Z CHEMOTHERAPY
  • R60B ACUTE LEUKAEMIA - CCC
50 Patients’ Episodes viewed in Parallel (Short first episode)

- 5 day initial K60 Episode, and all following episodes
- Sparse secondary episodes
50 Patients’ Episodes viewed in Parallel (Long first episode)

- 10 day initial K60 Episode, and all following episodes
- More and longer subsequent episodes
What does this tell us? – Acute Diabetes

• For 5 day initial episode
  – 30% chance of re-admit in 1 year
  – 3 day total LOS for subsequent episodes

• For 10 day initial episode
  – 40% chance of re-admit in 1 year
  – 7 day total LOS for subsequent episodes (130% increase)

• A long (10 day) LOS of the first episode is a good indicator of further episodes, and those episodes will be longer
Compare with Kidney Failure

- For 5 day initial episode
  - 37% chance or re-admit in 1 year
  - 4.2 day total LOS for subsequent episodes
- For 10 day initial episode
  - 51% chance of re-admit in 1 year
  - 5.2 day total LOS for subsequent episodes (24% increase)

- K60 is better ‘sentinel’ DRG to indicate future episodes
Conclusions

- A long (10 day) LOS of the first episode is a good indicator of further episodes, and those episodes will be longer
- Basic (obvious) fact – sick and complex patients have more episodes and those episodes are longer. These are the patients that are filling hospitals
- Analysis of Individual Episodes and DRGs don’t capture this
- Of interest to hospital planners, insurance companies, and underpins the need for community pre-emptive engagement
Developments in the pipeline

- Identification of the best ‘sentinel’ indicators
  - A sentinel indicator flags a high likelihood of re-admits and long LOS
- Total LOS – across all episodes and caretypes – can derive expected LOS
- Segment patients – the segment would identify complexity and LOS before admittance
Are you interested in helping?

- What questions would you like answered?
- What measures would you like to see?
- How should we proceed?

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