Hospital level analysis to improve patient flow

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Motivation

Overcrowding in Hospitals: an International Crisis

Increased wait times.
Increased medical errors.
Increased length of stay.
Increased medical negligence claims.

Increased walkouts.
Ambulance diversion.
Patient safety at risk.
Unnecessary deaths.
Motivation
The Magic Fixes

Better Capacity Management
Early Discharge
Motivation


- Choke Point A: increasing patient turnover
- Choke Point B: excess ED inflow
- Choke Point C: excess inpatient ward inflow

Analysis Period: 1st October 2007 to 31st March 2010 (913 days)
Motivation


Group 1
901 beds or more

Group 2
301-900 beds

Group 3
Up to 300 beds

QLD Group 3 Hospital Chokepoints:
A: 98%
B: 102%
C: 106%

Note: Vertical lines A, B and C represent stages of performance change associated with patient flow.
Caboolture Public Hospital
Access Block Vs Inpatient Occupancy

Robust Regression: Access Block Vs Inpatient Occupancy

Analysis Methodology

Analysis period:
1 Oct 2007 to 31 March 2010 (913 days).

Data Sources:
- Hospital Based Corporate Information System (HBCIS)
- Emergency Department Information System (EDIS)

3 points of performance change identified:
- Choke Point A: increasing patient turnover
- Choke Point B: excess ED inflow
- Choke Point C: excess inpatient ward inflow

Compared to similarly sized QLD hospitals

In Addition: Analysis groups:
- for all days together.
- for weekdays.
- for weekend days.

89% treated on time compared to the national average of 89%

See previous years’ data
The findings

Caboolture Hospital Chokepoints: 100%, 106%, and 113%

QLD Group 3 Hospital Chokepoints: 98%, 102%, and 106%
The findings

Caboolture Hospital WEEKDAY Chokepoints 100%, 108%, and 113%

Caboolture Hospital WEEKEND Chokepoints Choke Point B : 106%
In Conclusion

• Do the science

• Know the flow @ your service

• Understand how the science applies to flow @ your service
Patient Flow @ AEHRC
Enabling hospitals to better manage their resources & hence reduce waiting times

1. Linking ambulance, ED and admissions data
2. Disease surveillance
3. ED Length of stay performance
4. Better bed demand prediction
5. Patient flow visualisation
6. Patient flow and hospital occupancy
7. Bed configuration
8. Adverse event analysis
9. Early discharge strategies
10. Readmission prediction (frequent-flyers)

www.csiro.au/patientflow
Thank you

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