Examination of changes in pathology tests ordered by Diagnosis-Related Group (DRGs) following CPOE introduction

E Vecellio ¹, A Georgiou ¹, G Toouli ¹, A Eigenstetter ², L Li ¹, R Wilson ², JI Westbrook ¹

¹ Centre for Health Systems and Safety Research, University of New South Wales, Sydney, NSW
² South Eastern Area Laboratory Services, Prince of Wales Hospital, Sydney, NSW
Research Areas
Background

- Too many tests?
- Too few tests?
- The ‘just right’ number of tests?
Background

Overall Test Volume

Test Order Rate Per Patient Day
Background

DRG as a grouping variable

Length of stay
Ancillary service utilisation
Nursing hours

DRG as a grouping variable

Research Questions

Test Order Rate Per DRG Per Patient (Per Day)
Research Questions

Monitor test volume during the implementation of EMR
Research Questions

Compare Six Hospitals
Setting and Methods

- EMR incorporated Cerner PowerChart CPOE system. (Initially, version 2007 then, during 2011, version 2010.)

- The EMR was implemented at the six hospitals gradually between Oct 2008 and Oct 2009.

- Our dataset included two-months of data (Aug-Sep) for each of four years (2008-2011).

- 2011: EMR used for ~66% of pathology orders
Data Linkage
Data Linkage

Pathology tests: 1,256,079
Inpatient admissions: 71,191
Results

Mean Number of Tests per Inpatient

EMR@3  EMR@6 Hospitals

- Overall (Top-5 DRGs)

2008  2009  2010  2011
Results

Mean Number of Tests per Inpatient

EMR@3  EMR@6 Hospitals

- Tracheostomy
- Rehabilitation
- Haemodialysis
- Respiratory Infection
- Chest Pain
- Overall (Top-5 DRGs)
Research Questions

**DRG: Chest Pain (F74Z)**

**Compare Four EDs**
Pathology tests: 6,803
ED presentations: 988
Results

Mean Rate of Tests per ED Presentation

DRG: Chest Pain (F74Z)

Hospital ED
- A
- D
- E
- F

Rank
- 1
- 2
- 3
- 4
- 5

Tropinin
EUC
Automated Diff
LFT
PT/INR/APTT

Image: FreeDigitalPhotos.net / nokhoog_buchachon
So, what does it mean?
This project was funded by a grant from:
Australian Government
Department of Health and Ageing,
Quality Use of Pathology Program.

Thank You

Email: e.vecellio@unsw.edu.au
www.aihi.unsw.edu.au
Examination of changes in pathology tests ordered by Diagnosis-Related Group (DRGs) following CPOE introduction

E Vecellio ¹, A Georgiou ¹, G Toouli ¹, A Eigenstetter ², L Li ¹, R Wilson ², JI Westbrook ¹

¹ Centre for Health Systems and Safety Research, University of New South Wales, Sydney, NSW
² South Eastern Area Laboratory Services, Prince of Wales Hospital, Sydney, NSW
Results

Mean Number of Tests per Inpatient per Day

2008  2009  2010  2011

EMR@3  EMR@6 Hospitals

- Tracheostomy
- Rehabilitation
- Haemodialysis
- Respiratory Infection
- Chest Pain
- Overall (Top-5 DRGs)