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HEALTH POLICY ANALYSIS

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Australian emergency care costing and classification study

Activity based funding 2016 conference

Authors and acknowledgements

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Acknowledgments:

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  - HealthConsult
  - Health Outcomes International
  - Expert advisors (Dr Ralph Hanson, Dr Sue Ieraci, Dr Tim Smyth, Dr Peter Sprivulis, Dr Sharon Willcox)

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Why a new classification?

- More than 7 million patients present to emergency departments across Australia annually.

- This number is also increasing at a rate of about 5% annually.

- Current classification used for ABF:

  – Urgency Related Groups (URG): based on type of visit, triage, disposition and diagnosis.

  – Urgency Disposition Groups (UDG): based on type of visit, triage and disposition.

  – Both considered interim classifications.

- Limitations:

  – Both rely on triage (good indicator of urgency, but not complexity/ resource use).

  – Limited clinical meaning.

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Investigative review of classification systems for emergency care

- Commissioned by IHPA in 2013

- Reviewed classifications developed/ used in Australia and other countries:

  – Extensive clinical consultation.

  – Analysis of existing cost data.

- Conclusions:

  – New classification needed to replace the URGs/UDGs.

  – Should be based on a high quality costing study.

  – Triage given less importance.

  – New classification system should better account for patient complexity.

Current project

- The current project involves both a costing study and development of a classification system.

- Key aims of the costing study:
  - Significantly improve estimates of costs at the patient level (emergency department stay) compared with current NHCDC.
  - Collect information on patient characteristics (in addition to those routinely collected) that have the potential to explain variation in costs between patients.

- Key aims of the classification development component:
  - Develop, empirically test, and recommend a classification for emergency care that improves:
    - Explanation and prediction of variation in cost of emergency department stays.
    - Clinical meaning.

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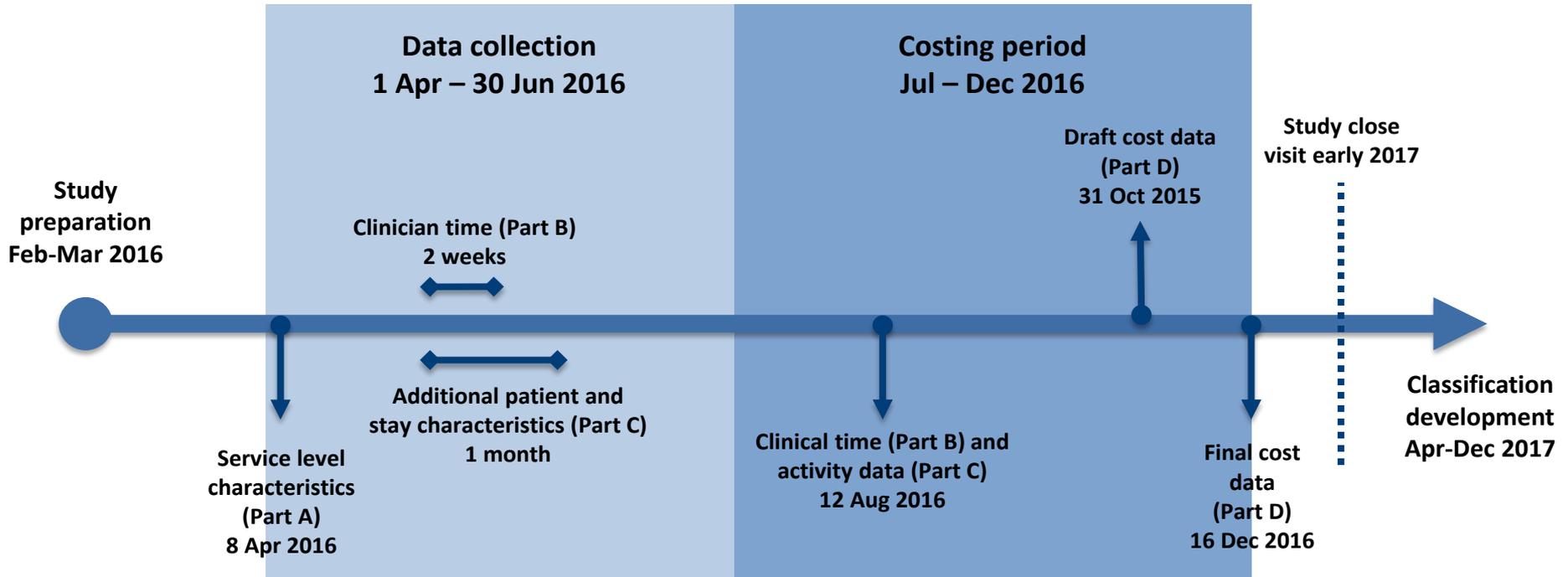
Emergency care costing study

- There are 12 sites participating in the study from NSW, SA, WA, NT and Tas.

- There is a good representation of emergency departments from the various groups of emergency care services.

- Although emergency services were also targeted, no sites were nominated to participate and as such are not included in the study.

Stratum	No. of sites
Specialist paediatric	2
Large ED – major cities	4
Large ED – regional	2
Other ED – major cities	1
Other ED – regional	2
Other ED – remote	1
Emergency services	0
Total sites	12

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Emergency care costing study

- The study is collecting the following types of data:

  - **Clinician time** against individual patients (including the activity/ procedure being undertaken during this time).

  - **Patient and stay characteristics** that are additional to those routinely collected.

  - **Costed activity**, using the clinician time collection information.

- The 'live' study is for one month (between April and June 2016), involving:

  - 2 weeks of the clinician time collection.

  - Additional patient and stay characteristics collected for the whole month.

Costing study time line

Data collection
1 Apr – 30 Jun 2016

Costing period
Jul – Dec 2016

Study preparation
Feb-Mar 2016

Clinician time (Part B)
2 weeks

Draft cost data (Part D)
31 Oct 2015

Study close visit early 2017

Service level characteristics (Part A)
8 Apr 2016

Additional patient and stay characteristics (Part C)
1 month

Clinical time (Part B) and activity data (Part C)
12 Aug 2016

Final cost data (Part D)
16 Dec 2016

Classification development Apr-Dec 2017

Costing study time line

Study preparation Feb-Mar 2016

Data collection Apr – Jun 2016

Clinician time 2 weeks

Additional patient & stay characteristics 1 month

Costing period Jul – Dec 2016

Study close visit early 2017

Classification development Apr-Dec 2017

Four main data submissions throughout study:
- Part A – Service level characteristics – 8 Apr 2016
- Part B – Clinical time – 12 Aug 2016
- Part C – Activity data – 12 Aug 2016
- Part D – Draft/ Final cost data – 31 Oct 2016 / 16 Dec 2016

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Clinician time collection

- All sites in the study are using barcode scanning technology to record clinicians' time spent with patients and the activity/ procedure undertaken.

- Some sites are also using observers for some specific roles (e.g. senior clinician) or places (e.g. resuscitation) within the emergency department.

- This information is being collected prospectively.

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Clinician time collection

Example barcode scan card:

Regional Procedures

Abscess/collection aspiration or drainage	Nasal packing/cautery	Suprapubic catheter
Advanced patient cooling/ warming setup	Nasogastric/PEG tube insertion	Urethral catheter/IDC
Bandaging/Strapping sprained joint	Peritoneal Aspiration	Vaginal speculum examination
Chest tube/catheter/thoracostomy	Peritoneal Dialysis	Walking aid dispensation(incl. patient education)
Eye irrigation	Plaster(POP)/backslab application	Wound cleaning & dressing
Foreign Body Removal	Pleural aspiration	Wound gluing
Fracture/dislocation reduction	Rectal examination	Wound suture/stapling - complex
Joint aspiration	Splint or sling application	Wound suture/stapling - simple
Lumbar puncture		

Patient mobilisation assistance and positioning

Airway management	Log roll spinal assessment
C-spine collar application	Nursing escort to an investigation procedure or on disposition
Heavy patient positioning	Positioning of patient to avoid pressure injury
Heavy patient toileting	

Management of Acute Behavioural Disturbance

Administration of Chemical/Mechanical Restraint	One-to-one Nursing for distressed/confused/agitated patient

Referrals

Referral aged care assessment	Referral other
Referral for mental health legal status assessmnt	

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Additional patient and stay characteristics

- In addition to routinely collected data (e.g. emergency department diagnosis, episode end status), sites are also required to collect and supply the following additional information for patients:
  - Presenting problem (a specific list was developed for the study)
  - Diagnosis 'modifiers' (a specific list was developed for the study)
  - Procedures (a specific list was developed for the study)
  - Investigations (imaging and pathology)
  - More detailed episode end status (e.g. transfer to ICU, transfer to operating theatre)

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Diagnosis 'modifiers'

- A condition or status of the patient that impacts treatment complexity (and therefore, cost of care).

- Identified through the *Investigative review* (through literature review and stakeholder consultation).

- Further refined following the costing study pilot. List is as follows:

1. Consciousness
2. Body mass index flag
3. Homelessness
4. Mental health legal status
5. Intellectual disability
6. Severe mental health disorder
7. Child at risk

8. Patient unable to self-care
9. Chronic substance/alcohol dependence or abuse
10. Patient unable to communicate in English
11. Patient distress/ confusion/ agitation requiring one to one nursing
12. Patient is a residential care resident

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Cost data

- Study sites are required to develop relative value units (RVUs) using the clinician time data collected.

- Costing will be for the entire 2015-16 financial year.

- Costing will be undertaken as follows:

  - For patients in the study against which clinician time is recorded, clinician time allocated directly for costing.

  - For patients in the study that have procedures and diagnosis modifiers recorded (but not clinician time), procedures will be used to allocate clinician time to patients (using clinician time collection to develop RVUs).

  - For patients not in the study, the best available markers will be used to allocate costs. These may include treatment area, pathology/ imaging tests recorded for the patient.

Consensus study of clinician time

- In addition to the empirical clinician time collection, a consensus study of clinician time is being undertaken.

- The study is aiming to estimate times for procedures and other patient-related activities undertaken by the different categories of emergency department clinicians.

- The results are intended to be used to:

  – Validate the data collected by clinicians through the empirical study (i.e. scanning and observational studies undertaken).

  – Potentially to supplement data that might be missing for specific procedures/ activities for any hospital.

- The consensus study is being undertaken in two rounds:

  – Survey 1 – Initial time estimates by clinicians (completed).

  – Survey 2 – Present the results back to clinicians and request confirmation or changed estimate.

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Study infrastructure

- Study documents
  - Data request specification
  - Costing methodology
  - Site implementation plan
- Study website
  - Public part and secure access part
  - Secure access part includes progress reporting function
- Training materials
  - PowerPoint slides
  - Handouts

- Scanners and scanning database
  - Provided by IHPA
  - Database set up locally to upload scanning information
- Study site data management system
  - System to manage the data required for the study, including quality and encryption of patient and staff identifiers

Study support

- Each site has appointed a local co-ordinator to set up and manage the study.

- Each state/ territory has been assigned a field management team to support sites within that state/ territory:
  - Assist with site set up, including training site coordinators
  - Support the study sites throughout the collection
  - Troubleshoot data collection issues

- Scanning software vendor has been setting up scanning databases locally, providing scan cards, and is providing training on the use of the scanners.

- The study has ethics approval from the South Australian HREC, and states/ territories have also obtained their own approvals.

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Concluding remarks

- Emergency departments are busy places, with clinicians working across a range of patients at any one time. Therefore, these studies are not an insignificant undertaking and have required backing and co-ordination from a range of people within the sites, as well as the state and territory health departments.

- The costing study will subsequently allow investigation of patient and stay characteristics that lead to cost differences between patients, for the development of the classification system.

- In addition to developing a classification system, the study has other benefits, such establishing an improved capacity of sites to undertake higher quality costing, which is aimed to be continued into the future.

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