

Acknowledgements

- Dr Kim Hansen FACEM
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- EMER site champions

ERROR BECAME EDIC/ : () 1 1 1 1 X C 3411 WHAT : (•)] h m h

Medical error 3rd leading cause of death...



A perfect storm



Studies on Error in Emergency Medicine

- 2000, Academic emergency medicine
- <u>Consensus committee</u> created to address definition, measurement and identification in EM
- 3 methods of <u>error identification</u> :
 - 1. mandatory reporting
 - 2. voluntary reporting (latent errors)
 - 3. active surveillance eg. chart review

Defining, Identifying and Measuring Error in Emergency Medicine Acad Emer Med Nov 2000 Handler et al

Studies on Error in Emergency Medicine

- Fordyce et al 2003 'Errors in a busy emergency department'
- One week, prospective observational study
- ~ 2000 patients / 400 error reports
- 18 errors per 100 patients
- <u>Categorised</u>: diagnostic studies, administrative procedures, pharmacotherapy, documentation, communication, environmental
- Older, sicker patients more errors

Experience in adverse events detection in an ED: incidence and outcome of events

- Hendrie et al, 2007
- Chart review
- Case histories screened for adverse events
- Overall event rate of ~ 5%
- Events resulting in death more likely preventable

Emergency Medicine Australasia (2007) 19, 16-24

Characteristics of Patient Care Management Problems Identified in ED M and M Investigations during 15 years

- Retrospective review 636 cases referred for M and M investigation
- **Phase of work** : diagnosis, treatment, disposition, public health
- **Contributing factors**: Patient factors, triage, clinical tasks, teamwork, system
- Moved away from talking about 'errors' to 'patient care management problems'

Cosby et al, Annals Energ Med Vol 51 No 3 March 2008

Cosby, 2008 (cont)

Need strategies to :

- Improve the diagnostic process
- Improve clinical tasks (medical reasoning, procedural skill sets, interpretative skills sets, affective influences)
- Address patient factors
- Develop more effective medical teams

Error Taxonomy

- taxis = order
- nomos = science/law



"A description of our work and our failures." Karen Cosby

...a foundation for communicating with others,developing a common language, share results, analyse problems and form solutions Encourage debate/consensus on What matters and why? ... start to make sense of our 'world'

From chaos to order ...



Types of Taxonomies of Adverse Events in Medicine

- Processes of care
- Failure to achieve <u>goal of care</u> (eg. diagnosis, treatment, disposition, public health)
- Clinician versus 'systems' error
- Human factors model interface of human, environment and equipment

Laboratory error



Medication error



Percent of Errors 39%

Intercept Rate 19%

True Error Rate 20%

Lucian Leape, et.al., JAMA, Volume 274, 1995

90 SECTION IV . DESIGNING AND MANAGING THE SAFE EMERGENCY DEPARTMENT



Figure 13.1 • Process mapping of sources of Emergency Department (ED) error EMS, emergency medical services; RACQITO, resource availability continuous quality improvement trade-off. (Adapted from Croskerry P, et al. Process Improvement and Patient Safety in the Emergency Department. In: Marx J, Hockberger R, Walls R. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 6th ed. St. Louis: Mosby; 2006;3119–3127.)

Taxonomies

Domain specific :

- Anaesthesia
- ICU
- ENT



Emergency Medicine Events Register

http://www.emer.org.au/









EMER



- November 2012, ACEM / APSF collaboration
- Specialty specific, College-led
- Anonymous
- On line
- 5 minutes to report
- Adverse events, near misses, good saves
- Available to all EDs in Australia/New Zealand
- 46 Site champions across 50 sites

Barriers to reporting in EM

- Time pressures
- Patient care
- Lack of feedback on incidents reported
- Fear



Data collected

- 21 questions (only 9 mandatory)
- 6 questions -free text answers (rich, descriptive)
- Include: Time/date, designation of reporter, triage category, specialty involved, stage incident initiated /detected
- Free text: what happened?, contributing/mitigating factors, outcome, how could have been prevented, action taken.



EMER



- Data analysed ED physicians/ expert coder
- Principal natural categories (up to 4 per case)
- Themes identified

• Feedback to the profession

Findings

- 324 incidents
- 42 deaths
- 1. Diagnostic error
- 2. Incidents involving Radiology/Pathology
- 3. Representation
- 4. Procedural error
- 5. Medication
- 6. Failure to recognise severity

EMER - designation



Triage





23 Principal Natural Categories

- Diagnostic
- Investigation (Path/Imaging)
- Representation
- Procedure
- Medication
- Failure to recognise severity
- Communication between teams
- Treatment
- Transfer/Transport
- Handover

- Equipment
- Triage
- Overcrowding
- Documentation
- Professionalism
- Staffing
- Patient identification
- Prolonged stay
- Injury/violence
- Self discharge
- Fall
- Referral
- Conflict between teams



Number of Incidents

PNC

Diagnostic errors (N= 135)

- AMI (8)
- PE (6)
- Aortic dissection (5) Carotid artery dissection (2)
- Stroke (5)
- Fractures (15)
- Testicular torsion (7)
- Pneumothorax (4)
- Meningitis (4) Sepsis (3)
- Epidural abscess/cauda equina (3)
- Ruptured spleen (3)

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Improving Diagnosis in Health Care



Using voluntary reports from physicians to learn from diagnostic errors in the emergency department

- Sepsis
- Acute coronary syndromes
- Fractures
- Most diagnostic errors relate to common disease conditions
- Systems factors: high workload, inefficient ED processes

Okafor et al, April 2016 Emergency medical journal

Aortic dissection









Emergency Medicine Events Register



Subject: Aortic Dissection

Aortic Dissection is over-represented in the EMER database. Currently, 2% of incidents (5/272) involve an aortic dissection. The incident categories in reports involving aortic dissections are diagnostic error and delay to treatment.

The diagnosis of aortic dissection can be difficult because the patients present with atypical chest, abdominal or back pain, with or without limb symptoms. In some patients, the pain resolves. All five EMER patients were put on an "ACS rule-out" pathway with ECGs and troponin. One patient had a normal VQ after a positive d-dimer. Equal bilateral BPs and the absence of mediastinal widening on CXR are not sufficiently accurate to rule out an aortic dissection.¹ A delayed diagnosis can be fatal – two EMER patients were found deceased in the days after discharge from ED.

Suspected torsion testes

- Adult/ paediatric
- Urology/general surgery
- Delays caused by obtaining ultrasound









Emergency Medicine Events Register



Subject: Testicular torsion

Testicular torsion in young males is over-represented in the EMER database. Currently, 3% of incidents (7/235) involved a probable testicular torsion. All incidents in the EMER database are coded into categories by an expert panel. The most common incident categories in reports involving torsion is delay to treatment, conflict between teams and diagnostic error.

The management of testicular torsion is rapid surgical exploration to maximise the chance of a positive outcome. The patient should be given analgesia and kept fasted. Ultrasound scanning should not delay surgical exploration.¹ Referral and treatment pathways should be established by the ED Leadership team in advance.



Near miss / good save

- Aortic dissection
- Torsion testis
- Re read of CT



Procedural errors (64)

- Intubation (22)
- Sedation (4)
- Corneal foreign body removal (5)
- Nasogastric insertion (3)
- IV access (4)
- Suturing (3)
- Nerve block (2)







Emergency Medicine Events Register



Subject: Airway Management

Adverse events in airway management are over-represented in the EMER database. Currently, 11% of EMER reports(30/270) involved an incident relating to intubation. All incidents in the EMER database are coded into categories. The most common types of airway incidents are CICO ('can't intubate, can't oxygenate), medication errors and delay to decision to intubate. Outcomes included unrecognised oesophageal intubation, surgical airway, cricothyroidotomy and 5 deaths (16.7% of airway incidents).

Advanced airway management remains a high risk procedure in Emergency Departments. To reduce errors a number of strategies can be utilised including equipment standardisation, simulation, selection of experienced practitioners, and use of a pre-intubation checklist and difficult airway algorithm.¹



Specialty involved



General surgery

- Midgut volvulus/Ischaemic colitis/Perforated appendix
 Issues around :
- Delay in surgical assessment as registrar in theatre
- Phone advice
- Non surgical abdomen admitted under medicine
- Over reliance on CT report



Imaging - issues

- Off site reporting
- Amended reports
- After hours access to CT/MRI
- Follow up of results



- Incidental findings not followed up (?metastases)
- ED reading of CT finding error

ENT incidents (N = 8)

- Post tonsillar bleed (3)
- Delay in diagnosis head and neck cancer (2)
- Foreign body removal ear (trauma to canal)
- Foreign body throat (sent home)
- Epiglottitis



Themes

- Verbal instructions (wrong dose, wrong patient given contrast)
- New/unfamiliar equipment
- Lost information (ambulance notes, triage)
- Follow up of test results
- Triaged to fast track
- "ED busy "

Follow up test results -examples

- AML low WCC
- Calung –found 1 year
- Urine urosepsis
- Bowel obstruction
- Eye swab –chlamydia
- Fractures delay in results checking



Themes

- How we supervise eg. STEMI/shoulder pain
- Sedation
- Night shift
- End of shift: procedures
- Morning handover



Themes

- Underappreciation of trauma in elderly
- Warfarin
- Deaths from sepsis
- Mental health: delays, absconding, misdiagnosis
- Doing a procedure on a patient you don't know, unfamiliar procedure, inexperience

Other significant findings

 Most incidents are detected *after discharge* from the ED

- Feedback from colleagues/patients- how can we improve this?
- How can we incorporate <u>follow up</u> of our patients into our professional role?

State reporting

- Requirement/expectation
- Reporter identified
- 10—25 mins (?)
- Opportunity for local feedback/improvement

Specialty reporting

- Voluntary
- Anonymous
- 5 minutes
- Specific to EM –opportunity for improvement of specialty
- Benefit to EM colleagues
- Burst reporting
- Consumer reporting
- CPD

There is a role for both.

Feedback to the profession...



- Journal publications
- Case reports Recurrent diagnostic pitfalls in our profession
- Review of ATS (Cat 2 Suspected torsion testis)
- Inform Procedural skills training (Diploma/Certificate)
- Planned development of College Guideline on 'Managing Adverse Events in the ED'



Emergency Medicine Australasia



Original Research

The Emergency Medicine Events Register: An analysis of the first 150 incidents entered into a novel, online incident reporting registry

Kim Hansen ⊠, Timothy Schultz, Carmel Crock, Anita Deakin, William Runciman, Andrew Gosbell

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Consumer reporting EMER





Home About us < Services < Get involved < Patient Exper

EMER: HOW CONSUMERS & CLINICIANS CAN IMPROVE PATIENT EXPERIENCES IN HOSPITAL EMERGENCY DEPARTMENTS

BLOG

1 in 10 diagnoses made by a doctor, is thought to be incorrect. It is estimated that each year in Australia 8,000 patients die from medical error. 300,000 hospital admissions are associated with potentially preventable adverse events. The Emergency Medicine Events Register otherwise known as EMER, was developed so that consumers and clinicians could report adverse incidents. To allow clinicians to learn from their mistakes and create an open culture of discussing patient safety.

Speaking at 'Organisational Approaches to Implementing Patient Experience: Lunch Box Session' from EMER are Anita Deakin and Dr Carmel Crock (Royal Victorian Eye and Ear Hospital & ACEM). **'EMER** is an adverse event and near-miss reporting system that is peer-led, online, anonymous and confidential. It is a means of supporting improvement in safety and quality in emergency medicine by understanding of contributing factors and how the risk of harm to patients can be minimised or prevented.' (emer.org.au)

Future





Brian Goldman:

Doctors make mistakes. Can we talk about that?

TEDxToronto 2010 · 19:28 · Filmed Nov 2011

🖳 31 subtitle languages 🙆

View interactive transcript



Every doctor makes mistakes. But, says physician Brian Goldman, medicine's culture of denial (and shame) keeps doctors from ever talking about those mistakes, or using them to learn and improve. Telling stories from his own long practice, he calls on doctors to start talking about being

One physician at a time...

- I am a redefined physician.
- I am human. I make mistakes.
- But I strive to learn one thing that I can pass on to other people.