Using an e-Portfolio to Demonstrate Competency in Acute Care Skills

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Conflicts and Acknowledgements

• No conflicts

• In any project there are those who help in small but important ways – special mention: Our colleagues Dr Anna Vnuk and Lynne Sanderson, also Colin Dalziel and Shane Sutherland at PebblePad
Outline

• Background to the project
• What we have done
• Outcomes
• Where we are going now
List in order of “safest” to “most unsafe”

- Flying on a scheduled service between Adelaide and Brisbane
- Flying between Australia and USA
- Driving between Melbourne and Sydney
- Skydiving
- Being admitted to a hospital for a minor procedure
Medical error in Australia

Estimated 18,000 deaths, 50,000 disabled and 330,000 harmed per year.

11 times safer to travel by road than to be admitted to hospital.

Commercial aviation is at least 10,000 times safer.

Medical Error Action Group - Australia
'Blundering hospitals kill 40,000 a year'

One in ten treated by NHS falls victim to errors, officials admit

Cost: £2 billion pa in extended hospital stays alone

(Data source: Dr Foster Research Group - BMJ)
## Adherence to quality care indicators

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>RCR*</th>
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<tbody>
<tr>
<td>Breast cancer, pre-natal care, low back pain, coronary artery disease, hypertension</td>
<td>81-100%</td>
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<tr>
<td>COPD, CHF, cerebrovascular disease, asthma, depression, diabetes, colorectal cancer</td>
<td>61-80%</td>
</tr>
<tr>
<td>UTI, headache, AF, peptic ulcer disease, STDs</td>
<td>41-60%</td>
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<tr>
<td>Alcohol dependence</td>
<td>21-40%</td>
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*Recommended care received*  
(McGlynn et al. NEJM 2003)
How to Improve Patient Care

• Standardisation of care
  – e.g. treatment algorithms
• Use of checklists
• Practise in managing medical emergencies including simulation
Basic and Advanced Life Support Guidelines

• BLS
  – DRAABCD

• ALS
  – BLS + advanced airway interventions + diagnosis and treatment of cause of problem + aftercare

from ERC, ARC, AHA, etc
Much BLS (and ALS) training is flawed!

- Focus on the individual practitioner but work is in teams
- Poor standardisation of teaching
- Assessment immediately after training
- Inadequate performance accepted
- Quality not recognised/rewarded

<table>
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<th>The system/environment:</th>
<th>Individual:</th>
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<tbody>
<tr>
<td>85-90%</td>
<td>10-15%</td>
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Investigated 240 cases

- Errors in judgment (173 of 240 [72%]), teamwork breakdowns (167 of 240 [70%]), and lack of technical competence (139 of 240 [58%]) were the most prevalent contributing factors.
- The most common task during which failures of technical competence occurred were diagnostic decision making and monitoring of the patient or situation.
Our objectives for acute care skills

- All students must acquire essential knowledge and become proficient in core acute care skills
- Students can evaluate their own performance and identify how it could be improved
- A web-based system for students to aggregate evidence of acute care clinical skills capability and performance from multiple sources
- Students receive feedback on performance
Flinders University main campus - Adelaide
Flinders rural clinical school sites (SA & NT)
Adult BLS

• Danger
• Response (tap and shout)
• Get help, eg activate EMS (999, 000, etc.)
• Airway & Breathing
• C – check SOL, commence ECC if needed
• D – use AED as soon as available
• E-valuate own performance
• F-eedback – essential for quality performance
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• Students receive feedback on performance
• Profiles
  – Competencies
  Components of skill sets including management of unwanted outcomes

• Proformas
  – Scaffold reflection
  Can reflect on performance and ability and attached video, feedback, etc.
Basic Life Support -2008

This form is for you to reflect on your Basic Life Support skills and to outline how you will improve on this skill set in the next academic year. When you have completed this form satisfactorily you will have achieved BLS Provider status.

Evidence of achievement.
You must upload your BLS assessment video and make sure it is attached to this form by the due date.

Basic Life Support Skills
You should read the BLS guidelines again and then provide a commentary on the BLS you have demonstrated in the video. Identify the good and not so good aspects of your performance. List the other acute care skills you have acquired that were not included in this assessment.

Developing my acute care skills
Outline how you plan to improve your resuscitation skills over the next 12-15 months.

8. The online form opens.
- Answer the questions
- Attach evidence (upload your video)

Video file size limit <10 MB)
# Student work submitted to Gateway

## Published Items

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<th>Modified</th>
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Basic Life Support Skills

You should read the BLS guidelines again and then provide a commentary on the BLS you have demonstrated in the video. Identify the good and not so good aspects of your performance. List the other acute care skills you have acquired that were not included in this assessment.

Good aspects - checked for danger; checked for response well (looking at victim's face although this can't be seen in the video); called for help; checked and opened airway; uncovered victim's chest and checked for breathing (looked, listened and felt) for ~8 seconds; commenced chest compressions within 1 minute (52 seconds). CPR ratio correct (30:2); rate initially a little fast, then steady at ~25 seconds per cycle, and compressions at a rate of 30/18 seconds (100/min).

Not so good - could be quicker at transfer between compressions and breaths. Compressions became shallower/weaker after only a few cycles of CPR. Significant trouble with mask fitting caused time delays and meant that no effective breaths were given in the 3rd cycle.

Other acute care skills - expired air resuscitation; use of automated external defibrillator; airway maintenance including use of the recovery position, and use of Guedel airways and laryngeal masks; management of choking (back slaps and chest thrusts); use of basic oxygen masks and oxygen flow adjustment in a hospital setting; vital signs assessment.

Developing my acute care skills

I will need to read relevant sources to keep track of any changes to guidelines. During the year, I hope to be able to access mannequins and bag-masks in order to practice resuscitation to maintain my skills and improve consistency. As long as my health allows it, I also intend to do some general exercise to increase my aerobic fitness and upper body strength (which would result in being able to continue CPR for longer).

My medical course contains further Basic Life Support training during year 2, and although not sure of the content of this training, I expect it will include revision of prior training. In addition, I expect to learn new skills and gain more experience in techniques to which we have only had a brief introduction this year (for instance, defibrillators and artificial airways).
Some observations

• Previously, when a student received a pass they simply moved on
• Now, students review their own performance and identify where they can improve and how to achieve this
• Students demonstrate completing turns of the skills development spiral (the reflective cycle)
Conclusion

• We are using an e-portfolio so students can
  – track their learning and experiences
  – reflect on those experiences
  – share their insights with faculty and receive timely feedback

• Students are becoming more confident and competent to perform BLS

• We are extending the e-portfolio to include ALS and other acute care clinical skills
Contrasting learning outcomes

- **Published research**
  Poor skill levels, poor assessment, low confidence and reluctance to begin CPR among medical students and recent graduates

- **Students at FU**
  Capability evidence required for progression. Many students and recent graduates have initiated CPR and performed effectively
Clinical performance examples

- Airport*
- Country hospital*#
- Fitness centre*#
- Road trauma*
- Dance clubs and parties
- GP clinic

*Students provided leadership in these settings  
#Students provided feedback that helped refine teaching
The future

• Extend e-portfolio beyond ALS and acute care skills to include all clinical skills
• External review of the program and audit of assessment
• Develop/acquire automated video capture in Clinical Skills and Simulation facilities
• Develop debriefing checklists (Utstein)
• Expand video capture in teaching areas