Why wait for the Accident?

Do you know that guy?

No, but he sure looks like an idiot ...

Sean McManus
Personal Perspective

- 1994 Intern RBWH
- 1995 Medical Superintendent Aramac
- 1996 – 1997 GP Trainee FNQ
- 1998 – 2002 ANZCA Trainee
- 2003 – 16 CBH Anaesthesia & ICU Consultant
Department of Anaesthesia, Intensive Care and Perioperative Medicine

- Combined department
- Large indigenous health burden
- Referral centre 400km
- Teaching
  - ANZCA
  - ACEM
  - CICM
  - JCCA/GP up-skilling
Rural Critical Care
3 stories and some data
Far North Queensland
Ravenshoe 2015

6. Huge gas explosion blows 3m-wide crater in the brick wall and shopfront explodes, rattling buildings 100m away. 21 lunchtime diners are badly burnt.

5. Smashes through a 2m wire fence and hits a large gas cylinder on the outside back wall of the Serves You Right Cafe.

1. Ute comes round bend into town on Griggs St, veers left offroad, misses telegraph pole and mounts pavement.

2. Hits a tree, taking out huge chunk of branch.

3. Flattens a signpost.

4. Clips another tree, crosses a side road, misses a public toilet block.
Ravenshoe 2015
Just a little drive........
The Ravenshoe Review

Department of Health and Cairns and Hinterland Hospital and Health Service

Joint Health Service Investigation – Ravenshoe Post-incident Review

Final Report

February 2016
Rural Critical Care
THE INTENSIVE CARE WORKFORCE IN AUSTRALIA

SUPPLY AND REQUIREMENTS

1997 - 2008

AMWAC Report 1999.1

February 1999
Guiding Principles

In compiling this report, the Working Party adopted the following guiding principles:

- The Australian community should have available an adequate number of trained intensive care specialists, appropriately distributed to provide the intensive care services it requires.
- The community is best served when intensive care specialists are appropriately qualified and experienced, working to a high standard in appropriately equipped intensive care facilities in both the public and private sectors.
- All Australian citizens must have access to a high standard of intensive care, irrespective of geographical location and economic status. In achieving this, convenience to the patient must be balanced against the practicality of distributing high cost and often technical services. Where such services cannot be provided at a local level, access should be ensured through intensive care retrieval services.
- For the purpose of this report, a wide definition of an intensive care specialist has been adopted. It is expected that there will be a progressive increase in the proportion of intensive care specialists who hold specific intensive care qualifications.
## Table 4: Geographic distribution of adult and paediatric intensive care units, by State/Territory, 1997

<table>
<thead>
<tr>
<th>State/Terr.</th>
<th>Capital city</th>
<th>Other metro.</th>
<th>Large rural</th>
<th>Small rural/remote</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>35</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>56</td>
</tr>
<tr>
<td>Victoria</td>
<td>22</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>36</td>
</tr>
<tr>
<td>Queensland</td>
<td>15</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>South Aust.</td>
<td>10</td>
<td>..</td>
<td>1</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>West. Aust.</td>
<td>8</td>
<td>..</td>
<td>..</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Tasmania</td>
<td>3</td>
<td>..</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>North. Terr.</td>
<td>1</td>
<td>..</td>
<td>..</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>ACT</td>
<td>2</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>2</td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td><strong>96</strong></td>
<td><strong>14</strong></td>
<td><strong>21</strong></td>
<td><strong>22</strong></td>
<td><strong>153</strong></td>
</tr>
<tr>
<td>%</td>
<td>62.7</td>
<td>9.2</td>
<td>13.7</td>
<td>14.4</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Rural zones:

3. Large rural centres are statistical local areas where most of the population reside in urban centres of population of 25,000 to 99,999. These centres are: Albury-Wodonga, Dubbo, Lismore, Orange, Port Macquarie, Tamworth, Wagga Wagga (NSW); Ballarat, Bendigo, Shepparton-Mooroopna (Vic); Bundaberg, Cairns, Mackay, Maroochydore-Mooloolaba, Rockhampton, Toowoomba (Qld), Whyalla (SA); and Launceston (Tas).

4. Small rural centres are statistical local areas in rural zones containing urban centres of population between 10,000 and 24,999. These centres are: Armidale, Ballina, Bathurst, Broken Hill, Casino, Coffs Harbour, Forster-Tuncurry, Goulburn, Grafton, Griffith, Lithgow, Moree Plains, Muswellbrook, Nowra-Bomaderry, Singleton, Taree (NSW); Bairnsdale, Colac, Echuca-Moama, Horsham, Mildura, Moe-Yallourn, Morwell, Ocean Grove-Barwon Heads, Portland, Sale, Traralgon, Wangaratta, Warrnambool (Vic); Caloundra, Gladstone, Gympie, Hervey Bay, Maryborough, Tewantin-Noosa, Warwick (Qld); Mount Gambier, Murray Bridge, Port Augusta, Port Lincoln, Port Pirie (SA); Albany, Bunbury, Geraldton, Mandurah (WA); Burnie-Somerset, Devonport (Tas).
AMWAC ICU Report 1999

- Defined Specialists as all caring for ICU pts
- Didn’t look at level one units
- Services improved with FJFICMs
- Not practical to have ICU care in smaller towns (<100,000 or <10 beds)
- Need good retrieval services
- Need more trained Intensivists
- No specific mention of Rural skill mix
<table>
<thead>
<tr>
<th>Year</th>
<th>Intensivist FTE</th>
<th>No. intensivist</th>
<th>Other specialist FTE</th>
<th>No. other specialist</th>
<th>% intensivist FTE</th>
<th>% intensivist no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999/2000</td>
<td>187.0 (57/57)</td>
<td>253 (57/57)</td>
<td>16.3 (57/57)</td>
<td>61 (57/57)</td>
<td>92.0</td>
<td>80.6</td>
</tr>
<tr>
<td>2005/2006</td>
<td>282.6 (58/58)</td>
<td>373 (58/58)</td>
<td>7.2 (58/58)</td>
<td>23 (57/58)</td>
<td>97.5</td>
<td>94.2</td>
</tr>
<tr>
<td>Level 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999/2000</td>
<td>30.7 (51/51)</td>
<td>52 (51/51)</td>
<td>41.0 (51/51)</td>
<td>202 (51/51)</td>
<td>42.8</td>
<td>20.5</td>
</tr>
<tr>
<td>2005/2006</td>
<td>62.1 (47/48)</td>
<td>139 (47/48)</td>
<td>39.4 (44/48)</td>
<td>152 (45/48)</td>
<td>61.2</td>
<td>47.8</td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999/2000</td>
<td>1.5 (32/32)</td>
<td>2 (32/32)</td>
<td>15.7 (32/32)</td>
<td>84 (32/32)</td>
<td>8.7</td>
<td>2.3</td>
</tr>
<tr>
<td>2005/2006</td>
<td>9.7 (17/18)</td>
<td>16 (17/18)</td>
<td>27.0 (16/18)</td>
<td>31 (15/18)</td>
<td>26.4</td>
<td>34.0</td>
</tr>
</tbody>
</table>

* Numbers in brackets refer to number of ICUs providing data/total number of ICUs.
Tuesday 1\textsuperscript{st} Feb 2011
<table>
<thead>
<tr>
<th>Bay</th>
<th>Patient</th>
<th>Diagnosis</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>31 year old German tourist</td>
<td>Sepsis post ORIF # L Rad/Ulna</td>
<td>Self-ventilating Hypotensive Due for theatre</td>
</tr>
<tr>
<td>7</td>
<td>52 year old Cairns local</td>
<td>Quetiapine Overdose</td>
<td>Ventilated</td>
</tr>
<tr>
<td>6</td>
<td>37 year old from Laura</td>
<td>Pulmonary Melioidosis VRE</td>
<td>Ventilated</td>
</tr>
<tr>
<td>9</td>
<td>64 year old Cairns local</td>
<td>CAP / ARDS VRE</td>
<td>Ventilated Critical</td>
</tr>
<tr>
<td>3</td>
<td>44 year old Cairns local</td>
<td>CAP / ARDS VRE</td>
<td>Ventilated Critical</td>
</tr>
<tr>
<td>5</td>
<td>76 year old from Innisfail</td>
<td>Slow Wean post robotic MVR VRE</td>
<td>Ventilated</td>
</tr>
<tr>
<td>4</td>
<td>57 year old local</td>
<td>Sepsis/Necrotising Fasciitis</td>
<td>Ventilated Critical Filtered</td>
</tr>
<tr>
<td>10</td>
<td>31 year old Melbournian</td>
<td>Necrotising Fasciitis (Fournier’s Gangrene), Septic shock</td>
<td>Ventilated Critical Filtered</td>
</tr>
<tr>
<td>8</td>
<td>26 year old from Mareeba</td>
<td>? Leptosporosis</td>
<td>Ventilated</td>
</tr>
<tr>
<td>Late Adm 9</td>
<td>19 year old from one of the islands</td>
<td>Acute Psychotic Episode</td>
<td>Ventilated for aggression</td>
</tr>
<tr>
<td>2</td>
<td>84 year old from Yungaburra</td>
<td>Perforated Colon</td>
<td>Ventilated</td>
</tr>
</tbody>
</table>
Going
Gone
Wednesday 2\textsuperscript{nd} February
Away
Dunk Island
Dunk Island
Thursday 3\textsuperscript{rd} February
A lunch date with CICM President

• Rugby, military history and College politics

• No prospect of limited accreditation in ICU’s outside the metro

• “Just go and do the Exam”
Rural Critical Care
Profile of Intensive Care Services

Figure 5: A profile of all ICUs across Australia and New Zealand

- **Western Australia**: 152 ICU Beds (10 Adult ICUs, 1 PICU)
- **Northern Territory**: 21 ICU Beds (2 Adult ICUs)
- **Queensland**: 387 ICU Beds (36 Adult ICUs, 2 PICUs)
- **South Australia**: 176 ICU Beds (12 Adult ICUs, 1 PICU)
- **New South Wales**: 774 ICU Beds (63 Adult ICUs, 2 PICUs)
- **Australian Capital Territory**: 41 ICU Beds (4 Adult ICUs)
- **Victoria**: 429 ICU Beds (38 Adult ICUs, 1 PICU)
- **New Zealand**: 266 ICU Beds (29 Adult ICUs, 1 PICU)

**Australia**: 8.63 beds per 100,000 population

**New Zealand**: 5.90 beds per 100,000 population
Figure 19: Admissions to adult ICUs by hospital classification

- Tertiary: 44.8%
- Metropolitan: 25.9%
- Rural: 16.7%
- Private: 12.6%
Figure 17: Observed and predicted hospital mortality
Intensive Care Service Model: NSW Level 4 Adult Intensive Care Units

Intensive Care Service Network

Recommended standards for standalone Intensive Care Units in smaller rural, remote and metropolitan NSW hospitals, developed to ensure that NSW residents have access to intensive care services close to where they live.

It is intended this document be used by Level 3 and 4 Intensive Care Units, to identify if in scope for the service model.
### 4. INTENSIVE CARE SERVICE

<table>
<thead>
<tr>
<th>Level</th>
<th>Service Scope</th>
<th>Service Requirements</th>
<th>Workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPS</td>
<td>No planned service.</td>
<td>Dedicated facility in the hospital. At least one staffed and equipped bed capable of invasive mechanical ventilation. Clear patient selection criteria and medical governance, developed in consultation with the LHD/SHN critical care network. Formal network and relationship with a Level 5 or 6 ICS, within LHD/SHN if available, including mutual transfer and back-transfer policies, clinical advice and professional development support (may include telehealth). Each patient has medical management plan agreed by the ICS medical director, with daily medical review and a process for escalation of treatment and possible transfer to another facility in case of deterioration. Access to consultation-liaison psychiatry. Allied health services on-site during business hours commensurate with casemix and clinical load. Extended hours access to physiotherapy services commensurate with casemix and clinical load. Access to comprehensive technical equipment support program, with processes in place to manage the quality assurance cycle for essential life support and monitoring equipment. Referral pathways to relevant Aboriginal programs and services. Participation in an intensive care services database desirable to allow benchmarking with other units. Quality and risk management programs in line with current National Safety and Quality Health Service (NSQHS) standards. May have combined operational and performance meetings with the supporting Level 5 or 6 unit to promote service (rather than unit) based approach to critical care delivery.</td>
<td>Service medical director with considerable experience in intensive care, preferably a Fellow of the College of Intensive Care Medicine (CICM), or other medical specialist. Paediatrician available in units where children may be admitted. Medical officer, Advanced Life Support (ALS) competent, on-site 24 hours; responsible for reviewing patients in the ICS. Refer to Nursing and Midwifery Workforce Framework. Access to allied health professionals, such as physiotherapist, social worker, speech pathologist, occupational therapist and/or dietitian. Aboriginal hospital liaison roles available, preferably both male and female. [Where the intensive care unit has responsibilities for rapid response or other outreach services such as vascular access, tracheostomy care, parenteral nutrition or participation in end of life care, consideration is given to staffing requirements that support these functions.]</td>
</tr>
</tbody>
</table>
Level 4 ICUs

• Provide basic multi-system life support, usually for less than 24 hours
• Separate and self-contained unit
• Medical director with training and experience in intensive care.
• Armidale, Bathurst, Bega, Broken Hill, Canterbury, Dubbo, Grafton, Griffith, Goulburn, Manning (Taree), Mona Vale and Shoalhaven
2013 - Griffith Locum
Called to Birth Suite
Multiple Skills required

• Primary and ongoing resus
• GA LUSCS
• Diagnostician
• Echo
• Retrieval Liaison
• Assertive with receiving ICU Consultant
Rural Critical Care

Services Chasm

Separated Services

Standardized Services

“Whole” Services

Optimized Services
Anaesthesia/ED/Medicine?

- FANZCA – 3/12 critical care minimum
- FACEM – 6/12 ICU or Anaesthesia
- FRACP – No ICU requirement
Rural Generalists?

- Aboriginal and Torres Strait Islander Health
- Academic Practice
- Adult Internal Medicine
- Anaesthetics (JCCA)
- Emergency Medicine
- Mental Health
- Obstetrics and Gynaecology (DRANZCOG Advanced)
- Paediatrics
- Population Health
- Remote Medicine
- Surgery (24 months)
JCCA – Critical Care

• Transport of critically ill patients:
  – the problems and dangers of transport of critically ill patients
  – criteria for stabilisation and support of critically ill patients at local hospital before transport or retrieval is arranged
  – principles underlying safe transport of critically ill patients
  – communication and cooperation with retrieval teams.
Intensivists?

“Orange's intensive care unit among Australia's best”
POINTER OF VIEW

The intensive care medicine workforce in Australia and New Zealand: oversupplied or underdemanded?

Rob Bevan, Balasubramanian Venkatesh and Ross Freebairn

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Figure 1. New intensive care medicine trainee registrations, by year

- New trainees registrations per year
- Linear (New trainees registrations per year)

Year (*2014 to November 7th)

Conversely, new Fellows seeking employment in rural ICUs, only to be told they are less employable than an anaesthetist (in-confidence personal communication), may feel justifiably aggrieved.
The view from outside

- Difficult for other specialities to move into ICU later in their career
- Reduction in airway and anaesthesia related skills
- Harder to dual train
- Rural Critical Care?
2003 Opinion

VIEWPOINT

Integrated critical care: an approach to specialist cover for critical care in the rural setting

Craig T Hore, William Lancashire, John B Roberts and Rob Fassett

Critical care encompasses elements of emergency medicine, anaesthesia, intensive care, acute internal medicine, postsurgical care, trauma management, and retrieval. In metropolitan teaching hospitals these elements are often distinct, with individual specialists providing discrete services. This may not be possible in rural centres, where specialist numbers are smaller and recruitment and retention more difficult. Multidisciplinary integrated critical care, using existing resources, has developed in some rural centres as a more relevant approach in this setting. The concept of developing a specialty of integrated critical-care medicine is worthy of further exploration. (MJA 2003; 179: 95-97)

Department of Critical Care, Port Macquarie Base Hospital, Port Macquarie, NSW.
Craig T Hore, MB BS, FACEM, Director of Critical Care;
William Lancashire, FRACGP, CCFP, Director of Clinical Training;
John B Roberts, MB BS, FACEM, Director of Emergency Medicine.

Department of Medicine, Launceston General Hospital, Launceston, TAS.
Rob Fassett, MB BS, FRACP, Associate Professor; and Director, Renal Unit.
Features of integrated critical care

- Multiskilled critical-care specialists trained and experienced in the various aspects of critical care in rural hospitals.
- Multidisciplinary critical-care teams that provide:
  - a more seamless interface between the various phases of critical care and between its respective disciplines;
  - a rapid response to, and a continuum of care for, critically ill and injured patients;
  - clinical leadership in evaluating and managing critically ill and injured patients, both in the hospital (including the emergency department, critical-care unit and hospital wards) and in the community (including retrievals, and support for ambulance crews, peripheral hospitals and general practitioners); and
  - training of medical students, medical staff, nursing staff and allied health professionals to recognise and provide a systematic approach to critical illness and injury.
- Team members who are empowered to work beyond perceived traditional boundaries, but within the realms of their clinical expertise and credentials, to enable the best use of available resources.