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Australian paramedic graduates transitioning into UK Ambulance Services: What are the potential challenges?

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Abstract:

With United Kingdom (UK) Ambulance National Health Service (NHS) Trusts and Foundation Trusts actively recruiting Australian paramedic graduates, this article seeks to stimulate discussion by identifying differences existing between the two ambulance systems, as well as highlighting potential challenges that Australian graduates may face when transitioning to the UK ambulance service. It also identifies similarities between Australian and UK ambulance systems, which may assist new graduates to overcome the transition shock. This article suggests that transition shock is not solely related to Australian graduates moving to the UK, and may well be present for graduates moving to comparable international ambulance services in Canada, the Middle East, Ireland and South Africa.

Key Words:

Ambulance, Australian, Globalisation, Graduates, Transition, UK

Introduction

United Kingdom ambulance services are actively recruiting Australian paramedic graduates (Wallis, Ross and Boyle, 2015). In this article, we seek to stimulate discussion by briefly examining the differences and some similarities between the two systems with a view to highlighting some potential challenges which Australian graduates may encounter when transitioning into the UK Ambulance National Health Service (NHS) Trusts and Foundation Trusts. These challenges may not be unique to Australian graduates transitioning to the UK, and may be applicable to other graduates moving to international ambulance services based on the Anglo-American model of practice.

Background – A comparison between UK and Australian Paramedic Programs

University paramedic programs in Australia and the United Kingdom commenced as early as 1994 in Australia (Fields, 1994; Lord, 2003) and 1998 in the United Kingdom (Carney, 1999). The transition of paramedic education and training from an apprenticeship in-house vocational model to a pre-employment university model increasingly means that new entrants to the profession must first gain a bachelor's degree before applying to an ambulance service for employment.

During tertiary based paramedic programs in Australia and the UK, students undertake subjects in core sciences such as anatomy, physiology and pharmacology. Social science subjects such as introductory public health and principles of evidence based practice, sociology, communication and mental health are also completed (Willis et al., 2009; College of Paramedics, 2014). The development of clinical skills is an important component of the paramedic curriculum in both countries, despite there being slight differences between UK and Australian tertiary paramedic programs in relation to the clinical scope of practice (see Tables 1 and 2). For example, UK paramedics are required in many ambulance services to

intubate and gain intraosseous access (Association of Ambulance Chief Executives, 2013). Conversely, these skills are only authorised for use by Intensive Care Paramedics in most Australian ambulance services (Ambulance Service of NSW, 2014; Ambulance Victoria, 2013; Queensland Ambulance Service, 2015).

Table 1: A skills comparison between UK Ambulance Service NHS Trust and Foundation Trusts with Australia's largest ambulance services

Skill/Procedure	UK	Australia
Airway		
Endotracheal Intubation	✓	× *ICP, CCP, MICA
Laryngeal Mask Airways	✓	✓ (adults)
Oropharyngeal Airways	✓	✓
Nasopharyngeal Airways	✓	✓
Magill's Forceps and Laryngoscope for Airway Obstruction	✓	✓
Needle Cricothyroidotomy	✓	× (ICP/CCP/MICA)
Breathing		
Intermittent Positive Pressure Ventilation	✓	✓
Capnography	✓	✓
Expiratory Assistance	×	✓ (NSW Ambulance Only)
Pulse Oximetry	✓	✓
Patient Assessment		
Vital Signs	✓	✓
Respiratory, Cardiac and Neurological Assessment	✓	✓
Abdominal Assessment	✓	✓
Trauma Assessment	✓	✓
Tympanic Thermometer Temperature Reading	✓	✓
Blood Glucose Level Reading	✓	✓
Drug Administration		
Intravenous (IV) Cannulation	✓	✓
Intraosseous (IO) Access	✓	× (ICP/CCP/MICA)
Intramuscular Injections (IMI)	✓	✓
Intranasal Administration	×	✓
Fracture/Trauma Management		
Spinal Immobilization	✓	✓
Pelvic Circumferential Compression Device	✓	✓
Needle Thoracocentesis	✓	✓
Limb Splints and Femoral Traction Splints	✓	✓
Arterial Tourniquets and	✓	✓

Haemorrhage Control		
Immobilisation/Extrication Jacket	✓	✓
Extrication Board/ Scoop Stretcher/Combi Board	✓	✓
Cling Film for Burns	✓	✓
Fish Hook Removal	×	✓
Helmet Removal	✓	✓
Tooth Replantation	×	✓
Cardiac Interventions and Resuscitation		
Manual Defibrillation	✓	✓
CPR	✓	✓
ROLE	✓	✓
4 Lead ECG Cardiac Monitoring	✓	✓
12 Lead ECG Cardiac Monitoring and Interpretation	✓	✓ (in most services)
Thrombolysis	✓	× (ICP/CCP)
Valsalva Manoeuvre	✓	✓
Obstetric Emergencies		
Normal Cephalic Delivery	✓	✓
External Aortic Pressure for Post-Partum Haemorrhage	×	✓ (QAS only)
Bi-Manual Compression for Post-Partum Haemorrhage	×	✓ (QAS only)
Shoulder Dystocia Delivery	✓	✓
Breech Birth Delivery	✓	✓
New Born Resuscitation	✓	✓

ICP: Intensive Care Paramedic; CCP: Critical Care Paramedic; MICA: Mobile Intensive Care Ambulance

Joint Royal College Ambulance Liaison Committee (JRCALC) Clinical Practice Guidelines (2013); Roberts et al. (2005); Ambulance Victoria (2014); NSW Ambulance (2014); Queensland Ambulance Service (2015)

Table 2: A Brief Comparison of Pharmacology – UK JRCALC Guidelines (Association of Ambulance Chief Executives, 2013) and Australian Qualified Paramedics from Ambulance Victoria (2014), NSW Ambulance (2014), and Queensland Ambulance Service (2015)

JRCALC Clinical Practice Guidelines (2013)	NSW Ambulance Protocols and Procedures (2014)	Ambulance Victoria Clinical Practice Guidelines for Ambulance and MICA Paramedics (2014)	Queensland Ambulance Service Clinical Practice Manual (2015)
Adrenaline	✓	✓	✓
Atropine	× (ICP)	× (MICA)	× (CCP)
Amiodarone	× (ICP)	× (MICA)	× (CCP)
Benzylpenicillin	✓	× (Ceftriaxone)	× (Ceftriaxone)
×	×	×	Box Jellyfish Anti-venom
Chlorphenamine	× (Fexofenadine)	×	×
Clopidogrel	× (ICP)	×	× (CCP)
Dexamethazone	× (Hydrocortisone - ICP/ECP)	✓	× (Hydrocortisone - CCP)
Diazepam	× (Midazolam)	× (Midazolam)	× (Midazolam)
Entonox	× (Methoxyflurane)	× (Methoxyflurane)	× (Methoxyflurane)
×	Fentanyl	Fentanyl	Fentanyl
Furosemide	× (ICP)	× (MICA)	× (CCP)
Glucagon Glucose 10% Glucose Gel	✓	✓	✓
Glyceryl Trinitrate	✓	✓	✓
Hartmann's Solution	✓	×	×
Heparin	× (ICP)	×	× (CCP)
Ibuprofin	✓	×	×
Ipratropium Bromide	✓	✓	✓
Metoclopramide	✓	✓	×
Misoprostol	×	✓	×
Morphine Sulphate	✓	✓	✓
Naloxone	✓	✓	✓
Ondansetron	✓	✓	✓
Oxygen	✓	✓	✓
Syntometrine	×	× (Oxytocin)	×
Paracetamol	✓ (oral)	✓ (oral)	✓ (oral)
Salbutamol	✓	✓	✓
Sodium chloride 0.9%	×	✓	✓
Tenecteplase	× (ICP)	×	× (CCP)
Tetracaine	×	×	×
Tranexamic Acid	×	×	×

A major discrepancy exists in relation to the duration of clinical placements between the two countries. In the Australasian context, some undergraduate paramedic students acquire as little as 240 hours of ambulance and hospital clinical practicum prior to graduation while

others may accrue up to 1068 hours (O'Meara, Williams, Dicker & Hickson, 2014). By comparison, in UK paramedic programs, clinical placements make up 50 percent of the total course hours (College of Paramedics, 2014), which equates to approximately 2,250 hours of placement time. Furthermore, 25 percent of the total placement time needs to occur outside of the paramedic setting. Consequently, significant differences are apparent when comparing the clinical placement requirements stipulated by the Health Care Professions Council (HCPC) in the UK with Australian paramedic programs. Additionally, paramedics in Australia are not currently recognised as registered health professionals contrary to the situation in the UK. The differences between the education, training and certification of UK and Australasian paramedics are further highlighted in Table 3.

Table 3: A Comparison of UK and Australasian Paramedic Education, Training and Certification (Council of Ambulance Authorities, 2010; Paramedics Australasia, 2011; College of Paramedics, 2014; O'Meara et al., 2014)

	Australasia	**United Kingdom**
Length of Bachelor of Paramedic Science Degree	• 3 years • 2 years (accelerated pathway) • 4 years (Nursing/Paramedic Science Dual Degree Qualification)	3 years
Course Accreditation	• Council of Ambulance Authorities • Paramedics Australasia	• College of Paramedics • Health Care Professions Council
Competency/Proficiency Standards of Practice	• Professional Competency Standards based on the Health Care Professions Council's Standards of Proficiencies for Paramedic • Paramedics Australasia - Australasian Competency Standards for Paramedics	• HCPC Standards of Proficiency – Paramedics
Clinical Placements	240 – 1068 hours of ambulance and non-ambulance clinical placements depending on the university	50% of course hours or approximately 2250 hours of ambulance and non-ambulance clinical placements
Transition to the Workplace	Up to 12 months supervision by a qualified paramedic prior to autonomous practice	Autonomous practice as the lead clinician, and the supervision of emergency care

	(internship)	assistants during a preceptorship
Licence to Practice	Certificate to Practice provided by the employing ambulance service - primarily based on a points system, renewed every 12 - 24 months	Certificate of Paramedic Registration provided by the Health Care Professions Council

When UK university paramedic students graduate, register with the HCPC, and gain employment with an Ambulance Service NHS Trust or Foundation Trust, there appears to be little to no supervised period of practice during their preceptorship before they are required to work autonomously, and supervise emergency care assistants (Gregory, 2013; College of Paramedics, 2014). Conversely some Australian ambulance services require paramedic graduates to complete a 12 month supervised preceptorship period (internship) before providing new entrants with a certificate to practice, and allowing them to work autonomously as qualified paramedics (Council of Ambulance Authorities, 2010).

The potential challenges

With UK Ambulance Service NHS Trusts and Foundation Trusts actively recruiting Australian paramedic graduates (Wallis, Ross and Boyle, 2015), the question must be asked whether or not the differences in clinical practice exposure have a significant impact on the ability of 'migrant' paramedics to integrate effectively into the UK ambulance services.

Australian paramedic graduates may encounter a transition shock (Boychuk Duchscher, 2009; Gregory, 2013) while adjusting to their new role as a registered paramedic, because their preconceived expectations may not reflect the reality of practice (Devenish, 2014). Australian graduate paramedics transitioning to the UK are required to work as senior clinicians on an ambulance within two to four months of beginning their employment. They will be working in an unfamiliar location, will be required to abide by a different set of

practice guidelines, and possibly be required to supervise emergency care assistants who have a lower scope of practice.

Despite UK graduates having undertaken significant amounts of clinical placement during their undergraduate training, this does not necessarily preclude the 'culture shock' associated with commencement as a registered paramedic. Research has also shown that new graduates encounter something of a 'reality shock' as they undergo a metamorphosis stage, and attempt to gain acceptance whilst transitioning to the workplace as employees (Gregory, 2013; Devenish, 2014; Thompson, 2015). In Australia, there has been some exploration of this issue. The paramedic literature suggests that Australian graduates have significant concerns about their work-readiness, and how a perceived knowledge-practice gap might affect their transition to professional practice with local state based ambulance services (Waxman and Williams, 2006; Lord, McCall and Wray, 2009; Wray and McCall, 2009; O'Brien et al., 2013; Devenish, 2014). In a recently published model depicting the professional socialisation of Australian and UK university educated paramedics (Devenish, 2014), the importance of a supervised preceptorship period was highlighted. A supervised preceptorship period enables graduates to consolidate their clinical skills and establish workplace routines, whilst integrating into the 'workplace culture' as employees.

Some UK undergraduates may experience programs in which this integration occurs during the undergraduate period. For example, until recently students at the University of Hertfordshire experienced a 'sandwich' year (professional employment year) with the London Ambulance Service NHS Trust during which they worked as ambulance technicians (Williams, 2010). The sandwich year was imbedded into the third year of the four year Bachelor of Paramedic Science (Hons) degree (Williams, 2010). The sandwich year is no longer offered. Due to significantly more undergraduate clinical placement time, UK graduates may arguably be better prepared for the transition to professional practice than

Australian graduates transitioning to UK ambulance services. However, despite the increased amount of clinical placement time in UK based paramedic programs, experiences gained during clinical practicum are not necessarily identical to experiences gained as a staff member on the payroll (Devenish, 2014). For example, on placements, students are 'visitors' in the paramedic workplace, and are not afforded the same level of acceptance and respect as a fulltime employee (Devenish, 2014). Additionally, students may be protected from the politics of the workplace, and confronting cases during clinical placements. The amount of responsibility encountered as an employee is invariably greater than that of a supernumerary crew member on clinical placement (Devenish, 2014).

Research also suggests that after returning from clinical placements, students encounter a 'hidden' curriculum which emphasises the high acuity side of paramedic work, when low acuity work makes up much of the reality of practice (Clark, Purdie and Fitzgerald, 2000; Woollard, 2003; Williams, Devenish and Stephens, 2012; Devenish, 2014). Consequently, when entering the profession, new graduates may well encounter a different working environment to that pre-conceived while at university. Research also shows that few graduate paramedics are prepared, through their university's paramedic curriculum, to mentor new staff and supervise emergency care assistants (Dawson, 2008; Donaghy, 2010; Sibson and Mursell, 2010; Edwards, 2011; Devenish, 2014).

Research suggests that both Australian and UK paramedic graduates encounter significant challenges with conflict resolution (Lazarsfeld-Jensen, 2010; Devenish, 2014) and with adapting and changing to fit into the paramedic professional culture (Devenish, 2014). However, without effective opportunities and/or support to transition from student to employee, new staff may develop and execute a precipitous exit strategy from the profession.

This may involve leaving the profession all together or taking up a non-clinical administrative role within the ambulance service (Devenish, 2014).

It seems fairly clear that the socialisation tactics employed by a profession can have a direct influence on the morale and retention of new staff members (Devenish, 2014). With the absence of a supervised preceptorship year to provide new graduates with an opportunity to consolidate their learnings, further research is necessary to determine whether the recruitment of Australian graduates by UK Ambulance Service NHS Trusts and Foundation Trusts is a long-term workforce planning solution. This research would ideally be suited to a longitudinal approach, following the progress of Australian graduates over a two year period, or the term of their contract.

The positives

Having explored several challenges which Australian new graduates may face when integrating into UK Ambulance Service NHS Trusts and Foundation Trusts, it is important to highlight some positive aspects that may facilitate their transition. Both UK and Australian ambulance cultures are very similar (Devenish, 2014), with both systems being historically based on a paramilitary command and control culture (Lazarsfeld-Jensen, Bridges and Loftus, 2011). Both UK and Australian ambulance systems are based on a clinical practice guideline approach to practice, and have similarities in relation to clinical roles such as paramedic, critical care and extended care (practitioner) levels of practice.

The types of clinical cases encountered are similar (Williams, Devenish and Stephens, 2012), despite the workload being greater in some UK ambulance services compared to Australian ambulance services. Patient demographics are similar, with both countries facing an increase in the elderly population (Clark and Fitzgerald, 1999; Downing and Wilson, 2004), and both countries are adopting strategies for alternative points of referral for low acuity patients not

requiring transport to hospital (Marks et al., 2002; Snooks et al., 2004; Mikolaizak et al., 2013; Ambulance Service of NSW, 2015).

Globalisation and the Paramedic Profession

While the discussion points in this article relate to the transition of Australian paramedic graduates to UK Ambulance Service NHS Trusts and Foundation Trusts, the topic of 'transition shock' is possibly applicable to graduates moving to other international ambulance services as well. Australian ambulance services which are based on the Anglo-American model, share similarities with ambulance services in the UK, Ireland, the Middle East and South Africa (Colbeck, 2014). With the globalisation of health care (Woodward et al., 2001; Schroth and Khawaja, 2006), increased opportunities for the movement of paramedics across similar international ambulance services may well result (Tippett, 2014). Thus further research is necessary to examine the extent to which 'transition shock' is associated with graduates moving to international ambulance services, and investigate how graduates can be better prepared for such a transition.

Summary

In conclusion, this article extends current thinking about the transition of university paramedic graduates to the workplace. It has raised a discussion point which questions whether Australian paramedic graduates integrating into NHS Ambulance Service Trusts and Foundation Trusts may encounter greater challenges than their counterparts who have gained employment with Australian ambulance services. The reason for this transition shock relates to a lack of a supervised preceptorship year for those new graduates who relocate to the UK, where the new paramedic can consolidate their university learnings. Instead, they need to adjust to the role of a registered paramedic with relatively little experience. However, several similarities between the two systems are identified, which may assist in the transition of

Australian paramedic graduates into UK Ambulance Service NHS Trusts and Foundation Trusts. Further research is essential to examine the experiences of Australian university graduates making the transition to UK ambulance services to discuss in greater detail the issues identified in this article. The findings from this future research could also be transferable to graduates moving to other international ambulance jurisdictions, as this phenomenon is becoming increasingly likely with the globalisation of the paramedic profession.

References

Ambulance Service of NSW (2014) *Protocols and Pharmacology*. Rozelle: Ambulance Service of NSW.

Ambulance Service of NSW (2015) Right care, right time: After-hours GP services now available for referrals. In *Sirens*. Rozelle: Ambulance Service of NSW.

Ambulance Victoria (2013) *Ambulance Victoria Clinical Practice Guidelines for Ambulance and MICA Paramedics*. 2014 edition. Doncaster: Ambulance Victoria.

Association of Ambulance Chief Executives (2013) *UK Ambulance Service Clinical Practice Guidelines 2013*. The University of Warwick Joint Royal College Ambulance Liaison Committee: Class Professional Publishing.

Boychuk Duchscher JE (2009) Transition shock: The initial stage of role adaptation for newly graduated Registered Nurses. *Journal of Advanced Nursing* **65** (5): 1103-1113. http://www.scopus.com/inward/record.url?eid=2-s2.0-63849187649&partnerID=40&md5=40d952fb30c6aa39a7515f613a74172d.

Carney CJ (1999) Prehospital Care - a UK perspective. *British Medical Bulletin* **55** (4): 757 - 766.

Clark MJ and Fitzgerald G (1999) Older people's use of ambulance services: a population based analysis. *Journal of Accident and Emergency Medicine* **16** (2): 108-111.

Clark MJ, Purdie J and Fitzgerald GJ (2000) Determinants of pre-hospital care non-usage for patients with emergency care needs. *Prehospital Immediate Care* **4** (2): 90-96.

Colbeck M (2014) Australasian consultant paramedic: A future direction? *Australasian Journal of Paramedicine* **11** (5): 1-2.

College of Paramedics (2014) *Paramedic Curriculum Guidance*. 3rd ed. Bridgewater UK: College of Paramedics.

Council of Ambulance Authorities (2010) *Guidelines for the assessment and accreditation of entry-level paramedic education programs*. Flinders Park, Adelaide: Convention of Ambulance Authorities for Australia and New Zealand. http://www.caa.net.au/attachments/article/91/PEPAP_Guidelines_Reviewed_MAY_2010.pdf.

Dawson D (2008) University educated ambulance paramedics: Job ready or not? Paper presented at the Australian College of Ambulance Professionals (ACAP) 2008 National Conference, Southbank, Melbourne. Journal of Emergency Primary Health Care.

Devenish S (2014) *Experiences in Becoming a Paramedic: A Qualitative Study Examining the Professional Socialisation of University Qualified Paramedics*. PhD, School of Clinical Sciences, Faculty of Health, Queensland University of Technology. http://trove.nla.gov.au/work/192129514?q=devenish+paramedic&c=book&versionId=210037878

Donaghy J (2010) Equipping the student for workplace changes in paramedic education. *Journal of Paramedic Practice* **2** (11): 524-528.

Downing A and Wilson R (2004) Older people's use of accident and emergency services. *Age and Ageing* **34** (1): 24-30.

Edwards D (2011) Paramedic preceptor: Work readiness in graduate paramedics. *The Clinical Teacher* **8** (2): 79-82.

Fields J (1994) The Politics and Economics of Educational Change. *Australian Journal of Emergency Care* **1** (1): 14 - 15.

Gregory P (2013) The Reality Shock. *Journal of Paramedic Practice* **5** (1): 5.

Lazarsfeld-Jensen A (2010) Starting young: The challange of developing graduates' road readiness. *Journal of Paramedic Practice* **2** (8): 368-372.

Lazarsfeld-Jensen A, Bridges D and Loftus S (2011) *Transitions: Command culture and autonomous paramedic practice*. Bathurst: Charles Sturt University. http://csusap.csu.edu.au/~cmcewen/Documents/TransitionsReport.pdf.

Lord B (2003) The development of a degree qualification for paramedics at Charles Sturt University. *Journal of Emergency Primary Health Care* **1** (1-2): 1-5.

Lord B, McCall M and Wray N (2009) Factors affecting the education of pre-employment paramedic students during the clinical practicum. *Journal of Emergency Primary Health Care* **7** (4): 1-9.

Marks PJ, Daniel TD, Afolabi O, Spiers G and Nguyen-Van-Tam JS (2002) Emergency (999) calls to the ambulance service that do not result in the patient being transported to hospital: an epidemiological study. *Emergency Medicine Journal* **19** (5): 449-452.

Mikolaizak AS, Simpson PM, Tiedemann A, Lord SR and Close JC (2013) Systematic review of non-transportation rates and outcomes for older people who have fallen after ambulance service call-out. *Australasian journal on ageing* **32** (3): 147-157.

O'Brien K, Moore A, Hartley P and Dawson D (2013). Lessons about work readiness from final year paramedic students in an Australian university. *Australasian Journal of Paramedicine* **10** (4): 1-13. http://ro.ecu.edu.au/jephc/vol10/iss4/3.

O'Meara P, Williams B, Dicker B, and Hickson H (2014) *Paramedic clinical placement duration and quality variance: An international benchmarking study*. La Trobe University, Bendigo, Australia: Report commissioned for Health Workforce Australia. http://hdl.handle.net/1959.9/316231

Paramedics Australasia (2011) *Australasian Competency Standards for Paramedics*. Paramedics Australasia Ltd. Ballarat Victoria. http://www.paramedics.org/content/2011/10/PA_Australasian-Competency-Standards-for-paramedics_July-20111.pdf

Queensland Ambulance Service (2015) *QAS Clinical Practice Manual*. February 2015 ed. Brisbane: Queensland Ambulance Service.

Roberts K, Jewkes F, Whalley H, Hopkins D and Porter K (2005) A review of emergency equipment carried and procedures performed by UK front line paramedics on paediatric patients. *Emergency Medicine Journal* **22** (8): 572–576

Schroth L and Khawaja R (2006). Globalization of healthcare. *Frontiers of health services management*. **24** (2): 19-30.

Sibson L and Mursell I (2010) Mentorship for paramedic practice: Bridging the gap. *Journal of Paramedic Practice* **2** (6): 270-274.

Snooks HA, Dale J, Hartley-Sharpe C and Halter M (2004) On-scene alternatives for emergency ambulance crews attending patients who do not need to travel to the accident and emergency department: a review of the literature. *Emergency Medicine Journal* **21** (2): 212-215.

Thompson S (2015) The percieved concerns of newly qualified paramedics commencing their careers: a pilot study. *Journal of Paramedic Practice* **7** (2): 74-78.

Tippett V (2014) Australian and New Zealand College of Paramedicine Future in Paramedic Practice Symposium. *Projecting futures for paramedic professionals*. Performed Brisbane: Australian and New Zealand College of Paramedicine (viewed 8-9 August 2014).

Wallis J, Ross L and Boyle M (2015) London swoops on Australian Paramedics. *Australasian Journal of Paramedicine* **12** (1): 1-1.

Waxman A and Williams B (2006) Paramedic pre-employment education and the concerns of our future: What are our expectations? *Journal of Emergency Primary Health Care* **4** (4): 1-10.

Williams J (2010) The existence of a sandwich year in the University of Hertfordshire paramedic program. Personal communication with Scott Devenish. Hatfield.

Williams J, Devenish S and Stephens J (2012) Qualitative Research in Ambulance Services: The Reality of Practice. Paper presented at the Qualitative Health Research Conference, Montreal, Canada. *International Journal of Qualitative Methods*. http://ejournals.library.ualberta.ca/index.php/IJQM/article/download/18663/14597.

Willis E, Pointon MT, O'Meara P, McCarthy MC and Jensen AL (2009). *Paramedic education: Developing depth through networks and evidence-based research*. Sydney:

Australian Learning and Teaching Council. http://www.olt.gov.au/system/files/resources/DS7-616%20Paramedic%20education%20March%202009.pdf.

Woodward D, Drager N, Beaglehole R and Lipson D (2001) Globalization and health: a framework for analysis and action. *Bulletin of the World Health Organization* **79** (9): 875-881. http://www.scielosp.org/scielo.php?script=sci_arttext&pid=S0042-96862001000900014.

Woollard M (2003) Emergency calls not requiring an urgent ambulance response: Expert consensus. *Prehospital Emergency Care* **7** (3): 384-391.

Wray N and McCall L (2009) They don't know much about us: Educational reform impacts on students' learning in the clinical environment. *Advances in Health Sciences Education: Theory and Practice* **14** (5): 665-676.