



## Clinical education

## Undergraduate paramedic student psychomotor skills in an obstetric setting: An evaluation

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## ABSTRACT

The clinical education of paramedic students is an international concern. In Australia, student placements are commonly undertaken with local district ambulance services, however these placements are increasingly limited. Clinical placements within inter-professional settings represent an innovative yet underdeveloped area of investigation. This paper addresses that gap by reporting a pilot evaluation of paramedic student clinical placements in a specialised obstetrics setting.

Using a case study approach, the evaluation aimed to identify paramedic psychomotor skills that could be practised in this setting, and understand the nature of key learning events. A purposive sample of paramedic students was recruited following completion of the obstetrics placement. A combination of student reflection and assessed psychomotor skills data were collected from clinical placement logs. Content analysis of all data was conducted inductively and deductively, as appropriate.

Findings indicated a comprehensive range of psychomotor skills can be practised in this setting, with over thirty psychomotor skills identified directly related to the paramedic curriculum; and seven psychomotor skills indirectly related. The themes *finding confidence in maternity care*, *watching the experts*, and *putting theory into practice* provide narrative insight into the clinical learning experience of paramedic students in this setting. Further research is recommended to build upon this pilot.

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## 1. Introduction

Clinical education in paramedicine has been an international concern for some time (Cooper, 2005). In Australia, undergraduate paramedic student placements are commonly undertaken with State and Territory based ambulance services; in recent times availability of these placements is increasingly limited, due to growing demand from larger student cohorts. This reality calls for exploration of other clinical settings in which paramedic student placements might be undertaken, whilst ensuring that quality of the student learning experience is not compromised. To contribute to paramedic education in practice, this case study was conducted as a pilot evaluation of paramedic student clinical placements in a specialised obstetrics setting.

## 2. Literature review

A comprehensive review of the literature was undertaken to situate the study within that context. The search strategy encompassed MEDLINE, CINAHL, and ERIC databases using the search terms 'Paramedic\*'; 'Student'; 'Clinical'; 'Placement'; 'Education'; and 'Training'. Article bibliographies were hand searched, and a search for grey literature using these terms was also conducted.

Despite its longstanding and essential practice role in Australian healthcare, paramedicine as an academic discipline remains in its infancy (Brightwell et al., 2015). But clinical education for paramedicine as a profession is a shared concern internationally. This is largely related to a transition from the traditional apprenticeship model of vocational training, towards a pre-employment model that encompasses a tertiary degree as an entry-level qualification (Joyce et al., 2009). In highlighting this transition, Joyce et al. (2009) underscore the increasing complexity and responsibility for clinical decision making and treatment in contemporary paramedicine practice.

Taken together, these developments are consistent with the

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anticipated move to register paramedics as health professionals under the Australian Health Practitioners Regulation Agency (AHPRA). At present, paramedic students are not provisionally registered with AHPRA during their training – as is the case with their nursing and other allied health colleagues. While considerable progress is evident, there is clearly more to be achieved in the areas of regulation and education to promote quality education and practice.

In the absence of a standardised national curriculum, or national standards to guide university-based paramedic education, historically there has been an inconsistent approach to paramedic education in Australia. This is highlighted by O'Meara et al. (2014a) who recognised that each institution has developed individual methods for the provision of paramedic student clinical placements. An evidence-base for learning and teaching within clinical placements is therefore important for the overall education of paramedic students (Waxman and Williams, 2006). In elucidating a theory-practice gap, Michau et al. (2009, p.1) explain that clinical placements 'form a fundamental component to undergraduate programs and provide students with a means of developing communication skills, professional socialisation, working in an interdisciplinary team environment, learning professional etiquette and practising psychomotor skills'.

A pilot study by Boyle et al. (2008) found in a survey of 77 Australian undergraduate paramedic students, that ambulance clinical placements were *not* a positive experience—clinically or educationally for some students. This was due to perceptions of unproductive down time during placement, as well as the amount and nature of supervision provided by paramedics. Another study conducted by Wray and McCall (2009) concluded that educational reforms impact on students' learning in the clinical environment. Therefore, consideration of the nature, quality, and duration of placements is paramount (O'Meara et al., 2014a; O'Meara et al., 2014b). Numerous approaches to enhancing the clinical education of paramedicine students are discussed in the literature. Australian studies have investigated and supported the use of peer-assisted learning (Williams et al., 2014) and self-directed learning approaches (Williams et al., 2013). However, addressing the theory-practice gap, and the pressing issue of limited placement availability remain concerns unresolved by these approaches.

While there is preliminary evidence to suggest that simulated training and e-learning approaches might be effective as mitigating strategies (Williams et al., 2009, 2011), the reorientation of some clinical placements provides another alternative that can support paramedicine students in gaining greater depth of experience across a wider range of health settings. The literature supports the position that a variety of inter-professional placements would be beneficial for paramedic students (Hou et al., 2013; O'Meara et al., 2014b). Given the relatively low industry employment rate of paramedicine graduates in Australia, this broader experience might also afford greater employment prospects. However, at present the literature in this emerging area of innovation is limited.

From their international benchmarking study that explored the duration and quality variance in paramedicine clinical placements, O'Meara et al. (2014a) recommended improvements to both the quality and consistency of training for paramedic students. Qualitative data from this study highlighted the theme 'diverse placement settings' as an element of quality in clinical placements. Interviews with experienced clinical instructors revealed that a variety of hospital environments (including E.D., theatre, midwifery, mental health, critical care, intensive care) and non-hospital environments (including community mental health, GP clinics and residential aged care) were valued as important to paramedic clinical education. Experienced clinical educators advocate for the value and inclusion of non-ambulance placement

settings, but further investigation of this emerging area is necessary.

With concerns regarding the availability and overall learning experience associated with ambulance-based placements, positive placements for paramedic students in novel clinical settings are now emerging in Australia (Lucas et al., 2013).

Further evaluation of implementation projects in this area can serve to inform future clinical education and progress the profession of paramedicine, both in Australia, and internationally. Clinical placements for paramedic students in inter-professional settings represent an innovative yet underdeveloped area of investigation.

This paper addresses that gap by reporting the pilot evaluation of paramedic student clinical placements in a specialised obstetrics setting. While there has been some discussion of similar placements in the literature (Michau et al., 2009), no relevant research was found in the literature; judgement regarding the appropriateness of this placement setting was thus limited to theoretical premise. This evaluation therefore sought to identify paramedic psychomotor skills that could be practised in this setting, and to understand the nature of key learning events as reported by paramedic students. In this way, an empirical basis could be established to better gauge appropriateness.

### 3. Research design

Given the emergent and exploratory nature of this research, a qualitative case study approach was adopted (Flyvbjerg, 2011; Yin, 2014), and specific research questions identified:

1. What paramedic psychomotor skills can be practised by students in an obstetrics setting?
2. What key learning events do paramedic students report in this setting?

#### 3.1. The case and context

For the purposes of the case study, both the case and context were identified (Yin, 2014): the case was *paramedic students' clinical learning*, and the context was *an obstetric specialised clinical placement*. The primary purpose of the pilot placement was to consolidate practical experience with newly acquired curriculum knowledge from a standalone unit focused on emergency child birth and immediate care of the newborn. This addressed previous feedback from students indicating that obstetric-specific learning opportunities were relatively limited during past ambulance-based placements. The obstetrics placements were negotiated and undertaken with a clinical partner of [de-identified for blinded peer review] across the maternity, intensive care, and operative units of a private metropolitan hospital located in the South East region of Australia.

A cohort of 42 third-year paramedic students took part in these placements, each completing between 35 and 110 clinical hours across a variety of rostered shifts over a period of three weeks. Students were given an explanatory briefing, and a preparatory workshop was conducted for the clinical education and midwifery staff who would be supervising paramedic students in the hospital. This workshop was developed and facilitated by an experienced paramedic and lecturer. As these were expert clinicians and educators in this setting, it was decided that this tailored workshop to familiarise staff with the role and learning needs of paramedic students would be sufficient for the purpose of the pilot.

As part of the placement, students were required to complete a *Clinical Placement and Skills Assessment Log* to record descriptions of the clinical skills practised – as well as reflections on key learning

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