



# Clinical placements: Putting theory into practice for paramedic students

Linda Ross, Ryan Bennett, Chantal Perera

## ABSTRACT

**Objective:** Clinical placements are integral to the education and development of paramedic students and are often cited as providing opportunities for students to apply knowledge and practice clinical skills. Clinical placements also serve to inform students about the realities of the paramedic profession. The objective of this study was to examine the prominent clinical themes identified by undergraduate paramedic students following experiences on clinical placement. **Methods:** This study employed a cross-sectional methodology using online discussion forum to elicit common clinical themes encountered by students during clinical placements. A convenience sample of 116 2<sup>nd</sup> year Bachelor of Emergency Health (Paramedic) students from Monash University, Melbourne, Australia was eligible to participate in the study. **Results:** A thematic analysis of the online posts revealed three main themes: Cannulation, resuscitation and experience. The three themes were selected based on the frequency of discussion and the level of importance placed on them by the students. **Conclusions:** This study demonstrates that a variety of clinical themes emerge from involvement in clinical placements. Students identified that skills such as intravenous cannulation, resuscitation including compressions, ventilation and airway management differed in application compared to what is practiced at university. The experience gained from clinical placements was consistently reported as beneficial, as placements allow exposure to the real aspects of emergency health, aid in consolidation of theory, and provide opportunities to investigate patients' conditions. Educators may use these results for future curriculum and placement planning in order to optimize the student's experience on clinical placement.

**KEY WORDS:** Clinical placement, paramedic student, theory and practice

Department of  
Community Emergency  
Health and Paramedic  
Practice, Monash  
University, Melbourne,  
Australia

### Address for correspondence:

Linda Ross, Department  
of Community Emergency  
Health & Paramedic Practice,  
Monash University, Peninsula  
Campus, PO Box 527,  
McMahons Road, Frankston,  
Victoria 3199, Australia.  
Phone: 61 3 9904 4407,  
E-mail: linda.ross@monash.  
edu

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## INTRODUCTION

Clinical placements are integral to the education and development of paramedic students. They provide a context for theory and abstract concepts and opportunities to practice clinical skills under the guidance of experienced practitioners [1]. They are a unique opportunity for students to consolidate and extend upon what they have already learnt [1,2].

Industry expectations are that graduates arrive "work ready." In an attempt to achieve this, opportunities to practice in real settings are vital. Students must, therefore, transition through clinical placement programs, which aid in the development of understanding and skills to the level required [2,3]. Clinical placements help students create a link between theory and practice [2]. They are required to transition from an abstract environment to an environment requiring action [4]. This is a major learning step for students as it becomes no longer adequate to know, or understand, but to perform actions that have real consequences. This transition from theory, to practice, enables students to challenge their own preconceived ideas formed at university, as well as develop new ideas associated with clinical practice [1].

Clinical placements also offer students the opportunity to develop problem-solving and clinical reasoning skills needed for the profession. The acquisition of these skills is crucial, as paramedics are often required to make split second decisions relating to treatment regimens and patient extrication. Clinical skills and interviewing techniques can also be practiced and consolidated through such placements [5]. Placements provide experience of the skill in a "real context" and without repetition and consolidation in a clinical environment, the skill may be lost [5]. Mastery of the skill is heavily dependent on repetition and feedback from experienced practitioners [5]. It is through this acquisition of clinical skills that students are able to more smoothly transition into the workforce [4].

Clinical placements are the only opportunity that paramedic students have to become accustomed to the standards and expectations of the industry, and experience the real pressures and stressors of the pre-hospital environment. Anxiety levels were found to be higher when learning on clinical placement as opposed to the classroom, thus a major barrier to the learning and progression of the student [6]. Although anxiety may be beneficial in a learning environment, too much, or too little, has shown to have an adverse effect on the student's ability to

learn [6]. If clinical placements are limited this can become a major barrier to the consolidation of the knowledge and skills required for students to reach a competent level of practice.

Experience in the clinical setting allowed students to gain experience and confidence in the clinical setting. During this process, they transition from a peripheral learner to a central learner [7]. As students move centrally they feel empowered, but if they are denied the opportunity they feel powerless and lose confidence [2]. This confidence is crucial to students developing themselves as practitioners and becoming prepared for autonomous practice [2].

Currently, there is a lack of research exploring the experiences or perceptions of paramedic students undertaking clinical placements. Educators are relatively uninformed to what students experience or think about clinical placements and thus are limited to how the placement process can be improved for future students. The objective of this study was therefore to examine the prominent clinical themes identified by undergraduate paramedic students following experiences on clinical placement.

## METHODS

### Study Design

This was a cross-sectional study using an online discussion forum to elicit common clinical themes encountered by students during clinical placements.

### Participants

A convenience sample of 116 2<sup>nd</sup> year Bachelor of Emergency Health (Paramedic) students from Monash University, Melbourne, Australia was eligible to participate in the study.

### Procedures

During the 2013/14 summer semester, 2<sup>nd</sup> year students completed 16 clinical placements with Ambulance Victoria. Students were also asked to enter into online discussion forums within groups of six and reflect on their clinical placements. This provided an opportunity to not only self-reflect, but to share, discuss and learn from other student experiences. These discussions were not bound by specific content guidelines but could incorporate anything the students found meaningful during their placements. These discussion posts were saved for further analysis.

### Data Analysis

A thematic analysis of the discussion posts was conducted by the authors who were able to reach a consensus on the major clinical themes encountered by the students during their placements.

### Ethics

Ethics approval was obtained by Monash University Human Research Ethics Committee (MUHREC).

## RESULTS

The entire cohort of 2<sup>nd</sup> year students enrolled in the summer semester placement unit agreed to having their discussion posts included in the analysis for this study ( $n = 116$ ).

Numerous clinical themes were identified from the thematic analysis of the placement discussion posts. These were narrowed down to three main themes; cannulation, resuscitation and experience. The three themes were selected based on the frequency of discussion and the level of importance placed on them by the students.

In relation to the first theme; cannulation, the students felt it had a far different feel when performed on a real patient as opposed to mannequins.

*“I’m really glad to hear I’m not the only one that found it much more difficult cannulating a real person compared to the fake practice arms at uni.” (Group 9)*

In addition, performing the skill in an emergency setting with other paramedics and bystanders watching was a cause of great anxiety and nervousness.

*“What was most stressful for me was that 2 MICA (mobile intensive care ambulance) paramedics, the ALS (advanced life support) crew I was working with and the patient’s family were all watching me insert the cannula.” (Group 9)*

The students greatly appreciated the tips given by paramedic educators in the field to refine and improve their techniques. Decreasing the angle of cannula insertion and progression was the most common tip provided to students performing this skill.

*“The paramedics commented that I seemed to be approaching the skin at an angle far too great, and that it only needs to enter at a slight angle to the skin.” (Group 7)*

Also, prominent in the discussion about cannulation was the issue of confidence, with students commenting on how successful cannulation attempts breed confidence, whilst unsuccessful attempts added to the nerves and self-doubt on subsequent attempts.

*“I know what I did wrong and I’m hoping on my next attempt I will learn from my mistakes, but I feel next time I will be more nervous now that I have lost a bit of confidence.” (Group 9)*

*“When I got the first one (cannula) in I couldn’t believe it. I felt on top of the world for the rest of the day.” (Group 9)*

The resuscitation theme centered on the major skill components; compressions, airway management and ventilation. Students noted the differences between performing these skills on a real person as opposed to a mannequin.

Many students commented on laryngeal mask airway (LMA) insertion after gaining experience with this skill under the

tutelage of an anesthetist on theater placement. There were mixed responses about the relative difficulty between mannequins and real patients.

*“Inserting LMA’s on an actual patient is a completely different experience compared to mannequins. I found it was largely dependent on the insertion technique and positioning of the patient’s head and neck.” (Group 14)*

*“I found LMA insertion more difficult on a real person. I was surprised at the amount of force and twisting I had to use and I was concerned about damaging their throat.” (Group 20)*

*“Upon insertion I was pleasantly surprised to find it was a lot easier in real life than on a dummy. Using the twisting motion the LMA easily was pushed down and into place.” (Group 15)*

Another discussion centered on establishing airway position and gaining a seal for ventilation.

*“It was the first time I have done a lateral head tilt and jaw thrust on an unconscious person and I was quite surprised at the amount of pressure I had to apply to put them in the correct position.” (Group 6)*

*“I got to hold the mask on while doing the jaw thrust and I couldn’t help but notice that it was a lot easier to get a good seal on a real person as opposed to the dummy in our prac rooms.” (Group 6)*

*“By far the most challenging skills that I’ve had to learn so far is trying to get the correct technique to gain an adequate seal between the mask and the patient’s face.” (Group 18)*

Several students had the opportunity to perform cardiac compressions and discussed issues such as breaking ribs and the physical nature of this skill. They were surprised about the amount of physical exertion that was required.

*“Even swapping between three people it was extremely exhausting to maintain. The compressions do feel extremely different on a real person though. It is an awful feeling when a rib cracks under your hands.”*

The third theme; experience, permeates through the previous two themes and the entire discussion. Students felt they developed and learnt through experience practicing basic clinical skills and performing repeated patient assessments. They also noted the difficulty in performing the verbal aspect of patient assessment and history taking which also became easier with experience.

*“It is very nerve wracking at first but after you get into the swing of asking questions and going through your structured approach it gets much easier.” (Group 12)*

Most students felt that a supportive, encouraging paramedic crew facilitated the development of confidence in their own skill level.

*“The biggest contributing factor to my confidence and comfort levels in assessing patients was having a friendly and supportive crew around me.” (Group 12)*

Exposure to patients was also central in regard to assessment, but also experience with different patient presentations and ailments. Two patient groups which the students felt they needed much more experience with were psychiatric and pediatric patients.

*“I have done the mental health unit and while it does help prepare for these kinds of cases, like most things, I think that this judgment is one of those skills that can only come with hard-earned experience.” (Group 1)*

*“I am still feeling quite scared and overwhelmed by the prospect of going to pediatric patients. There is always a very tense environment with worried parents and family members.” (Group 2)*

## DISCUSSION

2<sup>nd</sup> year paramedic students provided qualitative evidence of clinical placement themes. This provides research and evidence to an area that to our knowledge has not been researched in the pre-hospital field.

Intravenous cannulation (IV) was a theme present among the majority of students on clinical placement. Although no specific feedback was provided on why IV’s were difficult, many students did comment on the difference between cannulating on a mannequin as opposed to a real person. The external pressures may have a role in the skill itself being more difficult with evidence suggesting that onlookers made the skill more stressful than in a laboratory setting. This external stress can be attributed to the fear of failure in front of peers. Research has suggested that students do feel more anxious whilst in the clinical setting opposed to labs and this has a direct effect on the students’ performance of clinical skills [6].

Cannulating a human as opposed to a mannequin provides the student with additional aspects to the skill that are not practiced in the university environment. These include vein selection, varied vein depth, size and quality. These aspects are not observed in university training as the practice veins are large and easy to see. As discussed by Stayt and Merriman (2013), clinical placements provide students an opportunity to practice a skill in a real context thus allowing consolidation and development of the lab skill in the clinical environment further aiding the student to becoming a “work ready” graduate [5].

Students also commented on the benefit of receiving feedback from paramedics during the cannulation process. By utilizing the experience of qualified paramedics, students are able to correct mistakes. These tips and hints during feedback may not necessarily be provided in the lab setting. It is through the utilization of feedback from paramedics that students are able to increase their competency of the clinical skill [5].

Multiple students had the task of performing resuscitation on patients. As a result, many students commented on the difference between compressions and ventilation on a real person as opposed to the mannequins. All students agreed that compressions on a “real” chest is more difficult, the major difference relating to the amount of force required to actually compress the chest. The fear of breaking ribs appeared to be the major concern for students.

This may be an area that could be addressed in university training, where equipment is better modeled to replicate the actual force required for compressions. Although the skill was more difficult to perform, no students commented on a lack of knowledge of compressions and understood the skill well enough to recognize they were not compressing at an appropriate depth. This connection between theory and practice is the sole purpose of clinical placements and highlights the importance of placements to aid in the development of student’s skills and competencies [2].

Student comments varied regarding the difficulty of ventilating a real person. Students commented on the difficulty of creating and maintain a seal on the patients face whilst using a bag valve mask, while other students commented on how easy it was in comparison to the mannequins. This fluctuation between perceived ease and difficulty gaining and maintaining an adequate seal also indicates further areas in which to improve university training.

The major theme present across the majority of discussion posts was experience - something only gained through time and exposure to certain situations. Students appreciated the opportunities provided through their placements and found as a result they were calmer and more comfortable in approaching patients and performing skills. The most prominent concern was the verbal aspect of the job and attempting to attain information from the patient. Students found as they become more accustomed to how medical conditions present, they are better able to probe and question the patient. This experience also aids in the consolidation of theory and practice, allowing students to develop their critical thinking and apply their knowledge of conditions to a patient’s presentation [2]. This is invaluable for a student as they begin to develop into graduate paramedics where decisions must be made quickly and correctly.

In addition, being exposed to different patient presentations builds on a student’s foundation of knowledge, providing evidence of conditions and first hand exposure to how these patients present. This mitigates the gap between theory and practice, thus better preparing the student as a graduate. Students felt that as they continued to gain experience, their anxiety of anticipated situations was dissipating.

Research has found that the teachers can aid or hinder a student’s experience whilst on placement and our research concurs [5] with many students commenting on how paramedics aided in the placement and development of

the skill. The role, that qualified paramedics play in what students receive from placements, cannot be underestimated or undervalued. Their guidance and feedback are crucial for students to understand and address strengths and weaknesses and also how to continually develop professionally.

Clinical placements are a valuable learning experience for students, providing an opportunity to practice and apply skills learnt at university in a clinical environment. Students identified that skills such as IV cannulation, resuscitation including compressions and ventilation were different to what was practiced at university. Although the principles of the skill were the same, application was varied, and students found this the most difficult aspect of placement to comprehend.

The experience gained from placements is potentially the most beneficial aspect of clinical placements. Participation in placements allows exposure to the real aspects of emergency health, aids in consolidation of theory, and provides an opportunity to investigate patients’ presenting conditions. The research gathered from this study provides a complete understanding of students’ experiences during placement and the things they learn. This provides information for educators who can draw on this for future curriculum and placement planning in order to optimize the student’s experience on clinical placement.

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