

RESEARCH ARTICLE

**PARAMEDIC STUDENTS WORKING IN SNOW RESORT
MEDICAL CLINICS: A NON-TRADITIONAL
INTERPROFESSIONAL CLINICAL PLACEMENT MODEL****Anthony Scott Devenish** PhD^{1*}, **Glenn McKay** MBChB BSc², **David Nicholas Long** PhD¹, **Peter David Horrocks** MHLthSc BN¹, **Michael Smith** BHSc³*scott.devenish@gut.edu.au OPEN ACCESS ARTICLE

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Author affiliations

1. Queensland University of Technology, QLD, Australia
2. Medical Rescue Alpine Medical Services, Queenstown, New Zealand
3. Medical Rescue Alpine Medical Services, Australia

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Abstract

This study investigates the experiences of undergraduate paramedic students completing interprofessional clinical placements in snow sport injury clinics. Qualitative methods were used to investigate the experiences of participants (n=6) undertaking non-traditional ambulance clinical placements as part of a multidisciplinary healthcare team. Ethical approval was obtained through Queensland University of Technology, Brisbane Australia. Data were collected via individual face-to-face interviews and analysed using holistic and focused coding. The analysed results indicated the presence of three main categories, namely Pre-Placement, Intra-Placement and Post-Placement phases. As it was a new placement, student capabilities were not initially known by clinic staff. Nevertheless the workplace culture was inclusive and supportive, and paramedic skills were applicable in the clinic environment. Despite the placement costs being excessive, participants viewed it as an investment in their future careers. Benefits of the placement included perceived improvement in maturity levels, the acquisition of professional networks, an understanding of interprofessional practice and an exposure to clinical skills not normally practiced during traditional ambulance placements. The interprofessional clinical placement appears to be a valid alternative to traditional ambulance placements. However, using this model to replace mainstream placements is problematic due to the costs involved, the limited number of spots available and the seasonal occurrence of snow sports.

Keywords: alpine; interprofessional; paramedic; placement; qualitative; student

Introduction

Historically, clinical placements for Australian university paramedic students have occurred almost exclusively within state-based ambulance services. With the growth in paramedic student numbers and the introduction of new university-based paramedic programs, competition for clinical placements is unprecedented.(1) Subsequently, the Australasian peak industry body, the Council of Ambulance Authorities (CAA) recently endorsed clinical placement guidelines stipulating 600 hours of placement are required for university paramedic program accreditation.(2) The 600 hours include 300 hours minimum with a state-based emergency ambulance service and 300 hours maximum in an alternative area such as placements with international ambulance services, private ambulance providers, hospitals, medical clinics and aged care facilities. Clinical simulation can also be counted in the alternative placement hours up to a maximum of 100 hours.(2) Whether the Australian Health Practitioner Agency (AHPRA) adopts these guidelines is yet to be confirmed. Nevertheless due to placements being at capacity it is critical to expand clinical placement opportunities and explore alternative placement options.

Other health professional groups have been required to manage similar challenges. For example, in professions such as occupational therapy and physiotherapy, clinical placements can occur in a range of non-traditional settings, where the principal supervision of the placement comes from a health professional that is from a different health discipline to that of the student.(3-5) In effect, the clinical placement is managed through an interprofessional learning (IPL) approach as part of a multidisciplinary team.

In this study we used qualitative methods to evaluate paramedic students' experiences in an interprofessional snow resort medical clinic. Each interprofessional team consisted of an emergency doctor, emergency nurse, physiotherapist, medical student, two paramedic students and alpine ski patrol. Thus the paramedic student received their day-to-day supervision from health professionals other than a paramedic. The peer-reviewed literature about paramedic placements in a non-ambulance environment is limited. Studies were found investigating perceptions of paramedic students undertaking volunteer community placements.(6) Other research focuses on placements in nursing homes or dementia clinics.(7, 8) Research also exists, examining interprofessional paramedic placements in aged care facilities (9) and rural locations.(10) However, apart from a study examining the measurement properties of the Interprofessional Education Perception Scale (IEPS) in paramedic education, (11) research evaluating the effectiveness and quality of non-traditional university paramedic placements is limited in the peer-reviewed literature.(12)

No published peer-reviewed research was found focusing on non-traditional undergraduate paramedic student placements in an alpine ski environment, where supervision is provided by a health professional other than a paramedic. Thus this study provides a unique perspective about the experiences of paramedic students working with nurses, physiotherapists, emergency physicians, medical students and alpine ski patrol in an international multi-disciplinary clinic environment.

Methods

The aim of this study was to identify the experiences of undergraduate students undertaking an international clinical placement in an interprofessional snow resort medical clinic. Final year paramedic students from Queensland University of Technology (QUT), Brisbane, Australia were chosen to take part in the clinical placement with Medical Rescue. Students were invited by email to participate in the study. The email included a participant information document and consent form. Six students volunteered to participate in face-to-face semi-structured interviews after the completion of the placement.

Interviews, which lasted for approximately 45 to 60 minutes in length, were conducted at a pre-arranged time in a mutually agreed location, such as a café or library meeting room. Interviews were digitally recorded, and transcribed by a professional service. The data were analysed using qualitative content analysis.(13) Holistic coding (14-16) was used followed by code contestation.(13) Codes were then sorted into categories, concepts and themes and organised using focused coding.(14-16)

Ethics

Ethical clearance was sought and approved through the QUT Human Research Ethics Committee (Ethics clearance number: 1700000365). Participants signed a consent form prior to taking part in the study. Data cleaning took place to de-identify the students and maintain participant anonymity. Data were stored as per QUT policy. Research approval was obtained from Medical Rescue, which also contributed to the design and conduct of this study.

Results

Three categories became evident during the data analysis (Figure 1). First, the Pre-Placement Phase examined the experiences and preconception of students prior to their arrival in New Zealand. Second, the Intra-Placement Phase explored the experiences of students as their placement progressed in Medical Rescue ski injury clinics. Last, the Post-Placement Phase investigated student reflections about the placement after returning to Australia.

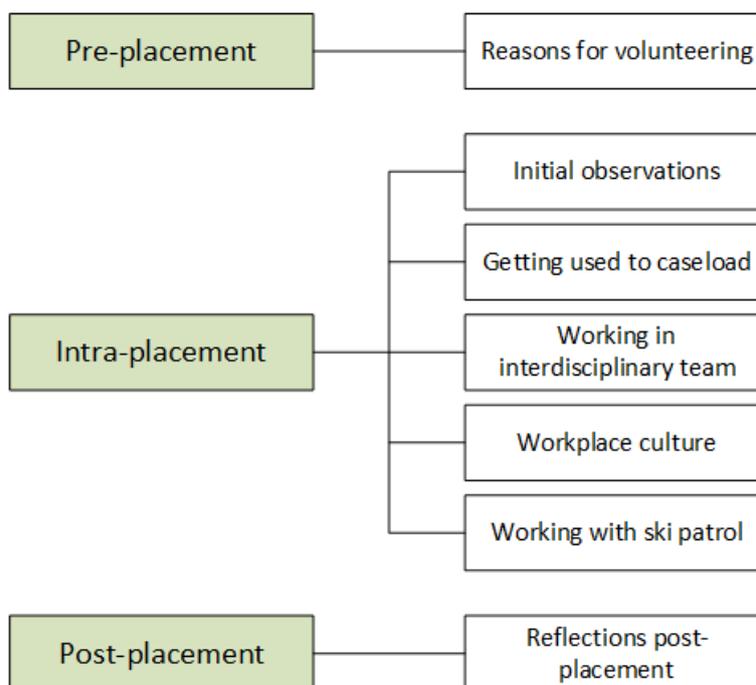


Figure 1. Categories established through holistic and focused coding (14-16), and qualitative content analysis of the data.(13)

Pre-Placement Phase

The Pre-Placement Phase examined the preconceptions and reasons why students volunteered for the clinical placement in the New Zealand ski resort clinics operated by Medical Rescue. The codes identified in the analysis of this phase are outlined in Figure 2. The desire to participate in snow sports and a perceived challenging clinical environment were the main drawcards. Additionally, being enamoured with ski patrol, and having a goal of working on the ski slopes in a medical capacity were reasons why students volunteered for this placement opportunity. Thus the Medical Rescue clinical placement combined an interest in ski patrol with university clinical placements. Working in an interprofessional team also enticed students to undertake the placement. The potential to work with emergency physicians and physiotherapists in a clinic, where the caseload was mainly trauma, was viewed as being an exciting challenge. Students were interested in making networks with a private paramedic providers, representing their university internationally, and completing a non-traditional placement with a view to making their application stand out from other students who did not get the same opportunity.

The large numbers of paramedic students in Australasia (1) were of concern to the

participants, and the Medical Rescue placement was seen as an opportunity to improve their job prospects with an alternative employer other than a state-based ambulance service:

“You don’t know where you’re going to get hired and if you’re going to get a job. I thought it’s good to look at all the different options that are available, that we could branch off into ... what other things could I potentially do and would I be able to get involved in that in the future?”

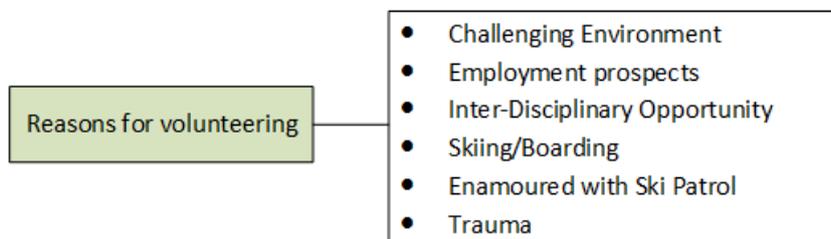


Figure 2. Pre-Placement codes established through holistic and focused coding (14-16), and qualitative content analysis of the data.(13)

Intra-Placement Phase

The Intra-Placement Phase encompasses the orientation prior to the opening of the clinics, and the process of learning and assimilating into a clinic environment throughout the placement. The codes established from the data analysis of the Intra-Placement Phase are highlighted in Figure 3. Of initial surprise were the challenges of becoming accustomed to the dynamics of working in transitional or seasonal ski injury clinics. Students, being used to traditional ambulance placements, were unprepared for a team of health professionals who had not necessarily worked together before, and did not know each other’s’ capabilities:

“Before the clinic opened people weren’t familiar with where things were, there was a new computer system, and the crew hadn’t worked with each other before. So we didn’t know who had what skills, who had done what ... whereas coming from an ambulance placement, everybody in that ambulance knows where equipment is and what they have and what they don’t have ... after the first couple of days it actually picked up and turned around ... there was a good support network ...”

The excitement of working at a ski resort was evident as students reported the experience to be surreal. The following participant had possibly spent holidays at the snow, and found working in the clinic and roaming the mountain with ski patrol to be surreal:

“The first couple of days after (the resort) opening, I couldn’t believe I was working on a ski field ... I’d strap on the snowboard and go for a run ... be seen on the runs and interact with the ski patrollers. It’s like this isn’t a job. This is amazing.”

Despite the initial lack of cohesion, student were made to feel part of the team, which for some was different to normal ambulance clinical placements, where they are visitors to the workplace, and not an integral part of the team. Despite a subtle clinical hierarchy, where the emergency physician was in charge of the clinic, students were surprised to be afforded acceptance into the team compared to their experiences on traditional ambulance placements:

“I mean there was an obvious clinical hierarchy, but we were all inclusive in that clinical interprofessional team for sure. I felt it was in some way better (than a traditional placement) because you haven’t got those paramedic mentors that think they’re God’s gift to earth and don’t want to look at you because you’re a measly student.”

It took a little while for participants to engage in learning activities associated with the placement. Students realised they had to approach the clinic staff and ask for opportunities, as the clinic staff had never worked with paramedic students before and did not know their capabilities. Furthermore, apart from ski patrol, clinic staff were working at the snow for various reasons such as a working holiday or to participate in snow sports. On occasions some staff did not go out of their way to involve students. Despite the initial teething process, students found they had more autonomy compared to a traditional ambulance clinical placement, as they had their own clinical practice guidelines to follow, which were developed by the Medical Rescue Medical Director. Students assisted with the initial triage, assessment and then referral to clinic staff, and were engaged in the management of a patient load.

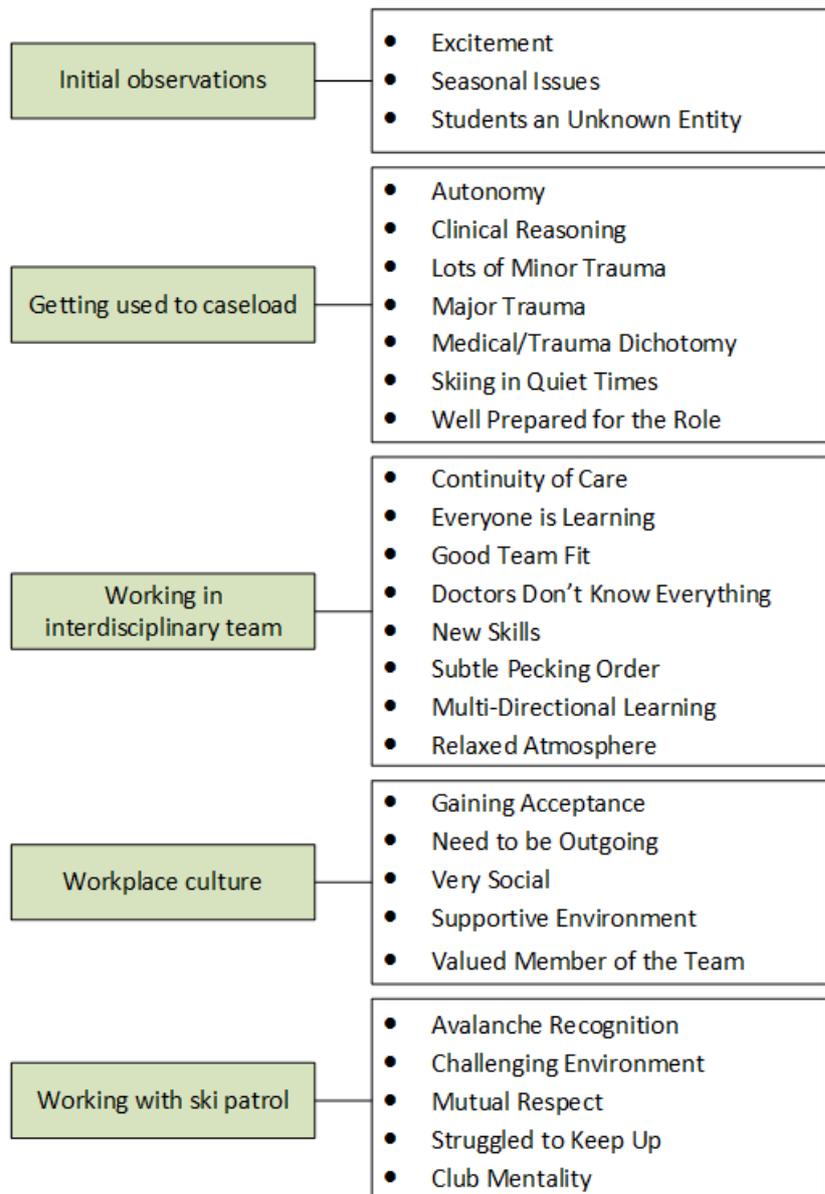


Figure 3. Intra-placement codes established through holistic and focused coding (14-16), and qualitative content analysis of the data. (13)

Despite the caseload being mostly minor trauma such as fractures, dislocations and torn ligaments, the occasional major trauma case occurred. Students found their university studies prepared them to manage major trauma, and were afforded greater respect by the clinical staff after proving their ability under stress:

“The (major trauma) cases certainly drove home how significant traumatic injuries can be up there ... Just seeing the team working together on a really critical patient demonstrates everyone’s skills, where everyone was supporting each other and they were very confident in their decisions ... Up until that point, we were all quite unsure about each other’s capabilities. The (doctor) was really impressed with our abilities, and our confidence and how calm and collected we were through it.”

Due to the location of the snow resorts, and the proximity of Queenstown to major trauma facilities, evacuating severe trauma cases required helicopter retrieval. Students spoke of their fascination observing emergency physicians and flight paramedics discussing the management of the patient and problem solving to provide high level care in a remote and challenging environment. Students learned that Emergency Doctors did not know everything and were challenged by the alpine environment. Furthermore, doctors often referred to other members of the interprofessional team when making diagnostic decisions. For example, students were impressed to see doctors refer to physiotherapists for an opinion about shoulder or knee injury. It provided students with an understanding of how multi-disciplinary teams operate. For example:

“It’s been very valuable working in an interprofessional team ... a lot of students don’t get to experience an interprofessional team in action ... it has opened my eyes to the opportunities of working in a medical facility and not being on-road, for sure.”

Learning in the clinic was not all unidirectional. That is to say, the interprofessional team learned from the students, especially when it came to patient packaging and the use of equipment such as femur traction splints, the use of cardiac monitors and cervical collar application. Being comfortable with this equipment appeared to improve the clinic staffs’ confidence in the students’ abilities.

Interaction with ski patrol was also an important component of the placement. Students often wished they approached ski patrol earlier in their placement to accompany them on mountain ‘sweeps’. Not being able to keep up with the patrollers appears to be the main reason why participants did not participate in sweeps earlier in their placement. After several weeks at the snow, students further developed their skiing or boarding proficiency, and thus obtained the confidence to accompany ski patrol. Valuable learning was obtained from observing and working with ski patrollers in relation to patient packaging, difficult extrication and managing a patient while standing on icy or an unstable surface.

Students spoke of a mutual respect between themselves and ski patrol possibly due to the type of cases they went to. Despite this mutual respect, students identified that at some resorts, ski patrol had their distinct culture compared to the other clinic staff. Students, during down time, were able to shadow ski patrol, and got to experience the challenges with providing trauma management to patients in the alpine setting:

“We went out and did a little bit of work with them. I did an instruction period with them ... attended cases on the mountain and sweeps at the end of the day when we were clearing the mounting. I got to understand a bit about hypothermia and the targets that we’re looking for with patients that are caught in an avalanche. That’s something I never would have learnt about otherwise. So that was really awesome.”

Overall, the workplace culture present in the ski resort medical clinic was different to the traditional paramedic setting. Students observed the workplace to be inclusive and trusting, not a paramilitary culture such as that found in ambulance services.(17-19) There was also a vibrant social life, which further led to team bonding and inclusion.

Post-Placement Phase

After the completion of the seven week clinical placement, students were able to reflect on their experiences in the Post Placement Phase (Figure 4).

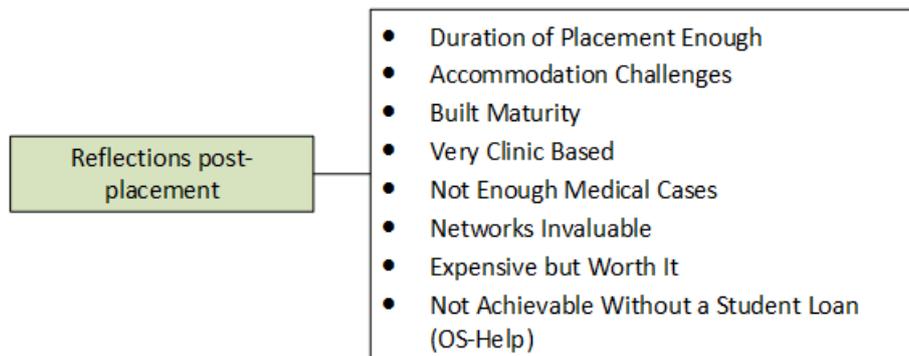


Figure 4. Post-Placement codes established through holistic and focused coding (14-16), and qualitative content analysis of the data. (13)

Participants believed the length of the placement was enough, as any more than seven weeks away from their friends and family would have been difficult. Due to the length of the placement, the cost of living in Queenstown was an issue for some, as well as having to find accommodation during the ski season. Despite the costs, students viewed the expenditure as an investment in their future career, which possibly opened up employment opportunities in the private paramedic sector. It also developed their professional networks with clinic staff. For example:

“I still keep in contact with the team. We’re still messaging each other ... Importantly it gave me some networks ... people that I can talk to who are doctors, physios and nurses ... So that’s really good for me and adds exposure to what I think my paramedic career is going to be.”

Participants felt that undertaking an international placement enabled them to build maturity which would assist them to transition to the workplace:

“I think it made us grow up a little bit. You’re suddenly in a different country, you’re living overseas, (and) you’ve got different priorities.”

Of interest was a dichotomy between medical and trauma cases. Participants identified that medical cases were too limited, with the caseload being mainly traumatic injuries:

“I didn’t do a single medical job while I was there ... and keeping my knowledge up for when you’re applying for jobs and clinical exams and stuff is important. But I definitely think that overall it was a useful placement. We don’t always get lots of trauma, so it’s good to be able to see that.”

This is possibly the reverse of what students experience on a traditional ambulance clinical placement, where the majority of jobs are medical cases.(20)

Despite paramedics working in interprofessional teams in the UK and Canada, and because Australian paramedics mainly work for state-based ambulance services, the following participant could not see benefits of a placement in an interprofessional clinic:

“I think the placement was good ... but maybe not directly related paramedic practice because it was very clinic based. I don’t think it necessarily resembled paramedic work unless you did more with ski patrol, and even then I suppose it’s a different job ... because I found they gave more sit reps over the radio than we do on ambulance placements.”

In relation to the increased level of situation reports (sit reps) passed by ski patrol, the participant above may not have understood ski patrollers possibly have a limited scope of practice compared to paramedics. Ski patrollers currently complete certificate level courses, and not university degrees. Thus the comparison is not entirely justified. This

finding above also appeared to be the exception and not the rule, and participants highly recommended the placement to further student cohorts:

“I think it’s a good opportunity ... it exposed you to how doctors work, because on ambulance placements you transport the patient and handover at hospital, and then see you later kind of thing. I would recommend to future students to do the placement. It helps if they’re a good skier, I think there’s a lot of scope for them to get out there and do that point of injury stuff, but I think it was a huge benefit to go because I did learn lots more about musculoskeletal injuries. I actually got to reduce dislocations which we talk about in class but we don’t actually do on-road.”

Discussion

An evaluation of the paramedic student clinical placement experience is important from the perspective of key stakeholders, and may have positive implications and applicability for other Australasian university paramedic programs. Furthermore, the interprofessional placements with Medical Rescue snow resort clinics identify the extent to which non-traditional clinical environments can help develop trauma management skills, inter-professional communication and improve confidence levels for undergraduate paramedic students.

While the literature identifies the benefits of interprofessional placements, most of these placement locations were in community settings, aged care facilities and dementia clinics.(6-9) Working in a snow resort medical clinic in New Zealand was a drawcard for engagement in this interprofessional placement. A unique finding was that working with ski patrol, or wanting to pursue a career in medicine were reasons why students volunteered for this opportunity. The high caseload of trauma may have appealed to student anticipatory professional socialisation views or preconceptions about the role of a paramedic being lifesaving, lights and sirens work.(17, 21) However, of particular note was the reported dichotomy between trauma and medical cases, where students voiced concerns about the lack of complex medical cases encountered. Furthermore, the perceived supply demand mismatch between available paramedic jobs and student numbers (1) was a motivator to pursue alternative placements to explore other possibilities in the paramedic job market.

During the Intra-Placement phase, initial frustrations were evident due to the seasonal nature of ski clinic work, as well as no precedence being set for paramedic student involvement in the alpine resort medical clinics. Thus an expectation and reality mismatch may have initially occurred.(22) Another dichotomy was evident as students were trying to learn their place in the clinic environment while simultaneously undergoing a honeymoon phase working at a ski resort, confirming similar findings from the paramedic professional socialisation literature.(17, 21) Gaining workplace acceptance appeared to be linked to clinical performance especially when managing critical patients, further confirming the Skills and Routine Mastery phase in the paramedic literature.(17, 21)

Assimilating into the clinic environment was assisted by the inclusive workplace culture. Research indicates that paramedic students can encounter stigmatisation and marginalisation on ambulance placements due to the paramilitary command and control culture.(17, 18, 21, 23-25) The clinical hierarchy present where the emergency doctor also supervised clinic staff confirms similar findings in the literature.(9) However doctors were readily seen to defer to physiotherapists and other health professional staff for their opinions, and unlike research findings about interprofessional learning, (9) they did not appear to act superior to other health professional groups. Furthermore, observing critical decision making about severe trauma cases was important for students to see that emergency doctors, who are possibly placed on a pedestal, do not have all the answers when working in a challenging alpine environment.

The mutual respect between students and ski patrol, and the ability to perform paramedic skills in a parallel environment possibly improved the clinical skills and confidence levels of students. Of particular note, learning in the clinical environment was multidirectional. Unlike traditional paramedic placements, where learning is more unidirectional, that is to say experienced staff teach students, clinic and ski patrol staff

were able to learn from paramedic students about techniques and equipment which are not commonly used in the hospital or the ski patrol environment. Thus the placement involved interprofessional learning between university students and qualified health professionals.

The restricted view of paramedicine by students was apparent in the analysed results. Professional registration has led to the diversification of the paramedic role in the UK, where paramedics practice in other areas of the health system such as emergency departments and medical clinics, and not solely in a traditional ambulance role. Beliefs associated through anticipatory professional socialisation, (17, 21) and the lack of a clear definition for the term 'paramedicine' (26) may also create misunderstandings for beginner practitioners about future roles for paramedics in Australasia.

While all participants found the placement to be valuable, and would highly recommend it to future students, there were challenging aspects experienced by students. These included a lack of awareness by clinic staff of student capabilities, and students having to seek learning experiences. This finding confirmed similar results in the literature about interprofessional clinical supervision in an allied health context.(3) As it was an inaugural placement, these challenges may not be as significant in subsequent placements, as clinical staff now have an understanding about how to best use paramedic students in an interprofessional team. The initial findings in the current study suggest non-traditional clinical placements as part of an interprofessional team in a snow resort medical clinic appear to be a valid alternative to traditional ambulance placements. However issues around placements costs, accommodation and skiing/snowboarding ability, as well as the seasonal nature of snow sports impact on how often these placements can occur, as well as the suitability of students to engage in this opportunity.

Limitations and Significance

The small number of participants may be seen as a limitation to the study. The findings of this study reflect the experiences of the participants (n=6), and not the placement cohort as a whole. A possible limitation was that the researchers' reflexivity was not addressed. To limit bias, well known coding techniques were used and 'intercoder reliability' (27) was undertaken to address the possibility of bias. The study only investigated the experiences of paramedic students taking part in the placement, and not the views of clinic or ski patrol staff. While this was outside of the scope of this study, it is intended that further research may include the view of student paramedic capabilities as seen by clinic staff in future placements. Despite these possible limitations, the study makes a unique contribution to the paramedic discipline, as to date there are few Australian or international peer-reviewed studies which examine non-traditional placement opportunities for paramedic students in an interprofessional snow sport injury clinical setting.

Conclusion

Undergraduate paramedic student clinical placements in interprofessional snow resort medical clinics are possibly a valid alternative to the traditional ambulance placement model which is reaching capacity in many state-based jurisdictions. Three phases were identified which help to examine the experiences of undergraduate paramedic students' experiences when engaging in non-traditional interprofessional placements, namely the Pre-Placement, Intra-Placement and Post-Placement phases. Benefits associated with the placement included working overseas, improving maturity levels, developing an understanding of interprofessional practice and interprofessional communication. Challenges associated with the placement related to clinic staff initially being unaware of student capabilities. While the cost could be seen to be prohibitive, participants chose to view it as an investment in their future. The limited number of sports available and the seasonal nature of snow sports are a disadvantage to this model being used as a mainstream placement in the paramedic program at QUT.

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