

## Research

# Investigating career intentions of undergraduate paramedic students studying in Queensland, Australia

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## Abstract

### Introduction

This study explores the career intentions of undergraduate university paramedic students. Other like studies have been completed before paramedicine registration, and this is the first career intentions study to focus on the Queensland perspective.

### Methods

Second year Queensland University of Technology (QUT) undergraduate paramedic students (n=182) were invited to participate. Ethics approval was gained and consent to participate was implied by the completion of a mixed methods questionnaire developed from the extant literature. Data were coded and analysed using Stata 15.1 and NVIVO 12.

### Results

The response rate was 47.3% (n=86). Findings indicated 82.35% of participants intend to pursue paramedic employment after graduating. Queensland Ambulance Service is the preferred choice of employer (78.05%), however 67.07% intended to apply to multiple services for employment, 62.2% are considering private industry employment and 59.76% are contemplating overseas work. Intended paramedicine career length revealed 39.5% of participants plan to work for 20 years or more, 29% for 6–10 years and 18.4% for 11–15 years. Qualitative findings suggest students are concerned about employment opportunities, dislocation from support networks, and feeling unprepared to work in other paramedic jurisdictions. Furthermore, the employer's reputation, culture, internship program and career development opportunities impact on employment decisions.

### Conclusion

The paramedic landscape in Australia appears to be changing. Although the majority of participants intend to work for jurisdictional ambulance services, students are exploring a range of employment opportunities. Understanding the career intentions of undergraduate paramedic students is essential for universities when preparing students for the transition to a globally evolving profession.

### Keywords:

career intention; paramedic; university; student; international; private sector

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## Introduction

This article explores the career intentions of undergraduate paramedic students from a large paramedic program located in Queensland, Australia. Studies about the career intentions of Australian undergraduate paramedic students are not new in the peer-reviewed literature. Previous studies completed before paramedicine became a registered profession have focussed on university paramedic programs in Victoria (1) and New South Wales (2). Data from Queensland has largely been absent from the peer-reviewed literature.

Paramedic undergraduate numbers across Queensland-based universities are higher compared to other Australasian jurisdictions (3), placing pressure on clinical placement capacity. Recent national registration for paramedics in Australia and New Zealand has possibly led to increased employment options with private and independent paramedical services. Additionally, before the COVID-19 pandemic, recruitment of Australasian paramedic university graduates by United Kingdom National Health Service (UK) (NHS) Foundation Trusts provided alternative international employment options (4). It also remains to be seen whether employment in the UK will recommence to the same extent once the current pandemic is over.

Other international employment options for Australasian paramedic graduates may expand further into the future, for example, opportunities in Canada and the United States (US). However, this study did not focus on international opportunities outside of the UK, as Australasian graduates may encounter greater challenges with obtaining provincial registration or a practice licence in North America compared to gaining paramedic registration with the UK Health Care Professionals Council. Unlike Australasian graduates who have a university degree, Canadian and US paramedic training occurs mostly at the certificate and diploma level. Despite the differences in training qualification frameworks, a higher clinical scope of practice is authorised for Canadian advanced care paramedics and for US paramedics/EMT-Ps in some counties (5). Therefore, the differences in clinical scope may result in Australasian graduates gaining equivalence as technicians (EMTs) in the US or as primary care paramedics in Canada.

While this article explores the career intentions of undergraduate paramedic students in Queensland, it may have transferability to other jurisdictions. The study indicates a changing landscape of paramedic employment and the profession across Australasia, which has occurred since the topic was previously explored in the literature.

## Methods

Undergraduate paramedic students enrolled in the second year of the program at the Queensland University of Technology (QUT) were invited to participate in this study. Of those enrolled (n=182), 47.25% (n=86) volunteered to participate in the

questionnaire. Ethical approval was sought and gained through the QUT Human Research Ethics Committee. A paper-based questionnaire, informed by the work of O'Meara, Tourle, Madigan and Lighton (2), and Waxman and Williams (1) was developed to compare the available literature with the Queensland context. The questionnaire investigated the cohort's demographics and focussed on the following career intentions:

- pursuing a paramedic career (as opposed to a pre-medicine degree or a career in nursing)
- preferred state or territory employer
- intended number of job applications
- consideration for private (non-ambulance service) employment
- consideration for overseas paramedic work
- intended length of service in the profession.

Consent to participate was implied by the completion of an anonymous questionnaire comprising of 10 quantitative questions to explore the career intentions of undergraduate students. Two of these quantitative questions allowed participants to provide further pertinent information about their selected answer. Additionally, there were two qualitative questions that explored the main factors influencing participants' intended career decisions and identified major concerns about applying for employment postgraduation. Quantitative data were coded and analysed using Stata (version 15.1) StataCorp, College Station, Texas, US. Generic qualitative methods were used to code the qualitative data into themes.

## Results

### Quantitative results

The demographics, including participant age, gender and course type are outlined in Table 1.

Table 1. Career intentions study participant characteristics

Characteristic	n	% of total	% of responders (n=85)
<b>Age (years)</b>			
17-25	74	86.05	86.05
26-35	12	13.95	13.95
<b>Gender*</b>			
Male	29	33.72	34.12
Female	56	65.12	65.88
Missing	1	1.16	-
<b>Single or double degree</b>			
Paramedic science	44	51.16	51.76
Nursing/paramedic science	41	47.67	48.24
Missing	1	1.16	-

\*gender as identified by the participant

Of the participants, 82.35% (n=71) planned to work in the paramedicine discipline after graduating from their undergraduate paramedic university degree. Of the remaining students, 2.35% (n=2) indicated they wished to pursue a career in nursing, and 2.35% (n=2) were using the course as a pre-medical degree. The remaining 12.94% (n=11) were undecided whether to pursue a career other than paramedicine. Of these undecided students, 63.64% (n=7) were nursing/paramedic dual degree students and the remainder 36.36% (n=4) were enrolled in the single paramedic degree pathway.

The participants' preferred Australian employer was the Queensland Ambulance Service (QAS) (78.05%, n=64). Of particular note, 20.73% (n=17) of students did not have a preference and selected multiple (three or more) services, indicating their willingness to move interstate to obtain employment. Participants were also asked if they would consider working for private non-traditional paramedic employers. Of the participants who responded, 13.41% (n=11) would not seek employment with independent employers, and 24.32% (n=20) were undecided. However, 62.2% (n=51) indicated they would consider working for private/non-traditional employers, which possibly indicates students are willing to look at multiple avenues to obtain employment.

The fear of not securing employment was further emphasised by 67.07% (n=55) of participants indicating they would submit applications for employment to more than three Australian ambulance services. Furthermore, 59.76% (n=49) of participants were considering applying for employment with UK NHS Foundation Ambulance Trusts. Of the remainder, 29.27% (n=24) were undecided, and 10.98% (n=9) did not want to pursue paramedic work in the UK. Table 2 indicates which UK ambulance services participants would most likely consider working for. Of particular note, the majority of participants did not have one preferred service in the UK. However, those that did indicated London Ambulance Service as their preferred UK based employer.

Table 2. Preferred UK ambulance service employer

UK ambulance services	n	% of total responders (n=72)
London	28	38.89
South central	2	2.78
Southeast coast	1	1.39
Other service	2	2.78
Multiple services preferred*	39	54.17

\*three or more services were selected

Finally, participants were asked to indicate their anticipated length of service in paramedicine (Table 3). Of interest, the highest response suggested that students were expecting to work as paramedics for more than 20 years, followed by 6–10 years and then 11–15 years.

Table 3. Anticipated years of service as a paramedic

Planning to work as a paramedic post-graduation (years)	n	% of total population (n=77)
2–5	4	5.19
6–10	22	28.57
11–15	15	19.48
16–20	6	7.79
>20	30	38.96

### Qualitative results

Two main themes became apparent from the qualitative results. These were 'concerns about employment' (Figure 1) and 'choice of employer' (Figure 2). The concerns about obtaining employment confirmed similar findings in the literature (2). However, the fear of not gaining employment in paramedicine due to large graduate numbers in Queensland appears to have led to a sense of nervousness, with students willing to pursue multiple options, including international opportunities, to obtain meaningful paramedic work suitable to their skills and clinical knowledge. Themes also centred on fears about meeting the criteria for employment with ambulance services, uncertainty about moving to other jurisdictions, missing application deadlines or being unable to undertake job interviews due to inflexible examination schedules, clinical placements or outside work commitment. Of particular note, concerns were raised by participants about not being accepted by colleagues post-employment, confirming similar findings in the literature (6,7). The results relating to the choice of employer also confirm similar findings in the literature (1,2). For example, participants are concerned about workplace culture, internship support, career opportunities and income. The theme of using the paramedic qualification to travel was not found in previous career intentions studies but is present in the paramedic literature (4).

### Discussion

The demographics of this study highlight differences to the existing published literature about paramedic student career intentions. For example, in the age category, the percentage of students less than 26 years of age was higher at QUT (86.05%) compared to the Victorian study (73%) (1), whereas the New South Wales study (2) did not indicate specific student age demographics. There were no significant differences in participant gender between studies. In this study, 65.12% indicated that they were female versus 61% from the Victorian study (1), and while not explicitly reporting gender-based data in their study, O'Meara and colleagues (2) suggested most participants were female. With more female graduates entering a historically male dominated workforce, more flexible working arrangements are required in future to accommodate for family friendly work scheduling and maternity leave (8,9).

Concerning career intentions, a trend is possibly appearing where undergraduate paramedic students are using the

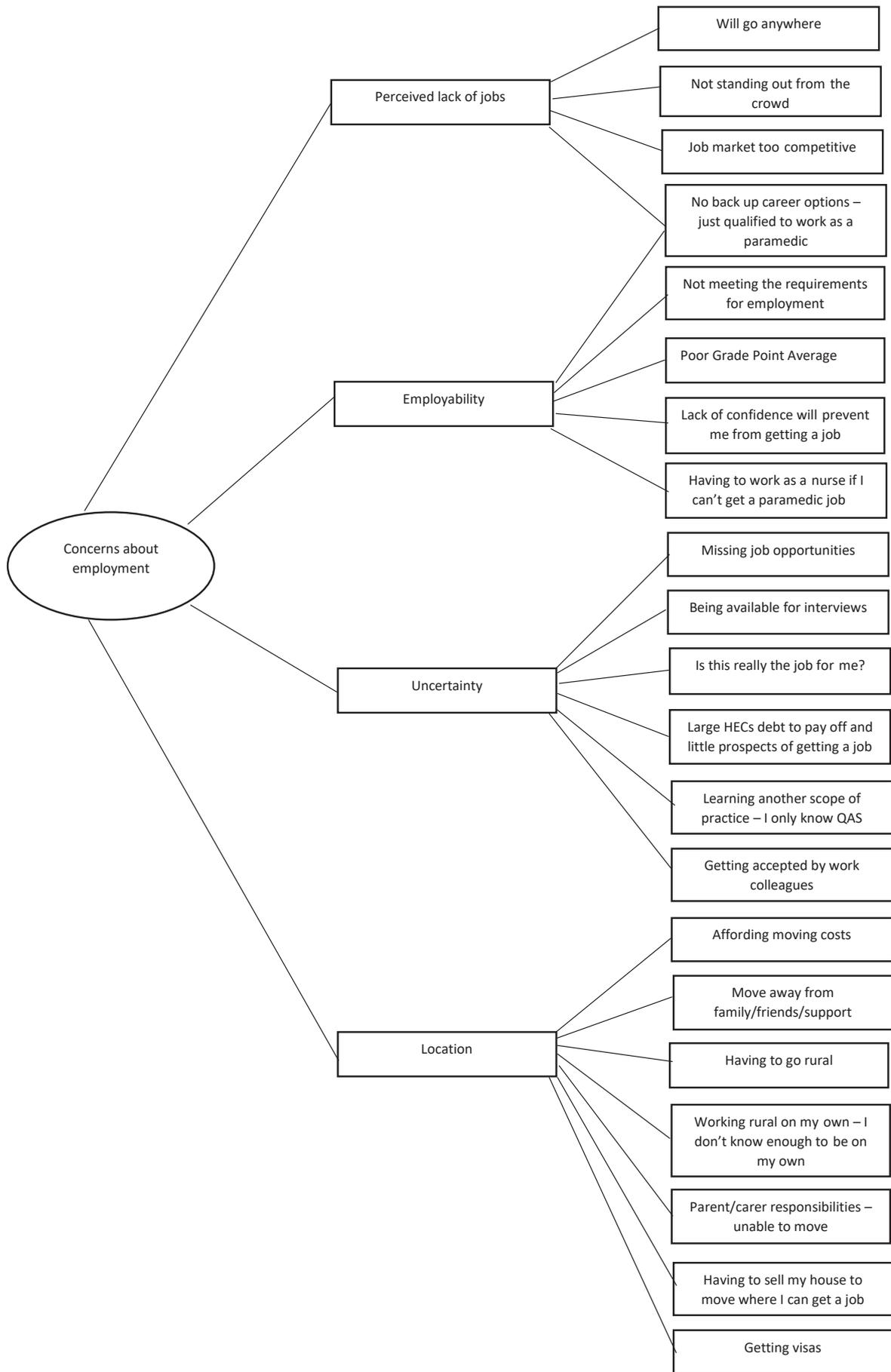


Figure 1. Qualitative themes relating to employment concerns

qualification as a pre-medical degree (4,7). Of particular note, the number of students pursuing the QUT paramedic degree as a pre-medicine option was 2.35%, much lower than anticipated. The analysed findings also indicate the majority of students want to pursue a career in paramedicine, with only 2.35% of the total cohort indicating they wanted to work in the nursing discipline. Given the low number of students intending to pursue a career in nursing and challenges associated with maintaining dual health professional registration, this study provides further evidence to academic institutions on future dual health professional educational offerings.

Unlike the Victorian study (1) where 81% of participants would not accept a position outside of Victoria, the vast majority of students enrolled in the QUT program are planning to submit more than three employment applications to ambulance services, confirming similar findings in the literature (6). Thus, participants in this study are willing to consider working for any Australasian ambulance service (20.73%), a result that is slightly higher than O'Meara and colleagues' (2) findings (16%). The data indicates that students were not necessarily 'tied' to their home jurisdiction.

Of interest were the results indicating students are considering

working for private or independent non-government services (62.2%) until they can secure a job with a state-based service. While alternative non-jurisdictional employment has been discussed previously (8), the increase in career options may be the result of paramedicine registration, private paramedic companies obtaining contracts with corporations and mass gathering events.

Paramedic graduates have also been taking up employment opportunities with UK ambulance services for several years (4). Another interesting finding is that 59.76% of the study's cohort are considering applying for work in the UK as paramedics, although the long-term impact of the COVID-19 pandemic on international employment is yet to be determined. While UK ambulance services have previously undertaken recruitment campaigns in Sydney and Melbourne, considering Queensland produces the highest number of paramedic graduates (and data in this study indicating significant interest in overseas employment), the inclusion of Queensland in future campaigns is warranted.

Another point of interest is the differences in the perceived length of employment as paramedics. The Victorian study (1) indicated more than half of students surveyed (54%) would work

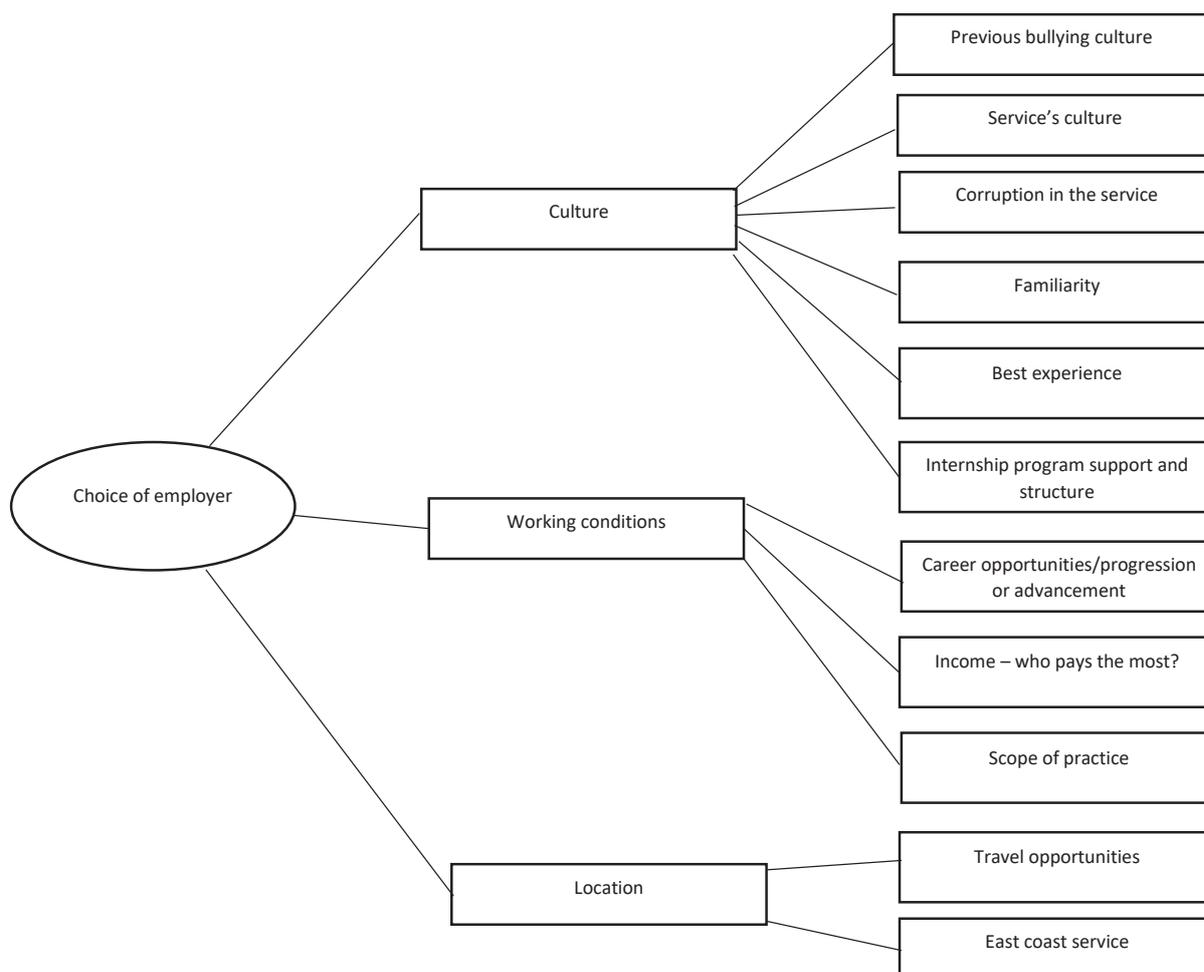


Figure 2. Qualitative themes relating to choosing an employer

as paramedics for more than 20 years and 92% for more than 11 years. The current Queensland-based study shows considerably fewer students wish to work as paramedics for more than 20 years (38.96), or work as paramedics for more than 11 years (66.24%). Further research is needed to understand the changing career duration intentions of graduates, and whether the creation of enhanced career pathways or additional clinical specialisations will impact career duration intentions.

The qualitative results mirrored many of the findings highlighted in the literature about career intentions, such as family and support networks impacting on employment, employer remuneration, working conditions and organisational culture (2). Of particular note is a strong theme of perceived job shortages for paramedics and a competitive job market. Graduates are needing to be more creative after graduating to pursue meaningful employment suited to their capabilities, until they can secure work with a jurisdictional ambulance service (8). The perceived shortage of graduate positions appears to have led to a growing fear among graduates about their grade point average, confidence levels and suitability for employment compared to other students. Financial concerns were also raised, such as having a student loan to repay, affording a move interstate or overseas, and having to sell assets to establish a career.

The finding that pursuing a career in nursing is seen as less desirable to working as a paramedic was unexpected, and can be interpreted as a nursing career is a fall-back position for some dual degree students, or a temporary option until ambulance service employment is secured. Conversely, students not completing a dual nursing/paramedic degree were concerned about having a qualification that was perceived as non-transferable to other health sectors without further training and education. Moving to a rural location was seen as undesirable due to a lack of confidence in participants' perceived ability to practise. Despite many graduates establishing successful interstate and international careers, there was the perception that students from QUT felt underprepared to work for an ambulance service, or private employer, outside of Queensland.

## Conclusion

This study fills a gap in the literature about the career intentions of Queensland-based undergraduate paramedic students from a single university. While many of the findings in this study confirm similar results in the existing literature from other states around employer of choice and factors influencing career decisions, the study has built on the previous findings indicating the changing face of the paramedicine profession. It has indicated more students are planning to seek employment in the private sector and interstate services as well as exploring international options. Large student numbers across Australasia have created perceived fears about not obtaining meaningful paramedic employment after graduating. The results have raised interesting questions about dual paramedic/nursing degrees, with the vast majority of students wishing to obtain employment

in paramedicine and careers in nursing being seen as a backup option.

## Limitations

A limitation of this study is that data were collected before the COVID-19 pandemic. While the international transition of paramedic graduates has been significantly affected by the pandemic, it remains to be seen how these employment options will be impacted long term once Australasian border restrictions are eased and overseas travel is re-established.

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## Competing interests

The authors declare no competing interests. Each author of this paper has completed the ICMJE conflict of interest statement.

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