

CONFERENCE ABSTRACTS

Australasian College of Paramedicine International Conference (ACPIC) 2021 Abstracts

Oral presentations

Morphine or Fentanyl? Is there any difference in pain management outcomes in the treatment of acute coronary syndromes?

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Abstract

Background: Both fentanyl and morphine are used within Australian ambulance services to manage cardiac chest pain. Although some studies exist, there is currently limited information comparing these drugs' analgesic efficacy and safety in patients with cardiac chest pain during administration by paramedics.

Aims: To compare the administration of fentanyl and morphine in patients with cardiac chest pain and assess if any adverse effects occur with the delivery of these drugs.

Methodology: After ethics approval, patient data was received from the Queensland Ambulance Service. A retrospective quantitative analysis was performed upon a total of 1901 STEMI patient case records over four years (2013-2016 inclusive). For all examined cases, strict inclusion/exclusion criteria were employed before the data was statistically analysed. Statistical comparisons were performed using ANOVA.

Results: There was no significant difference in respiratory rate or heart rate changes in patients who received either fentanyl or morphine. However, patients who were administered morphine reported a greater decrease in pain score than those who received fentanyl. A significant overall main effect for pain was revealed between morphine and fentanyl ($p=0.03$). Statistically significant differences in pain scores were shown at 20 min ($p=0.001$), 25 min ($p=0.001$), 30 min ($p=0.006$), and 35 min ($p=0.016$). There was a statistically significant decrease in systolic and diastolic blood pressure in patients who received morphine than in patients who received fentanyl ($p=0.001$).

Conclusion: Due to the statistical difference in comparing both analgesics, further studies should be conducted to determine whether there is any clinical application in this change. Based on the changes to systolic and diastolic blood pressure shown in patients who received morphine, studies into the drug's safety compared with fentanyl during STEMI would be useful.

Survival outcomes in traumatic out-of-hospital cardiac arrest after the introduction of a trauma-focused resuscitation protocol

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Abstract

Aim: In this study, we examine the impact of a trauma-focused resuscitation protocol on survival outcomes following adult traumatic out-of-hospital cardiac arrest (OHCA).

Methods: We included adult traumatic OHCA patients aged >16 years occurring between 2008 and 2019. In December 2016, a new resuscitation protocol for traumatic OHCA was introduced prioritising the treatment of potentially reversible causes before conventional cardiopulmonary resuscitation (CPR). The effect of the new protocol on survival outcomes was assessed using adjusted interrupted time series regression.

Results: Over the study period, paramedics attempted resuscitation on 996 cases, of which 672 cases (67.5%) and 324 cases (32.5%) occurred during pre-intervention and intervention periods, respectively. The frequency of almost all trauma interventions was significantly higher in intervention period, including external haemorrhage control (7.6% vs 15.7%, p -value <0.001), blood administration

(0.2% vs 3.8%, p-value <0.001), and needle thoracostomy (42.0% vs 75.9%, p-value <0.001), with significant reduction in the median time from initial patient contact to the delivery of needle thoracostomy (8.7 minutes vs 4.4 minutes, p-value <0.001) and splinting (17.5 minutes vs 8.7 minutes, p-value= 0.009). After adjustment, the odds of survival did not change under the trauma-focused resuscitation protocol (Discharged alive adjusted odds ratio [AOR] 0.98; 95% confidence interval [CI]: 0.11-8.59, event survival AOR 0.82; 95% CI: 0.33–2.03 and return of spontaneous circulation AOR 1.30; 95% CI: 0.61–2.76).

Conclusion: Despite an increase in trauma-based interventions and a reduction in the time to their administration, our study did not find a benefit in a trauma-focused resuscitation protocol over initial conventional CPR.

On the frontlines amidst uncertain times: Lived experiences of Canadian paramedics during the COVID-19 outbreak

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Abstract

Introduction: Despite the essential role of paramedics in public health emergency response, prior to the COVID-19 pandemic, existing research largely focused on the views of physicians, nurses, and hospital administrators, rather than paramedic practitioners. Existing literature on paramedics' pandemic experiences has focused on logistical planning, workforce availability, triage ethics, and vaccination considerations. This study addresses the gap in literature pertaining to the day-to-day experiences of paramedics during the COVID-19 pandemic and the meaning these experiences held for practitioners.

Aims: In this study we explore the lived experiences of paramedics during the initial months of the COVID-19 outbreak. We analyse the challenges faced and the areas considered priority by paramedics within the context of their operational settings.

Methods: Data was collected in a mixed methods study via an online survey consisting of primarily open-ended questions regarding paramedics' experiences across Canada. Data was collected across 10 provinces and territories. A

total of 428 surveys were completed between April 3rd to August 1st, 2020. With the study grounded in a descriptive phenomenological approach, responses were thematically analysed using the constant comparative method.

Results: Three main themes were identified in the data across Canada. The themes included tensions with change management, paramedic identity misalignment, and mental health sequelae experienced by paramedics. Through this study, two key contributions are identified. First, insights are provided into the realities of frontline prehospital paramedic care work during a pandemic and the meaning that paramedics found in these experiences. Second, the findings further highlighted two existing challenges in paramedicine surrounding the role of paramedics and their professional identity, and the contexts of their mental health and wellbeing.

Conclusion: Insights were gained regarding paramedics' daily lived experiences during the initial months of the COVID-19 pandemic and how existing challenges in paramedicine were exacerbated.

Evidence-based prehospital management of pain and distress in elderly hip fracture patients: A systematic review

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Abstract

Background: Hip fractures are a common injury. With an aging population, increases in the incidence rate of this injury are expected. The management of pre-hospital hip fractures in the current literature is a developing topic. This systematic review aims to add to the existing literature to improve patient outcomes.

Methods: The central question of the systematic review was: What evidence-based components of pre-hospital care have been shown to reduce pain and distress in elderly hip fracture patients? To explore this question, we followed the Joanna Briggs Institute Manual for Evidence Synthesis. A mixed-methods systematic review was undertaken. A comprehensive search of MEDLINE, CINAHL Escudos, COCHRANE, and OVID Emcare was completed to identify peer-reviewed articles.

Results: A final dataset of nineteen peer-reviewed articles was located, comprising of various study designs and methods. The systematic review found that care for elderly

hip fracture patients requires careful evaluation if patients are to experience high-quality care in the pre-hospital environment. The results showed that even though patients experience high pain levels, they do not receive adequate relief. The current pharmacological and non-pharmacological regimes are insufficient.

Discussion: Multiple components of care are required to perform high-quality hip fracture care.

Conclusion: The systematic review found that further research and developments must be completed to understand further why elderly patients are not receiving the levels of analgesia required to reduce pain and distress.

Exploring 'Queerspaces' within paramedicine curriculum: the LGBTQI+ vacuum

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Abstract

Introduction: Decisions around content included in paramedicine programs are influenced by stakeholders. These stakeholders reflect a population that is predominately heterosexual and cisgendered, in line with general population trends. Curriculum therefore tends to be produced through hetero-cis-normative lenses. Curriculum produced may not meet student needs in including diverse perspectives, experiences and needs of LGBTQI people in curriculum. There are two potential consequences of this. Firstly, the clinical practice needs of students in relation to interactions with the LGBTQI community may not be addressed. Secondly, the learning needs of LGBTQI students may be neglected. Inclusion of LGBTQI people and perspectives in curriculum may bridge this gap.

Aims: This study aimed to examine student and academic staff perspectives on including LGBTQI content in paramedicine curriculum.

Methods: The project explored the Australian Catholic University (ACU) Bachelor of Paramedicine curriculum through document analysis, online student survey, and staff and student interviews.

Results: There was no reference to LGBTQI people or perspectives in the approved curriculum. 187 survey participants indicated a desire for inclusion of LGBTQI content to meet their clinical needs, and LGBTQI students

expressed feelings of exclusion. Staff interviews indicated a recognition of the need to include LGBTQI material accompanied by anxiety around related curriculum design and teaching. Student interviews generally indicated support for attempts to include LGBTQI material over its omission.

Conclusion: There are benefits to inclusion of material related to LGBTQI people and perspectives in paramedicine curriculum. These include a greater sense of inclusion for LGBTQI paramedicine students, improved clinical practice and a better standard of care for members of the community served by paramedics. Staff need support in developing competence to teach within this area.

An evaluation of a perinatal, infant and child grief workshop into paramedic undergraduate curriculum using the CARES skills framework.

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Abstract

Introduction: Research has consistently shown that paramedic attendance at an infant or child death is reported as being the most distressing type of case paramedics attend. Furthermore, paramedic education programs have previously reported student confidence is low when discussing resuscitation wishes, notifying family members of a patient's death, and providing emotional and practical support to a bereaved family. Peer social support may offer an important medium for paramedic student support when coping with stressful situations, such as the death of a child, especially in the absence of supportive clinical mentors or a willingness to access psychological help.

Aim: The study aim was to evaluate the paramedic student experience of participating in a peer social support group using the CARES framework, to discuss aspects of perinatal grief and death related to infants and children.

Methods: A convenience sample of participants (target n=154) were recruited from a first-year paramedic program in a single Australian regional university. A modified Nominal Group Technique (NGT) method was used following a student debriefing session designed to identify problems, generate solutions, and make decisions regarding the efficacy of the CARES skills framework (Connect to emotion, Attention training, Reflective listening, Empathy, Support help

seeking) as a method to encourage participants to talk about perinatal grief and death related to infants and children.

Results: Of 154 eligible participants, 141 participated (92% response-rate). Peer social support normalised students' emotions related to death and dying. Although naming emotions was challenging, students reported the CARES model facilitated a safe environment to talk about death and dying. Students reported feeling heard and connected to their peers during the exercise and reported an enhanced sense of belonging after the exercise.

Implications: These findings contribute to evidence that suggests the CARES framework is a useful mechanism to enhance peer social support in paramedic students.

Safety and violence on “mental health calls”: A qualitative analysis

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Abstract

Introduction: Violent encounters and safety issues are a frequent occurrence in the healthcare setting, and experiences of violence are reported by paramedics worldwide. While concern for safety and violence presents on many different call types, these concerns are particularly salient on mental health and substance use-related calls. Those with mental health needs are often thought of as dangerous and violent, however evidence indicates that they are in fact more likely to be the victims, rather than perpetrators of violence.

Aims: This study explores the tensions between attention to care providers' and care recipients' safety. This analysis includes the contexts in which this care takes place including the limitations faced by paramedic services managing these calls and limitations of the larger mental health and social care systems.

Methods: The study was a single, qualitative, critical ethnographic case study of prehospital mental health and psychosocial care in paramedicine in Ontario, Canada. Data include interviews (n=46), field observation (n~90hours) and document analysis. Interviews were transcribed and field notes were taken during observation. Data were thematically analysed, using a constant comparative method. Feminist political economy is the theoretical framework guiding the study and analysis.

Results: Paramedics describe experiences and perceptions of violent encounters on mental health calls, their successful management and de-escalation of mental health calls, and the description that many mental health calls do not involve safety issues.

Conclusion: The themes of safety and violence presented as a significant consideration on mental health calls as reported by paramedics and management. Challenges exist with the historical and ongoing understanding of those with mental health needs as violent, and equity concerns exist about appropriate management of mental health emergencies. Recommendations are provided to enhance safety for both care providers and recipients.

So you think you are healthy: Think again

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Abstract

Introduction: Do paramedics think they are exempt from the vagaries of life? They see chronic disease in patients because of poor lifestyle choices, but do they reflect on this and modify their lifestyle to ensure it does not happen to them?

Research Aim: Describe the health status of paramedics in an Australian Ambulance Service

Methods:

- Representative nature of the data – age & job category
- Data (N=663) summary – frequency, mean & standard deviation by age group & overall
- Cross tabulation –organisational, individual & work-related factors associated with the health status of paramedics

Results:

- Representative data in terms of age & employment type
- Some risk factors had a negative relationship with health status indicators (e.g. central adiposity and cardiovascular disease)
- Apart from mental health, health status of paramedics was worse than the Australian population e.g. cardiovascular disease

- 77% reported depression 'all of the time' or 'most of the time' in the four weeks leading up to the survey
- Leading causes of ill health higher than that of the Australian population
- Chronic disease associated with obesity, work location, alcohol, shift work & gender
- 35% regarded the job as bad or depressing
- Work related health culture was regarded as negative by 61%
- 52% had thoughts of leaving
- 57% of paramedics did not get regular rest breaks, which was associated with poor health status, increased psychological distress, and increased risk factors for poor health such as fatigue

Conclusions: The mental and physical health of paramedics is worse than the Australian Population. This research has provided evidence that paramedics need an extended health improvement approach that focuses on all aspects of health, not just those that are related to mental well-being.

The relationship between personality and occupational preferences of paramedicine students: A canonical correlation analysis

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Abstract

Introduction: Individual differences between paramedics mean that some paramedics cope better than others when faced with challenges and respond to occupational stress differently. Being able to identify individuals who are less suited to the paramedic profession and more at risk of psychological stress could be useful in helping build their resilience and ability to cope early in their careers.

Aim: Our study focused on the degree of overlap or potential congruence between personality traits and occupational preferences of undergraduate paramedicine students.

Methods: Personality traits were determined using the Big Five Personality Model, while occupational preferences were identified using the RIASEC model. Canonical correlation analysis was conducted to determine the relationship between the factors of the Big Five and the RIASEC.

Results: The dominant Big Five personality factor for the sample was Agreeableness followed by Conscientiousness.

This is promising as agreeableness is often related to altruism and empathy, and previous studies have shown paramedic students having low empathy. The RIASEC scale identified the highest scored factor as Social followed by Investigative. Our findings were also positive with all students showing low relative Neuroticism, as well as female students showing high relative Extraversion. Relationships between personality and vocational interests do exist between several factors, however, relationships between some factors remain weak. Correlations showed significant links between Artistic and Openness, between Investigative and Openness, and between Social and Agreeableness. Overall, student personalities and vocational interests match the qualities and capabilities required by paramedics.

Conclusion: Helping students to be self-reflective about their personality and how their personality interacts with their feelings of satisfaction would be a useful first step towards building student resilience. There are also professional development opportunities for teaching staff and student counsellors who can help students understand possible interactions, map out career planning, and create avenues for alternative professional pathways.

Accessing emergency healthcare services during COVID-19: Perceptions of the Australian community

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Abstract

Introduction: Worldwide presentations to emergency departments (EDs) and other emergency healthcare services (EHS) reduced during COVID-19. There is a paucity of information regarding community-members perspectives on accessing EHS during the pandemic.

Aims: Explore Australian community-members opinions about accessing EHS before and during COVID-19.

1. Develop an education package for Australian paramedics targeting communication with community members during public health emergencies.

Methods: A quantitative online questionnaire was disseminated via an online market research company. A sub-sample of participants completed qualitative interviews to examine the lived experience of EHS utilisation during

COVID-19 in Victoria, Australia. Results generated were used to inform the formulation of an online education resource for paramedics which was pilot tested amongst paramedics and a National Advisory group.

Results: 5,261 questionnaires were completed. Participants were less willing to engage with EHS for emergency and non-emergency situations during COVID-19 compared to previously. Overall, 52.6% of participants agreed interacting with EHS during COVID was more stressful. Interacting with other patients, nurses and doctors in the ED was associated with enhanced anxiety surrounding COVID-19 contraction compared to interacting with paramedics at home or in the ambulance. Interviews ($n=62$) suggested (1) people with chronic health conditions were concerned with exposure and infection; (2) participants with acute health conditions still utilised EHS but were concerned with the impact of COVID-19 on care; (3) carers of people with sensory and developmental disabilities identified these individuals were less resilient to changes resulting from the pandemic; and (4) PPE led to communication challenges for some children and older adults. The online education package was viewed favourably by advisory groups.

Conclusion: This research provides unique insight into why community-members utilisation of EHS might have changed throughout COVID-19. The online education package will become available to paramedics. This research was funded by the WA Department of Health.

Exploring situational awareness among paramedic students during high-fidelity simulation. A mixed-methods pilot study.

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Abstract

Introduction: During emergencies, paramedics must be aware of the safety for themselves, their partners, their patient, and the public. To do so, they must be situationally aware. To be situationally aware, they must be able to perceive events, interpret them, and then anticipate future events. There is very limited literature regarding situational awareness (SA) in paramedicine.

Aims: To determine, during high-fidelity simulation, if paramedic students are situationally aware.

Methods: This was a mixed-methods pilot study where 12 paramedic students participated in a prehospital simulation while wearing point-of-view cameras. Surveys, assessments of performance, and measurement of their situational awareness with the situational awareness global assessment technique, all provided the quantitative data. Thematic analysis then provided the qualitative data.

Results: Students were able to perceive 42% of the information, interpret 34% of the information, and correctly anticipated 40% of the future information. Several themes were identified during the debriefing process that contributed to their loss of SA, with the major ones being tunnel vision, stress, and a lack of an organized approach.

Conclusion: The results suggest that the paramedic students did not have a high level of SA. They failed to perceive many events. Of the events they did perceive, they were unable to interpret what they may have meant or how future events may unfold. Their lack of SA was influenced heavily by their high levels of stress, inability to focus, and not utilizing an organized approach. Further research will be needed to identify best practices in paramedic education to improve the SA of paramedic students.

Are paramedics situationally aware? A cross-sectional study during emergency calls for service.

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Abstract

Introduction: Previous studies have suggested that paramedics are not situationally aware during their initial prehospital education nor during online simulation. No known research has measured situational awareness (SA) of paramedics during actual emergency calls for service.

Aims: To determine if paramedics are situationally aware during actual emergency calls for service in a busy, American 911 Emergency Medical Services (EMS) system.

Methods: An observational cross section study of paramedics in a busy 911 system during emergency calls for service. Utilizing the situational awareness global assessment technique (SAGAT) paramedics were asked a short series of questions during periodic stops during the emergency calls by trained observers. The questions were based on a previously proven theoretical framework of SA for paramedicine focusing on the paramedic's ability to properly recognize events, interpret their meaning, and then predict how they may unfold in the future.

Results: While observing 10 licensed paramedics, a total of 67 emergency calls for service were observed over a 4-week period. During those calls, 387 queries were asked of the paramedics during the actual emergency. Paramedics successfully answer 24% of the recognition questions, 32% of the interpretation questions, and 45% of the prediction questions. Overall SA was 34%.

Conclusion: Paramedics were not situationally aware. They struggled the most with recognition questions, possibly due to high levels of stress and tunnel vision while on scene with patients. Of the events that they were able to recognize, they performed better at properly interpreting what those events meant and how those events may unfold in the future. Future studies are needed to determine if a targeted educational approach may improve SA and then, possibly, patient outcomes.

Leveraging the experiences of firefighters and paramedics in Winnipeg, Manitoba: Lessons from the COVID-19 pandemic.

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Abstract

Introduction: The coronavirus disease 2019 (COVID-19) pandemic has disrupted day-to-day life on a global scale. Manitoba has not escaped this public health crisis. For many Manitobans, managing this crisis has been challenging, particularly for First Responders working on the front lines of care. Equally worrisome are the looming mental health ramifications to frontline responders in the weeks and months ahead as a consequence of the intensified demands placed on them in the wake of COVID-19. Given this unprecedented disruption to work and life, it is essential that we learn from firefighters and paramedics in order to better prepare and manage future mass health emergencies.

Aims: In consultation with Winnipeg Fire Paramedic Service (WFPS) we have started mixed-methods study aimed at understanding how firefighters and paramedics are responding to and have been affected by the current pandemic. More specifically, the questions guiding this research are: (1) How are firefighters and paramedics managing and responding to the COVID-19 pandemic? (2) How are they communicating work-related information? (3) What strategies and lessons learned from previous crises and emergencies are shaping current practice? By answering these questions, we can begin to expose how firefighters and paramedics are currently navigating the pandemic, including the increased demands they are faced with, and inform how work-related practices and information are shared and communicated amongst firefighters and paramedics.

Methods: The research involves two paths of data collection; 1) a survey of WFPS personnel focused on their perceptions of current challenges, risks, stress, and emerging demands, and 2) in-depth interviews with WFPS personnel to further examine their perceptions and lived experience of dealing with COVID-19.

Findings: Phase one (survey) data collection is complete and phase two (interviews) have commenced. Preliminary findings indicate concern involving an oversaturation of workplace communications involving personal protective equipment. Interview data is currently being analysed.

Dealing with dying – progressing paramedics' role in grief support

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Abstract

Introduction: Paramedics are frequently present around death and dying and are well positioned to provide grief support to those who are suddenly bereaved, but existing education and system resources have failed to provide paramedics with necessary tools.

Aims: We aimed to provide a critical commentary on the topic of paramedics' role in grief support that was informed by the broader health professional literature.

Methods: Literature Review: due to the lack of published literature directly related to paramedics' role in grief support, we performed multiple searches of both peer-reviewed and grey literature related to grief support and healthcare

professionals, non-technical skills (NTS), grief, bereavement, death notification, and palliative and end of life care to provide a holistic perspective on the topic.

Results: Although the literature emphasizes the importance of providing grief training from initial education, through clinical placements and into continuing professional development opportunities, the current state across health professions is a patchwork of elective, brief, and siloed opportunities. Our discussion proposes a multi-faceted approach focusing on recruitment, initial and continuing education, and continued support in clinical practice:

- Recruitment - expand recruitment beyond clinical knowledge and procedural skills to psychosocial attributes; potentially through the aid of valid situational judgement testing (SJT).
- Education - incorporate grief support into entry-to-practice education; systemically integrate paramedic training with multidisciplinary care teams; placements to focus specifically on NTS, shared decision-making and patient-centred care.
- Clinical Support - utilize paramedic specialist and interprofessional colleague support; provide integrated continuing education.

Conclusion: Research revealed the need for paramedic-specific studies surrounding grief support and reinforced gaps in paramedic grief education. We identified targeted intersections within paramedic systems to integrate grief competency and support strategies. We suggest further research exploring best approaches for better supporting paramedics in grief through strategic recruitment, robust education and ongoing clinical support.

Should I consider this drug? - The problems for students and trainee paramedics when using CPGs for education and learning

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Abstract

This presentation will feature an excerpt from a larger research project which examined the use of clinical practice guidelines (CPG's) and their influence upon decision making in paramedicine. Students and trainee paramedics use CPGs differently from qualified and experienced paramedics.

Aims: To understand how CPGs are used by students and trainee paramedics and explain the effect of electronic CPGs on educational opportunities.

Methods: This study used interviews and critical discourse analysis for data gathering. A total of 20 paramedics were interviewed, which included students, educators, and historians. Additionally, multiple CPGs were analysed using a conceptual framework to identify barriers and facilitators.

Results/Findings: Due to the wide variation of foundational training that paramedics may have before entering the workforce, CPGs struggle to meet the needs of newer and less experienced paramedics. Several barriers identified included the expectations of underpinning knowledge and level of literacy by the organisation. Compounding these issues are the various interpretations and confusions of the level of autonomy of practice surrounding the dialogue within CPGs.

Conclusion: This research provides a timely reminder of the special needs of students and trainee paramedics when designing guidelines and additionally using them as an educational resource. Further work is encouraged that improves the link between education and CPG creation.

Chronic pain management in the out-of-hospital setting – a scoping review.

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Abstract

Background: Advancements in paramedicine have shown the discipline focus on extended and holistic care, in addition to its primary use as an acute emergency service. Simultaneously, the prevalence of chronic conditions, such as chronic pain, is increasing – paramedics must know how to manage these complex and underserved patients effectively.

Aims: Chronic pain is a complex condition that transverses biological, psychological, and social processes – consequently, its management dissimilar to acute pain. This review aims to provide paramedics with the set of principles for the effective management of chronic pain patients.

Methods: Four databases were searched to identify literature, from which 223 results were yielded. Following screening, four articles were included with the addition of one

article using back-searching and three publications using hand-searching (total = 8).

Results: Four key themes were identified consistently throughout all articles. These were: stigma, multidisciplinary approach, non-opioid analgesia, opioid-based analgesia, and thorough assessment.

Conclusions: Identifying the above four themes has helped to develop a recommendation for a standard set of principles to be applied when paramedics manage chronic pain patients. These themes were consistent with the broader literature on the topic. This scoping review has identified the need for further study in assessing best-practice management of chronic pain patients in the out-of-hospital setting by paramedics.

Paramedic Assessment of Paediatric Mental Illness: A need for change

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Abstract

Introduction: Mental illnesses have been globally identified as a long-neglected problem in health services (World Health Organisation, 2013), and are estimated to impact 10-20% of children and adolescents worldwide (World Health Organisation, 2013). Suicide is the second leading cause of death in children and adolescents aged between 10-14 and 15-19 years old (Ballard et al., 2017), and more concerning, rates of suicide have remained consistent since the 1990's (Ballard et al., 2017). Eighty percent of young descendants who died by suicide had visited a healthcare facility in the year prior to their death.

In the out-of-hospital setting, paramedics are increasingly attending psychiatric related incidents amongst children and adolescents and are often the first point of contact. However, in Australia, none of the jurisdictional ambulance services appear to have specific screening and assessment tools to help early detect signs of mental illness amongst the paediatric population.

Research questions:

1. What paediatric mental health screening and assessment tools are utilised by a range of healthcare professionals in the emergency setting?
2. What tools could be adapted to paramedic practice?

Methods: A systematic review has been conducted, and a thorough search of primary published literature using the

selected databases: CINAHL, MEDLINE, PSYINFO and SCOPUS.

Results: A total of 32 articles were included within the study. Within the Articles, twenty-eight paediatric assessment and screening tools utilised within the emergency setting were identified. These tools covered a multitude of assessments which will be discussed in within the presentation.

Conclusion: Paramedics are seen to hold a hybrid of skill sets, and are in a unique position to assess, treat and refer persons onto an appropriate disposition. Equipping registered paramedics with appropriate instruments to screen for signs of mental illness amongst children and adolescents is one of legal and ethical importance.

Preparedness for Professional Practice: Investigating clinical preceptors and graduates' perceptions.

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Abstract

The "preparedness for practice" concept is difficult to quantify into a single construct. It has previously been poorly defined within paramedic and other healthcare research, with confusion apparent between the terms work readiness, preparedness for practice and work preparedness. The literature acknowledges factors that impede clinical learning however the impact on preparedness for practice is not clearly identified. The aim of this grounded theory study is to develop of a paramedic undergraduate preparedness for practice theory from an international, professional, and academic perspective. Through intensive face-to-face interviews the perceptions of preparedness for practice of clinical preceptors and graduates (n=10) are explored. Findings indicate maturity, self-awareness, communication, situational awareness, and leadership are important attributes in preparing graduates for practice. Furthermore, participants highlighted the keys to preparedness for practice are an understanding cultural and workplace practices and professional socialisation, confirming similar findings in the extant literature. This study forms part of a higher degree research project which now turns to investigate the views of paramedic academics about preparedness for practice from an Australasian perspective.

The everyday sexism experiences of female paramedics in Australia

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Abstract

Introduction: Allegations have been made that female paramedics have been subject to sexism in the workplace. This study investigates everyday sexism as experienced by female paramedics. Everyday sexism is defined as sexism that occurs in everyday interactions. It presents itself in the form of gender stereotyping, derogatory or demeaning commentary, discriminatory or unfair treatment on the basis of gender, or as sexist or sexually objectifying language.

Aims:

1. To understand female paramedics' experiences of everyday sexism in the workplace
2. To contribute to the body of knowledge regarding the gendered nature of paramedic culture and its impact on female paramedics.
3. To contribute to paramedic employer understanding of the impact of the experience of everyday sexism on well-being, job performance, and the career trajectory of female paramedics.

Methods: Qualitative Study. Seven female paramedic participants were recruited from ambulance services around Australia. Semi-structured, one-on-one interviews were undertaken via an online platform. Braun and Clarke's structured six-stage framework of thematic analysis was used to analyse the data.

Results: Although the sample size is small and results therefore not generalisable to the paramedic population, this study found that female paramedics from a range of ambulance services around Australia had common experiences of sexism in the workplace regardless of state, ambulance service, rural or metropolitan station of work, years of experience, age, sexuality, or current rank. These common experiences included: -

- Everyday Sexism
- Gender Normative Behaviour and Expectations
- Gender Discrimination and Sexual Harassment
- Adaptation to Clinical Practice
- Hierarchical Practices
- Female Visibility

Conclusion: This research has provided further evidence to support the claims of some female paramedics that they have

experienced everyday sexism and gender discrimination in the workplace. This has had an effect on not only the way they practice and undertake patient care but has also negatively impacted their career progression and personal well-being.

Pre-hospital health initiatives to reduce the potentially preventable hospitalisation of older people in rural and regional Australia: a growing opportunity.

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Abstract

Introduction: Australia's ageing population has growing health care needs, challenging timely health service provision. In rural and regional areas, older Australians have poorer healthcare outcomes and higher rates of potentially preventable hospital admissions (PPH). Paramedics may be uniquely placed to contribute to the health care outcomes of rural-dwelling older adults through involvement in primary and preventive healthcare, health promotion and health education, however roles in reducing PPH in this cohort remains unexplored.

Aim: The objective of this study was to explore the role of paramedics in initiatives designed to reduce the PPH of older adults (65 years and over) in rural and regional areas of Australia.

Methods: An internet search, underpinned by an environmental scan methodology, was utilised to systematically search the websites of Australian ambulance services for relevant initiatives. Stakeholder interviews were then conducted to enrich the findings of the environmental scan. Thematic analysis was utilised to analyse all data.

Results: Every ambulance service within Australia has some form of extended of community care paramedic role that includes, to differing degrees, some focus on PPH. Only two services explicitly addressed the PPH of older rural-dwelling people. Stakeholder interviews revealed a range of local interventions in rural communities across the country, driven largely by community need and a lack of health service

accessibility. Paramedic involvement in initiatives designed to reduce PPH in older rural-dwelling people was linked to community paramedicine programs, with stakeholders reflecting on the importance of the 'local paramedic' to small rural communities.

Conclusions: The identified small number of pre-hospital initiatives designed to reduce the PPH of older people living in rural and regional Australia indicates an opportunity in the provision of services designed to enable older adults to remain at home and avoid subsequent hospital admissions.

A pre-registration survey of Australian paramedics: Qualitative findings

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Abstract

Introduction: In 2018, paramedicine became the 15th profession in the National Registration and Accreditation Scheme (NRAS) for Health Practitioners.

Aims: This study sought to measure the knowledge and perceptions of paramedic registration in Australian paramedics prior its commencement. It aimed to establish a baseline of paramedic understanding of the scheme and gain insight into how the profession viewed and navigated the new regulatory environment.

Methods: A survey was deployed in the month prior to paramedics formally entering the NRAS. There were 419 responses eligible for analysis. The survey contained 23 research questions of which five were free text. These questions explored the rationale for registration, challenges in finding information, the impact on the profession, the impact on individuals and an open question on views of registration. The content of the free text questions was analysed using Interpretive Phenomenological Analysis.

Results: Most participants recognised that the role of registration was to protect the public, protect the title "paramedic" and increase practitioner accountability. However, a significant minority saw registration as part of a political agenda or revenue-raising. Many found both the registration process and standards confusing, primarily the English language standard. When asked about effects of registration, while accountability was a common theme, cost featured strongly and was the principal theme in reference to

individual impacts, followed by risk of complaints. While most questions accurately reflected the scheme, many suggested misunderstandings or even misinformation.

Conclusion: While most saw registration positively, there was also a strong element of distrust in the system and significant concern from a minority over negative consequences of the scheme. These concerns, often based on misinformation or misconceptions but expressed by participants as genuine existential stressors, warrants further investigation to explore the interaction between practitioners and regulation.

Management of cardiogenic shock; what can paramedics learn from current literature?

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Abstract

Introduction: Cardiogenic shock is a life-threatening state of hypoperfusion and hypoxia, resulting in high mortality in the patient population. Despite the frequency of cardiogenic shock presenting to the emergency department, an initial prehospital picture and its frequency is unknown. This review will argue that shortfalls in the literature concerning prehospital cardiogenic shock treatment highlight the need for further research to identify safer and more optimal management strategies.

Methods: Selected search terms were entered into seven electronic databases to identify publications in the past twenty years. Inclusion/exclusion criteria were applied, and full texts were reviewed for potential papers. Nine publications were identified as relevant and included in the literature review.

Results: The initial search yield resulted in 131 non-duplicate publications. After applying the inclusion/exclusion criteria to title and abstract, this was reduced to 91 publications requiring review. 63 further articles were excluded after the full-text screen, with another 19 during data extraction. The remaining 9 were used for data for this review. The three themes of a) adrenaline and its inadequacies during cardiogenic shock, b) dobutamine and noradrenaline should be considered as front-line drugs for the treatment of cardiogenic shock, and lastly, c) a combination of an inotrope and vasopressor is desirable as a pharmacological treatment for cardiogenic shock.

Conclusion: From this review, it can be concluded that there is a significant gap in our understanding of cardiogenic shock treatment. Most importantly, the literature is extremely limited in prehospital experiments and evidence of practice. There remains a significantly high mortality rate within cardiogenic shock, attributed to the utilisation of adrenaline as a first-line agent. This review identified more accurate, safe, and reliable pharmacological interventions utilised within the hospital setting. It stands to reason that these could be investigated further for implementation prehospitally, for safer and more effective cardiogenic shock management.

“A Known Player in a New Role” Implementing Community Paramedicine - opportunities and challenges: a review of reviews

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Abstract

Introduction: Australian Paramedics are well-educated, nationally registered, and plentiful. Paramedics practice in diverse contexts including communities, and the industrial, remote, and rotational commercial workforce.

Community paramedicine (CP) is an emergent practice where paramedics use knowledge, skills, and clinical reasoning beyond emergency response contributing to preventative and rehabilitative health in communities. CP is a feasible and financially viable approach addressing growing demands on health systems.

CPs often work with targeted or disadvantaged populations, in multidisciplinary collaboration with other health professionals. CP is increasingly accepted by health care providers, consumers and is recognised in Paramedicine as one of the ways forward for the profession. Internationally and in some Australian jurisdictions, there exist very successful CP models. However, across different jurisdictions there is limited consistency in terms of roles, education, and governance. Recently, due to the current surge of interest in CP, many reviews have been published with variability in quality and scope.

Aims: As part of our work in developing innovative CP-led multidisciplinary model of healthcare delivery in parts of

Victoria, Australia, we are undertaking a review of reviews, to identify the current evidence on opportunities and challenges to implementing and evaluating successful CP models.

Methods: A systematic search of the literature was undertaken to identify reviews of CP care delivery, education, and governance. The literature is investigated for evidence on opportunities for CP as well as challenges.

Results: The results summarise the evidence on opportunities and challenges for the implementation of CP care delivery, education, and governance, in countries with advanced paramedic systems.

Discussion: To facilitate the wide-spread implementation of CP models and their place in future development of the paramedic profession, it is important to identify and remove or manage unnecessary hurdles and streamline education and governance. We will discuss the results of the review within this context.

An exploration of decision making when accessing emergency healthcare in moderate to severe asthma patients from rural and remote NSW.

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Abstract

Introduction: Asthma is one of the largest contributors of respiratory illness throughout Australia. 11% of the Australian population are affected by asthma with a large amount of those residing in rural and remote locations. With fewer asthma related deaths occurring in major cities, it's important to investigate the impact of living in rural and remote areas on decision making of patients accessing emergency healthcare.

Aims: To investigate factors which influence individuals when deciding to access emergency healthcare in the event of a moderate to severe asthma exacerbation in rural and remote NSW.

Method: A qualitative interpretative design was utilised involving the collection of data through semi-structured interviews involving 12 participants. Participants were asked to discuss how they utilise emergency healthcare in NSW, what influences them to call for an ambulance and discuss any self-management strategies they use. Inclusion criteria included participants over 18 years who have accessed

emergency healthcare for a moderate to severe asthma exacerbation in a location which scores a MM3 or above on the Modified Monash Model within the last 5 years.

Results: Thematic analysis led to 4 main themes regarding the topic. The main theme that emerged was how the individual's education and experience with asthma influenced their decision to access emergency healthcare. Other themes included ambulance travel times compared to the distance from the hospital, access to and availability of ambulance resources and the belief that participants did not want to be a burden on ambulance staff. Cost was also a factor for those participants without ambulance cover however this factor was not considered in situations perceived to be life-threatening.

Conclusion: There are a number of factors which both positively and negatively influence the decision making regarding when to access emergency care in rural and remote Australia due to a moderate to severe asthma exacerbation.

The mental health and stress impacts of COVID-19 on Australian paramedics

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Abstract

Introduction: The delivery of essential frontline services in times of a pandemic, presents major challenges to 'on-the-ground' staff who manage the direct client contact and service provision, within the context of frequently changing operational directives. This is overlaid on workforces already coping with the stresses and demands of frontline service provision. This research investigated the nature of these challenges and the role of leadership in supporting staff in times of major service disruptions. This presentation focuses on ACP and NSW Ambulance respondents.

Aims: Research aims were threefold: to identify the nature and extent of work stressors related to COVID-19; measure the levels of employee workplace distress and anxiety; and investigate the characteristics and impact of good crisis leadership.

Methods: Data was collected through a Qualtrics survey distributed to members of participating organisations. The

survey comprised fixed response Likert scales, ranking scales, standardised validated measures, and free text response fields. The quantitative data was analysed using established protocols within SPSS and Stata statistical software, and the free field text using NVivo. Human Research Ethics approval was awarded (H20183).

Results: There were 592 returned questionnaires (207 ACP, 385 NSW). Results revealed depression and anxiety rates three and five times higher than general population respectively, and burnout rates four times higher than a sample of international health workers. Respondents reported increased stress resulting from COVID-19. Four overarching themes were identified, including challenges: of working in a rapidly changing environment; of the nature of frontline work; to individual resilience; and organisational culture. Factors identified for reducing stress and burnout amongst staff were clear communication, good organisational leadership, and feeling their work was valued.

Conclusion: Despite comparatively low infection and mortality rates in Australia, COVID-19 made a significant impact on the stress, workload, and family life for the vast majority of respondents.

What are the current mental health and wellbeing needs of paramedics and paramedic students?

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Abstract

Introduction: With the establishment of the Australasian College of Paramedicine (ACP) in 2020, special interest groups were formed to support members in diverse aspects of their professional careers. Although research identifying the key mental health issues was found, no research surveyed paramedics or paramedic students, on their mental health priorities. To ensure the College's priorities aligned with those of their members and the wider profession, direct feedback was sought in the development of the College's mental health strategy.

Aim: Identify the current mental health priorities for Australasian paramedics and paramedic students.

Methods: Cross-sectional study via an electronic self-reported questionnaire including both closed (Likert scale) and open-ended questions. The quantitative data was analysed using descriptive statistics and analysis of associations for categorical variables. The free text data was assessed using thematic analysis. Human Research Ethics was obtained.

Results: Ninety-four participants completed the questionnaire. Respondents ranked self-care and resilience, followed by work/life balance as the greatest priorities. Respondents' preferred method of receiving information was via online delivery (accessed at own convenience), followed by live online delivery (webinars) then face to face seminars.

The main factors negatively impacting on wellbeing were organisational; occupational; stigma; work intrusion; health; relationships; and support networks. Many of these factors were also supportive of wellbeing, in addition to: education; outlets; and professional support. A number of comments related specifically to the student experience and associated stressors. Organisational support services were the primary source of help accessed with respondents often utilising multiple support services. Peers were identified as an important source of support.

Conclusion: Self-care and resilience were the greatest mental health and wellbeing priority with online resources that can be accessed at any time the preferred method of delivery. Multiple factors impacted on wellbeing with organisational support and peers being great sources of assistance.

Paramedic incompetency and misconduct: An analysis of decisions made that have led to paramedics being struck off the register.

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Abstract

Introduction: Regulation of paramedics in Australia and the UK is designed, in part, to promote not only individual patient health and safety, but to protect the public interest more broadly. Complaints made against paramedics who allegedly breach these requirements are often heard by a panel of peers. In the UK, the details of these hearings are made

publicly available. This rich dataset provides researchers a better understanding of the way in which paramedics may be breaching competency and/or conduct standards, and this may provide valuable information for paramedics, educators and regulators.

Aim: The objective of the research is to identify the conduct and/or competency issues that has resulted in this sanction, and to share these findings with Australian paramedics, educators and regulators.

Method: This research involves a descriptive quantitative and thematic qualitative analysis of the 76 cases that have resulted in paramedics being struck off the register in the UK over the past 5 years. These cases are publicly available and have been coded and analysed against the regulatory standard of competency and conduct expected of a registered paramedic.

Results: This analysis provides an insight into the areas of practice in which paramedics are performing poorly.

Conclusion: Only a relatively small number of paramedics are performing so far below the required competency and/or conduct standard that they have been struck off to protect public safety and/or the public interest. However, there are common areas of competency/conduct concern that arise from the data.

Exploring the role and value of chaplains in the ambulance service: Paramedic perspectives

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Abstract

Introduction: Paramedic health and wellbeing around the globe has gained increased attention due to the well documented impact of their work on biological, psychological, social, and spiritual health outcomes. A suite of support options has been implemented in ambulance services to provide holistic staff support, including the employment of chaplains. A systematic scoping review on staff perceptions of chaplains in first responder and military settings identified those who sought chaplain support, the skills and attributes expected of chaplains, and perceived individual and

organisational value of chaplains, however the perspective of paramedics was missing from the data.

Aim: The aim of this presentation is to present the results from a study that explored paramedic perspectives on the role and value of chaplains in the ambulance service.

Methods: In phase 1 of this exploratory sequential mixed-methods study, purposefully sampled paramedics were recruited for semi-structured interviews. Any AHPRA-registered paramedic employed by New South Wales Ambulance was eligible to participate. Interviews were recorded, transcribed, and analysed using framework analysis method.

Results: 17 paramedics (nine male and eight female) from metropolitan and rural New South Wales participated in the study. Their ages ranged from 24 to >60 years, and their duration of service ranged from one year to >40 years. Ten participants identified as having no spiritual/religious orientation, four as spiritual but not religious, and three as religious. Interviewees outlined the chaplain's scope of practice, including proactive and sustained paramedic-centred support, and reactive on-scene support; the expertise, attitudes and attributes chaplains bring to their role; and organisational factors impacting the chaplain's role within the ambulance service.

Conclusion: Chaplains embedded in the ambulance service consistently provided significant care and support for paramedics regardless of the paramedic's personal spiritual belief or non-belief. Further studies are required to confirm these findings across a broader group of paramedics.

Adverse events from nitrate administration during right ventricular myocardial infarction: a systematic review and meta-analysis

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Abstract

Introduction: New studies (cumulatively, n = 1113) have challenged the single cohort study (n = 40) underlying the contraindication on nitrate use during right ventricular myocardial infarction (RVMI), suggesting that this topic merits review.

Aim: This systematic review aims to determine if there is an increased risk of adverse events when nitrates are administered to patients experiencing RVMI.

Methods: The protocol was registered on PROSPERO and published in *Evidence Synthesis*. PubMed, Embase, MEDLINE, Cochrane CENTRAL, CINAHL, and Google Scholar were systematically searched for experimental and analytical observational studies in January 2021, and identified literature assessed for quality and bias using JBI tools. Adverse events rates, risk ratios, and their 95% confidence intervals were calculated, and meta-analysis performed using the random effects inverse variance method with sensitivity analysis for each study.

Results: Five studies (n = 1113) were suitable for inclusion: three cohort studies and two before-after experiments. Outcomes measured included hypotension, bradycardia, haemodynamic, altered consciousness, syncope, arrest, and death. Arrest and death did not occur. Meta-analysis showed 400 mcg sublingual nitroglycerin (2 studies, n = 1050) had a statistically insignificant relative risk of 1.18, with a 95% confidence interval crossing the null effect line at 0.81 – 1.72 (p-value 0.39). Results remained robust under sensitivity analysis. Other routes, doses, and formulations are considerably below optimal information size.

Conclusion: This review suggests that the contraindication on nitrate administration during RVMI is not supported for 400 mcg sublingual nitroglycerin by the evidence informing this appraisal. Key limitations include not evaluating beneficial effects, low certainty of evidence, and two studies being suitable for synthesis. As adverse events are transient and easily managed, nitrates are a reasonable treatment modality to consider during RVMI on current evidence.

Funding: MWS received a faculty funding grant.

Poster Presentations

Perceptions of EMS leaders and supervisors on the challenges faced by female paramedics in Riyadh Saudi Arabia: A qualitative study

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Abstract

Introduction: Emergency Medical Services (EMS) is an essential public health service provided by the government of the Kingdom of Saudi Arabia (KSA). The services are provided by the Saudi Red Crescent Authority (SRCA) through male paramedics and Emergency Medical Technicians (EMTs) only, where the Saudi female paramedics have faced many challenges in the Saudi EMS system since the workforce is mostly male.

Aim: This study aimed to investigate perceptions of EMS experts, leaders, managers, and academics, about the challenges faced by female paramedics in the Saudi Arabian EMS workforce.

Methods: A descriptive qualitative research approach was used employing semi-structured face-to-face interviews with seven EMS leaders, managers and academics in Riyadh, Saudi Arabia. Data were analysed using thematic analysis informed by the work of Braun and Clark.

Results: Three themes emerged from the interviews that described EMS experts' perceptions, namely, cultural and family challenges, the value of Saudi female paramedics in the workforce, and workforce issues. It was found that the Saudi female paramedics faced a number of challenges that limited their availability in the EMS system such as finding a balance between career choice and demands of their families or physically like lifting and moving stretchers and carrying heavy bags.

Conclusion: Overall, the interviews with EMS leaders revealed that Saudi females faced several challenges that could affect their job duties and capacity to work in the EMS.

Currently, Saudi females face difficulties with family, social and religious responsibilities, such as taking care of children and households. Workforce issues were also considered problematic affecting Saudi female paramedics such as physical fitness and psychological burnout. The EMS leaders, managers and academics emphasised that due to the new Saudi 2030 vision, it is expected and recognised that more females need to be employed in the EMS workforce.

Saudi female paramedics' perceptions of the challenges in the workplace: A qualitative study

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Abstract

Introduction: Paramedicine is generally recognised as a noble profession that seeks to combine paramedic knowledge and advanced skills to provide a high quality of care that saves the lives of others. Paramedicine in Saudi Arabia is provided by the government for the public through the Saudi Red Crescent Authority (SRCA). The services have been operated by male Emergency Medical Technicians (EMT) and paramedics around the country. It is important that Saudi female paramedics are available in the field of paramedicine, although anecdotally they experience challenges that limit them in the field.

Aim: This study aimed to investigate the perceptions of Saudi female paramedics of the challenges that they currently face in the Kingdom of Saudi Arabia workforce.

Methods: This study utilised a descriptive qualitative approach. Fifteen Saudi female paramedics were recruited to attend one of four focus groups in Riyadh, Saudi Arabia. Data were analysed using thematic analysis.

Results: Three themes emerged from the focus groups that described the perceptions of Saudi female paramedics:

personal factors, social factors, and employment factors. It was found that they faced several challenges that could affect their family responsibilities, job duties and capacity to work in the field of paramedicine in the country. Saudi society also challenged Saudi female paramedics, as the culture and traditions limited their participation in the paramedicine workforce. Furthermore, they reported experiencing many employment issues about being recruited to prehospital settings due to policies and procedures in the country.

Conclusion: This study investigated Saudi female paramedics' perceptions of the challenges they face in the workplace. Several challenges were described that affected them, both professionally and personally. These issues also could affect the engagement of the female in the paramedic profession. Future research is needed to investigate these challenges and develop various strategies and plans to overcome them.

New ways of 'seeing' – using systems thinking to explore paramedic practice.

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Abstract

Introduction: Paramedic practice is dynamic, context-situated, and inherently complex. This presents a challenge when we attempt to describe it for the purposes of informing education, policy, and research. More importantly, it means we may fail to account for aspects of practice that impact on the health and wellbeing of both patients and paramedics.

Aim: We highlight what a systems-thinking theoretical framework can offer when attempting to describe paramedic practice.

Methods: We framed our work by adapting Ecological Systems Theory and complexity thinking in order to explore the multiple complex, unique, and context-embedded problems that exist within the messy, real-world system of paramedic practice.

Results: Using the systems thinking conceptual framework, we illustrate aspects of paramedic practice that are poorly addressed or overlooked. Some examples include providing culturally competent and safe care; identifying competencies

that accurately reflect clinical caseload and call characteristics; recognizing the psychosocial and socioeconomic influences on patient presentations (i.e., structural competency); supporting families with grief and bereavement; leading and working effectively within ad-hoc teams; acknowledging the diversity of paramedic practice contexts; preparing for the impacts of climate-change on practice; and identifying the role requirements of paramedics in non-traditional practice settings (e.g. ED, organ/tissue donation programs, palliative care programs).

Discussion: Our ability to represent paramedic practice may be improved when we outline what features may be relevant and their potential interactions, and how we can go about understanding these. We suggest that the strength of our systems thinking approach lies in its ability to highlight broader structural features of a system that have historically been overlooked when describing paramedic practice.

Lecture attendance among university paramedic students: A sequential mixed methods study

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Abstract

Introduction: Lecture absenteeism is a widespread issue and has been reported for a large range of university disciplines.

Aim: The aim of this study was to describe face-to-face lecture attendance within a Bachelor of Paramedicine cohort at a large Australian university and explore associated factors.

Methods: A sequential mixed methods study was undertaken using lecture attendance counts, a cross-sectional questionnaire, and semi structured interviews. Attendance was recorded at four time points throughout one semester. The Lecture Attendance Scale, a standardised 34-item questionnaire with a 7-point Likert rating scale, was used to examine reasons behind students' choice to attend lectures or not, followed by further exploration via semi-structured interviews.

Results: Lecture attendance ranged from 30% to 76%, with a mean of 49.2%. On analysis of the questionnaire, eight factors were identified, and these were largely supported by the interview data.

Conclusion: High levels of lecture attendance were not observed. This study suggests that the decision to attend a lecture can be complex and is influenced by a range of student and organisation-related factors. Understanding and utilising this information to modify and improve healthcare curricula delivery is vital, especially where there may be an association between attendance and the development of clinical skills, and professional attitudes and qualities. This is especially important in healthcare education in the post-COVID-19 pandemic era where the value of in-person education will continue to be examined.

The impact of body-worn cameras on incidence of occupational violence towards paramedics: a systematic review

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Abstract

Aims: Recent evidence indicates an increasing incidence of occupational violence (OV) towards paramedics. Body-worn cameras (BWC) have been posited as an intervention that may deter perpetrators, leading to a growing number of ambulance services introducing BWCs at considerable financial cost. The aim of this study was to investigate the impact of body-worn cameras on the incidence of occupational violence towards paramedics.

Methods: A systematic review was conducted according to the JBI methodology. EMBASE, CINAHL, MEDLINE, Cochrane Library, JBI Systematic Reviews, TROVE and Google Scholar were searched to identify primary research studies reporting on BWCs as an intervention against an outcome of OV incidence. Primary research papers, publicly accessible government reports, peer-reviewed and grey literature, if published in English, were eligible.

Results: The search identified 136 results, of which 109 were assessed following removal of duplicates. Following abstract screening and full text review, there were no studies available to include in the review.

Discussion: This rigorous systematic review identified no published research investigating the impact of BWC on incidence of OV towards paramedics. This lack of evidence describing the effectiveness of BWCs as deterrents is concerning given their increasingly widespread adoption. Introduction of interventions should be supported

by evidence and an analysis of associated health economics. There is a need for ambulance services that have implemented BWC initiatives to make evaluation data available publicly for transparent review to inform decision making elsewhere in the discipline.

Long-term functional and quality-of-life outcomes of cardiac arrest survivors stratified by shock provider: a 10 year retrospective study.

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Abstract

Aim: To assess the long-term functional recovery and health related quality-of-life (HRQoL) outcomes for out-of-hospital cardiac arrest (OHCA) survivors stratified by shock provider.

Methods: We included adult OHCA in initial shockable rhythms between 2010-2019. Those surviving to 12 months post arrest were invited to participate in telephone interviews to identify functional recovery and HRQoL outcomes, using the following assessment tools, Glasgow Outcome Scale-Extended (GOS-E), EuroQol-5D (EQ-5D), and 12-Item Short Form (SF-12).

Results: Of the 1,581 patients surviving to 12 months, 1,325 (85.5%) responded to the interviews, of these, 227 (17.1%) and 144 (10.9%) were initially shocked by bystanders and first responders, respectively. A higher proportion of patients shocked by bystanders were located in public ($p < 0.001$), received bystander CPR ($p < 0.001$) and received initial defibrillation faster from time of collapse ($P < 0.001$). Survivors receiving bystander defibrillation reported higher rates of living at home without care ($p = 0.004$), upper good recovery (GOS-E) ($p = 0.008$) and EQ-5D index score of 1 (perfect health) ($p = 0.023$). After adjustment, bystander defibrillation was associated with a 64% increase in the odds of an EQ-5D current Visual Analogue Scale ≥ 80 (AOR 1.64, 95%CI: 1.17-2.31;

$p=0.004$) and a 45% increase in the odds of a good functional recovery ($GOS-E \geq 7$) (AOR 1.45, 95% CI: 1.02–2.06; $p=0.037$), than those initially shocked by paramedics. No improvement in adjusted outcomes were observed for survivors initially defibrillated by first responders.

Conclusion: Patients receiving bystander defibrillation reported better functional recovery and HRQoL outcomes at 12 months compared to those defibrillated by first responders and paramedics.

Cardiac arrests in general practice clinics or witnessed by emergency medical services: a 20-year retrospective study

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Abstract

Objective: To compare the frequency and outcomes of cardiac arrests in general practice clinics with those of paramedic-witnessed cardiac arrests.

Design, setting: Retrospective study; analysis of Victorian Ambulance Cardiac Arrest Registry data for the period 1 January 2000 – 30 December 2019.

Participants: Patients who had non-traumatic cardiac arrests whom emergency medical services staff attempted to resuscitate.

Main outcome measures: Survival to hospital discharge.

Results: 6363 cases of cardiac arrest were identified, 216 in general practice clinics (3.4%) and 6147 witnessed by paramedics (96.6%). The proportion of patients presenting with initial shockable rhythms was larger in clinic cases (126 patients, 58%) than for paramedic-witnessed cases (1929, 31.4%). The proportion of general practice clinic cases in which defibrillation was provided in the clinic increased from 2 of 37 in 2000–2003 (5%) to 19 of 57 patients in 2016–2019 (33%); survival increased from 7 of 37 (19%) to 23

of 57 patients (40%). For patients with initial shockable rhythms, 57 of 126 patients in clinic cases (45%) and 1221 of 1929 people in paramedic-witnessed cases (63.3%) survived to hospital discharge; of 47 general practice patients defibrillated by clinic staff, 27 survived (57%). For patients with initial shockable rhythms, the odds of survival were greater following paramedic-witnessed events than general practice clinic arrests in which arriving paramedics provided defibrillation (aOR, 3.39; 95% CI, 2.08–5.54); survival of patients after general clinic arrests was greater when clinic staff provided defibrillation (aOR, 2.23; 95% CI, 1.03–4.83).

Conclusion: Emergency medical services should be alerted as soon as possible after people experience heart attack warning symptoms. Automated external defibrillators should be standard equipment in general practice clinics, enabling prompt defibrillation and substantially reduce the risk of death for people suffering a sudden cardiac arrest.

Exploring situational awareness among paramedic students during high-fidelity simulation. A mixed-methods pilot study.

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Abstract

Introduction: During emergencies, paramedics must be aware of the safety for themselves, their partners, their patient, and the public. In order to do so, they must be situationally aware. To be situationally aware, they must be able to perceive events, interpret them, and then anticipate future events. There is very limited literature regarding situational awareness (SA) in paramedicine.

Aims: To determine, during high-fidelity simulation, if paramedic students are situationally aware.

Methods: This was a mixed-methods pilot study where 12 paramedic students participated in a prehospital simulation while wearing point-of-view cameras. Surveys, assessments of performance, and measurement of their situational awareness with the situational awareness global assessment technique, all provided the quantitative data. Thematic analysis then provided the qualitative data.

Results: Students were able to perceive 42% of the information, interpret 34% of the information, and correctly anticipated 40% of the future information. Several themes were identified during the debriefing process that contributed to their loss of SA, with the major ones being: tunnel vision, stress, and a lack of an organized approach.

Conclusion: The results suggest that the paramedic students did not have a high level of SA. They failed to perceive many events. Of the events they did perceive, they were unable to interpret what they may have meant or how future events may unfold. Their lack of SA was influenced heavily by their high levels of stress, inability to focus, and not utilizing an organized approach. Further research will be needed to identify best practices in paramedic education in order to improve the SA of paramedic students.

Workplace learning of urban paramedics in a small Canadian city.

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Abstract

Background: As key professionals in emergency situations, society relies on the expertise of paramedics and the efficacy of their training. While the current training is not ineffective, significant gaps between the training curriculum and the knowledge necessary for effective job performance have been identified. Learning can be conceptualized into formal, informal, and non-formal categories. This study focuses on informal and non-formal learning which can be more easily conceptualized as workplace learning and self-directed learning-through-necessity.

Methods: Upon confirming informed consent, eighteen (n=18) paramedics partook in a semi-structured interview that was digitally recorded and transcribed for analysis. Data analysis involved a six-step thematic analysis where consistent themes emerged from our interpretations of the data. These findings were then shared with participants via member-checking to ensure credibility of results.

Findings: The first finding highlights the gap between the knowledge acquired through formal training and the actual knowledge required for effective job performance. The findings demonstrate that a substantial proportion of the knowledge applied in the paramedicine workplace setting is acquired through informal and non-formal learning processes including experience and self-directed study. The learning that is supplemental to the formal training process is

achieved through necessity, suggesting the importance of ongoing professional development.

A secondary finding that emerged was that the formal and informal learning processes are highly focused on the medical skills required of paramedics with a reliance on non-formal learning for all other extraneous, yet essential, skills. Skills such as problem-solving, leadership, and time management, among others, are learned through non-formal learning situations. As part of their ongoing continuing education, paramedics also apply non-formal learning strategies to maintain skills that were initially acquired through formal training. Findings from this preliminary study will be of interest to academic researchers, administrators, and perhaps most importantly, paramedics themselves.

Investigating the impact of volunteering on resilience in student paramedics.

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Abstract

Introduction: Paramedics have a higher incidence of mental illness than the general population with especially high rates of stress, burnout, and post-traumatic stress disorder (PTSD). Resilience has been identified as a protective factor that impacts the capacity to employ coping strategies to mitigate the negative impacts of exposure to traumatic events or to organisational stressors. Participation in volunteering has many reported positive health benefits, both physical and psychological and while there has been no explicit link to resilience, it promotes social connectedness through integration, support, and a sense of purpose.

Aims: 1. to investigate the impact of volunteering on resilience in student paramedics; 2. to explore what factors play a part in developing resilience; and 3. to contribute knowledge of factors influencing the development of resilience in student paramedics.

Methods: Mixed methods: Voluntary online survey and interview. The survey comprised eight validated psychometric questionnaires related to coping and resilience, social support, approaches to stress, and wellbeing. Participants upon completing the survey were invited to undertake a semi-structured interview. Interviews explored the impact of volunteering on resilience, coping strategies and peer support as well as gathering information concerning the type and

duration of volunteering activity. Descriptive analysis was applied to quantitative data and qualitative data was analysed using constant comparative analysis in line with a constructivist grounded theory methodological approach. Human Research Ethics approval H20240.

Results: 22 participants were interviewed with diverse volunteering experiences represented. Participants identified several attributes developed or enhanced through volunteering: sense of purpose and self-esteem; social support; self-reliance and determination; importance of reflection, adaptability, and flexibility; and benefits of exposure and experience.

Conclusion: Paramedic students volunteering in a range of diverse activities indicated numerous attributes associated with developing resilience.

Preparing First Year Paramedic Students to Cope with Stress and Stressors Associated with Their First Ambulance Placement

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Abstract

Background: Whilst evidence suggests that registered paramedics experience significant stress whilst working in the ambulance setting, little is known about the experiences of first year paramedic students. The paramedic student literature related to occupational socialisation reports on negative attitudes towards emotional expression with a preference for emotional suppression. This qualitative research study aimed to explore how first year paramedic students experience stress on their first ambulance placement.

Methods: Narrative interviews were used for their exploratory nature. A six-phase process of thematic analysis outline by Braun and Clarke (2006) was used to analyse the data, followed by secondary analysis using a critical social theory lens. Participants (n = 15) were first year paramedic students working in Queensland Ambulance Service, Australia.

Results: Four overarching themes emerged from the data: 1. Working in the Ambulance Setting, 2. Mentorship Stress, 3. Coping and 4. Acceptance. These themes are presented chronologically across three time points, before, during and after ambulance placement. Stress was perceived as useful

when students needed to focus on a clinical task, however students also reported on adverse emotional, psychological, financial, and academic stress. Other significant sources of stress included underdeveloped mentoring skills of clinical placement supervisors and hierarchical power imbalances that contributed to a reduced sense of belongingness.

Conclusions: Undergraduate paramedic curricula can be better leveraged to prepare students for the stressors that they will encounter in the ambulance setting by both raising awareness of negative socialisation behaviours and employing a proactive health orientated approach to stress management. Education providers and the Australian College of Paramedicine (ACP) could offer professional development courses and incentives for clinical placement supervisors to effectively undertake a mentorship role. Finally, education providers could collaborate with ambulance services to ensure that there are enough suitably trained clinical placement supervisors to mentor the increasing number of students.

A taxonomy of Australian and New Zealand paramedic clinical roles

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Abstract

Introduction: This article aims to summarise and categorise the current types of frontline paramedics in each jurisdictional ambulance service in Australia and New Zealand.

Methods: Each of the 10 jurisdictional ambulance services were contacted and their current clinical roles discussed. A copy of this paper was provided to all 10 services for verification.

Results: Minimum qualifications for Paramedics range from a diploma to an undergraduate degree, with graduate programs ranging from six to 18 months duration. Additional minimum qualifications for Extended Care Paramedics range from no minimum qualifications to a nursing degree. Additional minimum qualifications for Intensive Care Paramedics range from no minimum qualifications to a postgraduate diploma. Additional minimum qualifications for Retrievals range from no minimum qualifications to a Master's degree. Helicopter emergency medical services (HEMS) teams range from primarily physician-led in four services to autonomous paramedics in five services.

Armed offender paramedics exist in four services (three different titles used); urban search and rescue (USAR) paramedics exist in six services (three different titles used); wilderness paramedics exist in five services (four different titles used); chemical, biological, radiological, incendiary, and explosive incident (CBRIE) paramedics exist in three services (three different titles used); mental health paramedics exist in three services (two different titles used). Special Operations variously refers to HEMS, USAR, CBRIE or armed offender. Critical Care variously refers to Intensive Care, HEMS in a physician-led team, and autonomous HEMS. Advanced life support variously refers to Paramedics and a role like Intensive Care. Rescue Paramedic variously refers to road crash extrication or to wilderness paramedics.

Conclusion: The jurisdictional ambulance services are largely heterogenous in the training and terminology for their frontline paramedic roles. Due to this lack of consistency, roles for paramedics in Australasia are currently largely incomparable between services, rendering shared titles inoperable from intranational and international perspectives.

A Comparison of Australasian Jurisdictional Ambulance Services' Paramedic Clinical Practice Guidelines Series. Paper 1: Adult Anaphylaxis

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Abstract

Introduction: This article is part of a series that seeks to identify interjurisdictional differences in the scope of practice of paramedics, and consequently differences in patient treatment based upon which jurisdiction a patient is geographically located within at the time of their complaint.

Methods: The current CPGs of each JAS were accessed during June 2020. Content was extracted and verified by 18 paramedics or managers representing all 10 JASs.

Results: All JASs use intramuscular adrenaline as a first-line agent. Beyond this, significant differences exist in all treatments: 5 services provide nebulised adrenaline; 10 services provide adrenaline infusions (1 requires doctor approval; 1 provides repeat boluses); 6 services provide nebulised salbutamol; 2 services provide salbutamol infusions (1 requires doctor approval; 1 provides repeat boluses); 4 services provide nebulised ipratropium bromide; 8 services provide corticosteroids (3 restricted to ICPs); 5 services provide antihistamines for non-anaphylactic reactions; 4 services provide glucagon; 10 services allow unassisted intubation in anaphylactic arrest; 2 services allow sedation-facilitated intubation (1 by ICPs); 8 services allow rapid sequence induction (2 restricted to specialist roles).

Conclusion: The JASs in Australasia have each created unique treatment CPGs that are heterogeneous in their treatments and scopes of practice. A review of the evidence underlying each intervention is appropriate to determining best practice.