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Policy

A comparison of Australasian jurisdictional ambulance services' clinical practice guidelines series: An introduction

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Abstract

Introduction
There are 10 emergency paramedic services in Australia and New Zealand (Australasia), referred to as jurisdictional ambulance services (JASs). All 10 of the JASs in Australasia produce their own clinical practice guidelines (CPGs). With differing approaches to their review and implementation of new evidence, there is opportunity for differences to arise between guidelines. This article outlines a new series that will aim to identify interjurisdictional differences in CPGs and paramedic scopes of practice, and consequently differences in patient treatment depending on which jurisdiction a patient is geographically located within at the time of their complaint.

Methods
The current CPGs of each JAS will be directly obtained and content extracted. The scope of practice for each intervention presented in the guideline will be classified as being at the level of 'paramedic', 'extended care paramedic', 'intensive care paramedic' (or equivalent, as titles vary by jurisdiction), or 'restricted'. Each paper will be provided to each JAS for optional verification of content before publication, and the results of this will be stated.

Conclusion
This series will aim to provide a contemporary overview of Australasian JAS clinical practice guidelines and scopes of practice.

Keywords:
Australasia; emergency medical technician; guideline; paramedic; scope of practice

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Introduction

Australia and New Zealand (Australasia) are serviced by 10 domestic jurisdictional ambulance services (JASs), each of which is sponsored by the corresponding state or territory government of their jurisdiction (in Australia) or their district health boards (in New Zealand). These services are outlined in Table 1.

Despite their fundamental role in governing the treatments provided to patients by most Australasian paramedics, the policies and procedures used to develop the protocols are largely opaque to those outside (and sometimes to many inside) the JASs. The establishment of the Australasian College of Paramedicine's Clinical Practice Guidelines Special Interest Group has created an avenue for investigation of clinical practice guideline (CPG) issues across jurisdictions, including the production of CPGs (1). Currently, each of these services produce their own CPGs through internal units, and largely in isolation from each other – with the exceptions of the collaborative authorship between St John New Zealand and Wellington Free Ambulance, and a sharing agreement between Ambulance Victoria and Ambulance Tasmania (2-11). Nine of the 10 CPGs are fully open access (2-6,8-11), and one is not openly available (7). Of all the CPGs, only one set (6) is fully referenced, and two sets (3,6) are being developed using a modified version of the AGREE II instrument (12).

These CPGs directly guide the care that over 17,000 paramedics in Australia alone provided to over 3.7 million patients in 2019 to 2020 at a cost of over AU$4 billion (13). These CPGs are also regularly used for performance auditing, providing the scope of practice paramedics are authorised to operate within and implying the limits of the acceptable interventions they can perform under their employer. Finally, the CPGs are a key learning resource for over 8600 Australian university students, with the majority of university courses' clinical content and objective structured clinical examination assessment currently being shaped around the local jurisdictional service CPGs (13).

There are a myriad of valid reasons behind differences in practice, including the interpretation of best evidence by CPG authors or medical directors (in those services where medical directors also author guidelines), the level of risk acceptable to the employing organisation (or medical directors in those services that have their authority to practice derived from their medical director), the capability of local practitioners, the lack of pre-hospital specific evidence, financial constraints, and differences in geography and population demographics. Due to these factors, dependent on which service's jurisdiction they fall under, a patient is likely to receive differences in the treatment provided to them by their attending paramedic in both scope of practice and complexity of care.

This paper is the introduction to a planned series providing a comparison of current Australasian paramedic CPGs for the treatment of common conditions. A condition has been defined as any disease or situation requiring the presence of a paramedic, and conditions have in turn been defined as common when they have a dedicated CPG present in the majority of JAS guidelines; this was ascertained using the taxonomy previously created by Colbeck and Maria (14).

A comparison of the different JASs' paramedic CPGs is likely to be of benefit in identifying variations in practice, and consequently highlighting areas for consideration or review by each JAS. Additionally, as a summary of the current scope of practice of the profession in general, a review is likely to be of interest to paramedics not employed by a JAS, other external bodies such as health care services, and educational institutions. To our knowledge, this series is the first such peer-reviewed comparison of Australasian JAS CPGs.

Methods

Expressions of interest were sought from registered paramedics to co-author papers in this series. A team, commonly comprised of three individuals, was assigned to a topic of their choosing from a pre-determined list. Topics initially listed for review

Table 1. Australasian jurisdictional ambulance services

Geographical location	Ambulance service	Abbreviation
Australian Capital Territory, Australia	Australian Capital Territory Ambulance Service	ACTAS
New South Wales, Australia	New South Wales Ambulance	NSWA
New Zealand	St John New Zealand	SJNZ
New Zealand	Wellington Free Ambulance	WFA
Northern Territory, Australia	St John Northern Territory	SJNT
Queensland, Australia	Queensland Ambulance Service	QAS
South Australia, Australia	SA Ambulance Service*	SAAS
Tasmania, Australia	Ambulance Tasmania	AT
Victoria, Australia	Ambulance Victoria	AV
Western Australia, Australia	St John Western Australia	SJWA

*The jurisdictional service in South Australia's legal trading name is 'SA Ambulance Service', not, as it is sometimes erroneously referred to, 'South Australia Ambulance Service'

are those that have a unique CPG in at least eight of the 10 JASs; this is to ensure broad relevance of the papers and was ascertained using the previous work of Colbeck and Maria (14). As the series progresses, it may become appropriate to allocate topics that less commonly have unique CPGs for review.

The team were provided with access to the current CPGs of each service, from which they extracted appropriate data on the treatments available under each JAS. Nine of the 10 services have open access CPGs available on the internet (2-6,8-11). The one JAS that does not have their CPGs open access was contacted and provided a full electronic copy directly (7).

Each paper was subsequently reviewed by one of the series creators before being provided to each JAS for optional verification. Where a JAS did not have the resources available to proof the paper, a paramedic from that service informally reviewed content. As reviewers change between topics, the characteristics of each reviewer will be provided in each topic's paper.

This series is endorsed by the Australasian College of Paramedicine's Clinical Practice Guideline Special Interest Group (ACP CPG SIG) (1).

Results

Key information was summarised in a series of tables, developed with oversight from two senior lecturers in paramedicine who are the Chair and Vice-Chair of the ACP CPG SIG. Each topic is intended to initially present data in a single, large table that provides an overview of treatments. A tick indicates that paramedics are authorised to provide this treatment, with 'ECP', 'ICP' and restricted' used to denote when a treatment is limited to extended care paramedics (ECP), intensive care paramedics (ICPs), or other specialised paramedics (such as retrievalists) respectively. Footnotes have been provided where there are specific conditions to administration. Basic patient care has been omitted for brevity.

Following from this, a summary of the number of services that authorise each treatment will be provided, followed by a set of tables with specific data on each intervention. These tables do not reiterate which types of paramedics can administer the drug, as this information is available in the overview table. 'Not indicated' means that the drug is currently carried by paramedics of this service, but that the current CPGs do not authorise its use in the treatment of this condition. 'Not carried' means that the drug is not currently carried by paramedics of this service. 'Route not allowed' means that the drug is carried and indicated, but that a particular route of administration is not authorised.

Clinical practice guidelines are checked for updates on a regular basis, and each topic's paper will clearly list the date of the CPGs that data was extracted from. One service's guidelines are split across three different web documents without a common URL (9,15,16). For brevity, in subsequent papers in this series only the CPG document for that JAS will be referred to (9). Often multiple sections of a clinical manual are relevant to the treatment of any single condition, including the relevant CPG, drug protocols and procedure protocols. The listed date the treatment directives were last updated relates to the main condition's CPG.

Each JAS uses varying nomenclature for paramedics at the entry level of practice (ie. requiring an undergraduate degree or equivalent) and second-tier paramedics (ie. requiring a postgraduate degree or equivalent). For graduate paramedics, three services use the title 'Ambulance Paramedic' (ACTAS, AT, SJWA), four use the title 'Paramedic' (SAAS, SJNT, SJNZ, WFA), one uses the title 'Advance Care Paramedic 2' (QAS), one uses the title 'Qualified Paramedic' (NSWA), and one uses the title 'Advanced Life Support Paramedic' (AV). For second-tier 'low acuity' specialists, six services use the title 'Extended Care Paramedic' (ACTAS, AT, NSWA, SAAS, SJNZ, WFA), one service uses the title 'Community Paramedic' (SJNT), and one service uses the title 'Local Area Assessment and Referral Unit' (QAS). For second-tier 'high acuity' specialists, seven services use the title 'Intensive Care Paramedic' (ACTAS, AT, NSWA, SAAS, SJNT, SJNZ, WFA), two use the title 'Critical Care Paramedic' (QAS, SJWA), and one uses the title 'Mobile Intensive Care Ambulance Paramedic' (AV). For consistency, in this paper the titles 'Paramedic' (undergraduate degree paramedic, denoted with a capital), 'Extended Care Paramedic', and 'Intensive Care Paramedic' (postgraduate degree paramedic) will be used. Table 2 provides a summary of titles used by Australasian JASs. These titles were also adopted by Paramedics Australasia before it became the Australasian College of Paramedicine (ACP) (17). The ACP has not yet published a similar guide to nomenclature for differing paramedic levels in Australasia; a comparison of titles currently used can be viewed in the taxonomy by Wilkinson-Stokes (18).

Where additional treatments are available to a limited group of practitioners that do not have equivalents in all jurisdictions (such as flight paramedics, retrievalists, and many others), these will be identified as 'restricted' and relevant information will be provided in footnotes.

In addition to their own advanced scope of practice, all services' ECPs and ICPs are authorised to perform the treatments that their Paramedics are authorised to perform. Intraosseous administration is available for ICPs where intravenous administration is indicated and has not been specifically included unless necessary.

Limitations

This paper is a descriptive analysis and comparison of a specific and discrete cluster of primary sources. This comparison does not review the peer-reviewed, published literature to determine current best practice in treatment, no conduct causal comparisons or grade analysis. Consequently, no CPG is

inferred to be superior or inferior to any other, nor that the most common treatment is necessarily optimal. It is highly likely that differences between services will always be necessary due to regional variations in geography, demographics, differing interpretations of pre-hospital evidence and organisational budgets. The purpose of this review is to make the community aware of differences in the current scope of practice of Australasian paramedics and to present differences between the CPGs of the JASs that may warrant further investigation.

We have attempted to present data accurately by accessing current CPGs and by verifying content with paramedics from each service. However, due to the fluidity of these organisations, changes to the CPGs between data extraction and publication remain possible.

These papers do not cover the CPGs used by paramedics outside of the 10 JASs. Currently, the JASs employ approximately two-thirds of registered paramedics; their CPGs have been used due to their ease of access and the relatively large number of practitioners they apply to. Therefore, while these papers provide an overview of the treatments used by the majority of paramedics, they do not provide an exhaustive list.

Each CPG is presented in a way that is unique to each JAS, and an experienced paramedic in that service may accurately infer implications from that presentation that an unfamiliar viewer could remain unaware of. We have attempted to correct for this by verifying our interpretation of the CPG with paramedics from each service and providing a copy of the completed paper to each JAS for review before submission for publication; however, some mistaken interpretation remains possible. Similarly, common cultural practices in a JAS that are understood but not explicitly stated in the CPG could result in different interpretations between unfamiliar and experienced users of that CPG.

Conclusion

The different JASs throughout Australasia have each created a unique set of CPGs with different scopes of practice. This paper introduces a planned series comparing the treatment to different common conditions by Australasian JASs.

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Table 2. Summary of titles used by Australasian jurisdictional ambulance services

Most common title (adopted in this paper)	JAS title	JAS
Paramedic	Advanced Care Paramedic 2	Queensland Ambulance Service
	Advanced Life Support Paramedic	Ambulance Victoria
	Ambulance Paramedic	Australian Capital Territory Ambulance Service, Ambulance Tasmania, St John Western Australia
	Paramedic	South Australia Ambulance Service, St John Northern Territory, St John New Zealand, Wellington Free Ambulance
	Qualified Paramedic	New South Wales Ambulance
Extended Care Paramedic	Community Paramedic	St John Northern Territory
	Extended Care Paramedic	Australian Capital Territory Ambulance Service, Ambulance Tasmania, New South Wales Ambulance, South Australia Ambulance Service, St John New Zealand, Wellington Free Ambulance
	Local Area Assessment and Referral Unit Paramedic	Queensland Ambulance Service
	No equivalent	Ambulance Victoria, St John Western Australia
Intensive Care Paramedic	Critical Care Paramedic	Queensland Ambulance Service, St John Western Australia
	Intensive Care Paramedic	Australian Capital Territory Ambulance Service, Ambulance Tasmania, New South Wales Ambulance, South Australia Ambulance Service, St John Northern Territory, St John New Zealand, Wellington Free Ambulance
	Mobile Intensive Care Ambulance Paramedic	Ambulance Victoria

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Competing interests

All three authors are members of the Australasian College of Paramedicine Clinical Practice Guideline Special Interest Group, who have endorsed the creation of this series. This includes the Chair (Sonja Maria) and Vice-Chair (Marc Colbeck). Each author has completed the ICMJE conflict of interest statement.

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