

Review

A taxonomy of Australian and New Zealand paramedic clinical roles

Matt Wilkinson-Stokes is an undergraduate paramedicine student¹

Affiliation:

¹Australian Catholic University, School of Nursing, Midwifery and Paramedicine, Queensland

<https://doi.org/10.33151/ajp.18.880>

Abstract

Introduction

This article aims to summarise and categorise the current types of frontline paramedics in Australia and New Zealand, their relative scopes of practice, their qualifications and training, and the titles used in each jurisdictional ambulance service.

Methods

Each of the 10 jurisdictional ambulance services (eight in Australia, two in New Zealand) were contacted and their current clinical roles discussed with a manager or senior paramedic between June and October 2020. Information was summarised in tables and text. A copy of this paper was provided to all 10 services for verification before submission for peer review.

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 Retrievalists range from no minimum qualifications to a master 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 five services (three different titles used); wilderness paramedics exist in five services (four different titles used); chemical, biological, radiological, incendiary, nuclear and explosive incident (CBRNE) 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, CBRNE 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 similar to intensive care. Rescue Paramedic variously refers to road crash extrication or to wilderness paramedics. Flight Paramedic variously refers to Paramedics or Intensive Care Paramedics, and to either HEMS or fixed wing.

Conclusion

The jurisdictional ambulance services are heterogenous in the structure, qualifications, 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.

Keywords:

Australasia; emergency medical technician; paramedic; scope of practice

Corresponding Author: Matt Wilkinson-Stokes, matt.wilkinson-stokes@outlook.com

Introduction

Ten years ago, Paramedics Australasia (as it was then; in 2019 the organisation merged with the Australian & New Zealand College of Paramedicine to form the Australasian College of Paramedicine) produced a guideline outlining role descriptions in paramedicine in Australia and New Zealand (Australasia) (1). Just over a decade later, paramedicine is now a registered profession in Australia (2-11), and a regulated profession under the Health Practitioners Competence Assurance Act (2001) in New Zealand (with registration to commence in January 2021) (12-14). Importantly, registration does not specify a particular specialty, skill set or scope of practice – it simply approves entry to the profession. New Zealand's pending registration scheme has a draft proposal for two levels of registration – generalist and specialist – although the exact form that these will take has not yet been determined (14). Despite this increasing professionalism, roles within the Australasian services remain highly heterogeneous.

This article is based on the assumption that intranational and international consistency in terminology is beneficial – a principle widely adopted in many other areas of medicine (15-23). Variations in roles and scopes of practice are likely to always be necessary across Australasian services due to differences in geography, patient demographics, and organisational budgets. However, a baseline level of consistency in the qualifications, training, and scope of practice implied by a particular title – especially for any title that exists in multiple jurisdictions – is likely to be beneficial in reducing confusion to patients, paramedics, organisations and the general public.

In Australia, emergency paramedic services are provided by eight services under the authority of their local state or territory government – Ambulance Tasmania (AT), Ambulance Victoria (AV), Australian Capital Territory Ambulance Service (ACTAS), New South Wales Ambulance (NSWA), Queensland Ambulance Service (QAS), South Australia Ambulance Service (SAAS), St John Northern Territory (SJNT), and St John Western Australia (SJWA). In New Zealand, emergency paramedic services are provided by two services under the authority of the National Ambulance Sector Office – St John New Zealand (SJNZ) and Wellington Free Ambulance (WFA). Collectively, these 10 services are known as the jurisdictional ambulance services (JASs). Each service operates autonomously, produces its own clinical practice guidelines (CPGs), and determines its own scope of practice – leading to room for confusion intranationally and internationally in the scope of practice, qualifications and training that a particular title implies (24-33).

Creation of structures for organising and codifying paramedic roles to provide some level of consistency is at the discretion of these services and will require an extraordinary level of cooperation to achieve. In the hope that it may ultimately be useful in achieving baseline consistency in paramedic roles, this paper seeks to provide a clear overview and comparison of the current titles used by registered paramedics (and their regulated

New Zealand equivalents), the (approximate) scope of practice that this correlates with, and the qualifications and training required to obtain that position in the 10 JASs.

Methods

Nine of the services have fully open-access CPGs that were accessed during June 2020 (24-28,30-33). The final service was contacted in June 2020 and a full copy of their guidelines was provided (29). Initially, the CPGs of each service were used to identify the main types of paramedics and the terminology used by each service. This was achieved primarily by reference to any clinical skills matrix, and confirmed by the introductions, abbreviations and guidelines sections. Each of the 10 services were then contacted during June 2020 to gather further information about their structure and roles. Each service provided paramedic representatives who communicated their current range of roles, and the associated scope of practice, qualifications and training. The communication took the form of a structured interview: for each frontline role identified in the CPGs, the services were asked to: state the minimum level of formal qualification required for newly commencing practitioners, provide an overview of their training, and clarify the scope of practice they operate under. The services were also asked if there were any other frontline specialty roles for paramedics that had not been identified. If there were, they were asked the same three initial questions about each additional role. In total, 30 paramedics representing all 10 JASs were interviewed. These interviews were conducted in person in one case, via videoconference in three cases, via telephone in four cases, and via email in 22 cases. Follow-up queries were undertaken on an ad hoc basis as required to gain comparable information across services.

A copy of this paper was provided to all services for optional verification before being submitted for publication. In total, 16 paramedics and one professor of medicine, collectively representing nine of the JASs, further verified the content of this paper.

A critical assumption underlying this paper is that the scopes of practice of practitioners of a similar level in different jurisdictions are fundamentally comparable (eg. that all undergraduate trained, entry-level paramedic roles are analogous); this paper has not sought to differentiate which jurisdictions provide paramedics of a similar level with greater or smaller scopes of practice.

This paper has only discussed paramedics whose primary role is frontline emergency response. Other roles whose primary function falls outside this – such as team managers, senior paramedics available for telephone consultation, and others – have been excluded. In some instances, this has led to similar roles being differentiated. For example, peer support paramedics in some services are primarily phone-based, while in others they primarily respond on-road when a scene is flagged as potentially confronting. Only roles with a primarily on-scene role (as

identified by their own service) have been included.

This paper has only discussed the qualifications and training for registered (or regulated, pending registration in New Zealand) paramedics who are newly commencing in a particular role. Due to the recency of registration, formation of a new representative body, increasing requirement for university education, and similar current changes in the profession there have been a myriad of changes to the training and employment pathways for paramedics. Consequently, the majority of paramedics entered existing roles via previous, now defunct, pathways. This paper has not included historic pathways to roles and only lists current qualification requirements.

The terminology adopted in the 2009 Paramedics Australasia guide has been used for reference, with one exception: the Paramedics Australasia term 'general care paramedic' is not used by any service, while the synonymous 'extended care paramedic' is used by six (1). Therefore, this paper has used 'extended care paramedic' as the reference term. The terms 'graduate diploma' and 'postgraduate diploma' are used interchangeably by the JASs; the term 'postgraduate diploma' has been adopted here to clearly differentiate study in addition to an undergraduate degree (with the exception of proper nouns). The term 'graduate program' is used to refer to a commencing entry-level paramedic's supervised period before they begin autonomous practice. To capture tautology, acronyms have been written in full (eg., ICP FP has been written as Intensive Care Paramedic Flight Paramedic). For consistency, in this paper the title 'Paramedic' (denoted with a capital) will be used to specify the baseline skill level paramedic, while 'paramedic' (lower case) will be used to refer to all registered or regulated clinicians, regardless of scope of practice.

Results

A series of tables has been used to compare key data. Table 1 provides an overall summary of the titles used to describe particular roles in the 10 JASs. Table 2 summarises how the roles in the 2009 Paramedics Australasia guide are currently referred to (1). Tables 3 to 6 provide a broad outline of the current qualifications and training required for the different paramedic roles listed in the Paramedics Australasia guide (1).

Figures 1 to 10 provide a visualisation of the relationship between roles, the scope of practice they operate under, and the qualifications and training required for each JAS.

Where a specialised role is available to a more junior clinician (eg. a specialist mental health paramedic role available to Paramedics), it is assumed that this role is also available to more senior staff (ie. that Intensive Care Paramedics may also work in this role). In this instance, the roles have not been re-listed under each scope of practice in the diagrams – an exception has been made when a specialised role is then a pre-requisite for other roles (such as the remote area access specialty being a Paramedic role, an intensive care paramedic role, and a pre-

requisite for Intensive Care Paramedics to upskill to HEMS).

Discussion

All JASs in Australia and New Zealand display a high level of heterogeneity in the terminology, qualifications, training and roles for frontline paramedics.

For commencing Paramedics, minimum qualifications range from a diploma (NSWA) to an undergraduate degree (all other services). Three services provide simultaneous employment with study: in SJWA, prospective paramedics must first be employed before being accepted into the Bachelor of Science (Paramedicine) program at Curtin University, and they complete simultaneous on-road employment with their undergraduate studies; in SJNZ, students may commence on-road employment with the service after completing the first 12 months of their studies; in NSW, prospective paramedics under the diploma pathway must first be employed before commencing their diploma under NSW, and they complete simultaneous on-road employment with their studies. Graduate program lengths range significantly: one service has a 6-month graduate program (QAS), six services have a 12-month graduate program (AT, AV, NSW, SAAS, SJNZ, WFA), one service has a 15-month graduate program (ACTAS), and one service has a 12 to 18-month graduate program (SJNT). This summary excludes SJWA paramedics who do not complete the Bachelor of Science (Paramedicine) under Curtin University and join via direct entry; in this case, paramedics effectively complete a 3-year graduate program. Graduate programs are not completed by the SJWA Bachelor of Science (Paramedicine) students under Curtin University nor the NSW vocational diploma students.

Extended Care Paramedics minimum qualifications and training vary significantly. In two services, Extended Care Paramedics are required to be Intensive Care Paramedics (AT, SAAS); in the remaining six services, they are eligible for the role when working as Paramedics (ACTAS, NSW, QAS, SJNZ, SJNT, WFA). In one service, a Bachelor of Nursing and postgraduate certificate are both required (SJNT – role in development), in one service a Bachelor of Nursing is required (ACTAS), in one service a postgraduate diploma is required (SJNZ), and in one service a postgraduate certificate is required (QAS). In the remaining four services offering the role, no additional qualification is mandated (AT, NSW, SAAS, WFA). In two services, an Extended Care Paramedic role does not exist (AV, SJWA). Training ranges from a 1-month program (SAAS), 6-month program (AT, WFA), 6 to 12-month program (SJNZ), 10 weeks of classroom training with a 12-month program (NSW), to a 12 to 18-month program (QAS). Scope of practice ranges from no additional endorsements to administering 45 additional medications.

Intensive Care Paramedics minimum qualifications are a postgraduate diploma in five services (ACTAS, AV, QAS, SAAS, SJNT), postgraduate certificate in two services (SJNZ, WFA), and in the remaining two services there is no official minimum

qualification – although the services have stated that the majority of Intensive Care Paramedics have completed postgraduate studies (AT, NSWA). In one service, Intensive Care Paramedics do not operate on-road, and instead exclusively work on HEMS; this has been listed under Retrievalist instead (SJWA). Training programs for Intensive Care Paramedics range from 6 months (NSWA), 6–12 months (SJNZ), 8–12 months (SJNT), 9–12 months (AT), and 12 months (ACTAS, AV, QAS, SAAS, WFA). Of the services that require postgraduate qualifications, one service pre-selects paramedics before commencement of tertiary studies and funds 100% of the course (AV). This avoids the possibility of paramedics incurring significant time and financial expense and then being unsuccessful in obtaining an Intensive Care Paramedic position. In the remaining services, paramedics compete for positions after funding and completing their study autonomously. Two services explicitly listed having partial reimbursement schemes available, both of which – if an application is successful – have stated they reimburse approximately 50% of costs on average (QAS, SAAS). A third service has a reimbursement scheme available, with the amount of reimbursement not able to be clarified (ACTAS).

Retrievalists are required to hold winch certification and HUET training in all jurisdictions except one (SJNT). In one service, they are required to hold an additional postgraduate diploma on top of their Intensive Care Paramedic qualifications (ACTAS); in two services, they are additionally required to hold a postgraduate certificate (AV, SJNT). In two services, Retrievalists are split into two different levels, with the higher level additionally requiring a master degree (QAS, SAAS). Additional training for Retrievalists varies from 1 month (ACTAS), 2 months (SAAS lower level), 3 months (AV), 3–6 months (WFA), 6 months (AT, NSWA, SJWA), 7 months (QAS higher level), and 2–3 years (SAAS higher level).

As well as differences in minimum qualifications and the training provided, there are significant differences in nomenclature that may potentially lead to confusion for patients, paramedics, organisations, and the general public. The term Special Operations refers to HEMS in one service (SAAS), to a broad team whose skillset includes armed offender, USAR and CBRNE in one service (NSWA), and exclusively to armed offender paramedics in one service (SJWA). The term Critical Care Paramedic refers to an autonomous HEMS paramedic in one service (SJWA), a HEMS paramedic in a physician-led team in one service (NSWA), and a ground-based Intensive Care Paramedic in one service (QAS). The term First Responder in New Zealand can refer to a volunteer (SJNZ, WFA), a student employee in the second year of their undergraduate degree (SJNZ), or a paramedic in the first six months of their graduate program (WFA). The term Emergency Medical Technician in New Zealand can refer to either a student employee in the last year and a half of their undergraduate degree (SJNZ), or a paramedic in their graduate program and for one additional year after completion of the graduate program (WFA). The term Advanced Life Support can refer to a graduate paramedic in one

service (AV), or to a role being phased out that was similar to an intensive care paramedic in scope of practice (NSWA). The term Rescue Paramedic can refer to a road crash extrication trained paramedic (NSWA) or to a wilderness paramedic (WFA).

For baseline paramedics, five different terms are used: four services use the term Paramedic (SAAS, SJNZ, SJNT, WFA), three use the term Ambulance Paramedic (ACTAS, AT, SJWA), one uses the term Advanced Life Support Paramedic (AV, not to be confused with the NSWA position of the same title with a significantly increased scope of practice), one uses the term Qualified Paramedic P1 (NSWA), and one uses the term Advanced Care Paramedic 2 (QAS).

The term General Care Paramedic has been replaced by other terms – most commonly Extended Care Paramedic. Eight services currently have a version of this role: six use the term Extended Care Paramedic (ACTAS, AT, NSWA, SAAS, SJNZ, WFA), one uses the term Local Area Assessment and Referral Unit Paramedic (QAS), and one uses the term Community Paramedic (SJNT, role in development, not to be confused with the different role of the same name in SJWA). Two services do not have a version of this role (AV, SJWA).

For Intensive Care Paramedics, seven services use the term Intensive Care Paramedic (ACTAS, AT, NSWA, SAAS, SJNZ, SJNT, WFA), one uses the term Mobile Intensive Care Ambulance Paramedic (AV), and one uses the term Critical Care Paramedic (QAS, not to be confused with the different roles of the same name in SJWA and NSWA). One service has Intensive Care Paramedics exclusively working on HEMS, with no ground-based role (SJWA) – this has been listed under Retrievalist instead.

For Retrievalists, there are nine services that directly provide HEMS (in New Zealand, with the exception of the Wellington / Wairarapa region, HEMS is provided by private contractors and has not been covered in this paper). Within the nine services, seven different terms are used: one service uses the term Flight Intensive Care Paramedic (ACTAS, physician-led), two use the term Intensive Care Flight Paramedic (AT, physician-led, and WFA, autonomous), one uses the term Mobile Intensive Care Ambulance Flight Paramedic (AV, autonomous), two use the term Critical Care Paramedic (NSWA, physician-led, and SJWA, autonomous), one uses the term Critical Care Paramedic Flight Paramedic (QAS, physician-led), one uses the terms Special Operations Team Rescue Paramedic or Retrievalist (SAAS, autonomous, title depends on scope of practice), and one uses the term Critical Response Unit Paramedic (SJNT, autonomous). There is also significant variation in the use of physicians on HEMS services, and substantial differences of opinion expressed during interviews on the cost-benefit for patient outcomes of additionally staffing physicians compared to autonomous paramedics. HEMS teams are primarily autonomous paramedics in five services (AV, SAAS, SJNT, SJWA, WFA) and primarily physician-led in four services

Table 1. Different titles for clinical registered (Australia) or regulated (New Zealand) paramedic roles in Australia and New Zealand

		Jurisdictional ambulance service									
2009 Paramedics Australasia role description		AT	AV	ACTAS	NSWA	QAS	SAAS	SJNZ	SJNT	SJWA	WFA
Retrieval Paramedic (postgraduate study, commonly HEMS)		Intensive Care Flight Paramedic (physician-led HEMS)	Mobile Intensive Care Ambulance Flight Paramedic	Flight Intensive Care Paramedic (physician-led HEMS)	Critical Care Paramedic (physician-led HEMS)	Critical Care Paramedic Flight Paramedic (physician-led HEMS) High Acuity Response Unit Paramedic (mixed model on-road)	Retrieval Paramedic (autonomous HEMS) Special Operations Team Rescue Paramedic (physician-led HEMS)	Aeromedical services provided by contractors	Critical Response Unit Paramedic (autonomous HEMS)	Critical Care Paramedic (autonomous HEMS)	Intensive Care Flight Paramedic (autonomous HEMS)
Intensive Care Paramedic (postgraduate study)		Intensive Care Paramedic	Mobile Intensive Care Ambulance Paramedic	Intensive Care Paramedic	Intensive Care Paramedic	Critical Care Paramedic	Intensive Care Paramedic	Intensive Care Paramedic	Intensive Care Paramedic	HEMS only, not on-road (see Retrievalist)	Intensive Care Paramedic
General Care Paramedic (postgraduate study)		Extended Care Paramedic	No equivalent	Extended Care Paramedic	Extended Care Paramedic	Local Area Assessment and Referral Unit Paramedic	Extended Care Paramedic	Extended Care Paramedic	Community Paramedic	No equivalent	Extended Care Paramedic
Paramedic (undergraduate study)		Ambulance Paramedic	Advanced Life Support Paramedic	Ambulance Paramedic	Qualified Paramedic P1	Advanced Care Paramedic 2	Paramedic	Paramedic	Paramedic	Ambulance Paramedic	Paramedic
No Paramedics Australasia equivalent description	Armed Offender Paramedic				Special Operations Team Paramedic			Special Emergency Response Team Paramedic		Special Operations Team Paramedic	Tactical Emergency Medical Services Paramedic
	Urban Search and Rescue Paramedic				Special Operations Team Paramedic	Urban Search and Rescue Paramedic		Urban Search and Rescue Paramedic		Special Operations Team Paramedic	
	Wilderness Paramedic	Wilderness Paramedic			Remote Area Access Paramedic		Special Operations Team Rescue Paramedic				Rescue Paramedic

Chemical, Biological, Radiological, Nuclear, Explosives Paramedic										Chemical, Biological, Radiological, Nuclear, Explosives Paramedic
Mental Health Paramedic										Crisis Response Team Paramedic
Other primarily frontline roles										First Responder Emergency Medical Technician
										Clinical Support Paramedic Community Paramedic
										Police, Ambulance, and Clinician Early Response Paramedic
										Paramedic 5+ Intensive Care Paramedic 5+
										Hazardous Materials / Chemical, Biological, Radiological Paramedic
										First Responder Emergency Medical Technician Urgent Community Care Paramedic
										Paramedic Advanced Care Paramedic 1 Bicycle Paramedic Advanced Care Paramedic 2 Flight Paramedic
										Special Operations Team Paramedic
										Qualified Paramedic 3 Qualified Paramedic 3C Advanced Life Support Paramedic Motorbike Paramedic Rescue Paramedic
										Police, Ambulance, and Clinician Early Response Paramedic
										Advanced Life Support Paramedic Advanced Life Support Response Unit Paramedic Aquatic Response Paramedic Bicycle Paramedic Motorbike Paramedic Health Commander Clinical Instructor Manual Handling Facilitator Paramedic Educator Peer Support Paramedic
Chemical, Biological, Radiological, Nuclear, Explosives Paramedic										

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

2009 Paramedics Australasia role description	Jurisdictional ambulance service title	Jurisdictional ambulance service
Paramedic	Advanced Care Paramedic 2	QAS
	Advanced Life Support Paramedic	AV
	Ambulance Paramedic	AT, ACTAS, SJWA
	Paramedic	SAAS, SJNT, SJNZ, WFA
	Qualified Paramedic P1	NSWA
Intensive Care Paramedic	Critical Care Paramedic	QAS, SJWA*
	Intensive Care Paramedic	AT, ACTAS, NSWA, SAAS, SJNT, SJNZ, WFA
	Mobile Intensive Care Ambulance Paramedic	AV
General Care Paramedic	Community Paramedic	SJNT
	Extended Care Paramedic	AT, ACTAS, NSWA, SAAS, SJNZ, WFA
	Local Area Assessment and Referral Unit Paramedic	QAS
	No equivalent role	AV, SJWA
Retrieval Paramedic	Critical Care Paramedic	NSWA, SJWA
	Critical Care Paramedic Flight Paramedic	QAS
	Critical Care Response Unit Paramedic	SJNT
	Flight Intensive Care Paramedic	ACTAS
	Intensive Care Flight Paramedic	AT, WFA
	Mobile Intensive Care Ambulance Flight Paramedic	AV
	Retrieval Paramedic	SAAS
	Special Operations Team Rescue Paramedic	SAAS

*In SJWA, there is no road-based Intensive Care Paramedic role; Intensive Care Paramedics work exclusively on HEMS

Table 3. Qualifications and training of Paramedics in Australasian jurisdictional ambulance services

JAS	Qualification	Training
AT	Bachelor of Paramedicine	12-month graduate program
AV	Bachelor of Paramedicine	12-month graduate program
ACTAS	Bachelor of Paramedicine	15-month graduate program
NSWA	Vocational Diploma	3 years' employment (completed in tandem with vocational diploma)
	Bachelor of Paramedicine	12-month graduate program
QAS	Bachelor of Paramedicine	6-month graduate program
SAAS	Bachelor of Paramedicine	12-month graduate program
SJNZ	Bachelor of Science (Paramedicine)	12 months' Emergency Medical Technician experience
SJNT	Bachelor of Paramedicine	12-18-month graduate program
	Bachelor of Science (Paramedicine)	3 years' employment (completed in tandem with undergraduate degree)
SJWA	Bachelor of Paramedicine	3 years' probation**
	Bachelor of Paramedicine	6 months' First Responder experience followed by 6 months' Emergency Medical Technician experience

** For direct entry participants only

Table 4. Additional qualifications and training of Extended Care Paramedics in Australasian jurisdictional ambulance services

JAS	Additional qualification	Training
AT	As per Intensive Care Paramedic; no additional qualification formally required	6 months' supervised practice
AV	No equivalent role	
ACTAS	Bachelor of Nursing	Internal training program
NSWA	As per Paramedic; no additional qualification formally required	10-week theory course, 12 months' supervised practice
QAS	Graduate Certificate in Enhanced Assessment and Clinical Reasoning	12-18-month program
SAAS	As per Intensive Care Paramedic; no additional qualification formally required	1 months' training
SJNZ	Postgraduate diploma	6-12 months' supervised practice
SJNT	Bachelor of Nursing, Graduate Certificate in Community and Primary Healthcare	In development
SJWA	No equivalent role	
WFA	As per Paramedic; no additional qualification formally required	6-month study program

Table 5. Summary of additional qualifications and training of Intensive Care Paramedics in Australasian jurisdictional ambulance services

JAS	Additional qualification	Training
AT	As per Paramedic; no additional qualification formally required	9-12 months' supervised practice
AV	Postgraduate diploma	12 months' supervised practice
ACTAS	Postgraduate diploma	2-year program
NSWA	As per Paramedic; no additional qualification formally required	6 months' supervised practice
QAS	Postgraduate diploma	12 months' supervised practice
SAAS	Postgraduate diploma	12-month internship
SJNZ	Postgraduate certificate	6-12 months' supervised practice
SJNT	Postgraduate diploma	8-12 months' supervised practice
SJWA	No equivalent ground-based role; see under Retrievalist for HEMS	
WFA	Postgraduate certificate	12 months' study and supervised practice

Table 6. Summary of additional qualifications and training of Retrieval Paramedics in Australasian jurisdictional ambulance services

JAS	Additional qualification	Training
AT	As per Intensive Care Paramedic; no additional qualification formally required	6 months' internal training (plus 4 months' wilderness training)
AV	Postgraduate certificate	12 weeks' practicum
ACTAS	Postgraduate diploma	1 months' training program
NSWA	As per Intensive Care Paramedic; no additional qualification formally required	6 months' internal training
QAS	Critical Care Paramedic Flight Paramedic	As per Intensive Care Paramedic; no additional qualification formally required
	High Acuity Response Unit Paramedic	Masters in Traumatology*
SAAS	Retrieval Paramedic	Masters in Retrieval Medicine*
	Special Operations Team Paramedic	As per Intensive Care Paramedic; no additional qualification formally required
SJNZ	No equivalent role	
SJNT	Postgraduate certificate	Unable to be discovered
SJWA	As per Intensive Care Paramedic; no additional qualification formally required	6-month internship
WFA	As per Intensive Care Paramedic with RSI endorsement; no additional qualification formally required	3-6-month internship

*Completed while working in the role

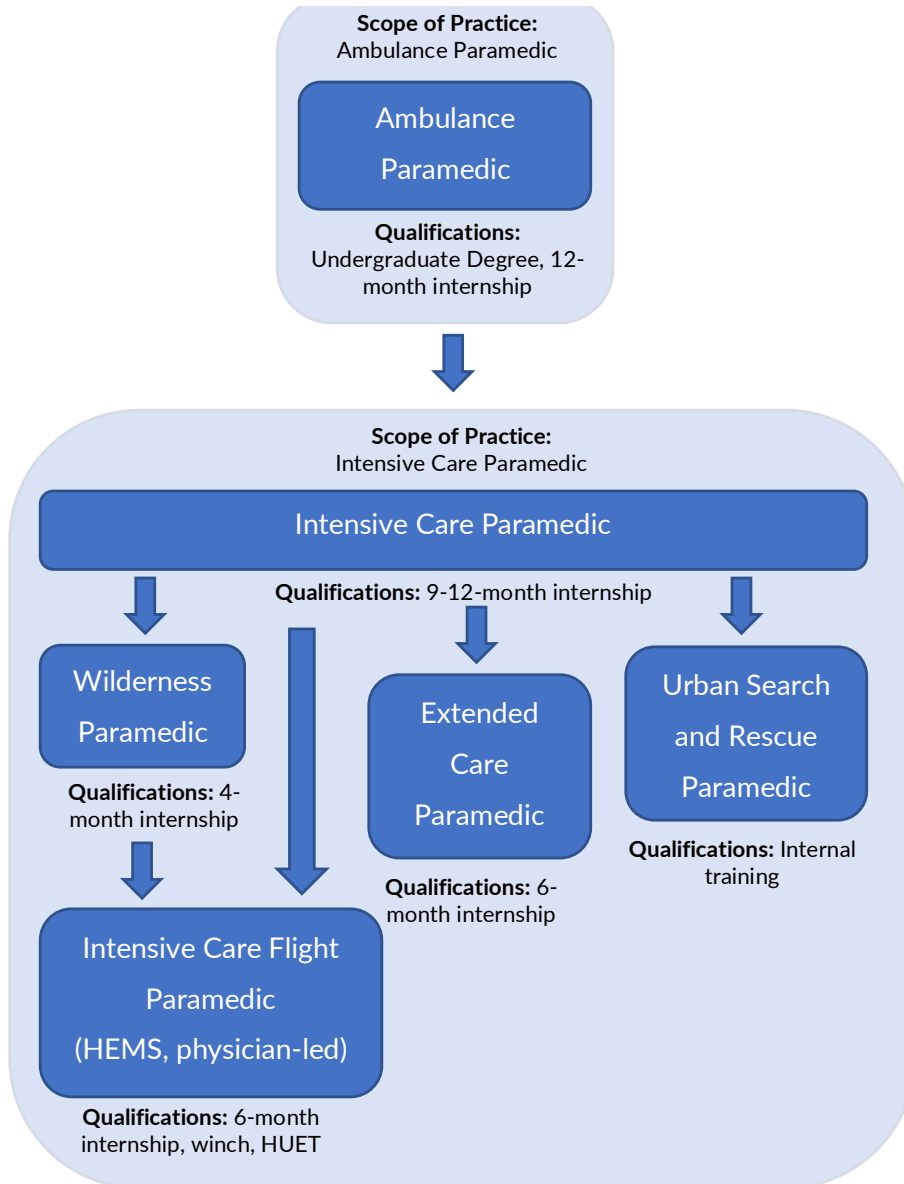


Figure 1 – Clinical roles in Ambulance Tasmania

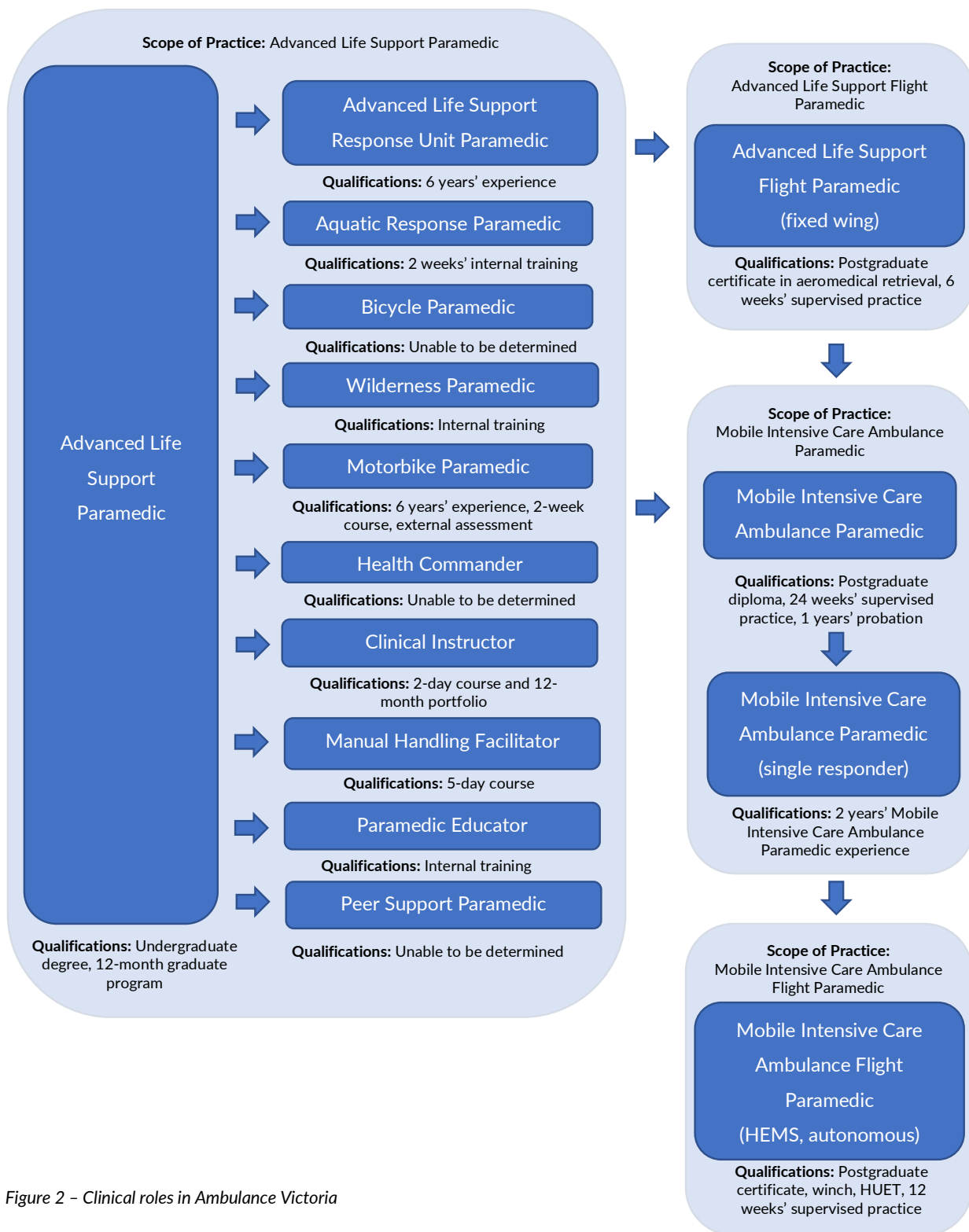


Figure 2 – Clinical roles in Ambulance Victoria

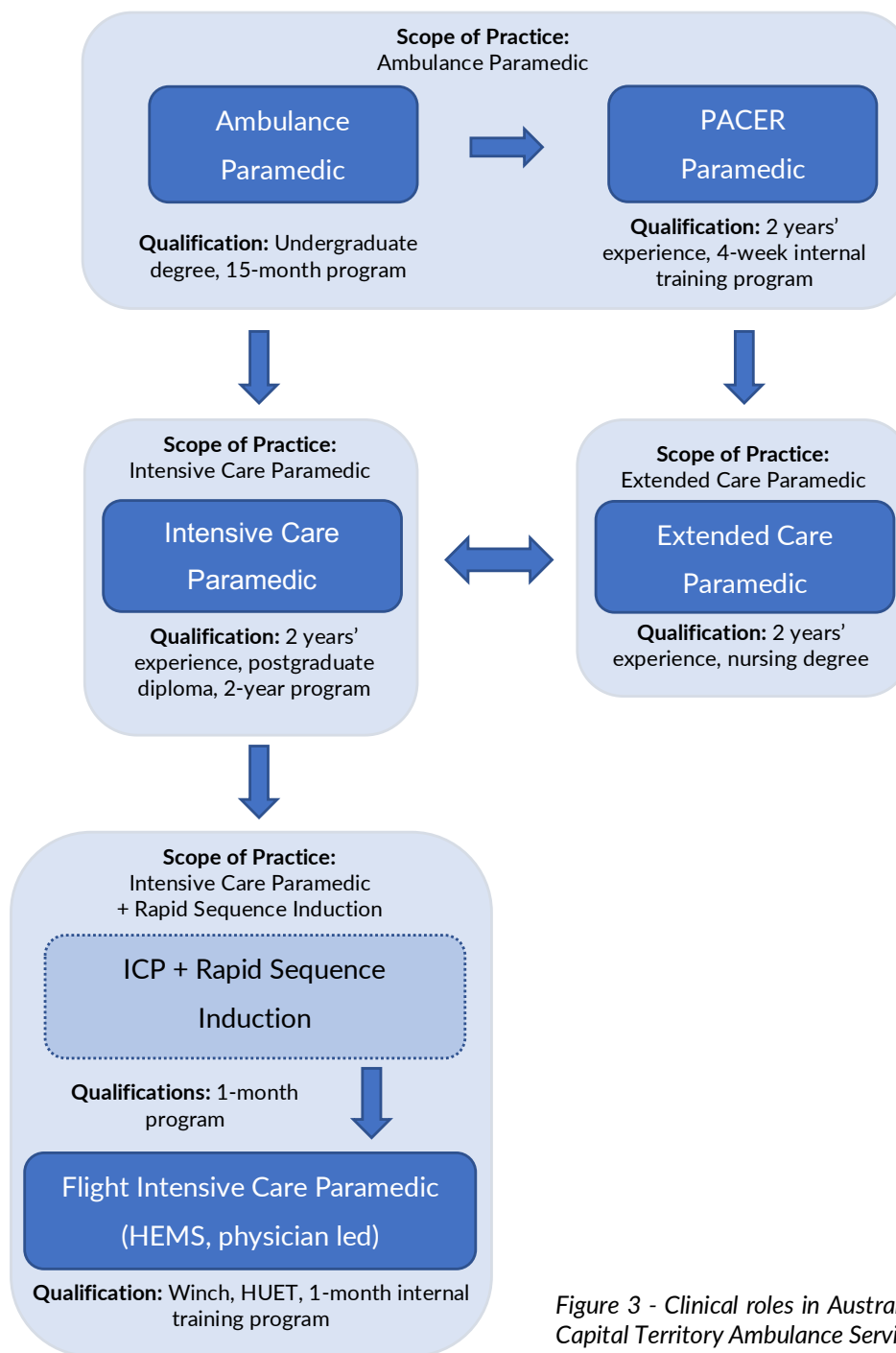


Figure 3 - Clinical roles in Australian Capital Territory Ambulance Service

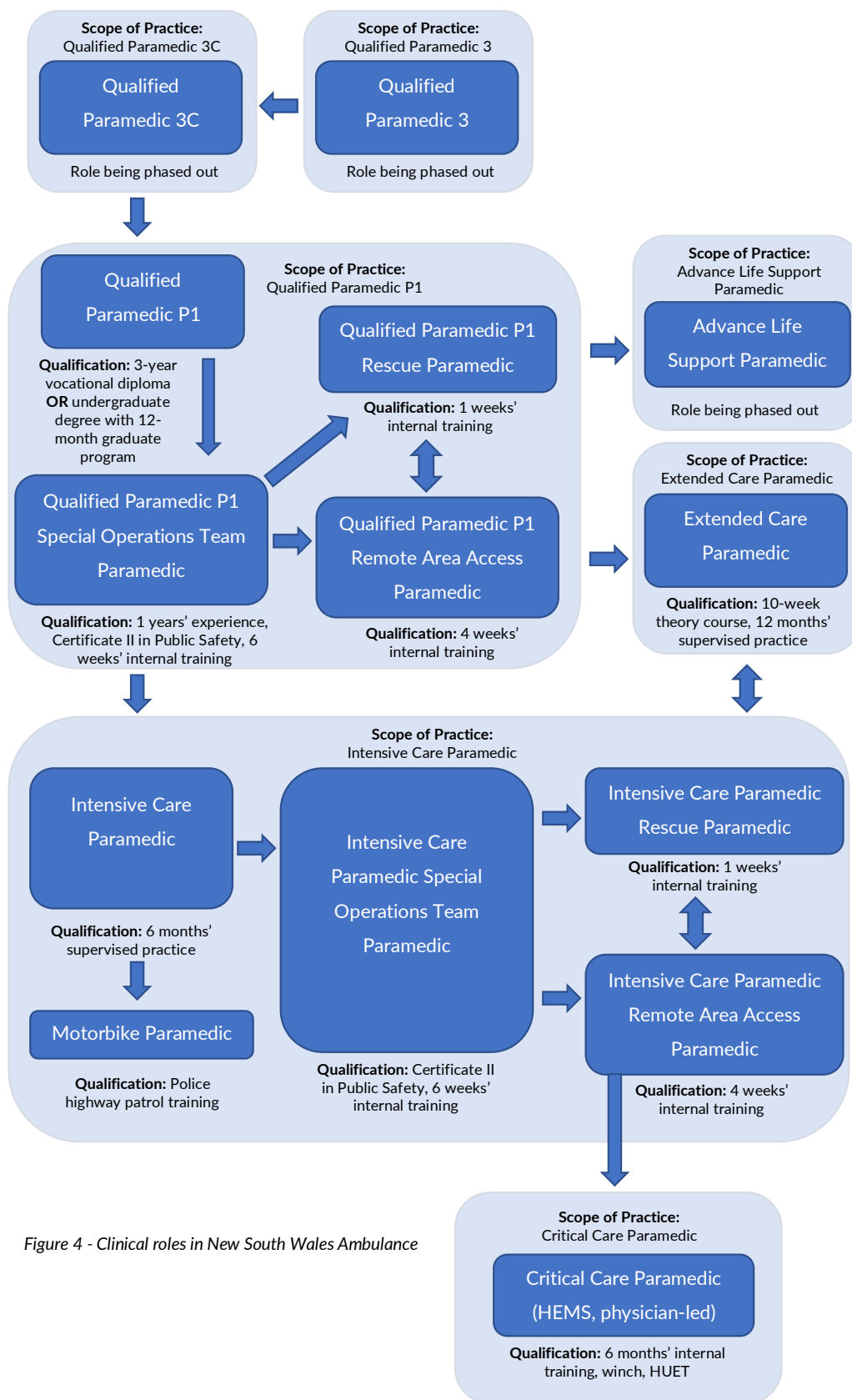


Figure 4 - Clinical roles in New South Wales Ambulance

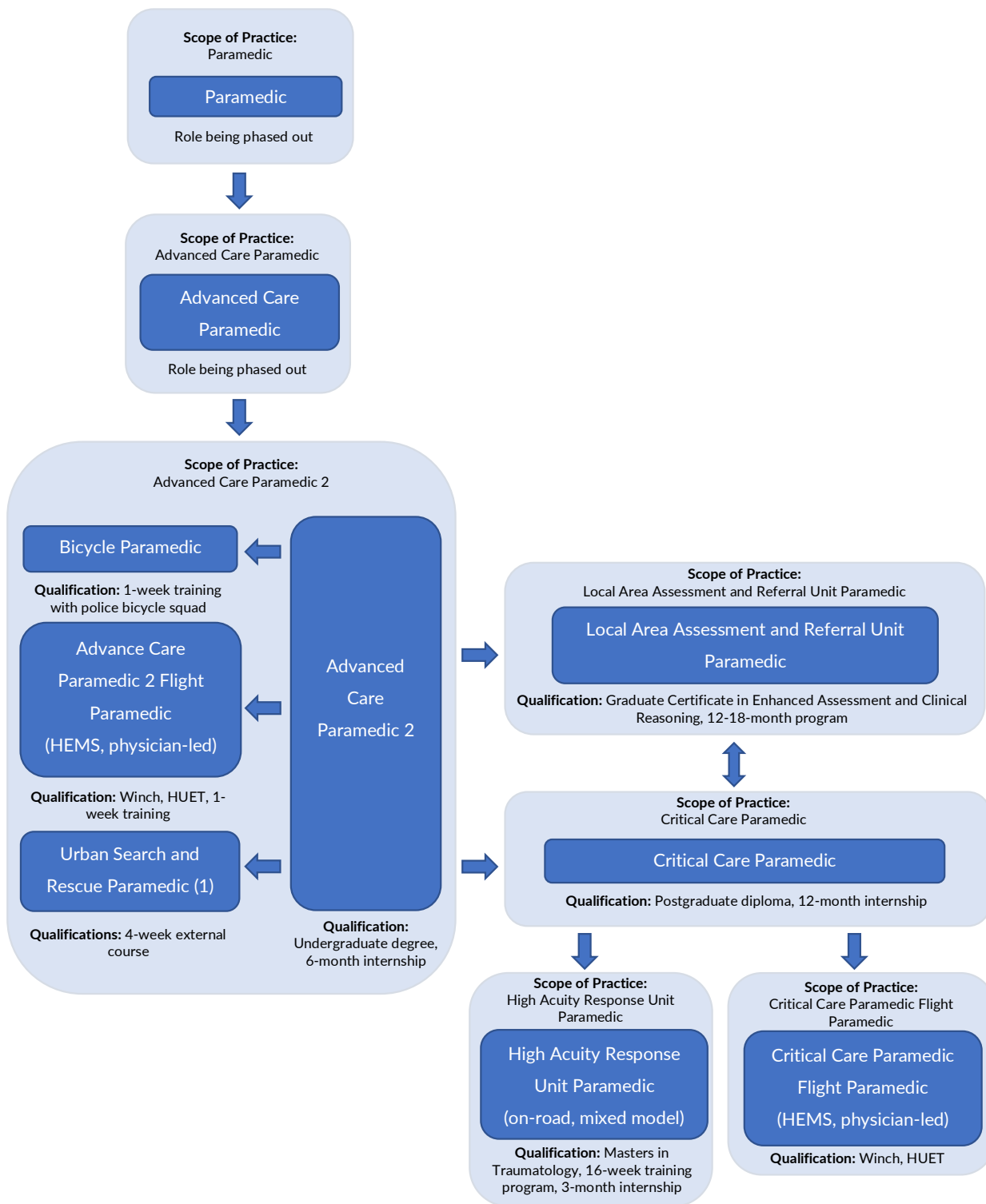


Figure 5 - Clinical roles in Queensland Ambulance Service (1) Minor endorsement on Advance Care Paramedic 2 scope of practice to administer Loperamide; as this is the only additional skill, this role has not been separated into a unique scope of practice box

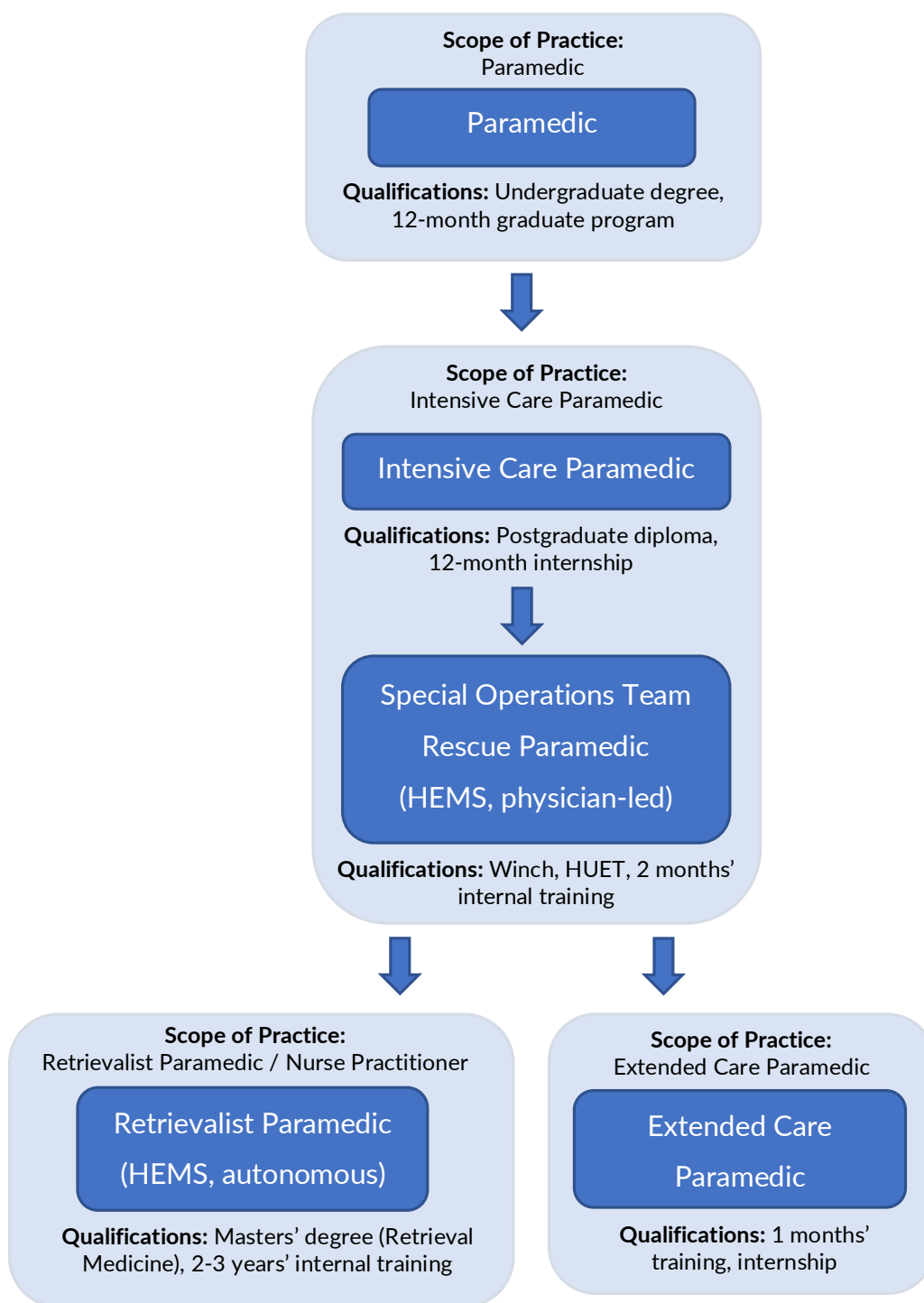


Figure 6 - Clinical roles in South Australia Ambulance Service

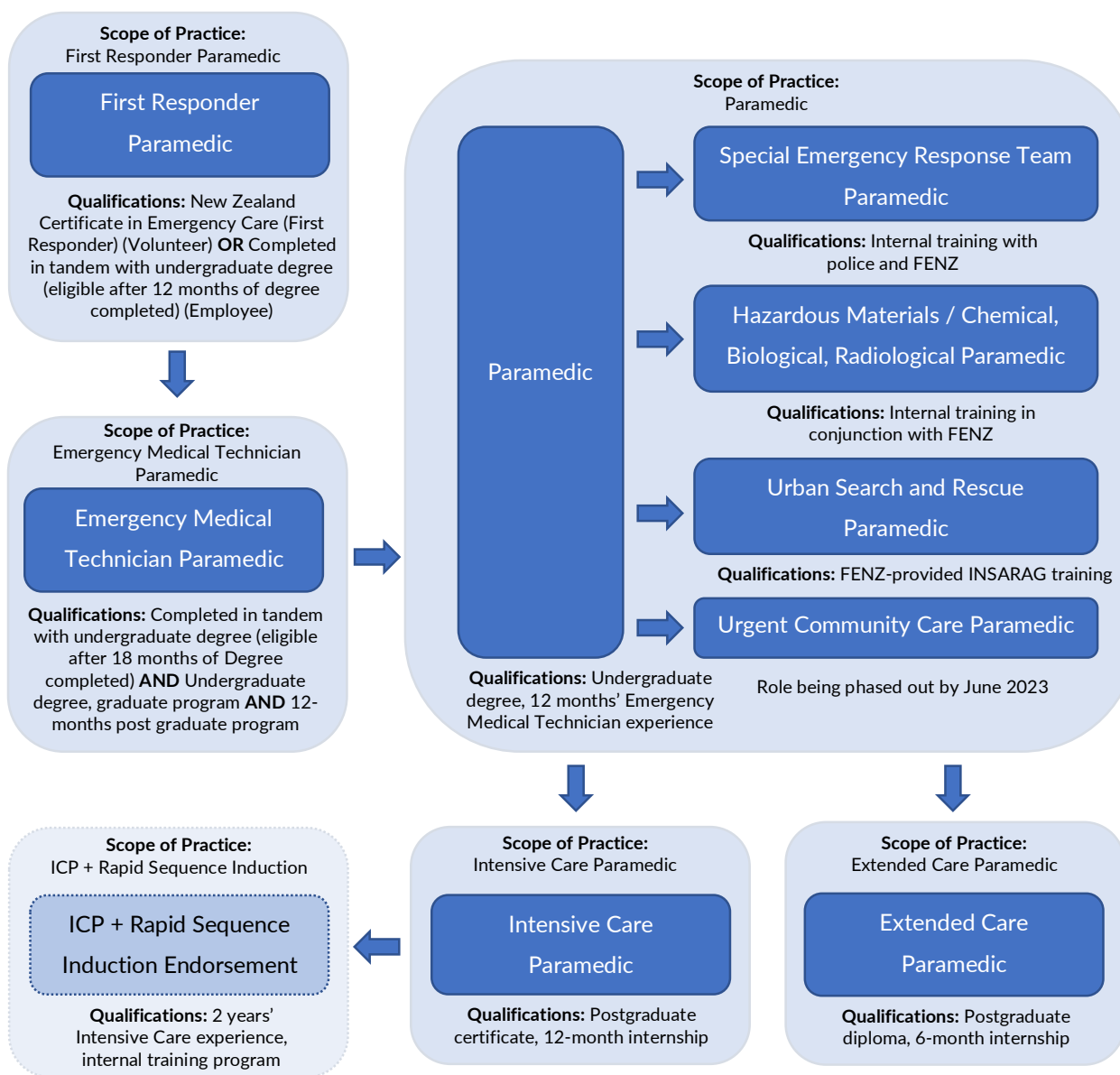


Figure 7 – Clinical roles in St John New Zealand

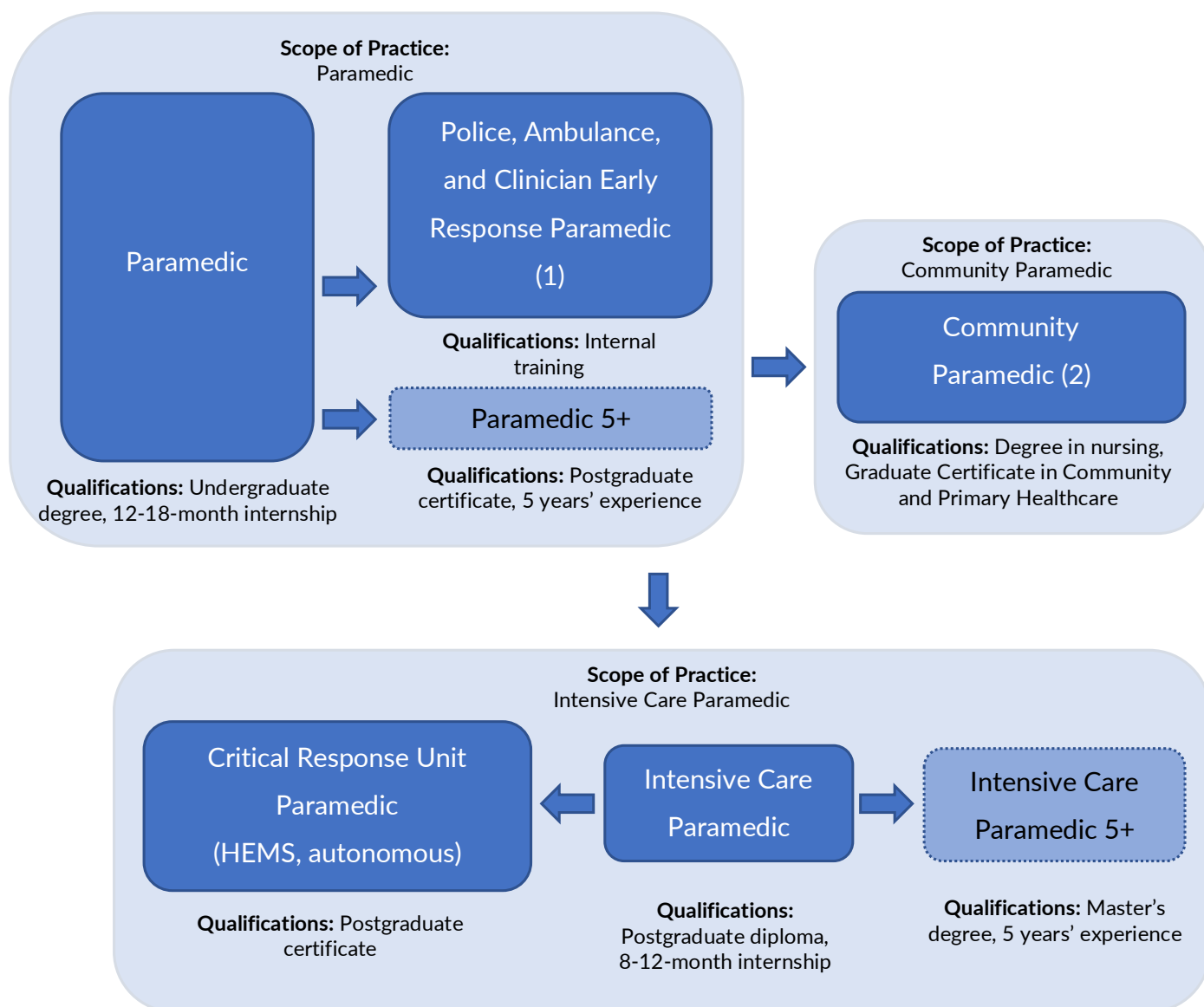


Figure 8 – Clinical roles in St John Northern Territory (1) Role currently in trial (2) Role currently in development

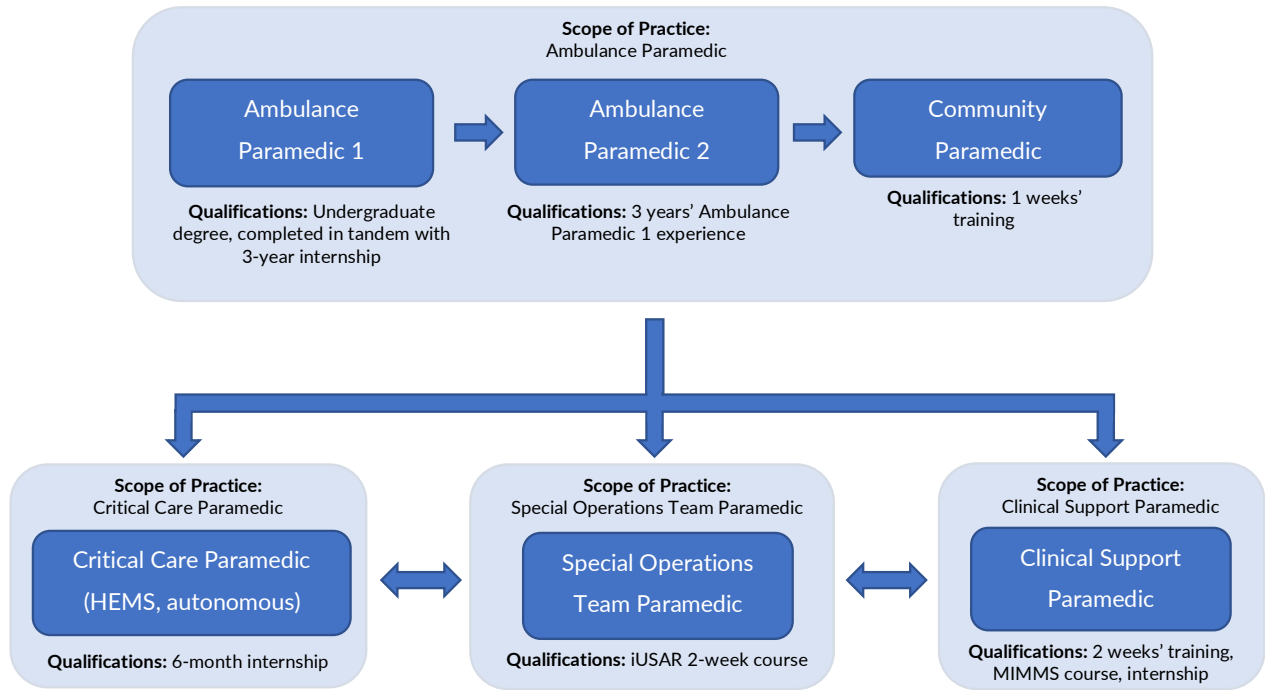


Figure 9 - Clinical roles in St John Western Australia

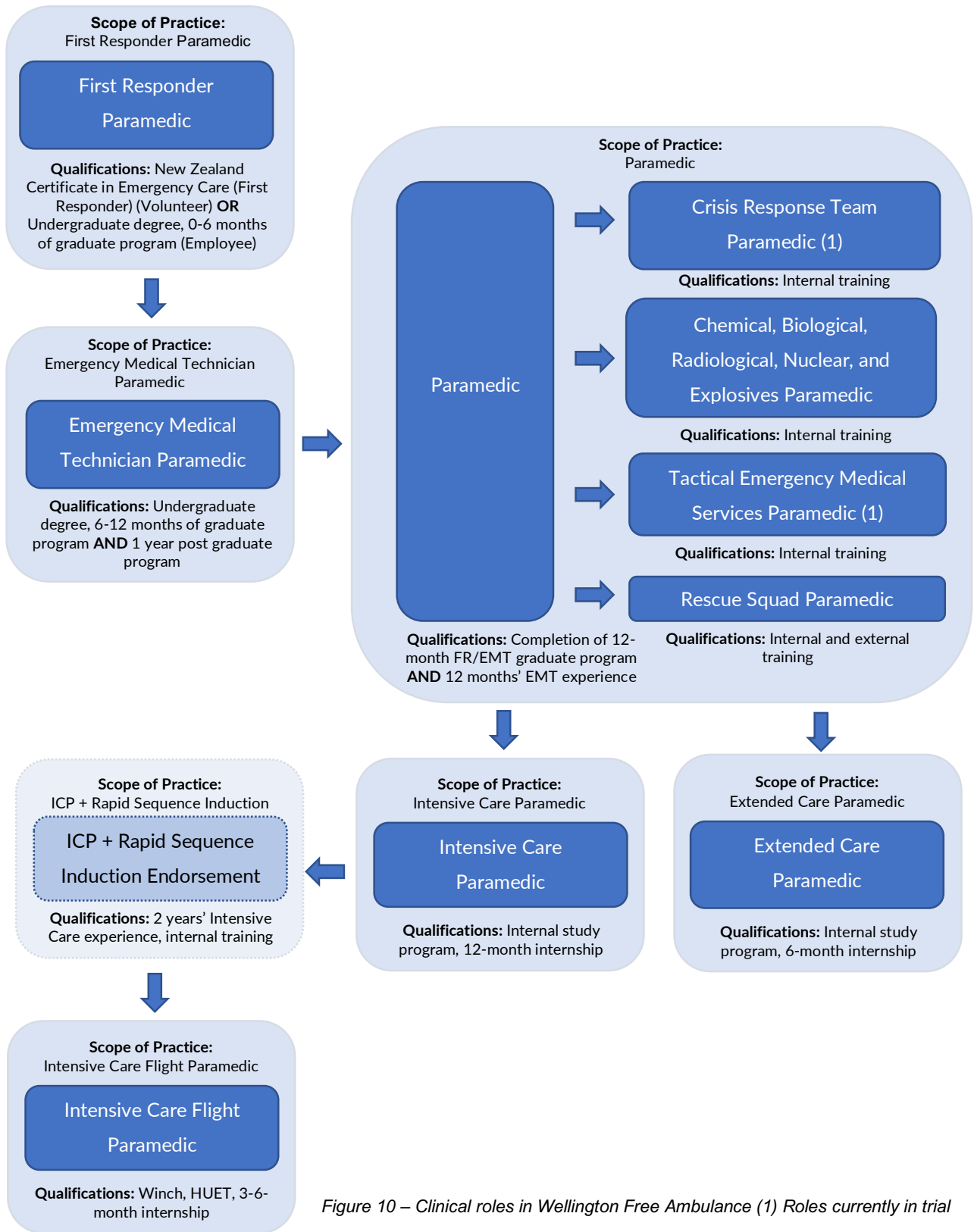


Figure 10 – Clinical roles in Wellington Free Ambulance (1) Roles currently in trial

(ACTAS, AT, NSWA, QAS). Information was not obtained about the HEMS services in New Zealand outside of the Wellington/Wairarapa region, which are provided by private contractors.

Armed offender paramedics exist in four services, with three different titles used: Special Operations Team Paramedic (NSWA, SJWA), Special Emergency Response Team Paramedic (SJNZ), and Tactical Emergency Medical Services Paramedic (WFA).

USAR paramedics exist in five services, with three different titles used: USAR Paramedic (AT, QAS, SJNZ), Special Operations Team Paramedic (NSWA), and Clinical Support Paramedic (SJWA).

Wilderness paramedics exist in five services, with four different titles used: Wilderness Paramedic (AT, AV), Remote Area Access Paramedic (NSWA), Special Operations Team Rescue Paramedic (SAAS), and Rescue Paramedic (WFA, not to be confused with the different role with the same title in NSWA).

CBRNE paramedics exist in three services, with three different titles used: Special Operations Team Paramedic (NSWA), Hazardous Materials / Chemical, Biological, Radiological Paramedic (SJNZ), and CBRNE Paramedic (WFA).

Mental health paramedics exist in three services, with two different titles used: Police, Ambulance, and Clinician Early Response Paramedic (ACTAS, SJNT) and Crisis Response Team Paramedic (WFA).

In addition, there are at least 30 unique clinical roles among the JASs. Several merit special mention. AV provides on-road Manual Handling Facilitators at over a dozen branches throughout the state, who proactively respond with specialised equipment to dispatches where a difficult extrication is expected (bariatric patients, staircases, etc.) and assume command of the safe extrication process. AV also has its Peer Support Paramedics proactively respond in-field to dispatches marked as potentially confronting for the attending crews. QAS has a role equivalent in scope of practice to Retrievalists that operate exclusively on-road instead of HEMS, and who respond both autonomously and in a physician-led team, known as a High Acuity Response Unit Paramedic. Both AV and QAS have Bicycle Paramedics, and both AV and NSWA have Motorbike Paramedics (in NSWA, all Motorbike Paramedics are Intensive Care Paramedics).

Limitations

This paper provides a snapshot of the current frontline responding roles for registered and regulated paramedics in the 10 JASs. Every effort has been made to ensure accuracy – both by gathering data from multiple senior personnel, and by cross-verifying data. However, due to the scale, complexity and fluidity of these organisations, it remains possible that errors may have occurred.

No service's model is implied to be superior or inferior to any other; the aim of this paper is to make the community aware of differences in structures across services that may warrant further investigation.

There are many roles for paramedics in all services that are not primarily frontline (such as station managers), and other roles for frontline paramedics that are not specifically focused on frontline work (such as peer support paramedics who are primarily office based rather than on scene, as is the case in some jurisdictions). There are also many roles for paramedics outside the JASs. These roles have been excluded for conciseness.

This paper does not seek to imply that all services should be identical in their service delivery models, nor that the most common model is necessarily best. As stated earlier, regional differences will always be essential due to differences in geography, demographics, and organisational budgets.

This paper instead aims to suggest that terminology shared across multiple services should aspire to be consistent in the qualifications, training, and scope of practice it implies – this is likely to bring increased clarity to patients, paramedics, organisations, and the general public.

Conclusion

Reaching consistency on the use of shared titles across services, and on the qualifications, training, and approximate scope of practice that a title implies, will require an extraordinary degree of cooperation between services. It is also likely to be beneficial in furthering paramedicine as a profession, and in bringing clarity to patients, paramedics, organisations and the general public.

Funding

The author has not received funding for the production of this manuscript.

Competing interests

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

Acknowledgements

Many thanks to the 30 interviewees who generously gave up their time to share their valuable knowledge and thoughts for this paper. It is greatly appreciated.

References

1. Paramedics Australasia. Paramedicine Role Descriptions. Melbourne, Australia; 2009. Available at: <http://apcollege>.

- edu.au/pdf/media-other/paramedic-information-paramedics.org-australian-paramedical-college.apcollege.edu.au.pdf
2. Australian Health Practitioners Regulatory Agency. Paramedicine Board. 2020. Available at: www.paramedicineboard.gov.au/
3. Parliament of Australia. Health Practitioner Regulation National Law Act 2009.
4. Parliament of Queensland. Health Practitioner Regulation National Law (Queensland).
5. Parliament of New South Wales. Health Practitioner Regulation National Law (NSW) No 86a.
6. Parliament of Victoria. Health Practitioner Regulation National Law (Victoria) Act 2009.
7. Parliament of the Australian Capital Territory. Health Practitioner Regulation National Law (ACT) Act 2010. Available at: www.legislation.act.gov.au/a/db_39269/current/pdf/db_39269.pdf
8. Parliament of the Northern Territory. Health Practitioner Regulation (National Uniform Legislation) Act 2010. Available at: www.legislation.qld.gov.au/view/html/inforce/current/act-2009-045
9. Parliament of Tasmania. Health Practitioner Regulation National Law (Tasmania) Act 2010. Available at: www.legislation.tas.gov.au/view/html/inforce/current/act-2010-002
10. Parliament of South Australia. Health Practitioner Regulation National Law (South Australia) Act 2010. Available at: [www.legislation.sa.gov.au/LZ/C/A/Health%20Practitioner%20Regulation%20National%20Law%20\(South%20Australia\)%20Act%202010.aspx](http://www.legislation.sa.gov.au/LZ/C/A/Health%20Practitioner%20Regulation%20National%20Law%20(South%20Australia)%20Act%202010.aspx)
11. Parliament of Western Australia. Health Practitioner Regulation National Law (WA) Act 2010. Available at: www.legislation.wa.gov.au/legislation/statutes.nsf/RedirectURL?OpenAgent&query=mrdoc_40825.pdf
12. Parliament of New Zealand. Health Practitioners Competence Assurance (Designation of Paramedic Services as Health Profession) Order 2019. Available at: www.legislation.govt.nz/regulation/public/2019/0249/latest/whole.html
13. The New Zealand Ministry of Health. Paramedics to be formally regulated. 2019. Available at: www.health.govt.nz/news-media/news-items/paramedics-be-formally-regulated#
14. Paramedicine Council. Consultation on proposed scopes of practice and prescribed qualifications for registration as a paramedic [Internet]. 2019. Available at: <https://paramediccouncil.org.nz/common/Uploaded files/Consult PDFs/Consult proposed scopes.pdf>
15. Carden KA, Chervin RD. Consistency and clarity in sleep medicine terminology. *J Clin Sleep Med* 2016;12:157-8. Available at: <http://jcs.m.aasm.org/doi/10.5664/jcs.m.5472>
16. Nargund G, Fauser BCJM, Macklon NS, et al. The ISMAAR proposal on terminology for ovarian stimulation for IVF. *Hum Reprod* 2007;22:2801-4. Available at: <https://academic.oup.com/humrep/article-lookup/doi/10.1093/humrep/dem285>
17. Yourkavitch J, Chetwynd EM. Toward consistency: updating lactation and breastfeeding terminology for population health research. *J Hum Lact* 2019;35:418-23. Available at: <http://journals.sagepub.com/doi/10.1177/0890334419851488>
18. Norton K, Norton L, Sadgrove D. Position statement on physical activity and exercise intensity terminology. *J Sci Med Sport* 2010;13:496-502. Available at: <https://linkinghub.elsevier.com/retrieve/pii/S1440244009002242>
19. Chabra S. Subsets of preterm and term infants: call for consistency in terminology. *Dev Med Child Neurol* 2013;55:673. Available at: <http://doi.wiley.com/10.1111/dmcn.12126>
20. Page SJ, Schmid A, Harris JE. Optimizing terminology for stroke motor rehabilitation: recommendations from the American Congress of Rehabilitation Medicine Stroke Movement Interventions Subcommittee. *Arch Phys Med Rehabil* 2012;93:1395-9. Available at: <https://linkinghub.elsevier.com/retrieve/pii/S0003999312001773>
21. Oh SH, Lee J. A systematic review of audiology terminology. *J Audiol Otol* 2016;20:109-13. Available at: <http://ejao.org/journal/view.php?doi=10.7874/jao.2016.20.2.109>
22. Falconer N, Barras M, Martin J, Cottrell N. Defining and classifying terminology for medication harm: a call for consensus. *Eur J Clin Pharmacol* 2019;75:137-45. Available at: <http://link.springer.com/10.1007/s00228-018-2567-5>
23. Kimberly LL, Beuttler MM, Shen M, Caplan AL, Bateman-House A. Pre-approval access terminology: a cause for confusion and a danger to patients. *Ther Innov Regul Sci* 2017;51:494-500. Available at: <http://link.springer.com/10.1177/2168479017696267>
24. Australian Capital Territory Ambulance Service. Clinical management guidelines, 2019. Available at: <https://esa.act.gov.au/about-esa-emergency-services/ambulance/clinical-management-guidelines>
25. Ambulance Tasmania. Clinical practice guidelines for ambulance paramedics. 2012. [Internet]. Available at: www.dhhs.tas.gov.au/ambulance/clinical_services/medical_protocols/paramedic_protocols
26. Ambulance Victoria. Clinical practice guidelines. 2020. Available at: www.ambulance.vic.gov.au/paramedics/clinical-practice-guidelines/
27. New South Wales Ambulance. New South Wales Ambulance Protocols 2.0.1. 2016. Available at: <https://apps.apple.com/au/app/nsw-ambulance-protocols/id1103576564>
28. Queensland Ambulance Service. Clinical practice manual. 2020. Available at: www.ambulance.qld.gov.au/clinical.html
29. South Australia Ambulance Service. Clinical practice guideline. 2019.
30. St John New Zealand. Clinical procedures and gGuidelines. 2019. Available at: www.stjohn.org.nz/globalassets/documents/health-practitioners/clinical-procedures-and-guidelines---comprehensive-edition.pdf
31. St John Northern Territory. Clinical practice procedures. 2013. Available at: www.stjohnnt.org.au/img/documents/clinical-manuals/cpphv23june2013.pdf
32. St John Western Australia. Clinical resource. 2020. Available at: <https://clinical.stjohnwa.com.au/>
33. Wellington Free Ambulance. Clinical procedures and guidelines. 2019. Available at: www.wfa.org.nz/what-we-do/clinical-care/