



# Australasian College for Emergency Medicine

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Chair  
New Zealand Ambulance Sector, Clinical Procedures and Guidelines Working Group

By email: [Tony.Smith@stjohn.org.nz](mailto:Tony.Smith@stjohn.org.nz)

Tēnā koe Dr Smith,

## Re: The review of the Aotearoa New Zealand ambulance sector Clinical Procedures and Guidelines

Thank you for providing the opportunity for the Australasian College for Emergency Medicine (ACEM; the College) to respond to this review. We are looking forward to working with the Ambulance Sector Working Group over the next two years on this important work.

ACEM sought feedback from our Aotearoa New Zealand Faculty, in particular Directors of Emergency Medicine (DEMs) as well as the members of its Ambulance Liaison (ALPs) Network.

Please find our collective feedback on each section, in the tables below. Some of these comments relate to specific medication Clinical Procedures and Guidelines (CPGs), which were not included in the scope of Sections 1 & 2 of the CPGs themselves, but which have drawn significant comment from the ACEM membership.

We have also included general comments below these tables in relation to wider themes that span across both sections, and across the CPGs generally. Some of this relates very closely, and in some cases duplicates, feedback that has been sent to ACEM before, in relation to perceived issues of clinical governance of the services when using these CPGs. Where such feedback persists, it is possible that perceptions arise from issues inherent to the CPGs. It is also possible, however, that they are due to issues and factors present in the complex interaction between individual paramedic practitioners, ambulance service organisational cultures, the CPGs, and the systems of Clinical Governance that exist.

### Section 1

Section	Feedback
1.1 Authority to practise and practice levels	<ul style="list-style-type: none"><li>• <u>Skills (page 2)</u> - General Comment<ul style="list-style-type: none"><li>○ Many of the interventions here would not be used by junior ED Registrars (e.g. PGY3-6), unless under direct supervision. We feel it is important to provide some comparison, given that many/most prehospital practitioners do not have this level of direct supervision available to them. Many of the ICP-only non-pharmacological procedures (cricothyroidotomy, fascia iliaca block, finger thoracostomy, endotracheal intubation) carry a much higher training and credentialling requirement in an emergency medicine setting.</li><li>○ Overall, the medications and skills seem appropriately stratified otherwise.</li></ul></li></ul>

	<ul style="list-style-type: none"> <li>• <u>Loratadine (page 2):</u> <ul style="list-style-type: none"> <li>○ In our experience this is a relatively ineffective antihistamine (slow onset of action) and we wonder if there was consideration of changing to Cetirizine. Unfortunately, there is a paucity of literature on this issue and this is not a strong recommendation.</li> </ul> </li> <li>• <u>Enoxaparin (page 2):</u> <ul style="list-style-type: none"> <li>○ It is unclear if there is significant benefit in providing this in the prehospital setting, in patients with STEMI requiring fibrinolysis. Does it need to be provided in this time frame? Given that significant proportion go on to have rescue PCI and will not continue on this medication, does single dose confer risk for limited benefit? Suggest referring this specific question to cardiology network about its benefit in the pre-hospital setting.</li> </ul> </li> <li>• <u>Valproate (page 3):</u> <ul style="list-style-type: none"> <li>○ Its entry in the CPGs looks appropriate but it is seldom used. Interpretation and use in clinical practice by those without strong clinical reasoning or experience likely varies and this has been identified as a risk. Isolated case where it has been used in an awake patient and documented as having functional/pseudo seizures. Unclear risk/benefit; has this been looked at/audited since its introduction?</li> </ul> </li> <li>• <u>Adenosine (page 3):</u> <ul style="list-style-type: none"> <li>○ There is no clear evidence of the benefit of Adenosine over the original treatment for SVT, Verapamil and whilst most EM Practitioners in NZ use Adenosine preferentially over Verapamil, it could be considered as a safe alternative in patients over the age of five. Neither Adenosine, nor CCB entirely benign.</li> <li>○ For Adenosine; consider adding caution for use in patients already receiving AV nodal blocking agents</li> <li>○ Smith, McD Taylor, and Cameron (2014)<sup>1</sup> in the Cochrane review 2017<sup>2</sup> states: “Low-quality evidence suggests no appreciable differences in major adverse event rates between CCBs and adenosine.”</li> </ul> </li> <li>• <u>Promethazine IV (page 3):</u> <ul style="list-style-type: none"> <li>○ Promethazine IV has specific risks. It can cause severe tissue damage, pain, vessel spasm, and has caused limb loss in patients. This is not documented anywhere in the CPGs and should be clearly listed under the specific medication section. Also, while it is only listed in the CPGs for use in patients undergoing interhospital transfer for Stroke Clot Retrieval who develop angioedema while receiving alteplase, we would have concern if it were to become more widespread in its indications or use. It would be our strong recommendation that this be removed from the CPGs</li> </ul> </li> </ul>
1.2 General principles	No comment.
1.3 Providing treatment that differs from that authorised in these CPGs	No comment.

<sup>1</sup> G. Smith, D. McD Taylor, A. Morgans, P. Cameron. 2014. Prehospital management of supraventricular tachycardia in Victoria, Australia: Epidemiology and effectiveness of therapies. EMA vol 26, 4, Aug 14.

<sup>2</sup> <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005154.pub4/full>

## 1.4 Analgesia

- Analgesia – General Comments
  - Main criticisms of CPGs revolve around interpretation; this is one area where the interaction between the CPG and the Clinical Governance framework raises concerns.
  - Specific concerns mentioned below regarding Ketamine and Fentanyl, as these appear to be the agents our members see most problems with, both in dosing and indications.
  - It is important to note and for CPGs to emphasise, that pain only needs to be reduced/controlled not taken away completely. Our members often see patients in from the community with high doses of analgesia despite short transport times to hospital. This affects their assessment and subsequent management.
  - CPGs and prehospital paramedic practice occasionally do not emphasise enough the implications of prehospital practice on ongoing resource utilisation in the ED once patient is delivered. A good example - most fracture-dislocations that are "realigned" by prehospital teams using dissociation need a monitored space to recover but many also require further procedural sedation in ED for inadequate reduction. In this situation, it would be hoped that the realignment was done to reduce neurovascular compromise or improve pain
  - Notwithstanding the above, decent pre-hospital analgesia is still to be generally encouraged.
- Fentanyl (pages 11, 12, 13, 14, 15, 16, 18, 19, 20, 38, and 2):
  - Fentanyl use is now prolific and concerns that current guideline dosing is simply too high. A dose of 10-50mcg every five minutes would not be continued in a hospital setting.
  - Our members report instances where they regularly receive patients with 200-300mcg Fentanyl on board with the inevitable negative effects. Hypoventilation and hypoxia are increasingly common now.
- Ketamine (pages 14, 15, 17, 18, 19, 20, and 2):
  - The analgesia doses are high and risk unpleasant side effects such as partial dissociation, particularly given the redosing intervals.
  - We suggest specific 10mg bolus initially and titrate further incremental boluses, as needed.
  - We do not support that Ketamine be issued at paramedic level under the current analgesia dosing regimen. Increased ketamine use by paramedic staff and usage that is outside CPG dosing is an area that causes most concern among EM specialists.
  - There have been multiple cases of Ketamine being used first line (without a concurrent opiate).
  - Patients arrive in ED partially or completely dissociated, despite "analgesia" dosing.
  - See comments re: resource utilisation above – Analgesic doses of Ketamine for Colles fractures, patients requiring resus/monitoring in ED when the vast majority are managed with regional arm blocks instead of sedation
  - Increasing difficulties with early assessment of critically unwell patients, despite "analgesic" doses
  - Increasing usage in agitated delirium, where this is not listed in current CPGs. Patients documented with "agitated delirium" almost never have it, as we would understand it. They may be intoxicated and agitated or violent and agitated and we would advocate their being hand cuffed and arrested.

	<ul style="list-style-type: none"> <li>• <u>Tramadol:</u> <ul style="list-style-type: none"> <li>○ The indications and precautions should be adjusted – 100mg for a ‘younger’ average-sized person only.</li> </ul> </li> <li>• <u>Ring blocks (pages 15 and 16):</u> <ul style="list-style-type: none"> <li>○ Paramedics should not only check for sensation but in situations where a digital nerve may be cut or damaged also ideally be checking the two-point discrimination and documenting this prior to performing ring block.</li> </ul> </li> <li>• <u>Fascia iliaca blocks (FIB) (page 16):</u> <ul style="list-style-type: none"> <li>○ Concerns have been raised over local anaesthetic toxicity, particularly with little/no training regarding management of this serious complication (if local anaesthetic inadvertently injected intravascularly) by paramedic staff, no access to lipid emulsion in cardiorespiratory arrest.</li> <li>○ A dose of 40ml of 0.375% (150mg) would be above generally recommended dose for anyone &lt;50kg (not uncommon in elderly woman with a fractured neck of femur (NOF). Most EDs use a lower dose and dilute it further with saline to get the volume likely needed for effective block. Suggest a maximum 3mg/kg dose is also used. (cf. to also isolated cases where patients have received 300mg as a single dose in error.)</li> <li>○ Numerous cases of failed analgesia from inexpertly performed FIB requiring IV opiates where the block was not repeated in ED due to high initial dosing.</li> <li>○ Increasingly in NZ EDs, FIB is performed under ultrasound – evidence for greater safety and effectiveness. Anatomical methods require high levels of training/currency for competence, and general feeling is that they are not being performed frequently enough for individual ICPs to achieve this.</li> <li>○ We would therefore support increased selectivity in FIB but suggest avoiding FIB if any diagnostic doubt such as other pelvic fracture and in total hip replacement (THR) dislocation. Consider including specific requirements regarding transport time or distance to avoid over-zealous use in metropolitan setting.</li> </ul> </li> <li>• <u>Acute exacerbations of chronic pain (pages 20, and 47 to 48)</u> <ul style="list-style-type: none"> <li>○ We would reiterate, that we generally do not support IV medication for patients with chronic pain.</li> </ul> </li> </ul>
1.5 Advance directives and advance care plans	No comment.
1.6 Patient competency	No comment.
1.7 Calling the Clinical Desk	No comment.
1.8 Personnel on the Clinical Desk providing advice	No comment.
1.9 Crew resource management	No comment.
1.10 Handover	No comment.

1.11 Informed consent	No comment.
1.12 Initial management of a major incident	No comment.
1.13 End of life care	<p><u>Droperidol (pages 38, and 2):</u></p> <ul style="list-style-type: none"> <li>• Currently the medication section (not in this review) only lists "frail" for indication to reduce dose to 5mg – it should probably include "frail and/or elderly".</li> </ul>
1.14 Verification of death	No comment.
1.15 Oxygen administration	<p><u>Oxygen administration following bleomycin treatment or paraquat Poisoning (page 46):</u></p> <ul style="list-style-type: none"> <li>• Bleomycin and Paraquat poisoning get mentioned as a contra-indication for Oxygen. We would be interested as to how many cases of complications of these two agents have ever been seen in Aotearoa New Zealand. Otherwise, we would suggest this section be removed or at least, remove the section on "Paraquat".</li> </ul>
1.16 Status codes	No comment.
1.17 Requesting a helicopter	No comment.
1.18 Treatment and referral decisions	No comment.
1.19 Vital signs	No comment.
1.20 Documentation	No comment.
1.21 The primary and secondary survey	No comment.

## Section 2

Section	Feedback
2.1 Asthma	<ul style="list-style-type: none"> <li>• <u>Severe asthma (pages 70 and 71); and immediately life-threatening asthma (page 71):</u> <ul style="list-style-type: none"> <li>○ We would strongly suggest removing the requirement for "measuring Peak expiratory flow rate (PEFR)". In severe or life-threatening asthma, this is not likely to be useful and on the basis of the definitions used in the CPGs, patients with severe asthma will not be able to perform this with any reproducibility or reliability whatsoever.</li> <li>○ We do not believe this adds any value.</li> </ul> </li> </ul>

2.2 Chronic obstructive pulmonary disease (COPD)	<ul style="list-style-type: none"> <li>• <u>Additional information:</u> <ul style="list-style-type: none"> <li>○ We would suggest there is a “Resource list” of useful and relevant resources under this section (and under others). For instance, under this section we would recommend you add a link to the <a href="#">NZ COPD Guidelines - Quick Reference Guide</a>, published by the Asthma and Respiratory Foundation New Zealand.</li> </ul> </li> </ul>
2.3 Foreign body airway obstruction	No comment.
2.4 Positive end expiratory pressure (PEEP)	No comment.
2.5 Stridor	No comment.
2.6 Croup	No comment.

### General Comments relating to CPGs and Clinical Governance

- IV-lines:
  - In our experience, around 75% of IV lines placed by PHRM staff are removed without ever being used. They are painful for patients and promote phlebitis, staph infections, and patients do not like them. We encourage the Clinical Procedures and Guidelines Working Group (CPGWG) to pass on these concerns and where possible, to audit/rationalise practice within the various ambulance services. We also recognise that at least 75% of IV lines put in at emergency departments are also unnecessary – where the indication for an IV cannula seems to have a “presence of a vein”. There is current and extensive research on the harms of unnecessary administration of IV lines in emergency department patients. It proves to be both costly, and the morbidity implications of these are high. There may be opportunities to collaborate to address these issues in both settings and ensure consistent practice.
  - The only reason we support placing an IV line is if they actually need IV medication immediately.

### Other feedback

The CPGs have become increasingly complex over many years, and now represent a very aspirational, comprehensive and wide-ranging set of skills. Many ACEM members have been involved in their evolution over these years in a variety of roles, however, throughout the rest of the Emergency Medicine workforce, there is a very wide range of understanding of the documents and the system of paramedic practice that it underpins. With the process of regular and ongoing review. It is from this reasonably heterogeneous background that this feedback is drawn.

We believe that the recent change by the CPGWG, to a system of reviewing individual sections will hopefully enable more useful input from across the Emergency Medicine community, as overall the documents are less daunting to review.

However, an apparent weakness of this process is that we have been asked to review the 2019-2022 CPG documentation, and we are aware that there may already be a number of proposed changes that are likely to have arisen from within the ambulance services, based on internal experience. We look forward to ongoing engagement and co-operation in providing feedback to the CPGs in an ongoing fashion.

With future reviews, it would be useful if the proposed new CPGs are provided and accompanied by a consultation (cover) paper that outlines any major changes to the current CPGs. This will put any proposed changes into context, as opposed to merely allowing comment on what has been done under the last (and current) iteration of the CPGs.

ACEM has a vital interest in ensuring the highest standards of medical care are provided for all patients presenting to an emergency department. ACEM has been actively involved in the advocacy for resource stewardship through the *Choosing Wisely* campaign<sup>34</sup>. We continue to avidly promote principles of equity to identify inequitable healthcare delivery, rational resource stewardship to reduce unnecessary and/or harmful healthcare practices including medicines and increase provision of care to those missing out. We would recommend that references to the Choosing Wisely principles and resources be added to this document, where relevant.

Finally, we would like to reiterate and encourage that with the implementation of these and subsequent CPGs, the various ambulance services should continue to emphasise to all paramedic and PHRM staff, that they must continue to develop and maintain very high levels of awareness of the consequences of their actions in terms of procedures and medication administration, on the next steps in the treatment of their patients once they have been delivered to an Emergency Department. This is particularly true if they are only minutes away from a hospital when they provide their treatments, such as the administration of:


- Neuromuscular paralysis with Suxamethonium and Rocuronium
- Dissociative doses of Ketamine
- Significant sedation - Midazolam/Droperidol use, and
- Fascia iliaca blocks if there is not unequivocally a fractured femur or neck of femur.

And as mentioned, the most prominent concerns are when patients are sedated, paralysed and dissociated within minutes of an emergency department. For this, we wish to recommend references to the introduction of the Health and Disability Service Standards NZS8134:2021<sup>5</sup> as from February 2022<sup>6</sup>.

#### For more information

For more information, or if you need further clarification, please feel free to contact us, or Ali Watt at the Aotearoa New Zealand Office at [acemnz@acem.org.au](mailto:acemnz@acem.org.au).

Nā mātou noa, nā



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<sup>3</sup> <https://choosingwisely.org.nz/>

<sup>4</sup> <https://www.choosingwisely.org.au/>

<sup>5</sup> <https://www.standards.govt.nz/shop/nzs-81342021/>

<sup>6</sup> <https://www.health.govt.nz/our-work/regulation-health-and-disability-system/certification-health-care-services/services-standards/nga-paerewa-health-and-disability-services-standard>