



International Hypothermia Registry

Canterbury / West Coast Emergency Care Coordination Team

Dr Malin Zachau 15 February 2022



ISMM

International Society
for Mountain Medicine



New Zealand Society for
MOUNTAIN MEDICINE



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“If you can’t measure it, you can’t manage it”

Peter Drucker (1909-2005)

“If you can’t measure it, you can’t improve it”

(attributed to Lord Kelvin (1824-1907)

But....

What Lord Kelvin actually said in his lecture on 3 May 1883 was this:

“I often say that when you can measure what you are speaking about,
and express it in numbers,
you know something about it;
but when you cannot measure it,
when you cannot express it in numbers,
your knowledge is of a meagre and unsatisfactory kind;
it may be the beginning of knowledge,
but you have scarcely,
in your thoughts,
advanced to the stage of science,
whatever the matter may be.”



Inclusion criteria for IHR:

- Accidental hypothermia with body core temperature equal to or less than 32°C
- Any age, gender or comorbidities
- Independent of hypothermia aetiology or patient outcome
- The registry is mainly prospective but retrospective entries are welcome

Trauma induced hypothermia:

- What proportion of your trauma patients have a core body temp $<36^{\circ}\text{C}$ on arrival in ED?
- What proportion of your trauma patients become colder after arrival in ED?
- What proportion of your trauma patients have a core temp of 32°C ?
- How are your trauma patient outcomes influenced by their body temperatures?



How much extra work does it entail?

Very little:

- core temperature measurement
- filling in a short form online

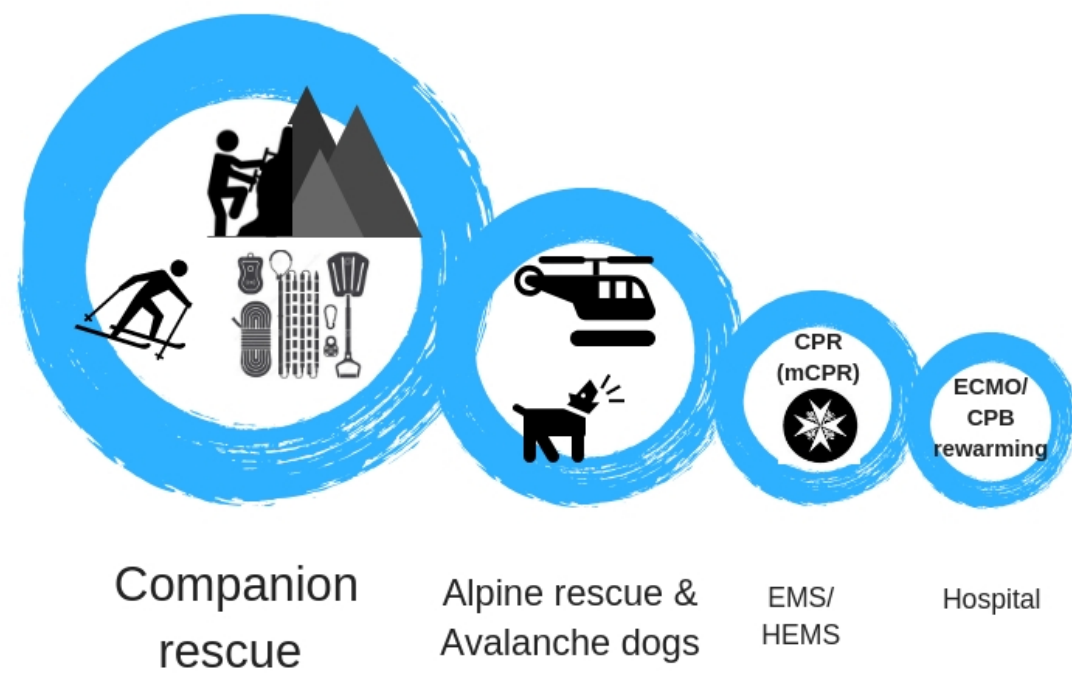


Why should we bother ?

What good will it do?

How has the chain of rescue in Accidental & Trauma Induced Hypothermia progressed in NZ since 2018?

Chain of survival for Avalanche rescue:
Not all links are equal in hypothermic cardiac arrest



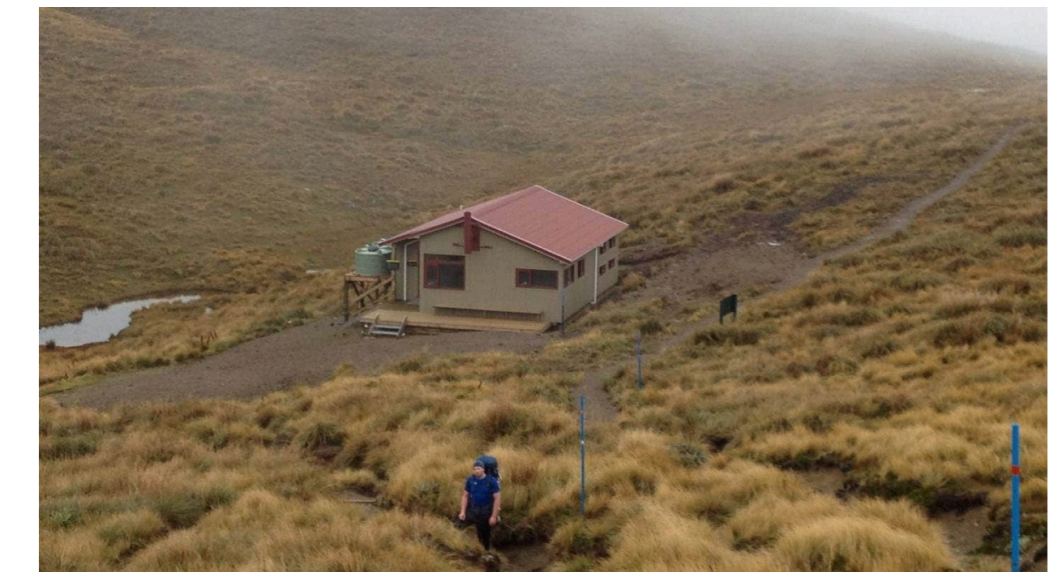
 DrM@WildernessEMC

6 February 2019 (DRAFT)
see website
drmwildernessemc.wordpress.com
for more details

First link: In situ responders/ companion rescuers

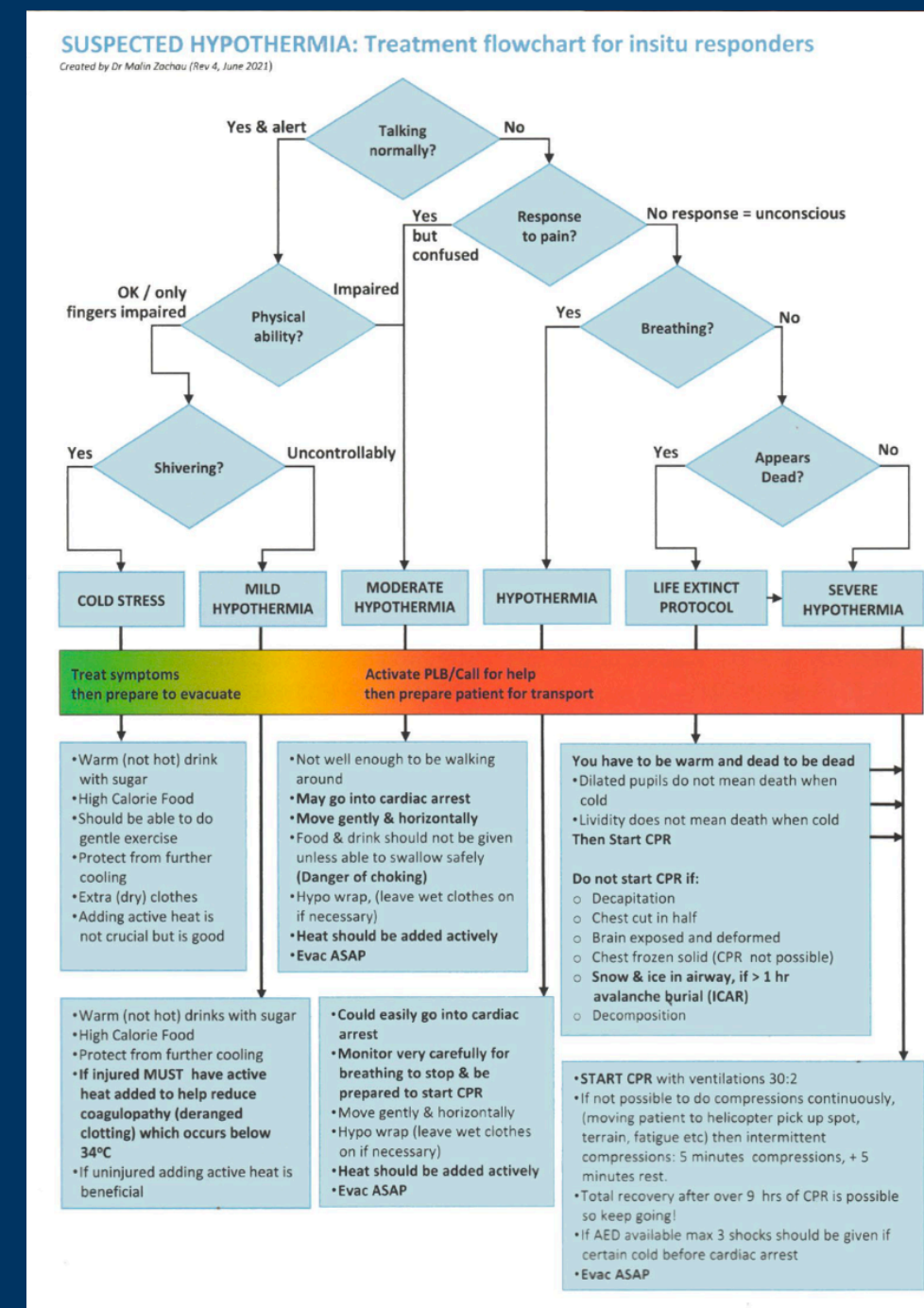
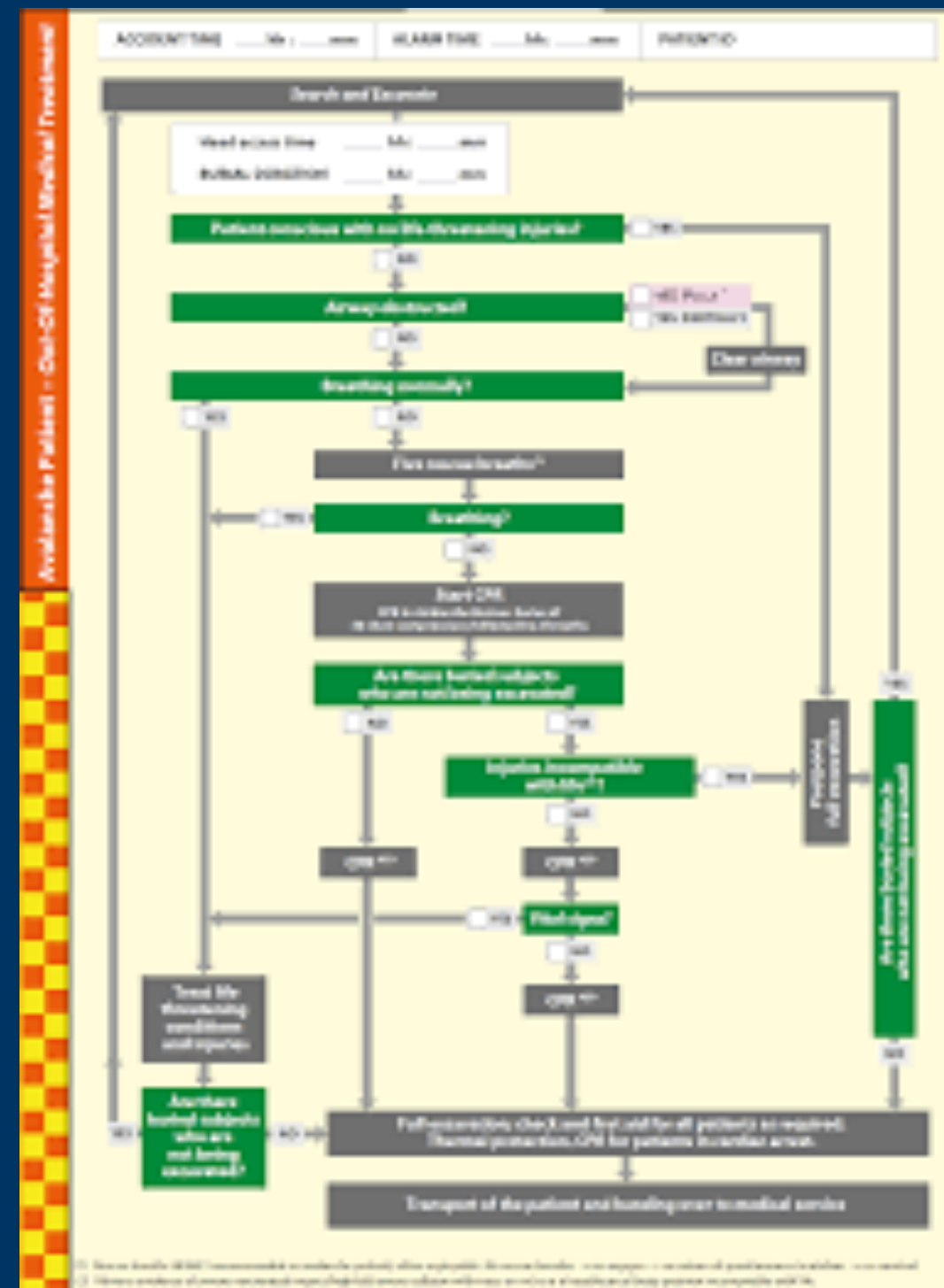
Man who fell ill on Tararua Range reportedly ill-prepared for dangerously low temperatures

Damian George · 00:12, Mar 29 2018

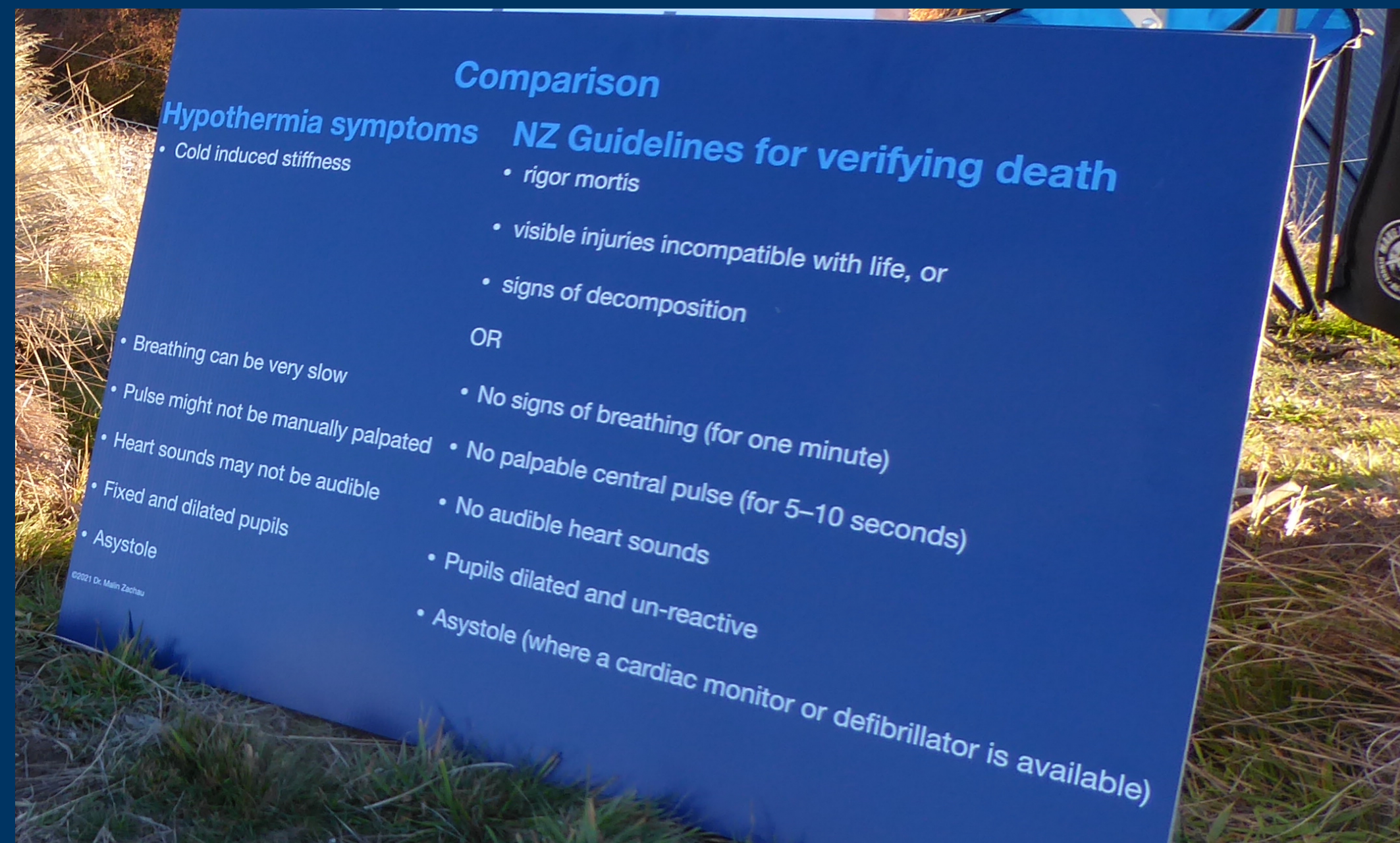


STUFF

When Thomas Hannon and the man reached Kime Hut, a group of five fellow trampers were already there, and they helped to remove the man's wet clothes and put him in a sleeping bag. (FILE PHOTO)



Second link: Volunteer rescuers / DoCAoraki



Third link: Road ambulance / HEMS NZ

increase in metabolism that occurs as food is digested.

Additional treatment considerations for moderate to severe hypothermia

- It is not feasible to provide sufficient heat to warm a patient with moderate to severe hypothermia in the out-of-hospital setting. The goal is to prevent further heat loss and transport the patient to a hospital with the facilities to provide appropriate and safe warming.
- Vasodilation may lead to a worsening of hypothermia as a result of cold blood returning to the patient's core. This is why it is important to focus on warming the torso (and not the extremities) and is why IV fluid is avoided unless the patient clearly has severe hypovolaemic shock. Even if IV fluid is warmed, it may make hypothermia worse by increasing blood supply to cold peripheries.
- Whenever feasible IV fluid should be warmed using a dedicated warming device. These may be available (for example via a helicopter service) and should be requested whenever feasible.
- Do not warm IV fluid in microwaves because this can result in unreliable fluid temperatures and/or may damage the plastic bag.
- Impaired cellular metabolism may impair the response to treatment. For example the patient may not respond to pacing, synchronised cardioversion or defibrillation.
- The risk of precipitating a dysrhythmia (particularly ventricular fibrillation) during patient movement is controversial. It is not clear from the literature that it is patient movement that causes the dysrhythmia, or if it is secondary to the change in temperature that usually coincides with the patient being moved. Moving the patient should not be unnecessarily delayed but avoid excessive and/or unnecessary movement, for example moving from a supine to a sitting position, whenever this is feasible and safe.
- Keep the patient flat to maximise venous return and help maintain cardiac output.

Hypothermic trumper winched from national park after two nights in the bush

Carly Gooch · 15:28, Jul 04 2021



Fourth link: Hospital / Specialist rewarming centre

The screenshot shows the Canterbury HealthPathways interface. At the top, there is a green header with the Canterbury logo and a search icon. Below the header, the page title is "Hypothermia". A "Request" section contains a list of clinical criteria for requesting acute cardiothoracic, intensive care, and acute general medicine admissions, as well as acute mental health reviews. On the right side, there are utility icons for "Expand all", "Print", "Share", and "Copy". Below these are sections for "ABOUT THIS PAGE" with links to "Contributors", "Sources", and "Page information", and a "Topic ID: 203619". At the bottom left, there is a copyright notice for 2022 HealthPathways and a "View on classic Hospital HealthPathways" link.

The screenshot shows the ASAIO Journal website. The top navigation bar includes "Log in or Register", "Get new issue alerts", and the Wolters Kluwer logo. The main header features the "ASAIO Journal" logo and a search bar with "Articles" and "Advanced Search" options. A secondary navigation bar contains links for "Articles & Issues", "Online First", "Collections", "Digital Media", "For Authors", "Journal Info", and "History". The article title is "Extracorporeal Life Support in Accidental Hypothermia with Cardiac Arrest—A Narrative Review". The authors listed are Swol, Justyna; Darocha, Tomasz; Paal, Peter; Brugger, Hermann; Podsiadto, Paweł; Kosiński, Sylwester; Puślecki, Mateusz; Ligowski, Marcin; and Pasquier, Mathieu. The article level metrics show 33 views, 58 tweets, 4 Facebook shares, and 4 readers on Mendeley. A link to "View full article metrics" is provided.

Discussion