

National Institute for Health and Clinical Excellence

(863/1) – Therapeutic hypothermia following cardiac arrest

Consultation Comments table

IPAC date: Thursday 9 December 2010

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
1	Consultee1 Head of Resuscitation Services	1	Would tentatively agree although critical numbers are lacking in terms of equivocal evidence of beneficence longer term	Thank you for your comment.
2	Consultee 2 NHS Professional	1	Fully agree	Thank you for your comment.
3	Consultee 3 NHS Professional	1	I agree, but would add that adequate resources and skills are required as it represents an additional workload per patient that otherwise would not be performed, although it may save money in the long term due to improved patient outcome.	Thank you for your comment. The Committee makes recommendations on conditions for the safe use of a procedure including training standards, consent, audit and clinical governance. It does not have a remit to make recommendations regarding configuration of services / resourcing.

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4	Consultee 4 Charge nurse adult ICU	1	there needs to be a national consensus of target temperature to be achieved (most units aim for a core temperature of 33 degrees celsius) as well as an agreed duration for maintaining therapeutic hypothermia (yet again most units aim for 24 hour duration) and a standardised target for speed of rewarming eg 0.25 or 0.5 degrees celsius per hour. I feel strongly as do the critical care team working within the bristol royal infirmary that maintenance of normothermia for 48 hours post rewarming may well be as equally important as the initial 24 hours of therapeutic hypothermia. we have reviewed dozens of out of hospital arrests treated within the BRI and have some anecdotal evidence that those patients that we strive to maintain normothermia after rewarming have an improved neurological outcome compared to a similarly treated patient that is not well controlled post rewarming. We use the artic sun device as it is none invasive and can be kept in situ for the duration eg cooling, rewarming and maintaining normothermia. it is user friendly and is not operator dependent and requiring of medical staff to implement the onset of cooling, rewarming or maintaining normothermia.	Thank you for your comment. The Committee considered this comment but decided not to change the guidance.
5	Consultant 5 Specialist Adviser	1	I think this recommendation is consistent with the evidence published so far.	Thank you for your comment.
6	Consultee1 Head of Resuscitation Services	2.1	This is the UK not the USA. Please refer to the drug by its proper name Adrenaline. That is the name used safely by clinicians. Please note that previously when there was a drive to call it Ephinephrine it caused potentially serious confusion as people confused it with Ephedrine. Atropine useage is now not recommended in the RCUK 2010 guidelines	Thank you for your comment. Section 2.1.2 of the guidance will be changed.
7	Consultee 6 NHS Professional	2.1	The 2010 resuscitation guiedlines do not include atropine.	Thank you for your comment. Section 2.1.2 of the guidance will be changed.

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8	Consultee 3 Specialist Adviser NHS Professional	2.1	evidence for cooling is only present in cardiac arrest patients due to a primary arrhythmia, although I believe it would be reasonable to extrapolate this to potential hypoxic brain injury from other causes.	Thank you for your comment.
9	Consultee 4 Charge nurse adult ICU	2.1	i think death is likely and is entirely associated with whether the victim of the out of hospital cardiac arrest had bystander CPR or not. I think there is a growing feeling amongst critical care clinicians that we should be actively cooling all out of hospital arrests regardless of their presenting arrhythmia and whether they were shockable or non shockable. this is indicated and referred to in the new ALS guidelines recently published by the uk resus council. post resus care however needs to be implemented in a level 3 facility eg full ICU bed and this should be a recommendation published by NICE- currently many hospitals due to a lack of critical care facilities and level 3 beds are caring for these very sick and unstable post arrest patients in non icu facilities eg theatre recovery rooms or anaesthetic rooms due to the lack of beds. only level 3 facilities have the requisite skills and resources to ensure effective cardiovascular and other bodily organ support.	Thank you for your comment. The Committee makes recommendations on conditions for the safe use of a procedure including training standards, consent, audit and clinical governance. It does not have a remit to make recommendations regarding configuration of services / resourcing.
10	Consultant 5 Specialist Adviser	2.1	Coronary artery disease accounts for at least half of all out-of-hospital cardiac arrests. Drowning in relatively rare, and electrocution and choking are extremely rare causes of cardiac arrest - I am not sure why they have been cited. It would be better to refer to the generic term asphyxial cardiac arrest. Atropine is no longer indicated in cardiac arrest. In the UK, the term is adrenaline, not epinephrine.	Thank you for your comment. Sections 2.1.1 and 2.1.2 of the guidance will be changed.
11	Consultee 1 Head of Resuscitation Services	2.2	Happy with that section clear and concise	Thank you for your comment.

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12	Consultee 2 NHS Professional	2.2	In our experience re-warming not necessarily have to be passive but controlled & usually between 0.25degrees – 0.50 degrees per hour	Thank you for your comment.
13	Consultee 3 Specialist Adviser NHS Professional	2.2	there needs to be some consideration here as to whether it is in the best interest of the patient to be actively cooled. This should be based on their own wishes where possible, but also on the appropriateness of this scale of intervention given their pre-morbid state and the likelihood of survival. i think the recommended time period for cooling should be set at a specified time i.e. 24 hours	Thank you for your comment..
14	Consultee 7 NHS Professional	2.2	I would welcome a comment about the rate of re-warming: there are some data in the literature suggesting that fever may be harmful and that too rapid a rewarming phase may itself be harmful. I would suggest that a controlled rewarming phase no faster than 0.25 C/hr is recommended and that pyrexia is actively managed for at least 48hrs after this.	Thank you for your comment. Section 2.2.2 of the guidance will be changed.
15	Consultee 4 Charge nurse adult ICU	2.2	our target at the Bristol royal infirmary is 33 degrees celsius as monitored via a PICCO (arterial catheter) or via a core temperature probe inserted oesophageal or gastrically. rewarming commences for 24 hours and is set at 0.5 degrees celsius.	Thank you for your comment.
16	Consultant 5 Specialist Adviser	2.2	Hypothermia is induced most commonly with cold IV fluid followed by either simple external cooling with ice packs or a specific cooling device, or an endovascular system. It should be controlled (not passive) rewarming at 0.25 - 0.5°C per hour (8-12 hours). Muscle relaxants may be required but are not mandatory.	Thank you for your comment.
17	Consultee 1 Head of Resuscitation Services	2.3	happy with this. Only significant evidence that exists . Please see comments in section 1	Thank you for your comment.

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18	Consultee 3 Specialist Adviser NHS Professional	2.3	compelling evidence	Thank you for your comment.
19	Consultee 4 Charge nurse adult ICU	2.3	I support and agree with these results there is an ever growing and mounting evidence for therapeutic hypothermia.	Thank you for your comment.
20	Consultant 5 Specialist Adviser	2.3	2.3.4 - This is only an abstract and has never been published in full. Although it was included in the Cochrane Meta-analysis and I don't think it should be cited to support NICE Guidance I would add a Dutch study now online in Critical Care Medicine: van der Wal G et al. Crit Care Med 2011 39: in press	Thank you for your comment. The guidance will not be changed. The van der Wal 2010 paper was identified in the post consultation literature search and will be added to the overview.
21	Consultee 1 Head of Resuscitation Services	2.4	Happy as the potential risks are identified and the aim is for improved outcome in the patient, something which can never be guaranteed whatever the therapy	Thank you for your comment.
22	Consultee 3 Specialist Adviser NHS Professional	2.4	It might be prudent to calculate Number Needed to Treat and N N Harm data.	Thank you for your comment. This is beyond the scope of the guidance.
23	Consultee 4 Charge nurse adult ICU	2.4	There are recognised risks to therapeutic hypothermia!- these can to some extent be negated by strict compliance to care bundles for ventilated patients. ventilated patient care bundle, line handling and medicines management operative procedures etc. the question is are the risks outweighed by the significantly improved neurological outcome I feel they are as a risk benefit ratio.	Thank you for your comment.
24	Consultant 5 Specialist Adviser	2.4	Include new study on adverse events published on line: Nielsen N et al. Crit Care Med 201139: in press	Thank you for your comment. The Nielsen 2010 paper will not be included in the overview as these patients are already reported in Nielsen 2009.
25	Consultee 1 Head of Resuscitation Services	2.5	Needs greater numbers, to include patients from non VF/VT arrests to get better data	Thank you for your comment.

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26	Consultee 3 Specialist Adviser NHS Professional	2.5	see section 2.1	Thank you for your comment.
27	Consultee 4 Charge nurse adult ICU	2.5	I feel that if the ICNARC system which 90% of national ICUs report into reviewed asked for data on therapeutic hypothermia as part of their minimal data set NICE would very rapidly gain some insight into current practice. we use therapeutic hypothermia now for probably 95% of successfully resuscitated out of hospital arrests regardless of whether they were "shockable or non shockable" as their presenting arrhythmia.- we have case study reports and anecdotal evidence that other patients do benefit from therapeutic hypothermia, please feel free to contact one of my colleagues [details provided].	Thank you for your comment.
28	Consultant 5 Specialist Adviser	2.5	Suggest reword: The Committee noted that the majority of evidence was on patients with ventricular fibrillation arrest and continuing coma. Evidence on other patients is based on observational studies only. There is some evidence that cooling should be started as soon as possible. It may be worth adding that assessing prognosis for post-cardiac arrest patients remaining in coma after the application of hypothermia is difficult - any single test is likely to be unreliable.	Thank you for your comment. A section 2.5.2 will be added to the guidance.
29	Consultant 5 Specialist Adviser	general	I am the lead author for the 2003 ILCOR Advisory Statement on therapeutic hypothermia after cardiac arrest and I have other publications in this field.	Thank you for your comment.

"Comments received in the course of consultations carried out by NICE are published in the interests of openness and transparency, and to promote understanding of how recommendations are developed. The comments are published as a record of the submissions that NICE has received, and are not endorsed by NICE, its officers or advisory committees."