

Title

Feasibility of a one-day course to teach Cold Water Immersion to medical practitioners

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Text

Severe Exertional Heat Illness (EHI) poses a significant risk to those undertaking prolonged physical activity, including military training¹, and best-practice guidance^{2,3} recommends treating promptly with whole-body Cold Water Immersion (CWI). Improving the early availability of CWI is imperative for those at risk of Severe EHI and requires healthcare teams to become competent and confident in its delivery. However, outside certain specialised settings⁴, Severe EHI may be seen only occasionally by individual military medical practitioners. As such, opportunities to learn the safe delivery of CWI may be limited and no recognised programme exists to train personnel.

Our aim was to design and run a pilot course to teach CWI to a mixed group of military and civilian paramedics and doctors. This project was considered by the MoD Research Ethics Committee who confirmed it could proceed as service improvement. 16 practitioners attended a half day training course, comprising lectures on recognising EHI and delivering CWI followed by in-situ simulated clinical scenarios at the Brighton marathon medical treatment facility⁵ (Figure 1). Key learning objectives included considerations for managing a critically unwell casualty during CWI and an ability to rapidly extricate a casualty, if required. A volunteer wearing a drysuit acted as the casualty for each scenario with an iPad as a simulated monitor, allowing practitioners to participate in each stage of CWI.

15/16 participants completed an anonymous self-assessment questionnaire before and 14/16 after the course, rating their agreement with statements on a 5-point Likert scale

(Figure 2). The voluntary nature of the course seems likely to have skewed participation towards those with a pre-existing interest. Despite this, substantial improvements were seen in participants' confidence to recognise and assess EHI. Prior to the course, 80% were not confident to help deliver CWI, whereas after the course all participants were confident. This quantitative feedback also demonstrated improved confidence in leading CWI and understanding the principles of post-cooling care.

9 participants wrote additional comments. This qualitative feedback highlighted that participants valued the instructors' expertise, which they felt gave them credibility. The practical elements were felt to be essential in improving competence and confidence. The participants also valued the guidance given as unambiguous and easy to follow. Some would have preferred a longer course to explore the topic and cement the techniques taught.

Quantitative feedback showed that this pilot course was successful in improving familiarity and confidence amongst participants and the qualitative feedback will allow further refinement of content and delivery. To improve the availability of CWI, training could be delivered for military medical personnel as a standalone course or elements incorporated into a pre-existing course (e.g. Military Pre-Hospital Emergency Care). Consideration should also be given to a train-the-trainer approach focussing initially on key enablers at sites with higher numbers of expected cases.



Figure 1: A Cold Water Immersion resuscitation bay prepared to receive a casualty.

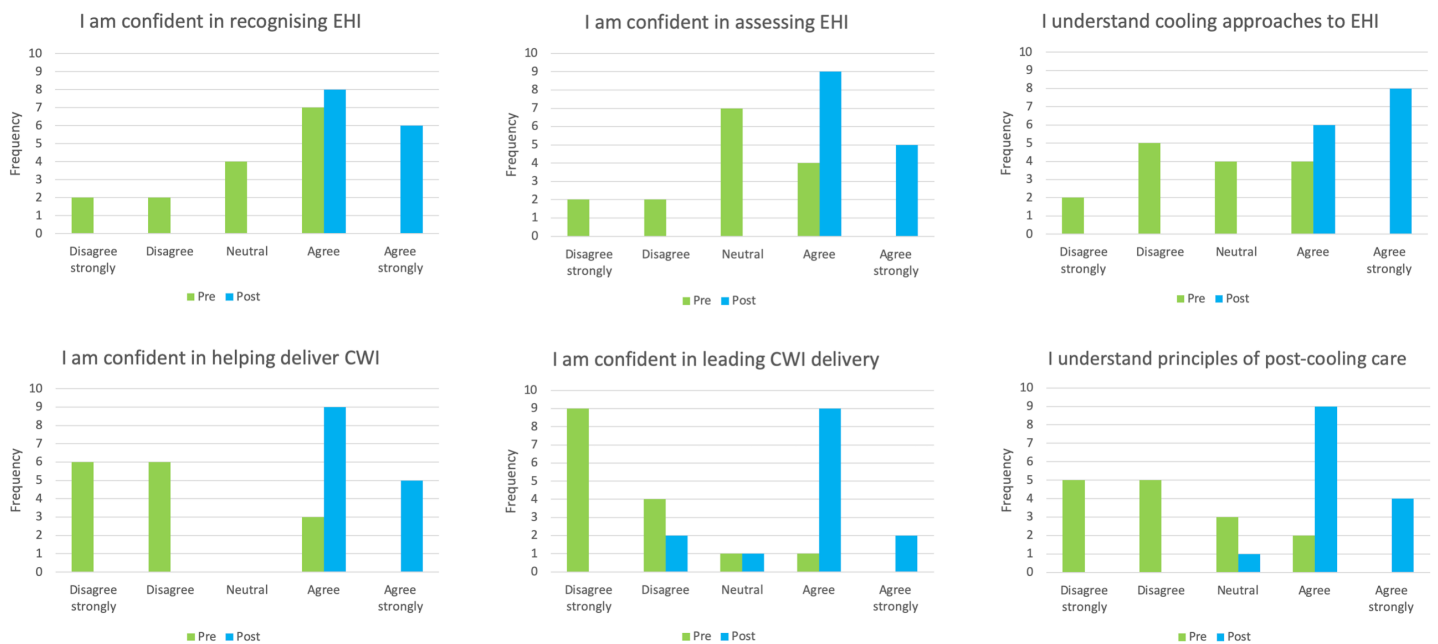


Figure 2: Pre and post-course scores completed by candidates on a Likert scale.

Competing interests

RH is the director of Nereus medical, which produces equipment to enable CWI and provided this for use during the course. None of the other authors has a competing interest.

Contributorship statement

FW assisted with running the course, analysed the survey responses, drafted the manuscript and is the guarantor. PG assisted with analysing the responses and drafted related sections of the manuscript. In addition to assisting with designing and running the course, GJ designed the feedback survey and provided advice on analysing the results. The course was designed and run by TL, RH, CK, AH and MS. All authors reviewed and approved the final manuscript. Additional input and assistance was provided from the UK Heat Illness Advisory Group and the Brighton Marathon Medical Team.

This project was reviewed by the MoD Research Ethics Committee who confirmed it was service evaluation/improvement and did not require ethical approval (ref. 23/24.009).

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