July 2018

FPHC Newsletter

Welcome to the Faculty of Pre-Hospital Care newsletter. We hope you enjoy it. Please get in touch if you have ideas, content, reports or simply want to be involved fphc@rcsed.ac.uk

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A review of expedition competencies

"Because it is there" George Mallory 1923

An expedition is an organised journey with a purpose and Expedition Medicine is the area concerned in maintaining overall health under the stresses and challenges in austere conditions.

Expedition Medicine is a rapidly developing and expansive field due to growth in exploration, environmental and physiological research, the need for human challenges, and general accessibility. This rise in interest has led to a demand for medical cover and expertise.

In 2015 the FPHC produced their first document "Guidance for Medical Provision for Wilderness Medicine", in response to ever-increasing requests for information regarding how to get involved in Expedition Medicine. Three years on, in April 2018, an expanded panel of experts grouped together to solidify their experiences and refine these guidelines, along with the Royal Geographical Society.

Our goal was to create a set of clear guidelines for all levels, not necessarily just for the qualified doctor but rather anyone providing medical care; whether purely medical or in addition to another role. These guidelines will have multiple aims; to provide a framework of skills which ensured the best and safest medical care for patients in austere environments, advise both guides and leaders about the necessary skills and appropriate training needed, and lastly for companies to use as a "Gold Standard" for both hire of medical cover and expedition planning.

After an exciting day of discussions and stories, a collection of knowledge and experience was created which will be drafted this September - the final document due for release at the end of this year.

So, watch this space and keep exploring!

Dr. B. Allen

Heat illness

Heat illness is a continuum of preventable disorders related to environmental exposure to heat, causing increased heat production and inadequate heat dissipation.

Given the recent record high temperatures in the United Kingdom, heat illness has been on the rise and the consequences can easily be life-threatening. Public knowledge of these illnesses in cold climates is often poor.

There are many predisposing factors including medications, obesity, extremes of age, dehydration, exertion, alcohol use and certain blood dyscrasias.

There are thought to be five classifications of heat illness. Heat oedema, often considered the mildest form of heat illness, is characterised by dependent oedema in the extremities when unacclimatised individuals are exposed to extreme heat. It is typically prevented by gradual acclimatisation, elevation of the affected extremity and periodic exercise. Diuretic therapy is not recommended.

Secondly, heat cramps range from a mild inconvenience to severe spasms of limb musculature. Diuretic therapy predisposes patients to this, as does poor heat acclimatisation and pre-existing sodium deficit.

Treatment with fluid replacement is recommended alongside sodium replacement where deficit is suspected. Stretching the affected muscles and ice massages are helpful strategies here.

Heat syncope classically presents with an episode of loss of consciousness, typically occurring after standing for long periods or postural hypotension. Treatment is similar to that of a vasovagal attack, by elevation of the lower extremities and rehydration.

Heat exhaustion usually occurs suddenly when dehydration and high external temperatures coexist. Symptoms usually include headache, nausea and vomiting, chills, weakness and sweating. Core body temperature, by definition of heat exhaustion should not be higher than 40.5^{o}C. Judgment may be impaired and some irritability and miscoordination can occur, but significant cognitive impairment is not usual. These patients need to be rapidly cooled, often by emersion in an ice bath and protected from further exposure to heat.

The choice of oral versus intravenous rehydration should be guided by the individuals' conscious level, pre-morbid hydration status and consideration for other insensible losses. Several litres of fluid replacement and antiemetic cover may be needed.

Heat stroke is life-threatening and should be considered a medical emergency as unlike the aforementioned conditions, it will not self-correct. Core body temperature (which should be measured rectally) rises over 40.5^{o}C, sweating is no longer effective or absent with gross neurological impairment - essentially very similar in symptomatology to heat exhaustion, with significant cognitive malady. Rapid identification and treatment is vital here. Monitoring cardiovascular parameters may be logistically difficult but should be observed wherever possible. Cold water immersion conveys the fastest cooling times and lowest mortality rates however wet towel application, tepid water spraying with fan to aid convection and evaporation and application of ice packs over great vessels (axillae and groins) are often practical additional cooling techniques. Reassurance during this process is imperative as patients often feel cold rather than hot. Intravenous fluid resuscitation is helpful but again may prove practically challenging when using the immersion technique.

Dr. Hannah Evans (GP Registrar, FAWM, FRGS, DTM&H, Expedition Medicine Faculty)

Dr. Laura Nicol (ST7 General Surgery and Expedition Doctor)

PHOTON Pre-Hospital Trainee Operated research Network

PHOTON is a national pre-hospital care collaborative research network with the aim "*To undertake trainee-led high quality multi-regional collaborative pre-hospital research, audit and quality improvement projects, striving to inform and develop the pre-hospital care delivered to our patients".*

PHOTON is supported by the Faculty of Pre-Hospital Care (FPHC) of the Royal College of Surgeons of Edinburgh and by the Pre-Hospital Emergency Medicine Trainees' Association (PHEMTA). Full membership is open to all non consultant grade doctors working in pre-hospital care, we currently have trainees from across England, Scotland and Wales contributing to our projects.

PHOTON aims to deliver national audit, research and improvement projects whilst taking into account the different models of pre-hospital critical care delivery seen across the country due to geography, case mix and staffing. The results of any PHOTON study will be anonymous by Air Ambulance organisation and no organisation will be identified as an outlier. Data security and confidentiality are key principles of the work of PHOTON and all our data handling and storage methods have been carefully selected to achieve this. PHOTON aim to make publicly available the results of any study which is conducted and therefore we will submit papers for publication in relevant journals. Further details of our policies can be found in our constitution.

The PHOTON collaborative is continuing to grow and has made some significant progress in the last few months due to the hard work of its founding members, committee and our growing membership. We have launched our time to pre-hospital anaesthesia (TT-PHEA) national audit which is live at 18 sites, with only 3 sites pending final approval out of the 21 UK Air Ambulance services that offer PHEA. The PHOTON committee are extremely excited about this study, and we look forward to bringing you the results of this project later in the year. This will be the biggest collaborative pre hospital study ever in the UK, and we are anticipating that all Air Ambulances in the UK that provide PHEA will participate. We are also finalising the last aspects of our next project, a service provision questionnaire that will quantify the pre-hospital critical care services currently available across the country and build a better understanding of the operations providing PHEM throughout the UK. We are currently reaching out to HEMS services for approval of this project and hope to launch this questionnaire in early July.

Our website is now up and running - https://fphc.rcsed.ac.uk/my-fphc/about-us/sub-committees-groups/photon-group, our twitter account is active with a growing followership - @researchPHOTON, and we are actively looking for new members. If you have any suggestions or comments regarding future projects please email PHOTONchair@rcsed.net

Dr. James Raitt (MBChB MRCEM Dip IMC; Chair PHOTON)

BASICS FPHC Annual Conference

Information about the programme, rates, the DipIMC revision session and the poster competition has now been published. You will find below the relevant links to each page.

Programme

Conference Rates

Poster Competition

DipIMC revision session

REGISTER HERE!

Calling out all exhibitors!

There are only 6 exhibitor tables left! Make sure to book one before all the spaces have been reserved, by filling in the online application form.

Rates per table: 1 day: £750

2 days: £1,200