

## EXAM PREPARATION

### The Diploma in Mountain Medicine

MJ Brookes, P Richards



*Crevasse Rescue Training.*

#### Introduction

With the clinical phenomenon of 'diplomatosi' being recently documented (1) questions may be asked as to the necessity of a diploma in mountain medicine. Mainland Europeans, however, have long since taken the provision of pre-hospital care in a mountain environment a lot more seriously. Alpine countries have full-time, salaried mountain rescue services, which are usually a division of the police or armed forces. Doctors serving with these rescue services must hold the diploma in mountain medicine as proof that their clinical and practical skills meet a required standard in order to operate as an effective member of a mountain rescue team (2). The diploma is run in conjunction with UIAA (Union Internationale Des Associations D'Alpisme - the International Mountaineering and Climbing Federation) and IKAR (International Committee for Alpine Rescue).

The situation in the United Kingdom is very different. The Mountain Rescue Council oversees 69 different rescue teams, which operate semi-autonomously. Each team usually has one or more doctors volunteering their services, and there is a wide range of experience within the cohort of

mountain rescue doctors. There is no mandatory qualification for service as a team doctor

Increasingly clinicians are also consulted by patients who are preparing to depart or who have recently returned from expeditions at high altitude, often in remote areas. Patients often require specialised advice, such as management of frostbite injury (3). At present, there is an ad hoc arrangement where doctors may ask the British Mountaineering Council (BMC) for advice, and the BMC will pass the questions onto their medical panel. A national web-based forum is currently being established for doctors who have an interest in, or questions about, high altitude medicine (4).

A working knowledge of the effects of high altitude is becoming more important with ongoing military operations in mountainous regions, such as Afghanistan (5, 6). Military Medical Officers must be able to recognise the symptoms and signs of altitude related disease early and treat casualties urgently, especially as mountainous regions are associated with long evacuation times and casualties can deteriorate quickly if left at altitude or treated inappropriately. Recent service expeditions have experienced these phenomena (7).

#### The Diploma

The Diploma in Mountain Medicine is administered by Medical Expeditions, a charity with the remit to promote research and education on high altitude physiology and medicine. It is approved as a diploma by UIAA, IKAR and the International Society of Mountain Medicine. (ISMM). It is also currently approved as a Certificate in Mountain Medicine by the University of Leicester, (although status as a university Diploma is pending), with future plans to extend the option of progression to an MSc(8)

The diploma consists of four modules (see Appendix 1):

- ◆ Altitude and environmental medicine and physiology.
- ◆ Travel and expedition medicine.
- ◆ Mountain rescue and traumatology.
- ◆ Personal mountaineering skills.

The modules are taught over four periods of student contact. Two periods are held at Plas-Y-Brenin, Snowdonia, one period is

Capt MJ Brookes  
BMedSci(Hons) BM  
BS FRGS RAMC  
MDHU Northallerton,  
Friarage Hospital,  
Northallerton,  
North Yorks DL6 1JG  
Email: mikebrookes@physiobase.com

Dr P Richards MB  
ChB. MRCP DFFP  
Msc FRGS  
The Surgery,  
London Road, Wickford  
South East Travel Clinic  
Clinical Tutor Royal  
Free Hospital, London  
Email: paul@medex.org.uk

held at Fort William and the final period is held at Arolla in the Swiss Alps. Each session requires pre and post course assessments, which are usually MCQs, and six short answer questions of a similar format to the Diploma in Immediate Care of The Royal College of Surgeons of Edinburgh. There is also continuous assessment from the tutors and mountaineering instructors during the contact periods.

It is possible to complete the diploma in a year and all candidates are encouraged to finish within two. On application, diplomats have up to four years to pass all four modules, which is useful for military candidates.

### Pre-entry Requirements

Candidates must hold full GMC registration and possess personal mountaineering skills described as 'a high level of performance at a relatively low standard'. Individual skills vary, but the UIAGM guides provide instruction to all candidates in order to ensure best practice. Candidates should be able to navigate with confidence, be able to look after themselves in the field and have a basic knowledge of ropework. Those lacking basic skills may be asked to resit elements of the modules. A list of useful reading is given at Appendix 2.

### Costs

The cost of the Diploma is £2000. However, this does not include transport costs or accommodation costs in Scotland or the Alps, which are several hundred pounds. Candidates use their own mountaineering equipment on the course. Most diplomats do not incur any extra cost hiring or purchasing equipment as most already own basic kit such as an ice-axe and crampons.

### Personal Experience as a Candidate

The modules are very intense, and feature some esteemed international speakers such as Professor John West and Dr Jim Milledge, who are pioneers and leaders in the field of high altitude medicine. Other lecturers from the Scottish Mountain rescue teams are able to impart immense practical advice from their many years of experience at the 'sharp end'. The mountain instructors are all qualified UIAA guides and provide superb instruction and useful tips to the more experienced mountaineer. They also have good first hand knowledge of field first aid and rescue in situations such as avalanche, and their case reports make interesting learning.

Military medical officers may find some aspects of the course well within their grasp, as most have had exposure to pre-hospital work and had experience with rotary wing evacuation. There are no considerations of

previous experience, but the modules are worth attending in their entirety as there is always something to learn from an extremely experienced and diverse faculty.

Doctors who are less confident with their mountaineering skills would benefit from attending a Mountain Leader Training course (MLT) or a Winter Mountain Leader Training course, both available from the Joint Service Mountain Training Centre via the unit training wing.

### Conclusion

The Diploma is evolving rapidly in this its first year in the UK. At times, it may seem disjointed, but this will always be the case with a brand new course and with 20 doctors all in the same place at the same time. The diploma is ideal for military doctors advising or accompanying service groups travelling to high altitude areas both for adventurous training and for operations, and for those who wish to widen their pre-hospital care interest to encompass mountain rescue.

### References

1. Easton G. Writing for the new diplomatis column. *BMJ Careers* 2004; 7 Aug: 57.
2. Scrimgeour C. Mountain rescue medicine in France. *BMJ Careers* 2004; 19 Jul: 17-18.
3. Minerva. *Brit Med J* 2004; 328: 1210.
4. Personal communication Brookes/Hillebrandt.
5. Grau L, Jorgensen W. Medical implications of high altitude combat. *Journal of Special Operations Medicine* 2003; **Dec**: 30-38.
6. Sawhney P. Kashmir's cold war. *Janes International Defense Review* 1997; **Dec**: 58-61.
7. Blackwood I. Rescue from White Rocks Aconcagua. *Army Mountaineer* 2004; **Summer**: 20-22.
8. Barry P. Mountain Medicine Training. <http://careerfocus.bmjournals.com/cgi/eletters/327/7407/s17-a#34843>, 24 Jul 2003 accessed on 23 Aug 04.

### Conflict of Interest

MJB is a member of the Diploma Faculty. He has led and participated in several high-altitude expeditions, is a member of Medex and a Team Doctor for Swaledale Mountain Rescue Team.

PR is a Diploma Faculty member and a director of Medical Expeditions. He has participated in numerous high altitude research and climbing expeditions and has acted as a consultant to Jagged Globe and World Challenge expedition companies.

## Appendix 1. Summary of Syllabus

<b>Module 1 Altitude and Environmental Medicine and Physiology</b>	
Altitude	Physiology, features and diagnosis of Acute Mountain Sickness, High Altitude Cerebral Oedema and High Altitude Pulmonary Oedema
Hypothermia	Prevention, protection and evacuation of casualties. Field and hospital treatment
Cold	Prevention and treatment of cold injuries
Heat And Solar Radiation	High altitude skin and eye problems
Children In The Mountains	Special considerations with children at altitude
Nutrition	Expedition diet, hydration and hygiene
Physiology	Sports and exercise physiology pertaining to mountain performance
Stress Management	
Pre-Existing Medical Conditions	Giving advice and managing complications of pre-existing medical conditions
Medical Problems In Remote Areas	Diabetes, Asthma, Acute Coronary Syndromes
Avalanche And Weather	The effects of weather on mountain safety. Avalanche prediction and safety

<b>Module 2 Travel and Expedition Medicine</b>	
Member Selection	Personality and existing illness
Risk Assessment, Legal Aspects And Insurance	
Medical Kits	
Immunisations	
Malaria	
Other Animals That Cause Problems	Leeches, scorpions, snakes etc
Water And Food	Water purification systems
Gastroenteritis	Types and treatments
Hygiene	
Sexual Health	Health and contraception on expeditions
Dental	Preparation and field treatment
Rescue	International aspects. Evacuation planning. First Aid training for team members

<b>Module 3 Mountain Rescue and Traumatology</b>	
Organisation	Teams in UK and abroad
Communications	

<b>Appendix 2. Further Reading</b>			
Name	Author	Publisher and Date	Comments
The High Altitude Medicine Handbook	Andrew Pollard, David Murdoch	Radcliffe Medical Press 2003	Updated, very useful basic reference text
High Altitude Medicine and Physiology	Michael Ward, James Milledge and John West	Arnold 2000	Expensive, but current definitive text
Medex		www.medex.org.uk	
JSP 419			Adventurous training courses
Expedition Medicine	David Warrell, Sarah Anderson	Profile Books 2002	Good, basic advice for a variety of expedition environments
The Mountain Skills Training Handbook	Pete Hill, Stuart Johnston	David and Charles 2000	Current definitive text for mountaineering skills
The Handbook of Climbing	Allen Fyffe, Iain Peter	Pelham Books 1997	Thorough text in climbing and mountaineering
IKAR		www.ikar-cisa.org	
ISMED		www.ismmed.org	
UIAA		www.uiaa.ch	

<b>Module 3. Mountain Rescue and Traumatology</b>	
Organisation	Teams in UK and abroad
Communications	
Patient Assessment	
Improvised Rescue Techniques	
Rescue Techniques	Accepted search and rescue techniques
Patient Packaging	
Patient Transport	
Helicopters	Type, costs, working environment and limitations
Field Treatments	Drugs, IV fluids, chest drain, immobilisation
Analgesia	Types, routes of administration and internal regulations in controlled drug use

<b>Module 4. Personal Mountaineering Skills</b>	
Navigation	Effective navigation in poor visibility including darkness
Shelter	Use of group shelters, tents and snow-holes Patient Assessment
Personal Care	Basic tenets of personal administration in the field
Technical	Construct belays on snow, rock and ice
Avalanche And Weather	Basic knowledge of weather systems and avalanche safety. Conduct searches with/without avalanche transceivers
Rescue	Abseil, prussic, arrange simple hoist and crevasse rescue