

THE FIRST PORT OF CALL FOR THOSE
FIRST AT THE SCENE

OXFORD HANDBOOK OF PRE-HOSPITAL CARE

A comprehensive guide to all
conditions encountered in the
immediate care setting

Easily accessible, authoritative,
and evidence-based
information at your fingertips

Incorporates national and
international guidelines and
protocols

Ian Greaves
Keith Porter

OXFORD MEDICAL PUBLICATIONS

**Oxford Handbook of
Pre-Hospital
Care**

Published and forthcoming Oxford Handbooks

Oxford Handbook of Clinical Medicine 7/e
Oxford Handbook of Clinical Specialties 7/e
Oxford Handbook of Acute Medicine 2/e
Oxford Handbook of Anaesthesia 2/e
Oxford Handbook of Applied Dental Sciences
Oxford Handbook of Cardiology
Oxford Handbook of Clinical Dentistry 4/e
Oxford Handbook of Clinical and Laboratory Investigation 2/e
Oxford Handbook of Clinical Diagnosis
Oxford Handbook of Clinical Haematology 2/e
Oxford Handbook of Clinical Immunology and Allergy 2/e
Oxford Handbook of Clinical Pharmacy
Oxford Handbook of Clinical Surgery 2/e
Oxford Handbook of Critical Care 2/e
Oxford Handbook of Dental Patient Care 2/e
Oxford Handbook of Dialysis 2/e
Oxford Handbook of Emergency Medicine 3/e
Oxford Handbook of Endocrinology and Diabetes
Oxford Handbook of ENT and Head and Neck Surgery
Oxford Handbook for the Foundation Programme
Oxford Handbook of Gastroenterology and Hepatology
Oxford Handbook of General Practice 2/e
Oxford Handbook of Genitourinary Medicine, HIV and AIDS
Oxford Handbook of Geriatric Medicine
Oxford Handbook of Medical Sciences
Oxford Handbook of Nutrition and Dietetics
Oxford Handbook of Neurology
Oxford Handbook of Obstetrics and Gynaecology
Oxford Handbook of Oncology 2/e
Oxford Handbook of Ophthalmology
Oxford Handbook of Palliative Care
Oxford Handbook of Practical Drug Therapy
Oxford Handbook of Psychiatry
Oxford Handbook of Public Health Practice 2/e
Oxford Handbook of Rehabilitation Medicine
Oxford Handbook of Respiratory Medicine
Oxford Handbook of Rheumatology 2/e
Oxford Handbook of Tropical Medicine 2/e
Oxford Handbook of Urology

Oxford Handbook of Pre-Hospital Care

Ian Greaves

Visiting Professor of Emergency Medicine
University of Teesside, UK;
Consultant in Emergency Medicine
British Army

and

Keith Porter

Professor of Clinical Traumatology
University Hospital
Birmingham, UK

OXFORD
UNIVERSITY PRESS

OXFORD

UNIVERSITY PRESS

Great Clarendon Street, Oxford OX2 6DP

Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
and education by publishing worldwide in

Oxford New York

Auckland Cape Town Dar es Salaam Hong Kong Karachi

Kuala Lumpur Madrid Melbourne Mexico City Nairobi

New Delhi Shanghai Taipei Toronto

With offices in

Argentina Austria Brazil Chile Czech Republic France Greece

Guatemala Hungary Italy Japan Poland Portugal Singapore

South Korea Switzerland Thailand Turkey Ukraine Vietnam

Oxford is a registered trade mark of Oxford University Press
in the UK and in certain other countries

Published in the United States

by Oxford University Press, Inc., New York

© Oxford University Press 2007

The moral rights of the authors have been asserted

Database right Oxford University Press (maker)

First published 2007

All rights reserved. No part of this publication may be reproduced,
stored in a retrieval system, or transmitted, in any form or by any means,
without the prior permission in writing of Oxford University Press,
or as expressly permitted by law, or under terms agreed with the appropriate
reprographics rights organization. Enquiries concerning reproduction
outside the scope of the above should be sent to the Rights Department,
Oxford University Press, at the address above

You must not circulate this book in any other binding or cover
and you must impose the same condition on any acquirer

British Library Cataloguing in Publication Data

Data available

Library of Congress Cataloging in Publication Data

Data available

Typeset by Newgen Imaging Systems (P) Ltd., Chennai, India

Printed in Italy

on acid-free paper by

LegoPrint S.p.A.

ISBN 0-19-851584-7 (flexicover: alk. paper) 978-0-19-851584-5 (flexicover: alk. paper)

10 9 8 7 6 5 4 3 2 1

Foreword

By Rudy Crawford

There have been many changes in clinical medicine and in the UK National Health Service since the publication of *Pre-Hospital Medicine: The Principles and Practice of Immediate Care*, in 1999.¹ Advances in the treatment of cardiac emergencies have moved time critical interventions such as thrombolysis for acute myocardial infarction to the prehospital arena, while in-hospital primary percutaneous coronary intervention is increasingly the treatment of choice in hospitals for patients with acute coronary syndromes. The introduction of thrombolysis for acute ischaemic stroke (brain attack) is a time critical treatment that places further pressure on pre-hospital practitioners involved in the care of patients with acute cerebrovascular emergencies. These developments have increasing implications for those involved in pre-hospital care, which is the first step in the process of care for the acutely ill and injured. In addition, changes in primary care have resulted in many general practitioners no longer providing 24-hour care. This has left a gap in health-care provision, which is driving the development of the role of existing pre-hospital care providers to include activities previously undertaken by medical practitioners only, and is introducing new roles, such as the emergency care practitioner, to fill the unmet need for out-of-hours care.

The rapidity of National Health Service reform means that most of these changes are being introduced without any clinical evidence base to support their effectiveness or appropriateness. There has been very little research done to demonstrate the value of advanced pre-hospital care, although there is some evidence in the area of basic life support and defibrillation. Consequently, defibrillation has moved from being an advanced life support technique to a basic one and volunteer first aiders and other lay people have been trained in its use with additional lives being saved. In the past ten years, the Faculty of Pre-hospital Care has become firmly established as the authoritative body in the field of pre-hospital care, both setting and raising standards and supporting research to provide a firm evidence base for what we do.

Pre-hospital care is becoming increasingly specialized and may eventually be recognized as a separate subspecialty within Emergency Medicine. Nowadays, practitioners who are committed to pre-hospital care not only have to be competent in dealing with individual casualties in an environment that brings unique challenges, but also increasingly have to be able to respond effectively to civil emergencies involving mass casualties or terrorist threats which include bomb, chemical, biological, radiological, or nuclear threats. The Faculty has developed a structured training and examination syllabus which is open to medical and non-medical practitioners.

¹ Greaves I and KM Porter (eds) (1999). *Pre-Hospital Medicine: The Principles and Practice of Immediate Care*. Arnold, London.

Membership of the Faculty is open to nurses, ambulance service staff, and voluntary aid society members as well as medical practitioners, reflecting the Faculty's commitment to improving pre-hospital care across the whole spectrum of practice and encouraging a multidisciplinary approach. The authors are prominent members of the Faculty and serve on its Board of Management. This comprehensive book deals with all aspects of pre-hospital care in a pragmatic down to earth style, which encompasses best practice and is also underpinned by the currently available research evidence. The discerning reader will find numerous pearls which will be relevant to them as doctors, nurses, paramedics, and voluntary aid society members alike.

Rudy Crawford
MBE BSc (Hons) MB ChB FRCS (Glasg) FCEM
Consultant in Accident and
Emergency Medicine and Surgery
Glasgow Royal Infirmary and Chairman
St Andrew's Ambulance Association
September 2006

Foreword

By Fiona Moore

The publication of an Oxford Handbook has to be a defining moment in the recognition of the specialty of Pre-hospital Care, which has existed, often unsung and practiced by a relatively small number of enthusiasts, for many years. This handbook joins a comprehensive list of publications covering almost forty very diverse specialities. It is perhaps unique in that it covers an area which is increasingly recognized as a vital part in the continuum of patient care, even by doctors who still treat patients as if they had collapsed or received injuries just outside the doors of the Emergency Department. It is an area of care often practiced in difficult circumstances when compared to hospital medicine, with a sometimes inadequate history, poor lighting, inclement weather, hostile conditions, and limited assistance, both in terms of personnel and equipment.

Pre-hospital care is an environment well known to ambulance services, historically regarded as the health arm of the emergency services but increasingly regarded as the emergency arm of the health service. With increasing integration between primary and secondary care ambulance staff and other pre-hospital care practitioners have opportunities to assume even greater responsibility for delivering care outside hospital, as highlighted within the recent Ambulance Service Review *Taking Healthcare to the Patient*.¹

The emphasis of the specialty has changed from having a purely trauma focus to include all the conditions which might present to the pre-hospital practitioner. The concept of such a practitioner is an inclusive one covering individuals from a medical, nursing or paramedic background, whether working for an Immediate Care scheme, for the Armed Services or an ambulance service, whether from the statutory, private, or voluntary sector. The settings include primary care emergencies, sporting and mass gathering events but also cover the less common but very challenging areas of CBRN and major incident management. The conditions covered include not only those commonly dealt with in the emergency hospital setting, such as acute medical, surgical, and trauma emergencies, paediatrics, obstetrics, and gynaecology but also the less common and unique pre-hospital areas of mass gatherings and sporting events.

Given the variety of clinical settings that may arise, many of the existing sources of written advice are too large and unwieldy to be of much help in the emergency setting. Hospital doctors are very familiar with the assistance afforded by the small, easily referenced and robust handbook which is small enough to fit in the pocket of a white coat, the Emergency Department scrubs, or to keep nearby the phone. This Handbook will fill an important role both as an educational tool well as an aide-memoire when the practitioner might most need it. This is due to the authors

¹ Department of Health (2005). *Taking healthcare to the patient: Transforming NHS ambulance services*. DH, London.

being well known within the pre-hospital care community, being at the leading edge of pre-hospital training and education, and having immense credibility through their practical day-to-day involvement in the specialty. With its succinct style, comprehensive contents, and practical advice, this book will find its way into the Hi Viz jacket pockets, Thomas packs, and the vehicles of pre-hospital practitioners. It will be an invaluable quick reference guide both in the emergency setting, for those in training within the specialty and those working towards the Diploma and Fellowship examinations set by the Faculty of Pre-hospital Care.

Fionna Moore
Medical Director
London Ambulance Service
September 2006

Contents

Foreword by Rudy Crawford *v*

Foreword by Fionna Moore *vii*

Abbreviations *xi*

Note: the content of individual chapters is detailed on each chapter's first page

| | | |
|----|---|-----|
| 1 | An approach to pre-hospital care | 1 |
| 2 | Acute medical and surgical problems | 69 |
| 3 | Trauma | 169 |
| 4 | Formulary | 307 |
| 5 | Analgesia and anaesthesia | 359 |
| 6 | Poisoning and substance abuse | 396 |
| 7 | Acute psychiatric emergencies | 481 |
| 8 | Paediatrics | 495 |
| 9 | The hostile environment | 553 |
| 10 | Major incident management and triage | 575 |
| 11 | Chemical, biological, radiological, and nuclear (CBRN) incidents | 619 |
| 12 | Emergency obstetrics and gynaecology | 641 |
| 13 | Patient rescue and transportation | 681 |
| 14 | Sporting events and mass gatherings | 703 |

Index *707*

Oxford University Press makes no representation, express or implied, that the drug dosages in this book are correct. Readers must therefore always check the product information and clinical procedures with the most up-to-date published product information and data sheets provided by the manufacturers and the most recent codes of conduct and safety regulations. The authors and the publishers do not accept responsibility or legal liability for any errors in the text or for the misuse or misapplication of material in this work.

Abbreviations

| | |
|--------|---|
| AAA | abdominal aortic aneurysm |
| ac | alternating current |
| ACCOLC | access overload control |
| ACE | angiotensin converting enzyme |
| ADI | acute decompression illness |
| A&E | accident and emergency |
| AED | automated external defibrillator |
| AF | atrial fibrillation |
| AIS | abbreviated injury scale |
| ALS | advance life support |
| ALSO | advanced life support obstetrics |
| AOC | air operations centre |
| AP | anteroposterior |
| APLS | advanced paediatric life support |
| ARDS | acute respiratory distress syndrome |
| ATLS | advance trauma life support |
| AV | atrioventricular |
| AVLS | automatic vehicle location system |
| AVNRT | AV nodal re-entrant tachycardia |
| BA | biological agent |
| BASICS | British Association for Immediate Care |
| BLS | basic life support |
| BP | blood pressure |
| BTLS | basic trauma life support |
| CAA | Civil Aviation Authority |
| CAD | computer aided dispatch |
| CBRN | chemical, biological, radiological, and nuclear |
| CCS | casualty clearing station |
| cm | centimetre |
| COPD | chronic obstructive pulmonary disease |
| CPP | cerebral perfusion pressure |
| CPR | cardiopulmonary resuscitation |
| CSF | cerebrospinal fluid |
| CVA | cerebrovascular accident |
| DAI | diffuse axonal injury |

| | |
|---------|--|
| dc | direct current |
| DipIMC | Diploma in Immediate Medical Care |
| DKA | diabetic ketoacidosis |
| DNR | do not resuscitate |
| DVT | deep vein thrombosis |
| ECG | electrocardiogram |
| EMD | electromechanical association |
| EMJ | <i>Emergency Medicine Journal</i> |
| EPO | emergency planning officer |
| ERL | emergency reference level |
| ET | endotracheal |
| FIMC | Fellowship in Immediate Medical Care |
| FPOS | first person on scene |
| GCS | Glasgow Coma Scale |
| GTN | Glycerol trinitrate |
| HAZCHEM | hazardous chemical |
| HAZMAT | hazardous material |
| HEMS | helicopter emergency medical service |
| hr | hour |
| ICP | intracranial pressure |
| IHCD | Institute for Health Care Development |
| IHD | ischaemic heart disease |
| ILMA | intubating laryngeal mask airway |
| im | intramuscular |
| iv | intravenous |
| JRCALC | Joint Royal Colleges Ambulance Liaison Committee |
| JVP | jugular venous pressure |
| kg | kilogram |
| l | litre |
| LMA | laryngeal mask airway |
| LSD | lysergic acid diethylamide |
| m | metre |
| MAC | military aid to the civil powers |
| MAOI | monoamine oxidase inhibitor |
| MAP | mean arterial pressure |
| MCA | Maritime and Coastguard Agency |
| mcg | microgram |
| MDI | metered dose inhaler |
| mg | milligram |
| MI | myocardial infarction |
| MICP | mean intracranial pressure |

| | |
|-------|---|
| MIMMS | major incident medical management and support |
| min | minutes |
| ml | millilitres |
| mm | millimetres |
| MRCC | Maritime Rescue Co-ordination Centres |
| MRSC | Maritime Rescue Sub-centres |
| NAIR | National Arrangements for Incidents involving Radioactivity |
| NPIS | National Poisons Information Service |
| NRPB | National Radiological Protection Board |
| NSAID | non-steroidal anti-inflammatory drug |
| ORCON | operational research consultantancy |
| PASG | pneumatic antishock garment |
| PCI | percutaneous coronary intervention |
| PE | pulmonary embolism |
| PEA | pulseless electrical activity |
| PEFR | peak expiratory flow rate |
| PEPP | paediatrics for pre-hospital professionals |
| PHEC | pre-hospital emergency care |
| PHPLS | pre-hospital paediatric life support |
| PHTC | pre-hospital trauma course |
| PHTLS | pre-hospital trauma life support |
| PPE | personal protective equipment |
| PR | per rectum |
| PTS | paediatric trauma score |
| RCSEd | Royal College of Surgeons of Edinburgh |
| RED | Russell extrication device |
| RICE | rest, ice, compression, and elevation |
| RNLI | Royal National Lifeboat Institution |
| RSI | rapid sequence induction |
| RTC | road traffic collision |
| RTS | revised trauma score |
| RVP | rendezvous point |
| SAH | subarachnoid haemorrhage |
| sc | subcutaneous |
| sec/s | second/s |
| SIDS | sudden infant death syndrome |
| SSRI | selective serotonin reuptake inhibitors |
| stat | immediately |
| SVT | supra ventricular tachycardia |
| TCA | tricyclic antidepressant |
| tds | three times daily |

| | |
|-------|--------------------------------------|
| TED | Telford extrication device |
| TIA | transient ischaemic attack |
| TREM | transport emergency |
| TRISS | trauma score – injury severity score |
| v | volts |
| VF | ventricular fibrillation |
| VT | ventricular tachycardia |
| WRVS | Women’s Royal Voluntary Service |

An approach to pre-hospital care

| | |
|--|----|
| Why bother? | 2 |
| Getting started | 4 |
| Training and education | 6 |
| Qualifications in pre-hospital care | 10 |
| Accreditation and re-accreditation | 12 |
| Medical equipment | 14 |
| Personal protective equipment | 20 |
| Packaging | 22 |
| A pre-hospital formulary | 24 |
| Drug security | 26 |
| Things to take to a call or keep in your vehicle | 28 |
| Transport | 30 |
| The law and pre-hospital care | 32 |
| Insurance | 40 |
| Getting there: safe driving to the scene | 42 |
| Record keeping | 46 |
| The emergency services: the police | 48 |
| The emergency services: the fire service | 52 |
| The emergency services: the ambulance service | 56 |
| The emergency services: other agencies | 58 |
| The Faculty of Pre-hospital Care | 60 |
| BASICS and BASICS Scotland | 62 |
| Suggested reading | 64 |
| Useful addresses | 66 |

Why bother?

There are very few prospective randomized clinical studies proving the value of immediate medical care and its impact on morbidity and mortality. Whilst there are reported series on the value of pre-hospital basic life support and defibrillation, there are very few reports relating to trauma. Yet many people continue to sacrifice their free time to provide medical care everywhere from racecourses to oil rigs, from country cottages to tower blocks. Every active immediate care doctor can recount an incident where a life was saved or a tragic future avoided by early acute medical intervention at scene. Whether the life-saving intervention is the establishment of a patent airway, the splintage of a shattered pelvis, the rapid extrication of an entrapped patient, or defibrillation of a VF arrest, we can all recollect an incident where being there *did* make a difference. In addition, although in many cases intervention alters neither long-term morbidity nor mortality, there can be no doubt that it greatly improves the patient's comfort and confidence, thereby making a potentially dreadful experience slightly less so.

For all these reasons, pre-hospital care is supremely worth doing. It is also a hugely challenging (and sometimes frustrating) speciality which demands a great deal of its practitioners. Despite the difficult situations in which it is practiced, there can be no excuse for anything but the highest professionalism. '*Better than nothing*' is no justification for getting involved: the keys to effective pre-hospital care are education, practice, experience, and revalidation—and enthusiasm. These are the keys to one of the most challenging branches of modern medicine.

IG
KP

North Yorkshire, 2006

This page intentionally left blank

Getting started

Like any other subject, the secret of success in pre-hospital care is preparation. This chapter will help anyone beginning to work in the pre-hospital care environment. Having acquired the interest and enthusiasm, attention must be given to the following:

- Training
- Reading
- Equipment
 - Personal
 - Medical
- Transport
- Insurance
- Joining a scheme
- Validation (and revalidation).

Each of these subjects is discussed in this chapter.

This page intentionally left blank

Training and education

As in any other branch of medicine, appropriate training is essential. Experience is important, but knowing how to 'do it right' is crucial. The Faculty of Pre-hospital Care of the Royal College of Surgeons of Edinburgh, BASICS (the British Association for Immediate Care), and BASICS Scotland organize or accredit a range of courses (for contact details see p.66). These courses are designed to be relevant to a wide range of different professional backgrounds and skill levels.

Pre-hospital Emergency Care (PHEC)

The three-day *Pre-hospital Emergency Care* course and certificate is organized jointly by BASICS, BASICS Scotland, and the Faculty of Pre-hospital Care of the Royal College of Surgeons of Edinburgh. Advice regarding the content of the course is also taken from ambulance service representatives and representatives of the Royal College of Nursing.

This course is open to anyone who may be called upon to deal with emergency situations including general practitioners, practice nurses, emergency services personnel, paramedics, voluntary aid society members, and those involved in sports medicine. Successful completion of the course and end-of-course assessment leads to the awarding of the PHEC certificate.

The course covers all aspects of emergency care in a pre-hospital setting in relation to adults concentrating on medical and trauma emergencies with an introduction to paediatric emergencies and trauma and major incident management. Course details can be obtained from BASICS Education or BASICS Scotland (see p.66).

First Person on Scene (FPOS)

The *First Person on Scene* awards have been developed by the Institute for Health Care Development (IHCD) and the Faculty of Pre-hospital Care. Two awards are currently available:

- First Person on Scene (Basic)—10 hours' training (including assessments).
- First Person on Scene (Intermediate)—30 hours' training (including assessments).

The content of the two levels is designed to reflect how long responders are likely to have to deal with a patient before the arrival of an ambulance. For the Basic Award this is up to 20 minutes; for the Intermediate Award, up to 40 minutes. Additional skills can be added to both levels of award to accommodate specific responder requirements.

To achieve the FPOS award (at either level) both knowledge and practical assessments have to be successfully completed. Questions are selected from central question banks and training can only be delivered at IHCD accredited centres. Clinical endorsement of the FPOS awards, assessment, and training support materials are the responsibility of the Faculty of Pre-hospital Care. Further information is available from Edexcel or the Faculty of Pre-hospital Care (see p.66).

Pre-hospital Trauma Course (PHTC)

This is a two-day course with 19 hours of highly practical educational activity. Topics include scene safety, triage, clinical assessment, and treatment. There is an emphasis on entrapment and extrication. Candidates are individually assessed on the practical aspects of pre-hospital trauma care. Further information is available from the Faculty of Pre-hospital Care (see p.66) or from www.basics.org.uk

Basic Trauma Life Support (BTLS)

Basic Trauma Life Support courses were developed in the USA. BTLS aims to provide pre-hospital responders with a structured approach to the rapid assessment, appropriate treatment, and evacuation of injured patients. The 'advanced' version of the course is aimed at paramedics and other advanced-level providers (such as trauma nurses) permitted to provide invasive treatment. There is also a 'basic' course, aimed at providers of pre-hospital care such as ambulance technicians and fire-fighters, which is limited to non-invasive skills. Both versions of the course are 16 hours in duration and are endorsed by the American College of Emergency Physicians and the (USA) National Association of Emergency Medical Services Physicians. Contact details of BTLS chapters that run courses worldwide (including the UK) can be found at www.btls.org/organ/chapters.htm

Pre-hospital Trauma Life Support (PHTLS)

Pre-hospital Trauma Life Support training was also developed in the USA and, like BTLS, offers basic and advanced courses, each of two days' duration and aimed at similar audiences. The USA National Association of Emergency Medical Technicians oversees PHTLS in conjunction with the Committee on Trauma of the American College of Surgeons. The courses have similar aims to BTLS, providing a structured approach for the rapid identification, treatment, and extrication of time-critical trauma patients. The strategies taught are designed to integrate with the Advanced Trauma Life Support (ATLS) approach to trauma management, facilitating seamless care between the pre-hospital and emergency department settings. In the UK, PHTLS courses are accredited by the Royal College of Surgeons of England. Details of courses run in the UK can be obtained from www.rcseng.ac.uk

Pre-hospital Paediatric Life Support (PHPLS)

Pre-hospital Paediatric Life Support aims to provide paramedics, nurses, and doctors with the skills to identify and manage seriously ill and injured children in the pre-hospital setting. Although its content is strongly allied to the Advanced Paediatric Life Support (APLS) course, it differs in addressing the practical restrictions on treatment in the out-of-hospital setting and stresses the importance of identifying patients requiring early and rapid transport to hospital. The course is accredited by the UK Advanced Life Support Group and details can be obtained from www.alsg.org/main_paed_resus.htm

Paediatrics for Pre-hospital Professionals (PEPP)

Paediatrics for Pre-hospital Professionals was developed in the USA by the American Academy of Pediatrics and is offered in two-day 'advanced' and one-day 'basic' versions, the former being aimed at paramedics, doctors, and nurses. Training may also be delivered on a modular basis. The aims of PEPP are similar to those of PHPLS, although at the time of writing PEPP is yet to be Anglicized and is not directly accredited by a UK professional body. Courses are currently run by BASICS (see p.66). Details of the PEPP programme can be found at www.peppsite.com

Advanced Life Support (ALS)

Advanced Life Support is a UK-developed Europe-wide course which teaches the management of cardiac arrest and peri-arrest arrhythmias, including the skills of manual defibrillation, drug administration, and endotracheal intubation. It is aimed at doctors, nurses, and paramedics and, whilst it emphasizes in-hospital care, the principles taught may be easily adapted to an out-of-hospital setting. Details of courses can be obtained from www.resus.org.uk/pages/alsinfo.htm

Advanced Life Support Obstetrics (ALSO)

Advanced Life Support Obstetrics aims to teach advanced providers who may be involved in emergency obstetric care. Although based on in-hospital scenarios, the principles taught may be adapted for use in an out-of-hospital setting. Details of courses can be found at www.also.org.uk/providercourses.asp

Madingley Immediate Care Course

Run by BASICS Education, this five-day course is primarily for those with experience in immediate care and has the aim of developing and enhancing their skills in dealing with medical and other emergencies encountered in all fields of pre-hospital medicine. The course is an effective preparation for the Diploma in Immediate Care Examination. Contact: BASICS Education (see p.66).

Major Incident Medical Management and Support (MIMMS)

Developed by the Advanced Life Support Group, the MIMMS course is now internationally accepted as the standard training programme for all those likely to be involved in the medical management of a major incident. The three-day course consists of two days of lectures, tabletop exercises, and practical skill stations such as radio voice procedure and triage. This is followed by a written and practical assessment. The final day consists of two major incident exercises, each based at a location near the course venue which might be considered at risk of a real major incident. These venues have included football grounds, industrial plants, and transport facilities. A one-day 'introductory' MIMMS course and a specialist chemical incident course are also now available. Contact: Advanced Life Support Group (see p.66).

Diploma in Immediate Care Preparation Course

This intensive five-day course for the Diploma in Immediate Care is run by the Department of Academic Emergency Medicine of the University of Teesside at the James Cook University Hospital Middlesbrough. It is designed to prepare candidates for the diploma examination. Contact www.teessideEM.org.uk for details or see p.67.

A similar course is offered by the West Midlands CARE Team based in Birmingham (details from www.wmcareteam.org.uk or from the Faculty of Pre-hospital Care).

- [**download online Lost in a Good Book \(Thursday Next, Book 2\) here**](#)
- [Quine \(Arguments of the Philosophers\) book](#)
- [read online Redirect: The Surprising New Science of Psychological Change pdf, azw \(kindle\), epub, doc, mobi](#)
- [The Magical Worlds of Harry Potter \(Revised Edition\) for free](#)
- [**Six Sigma with R: Statistical Engineering for Process Improvement \(Use R!\) for free**](#)

- <http://www.1973vision.com/?library/Deaf-Sentence.pdf>
- <http://nexson.arzamaszev.com/library/Quine--Arguments-of-the-Philosophers-.pdf>
- <http://transtrade.cz/?ebooks/Teaching-and-Researching--Listening--Applied-Linguistics-in-Action-.pdf>
- <http://schrolf.de/books/Restoring-the-Lost-Constitution--The-Presumption-of-Liberty.pdf>
- <http://berttrotman.com/library/Living-Cuisine--The-Art-and-Spirit-of-Raw-Foods--Avery-Health-Guides-.pdf>