Pre-Hospital Obstetric Emergency Training
The Practical Approach

Advanced Life Support Group
EDITED BY
Malcolm Woollard
Kim Hinshaw
Helen Simpson
Sue Wieteska
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Note to text:
Drugs and their doses are mentioned in this text. Although every effort has been made to ensure accuracy, the writers, editors, publishers and printers cannot accept liability for errors or omissions. The final responsibility for delivery of the correct dose remains with the practitioner administering the drug.
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Dedication

With thanks to our families for their tolerance and support during the development of this manual and its associated course.
Foreword

I was delighted and pleased to read ‘POET’ which gives practical advice to a range of practitioners. Although it is intended for pre-hospital practitioners there is valuable information for nurses, midwives, general practitioners (GPs) and pre- and post-registration doctors. The chapters cover a wide variety of topics starting from the organisation of obstetric services to details of anatomy, physiology and normal delivery. Once this is covered, the chapters logically proceed to a general approach to the obstetric patient followed by management of emergencies in early and late pregnancy and during delivery. The illustrations and flow charts of care pathways make it simple to read and to keep in mind the logical steps to be taken to provide the best care.

The chapter on ‘Care of the baby at birth’ is a welcome chapter for such a book. The management of non-obstetric emergencies, cardiac arrest and shock in pregnancy has different management issues compared with a woman who is not pregnant. The knowledge needed for these is provided in a way that could be easily understood. This chapter will be useful for a different range of practitioners.

POET is a comprehensive book that covers the knowledge needed for pre-hospital practitioners. But I would recommend this book for a wider audience of nurses, midwives, GPs and A&E doctors who may face the pregnant mother in an outside hospital setting or in a hospital with no maternity service provision. The authors deserve credit for simplifying a complex subject and for covering the knowledge needed on this topic for pre-hospital practitioners.

S. Arulkumaran FRCOG, PhD
Professor and Head of Obstetrics and Gynaecology
St George’s University of London
November 2009
Preface

Pre-hospital obstetric incidents make up a significant proportion of the more costly litigation claims against UK ambulance services. These claims are based either on an alleged failure to identify and manage a problem or lack of appropriate equipment for the treatment of a preterm baby.

For a number of years after the UK national paramedic curriculum was introduced in the UK, it included no specific training on the management of obstetric emergencies at an ‘advanced life support’ level. Most staff received only a half-day of lectures during their initial ambulance technician training at the beginning of their career. Since 1999, advanced obstetrics and gynaecology became a mandatory part of the paramedic course for new entrants but with the expectation that existing paramedics would receive update training. Our experience has indicated, however, that paramedics in many parts of the UK have not had the opportunity to do so.

A confidential enquiry into maternal and child health (CEMACH) report has indicated that many of the pregnant women dying ‘had chaotic lifestyles and found it hard to engage with maternity services’. The ambulance service may be the initial contact with the health service for these patients and their peers who become unwell but are fortunate enough to survive. The CEMACH report identifies the need for a widened awareness of the risk factors and early signs and symptoms of potentially serious problems in pregnancy, and makes a number of key recommendations that could be addressed in part by appropriately trained pre-hospital practitioners. For example, it states:

All clinical staff must undertake regular, written, documented and audited training for:

- The identification, initial management and referral for serious medical and mental health conditions which, although unrelated to pregnancy, may affect pregnant women or recently delivered mothers
- The early recognition and management of severely ill pregnant women and impending maternal collapse
• The improvement of basic, immediate and advanced life support skills. A number of courses provide additional training for staff caring for pregnant women and newborn babies.

There is also a need for staff to recognise their limitations and to know when, how and whom to call for assistance. This manual and its associated Advanced Life Support Group training course (also called POET) hope to meet these educational needs for a range of pre-hospital practitioners. Both the text and the course have been developed by a multi-disciplinary team of senior paramedics, consultant obstetricians and midwives, all of whom are practicing clinicians and experienced educators. POET course teaching teams have a similar multi-professional membership with a shared philosophy of combining pre-hospital and obstetric expertise. Although we anticipate that paramedics and pre-hospital physicians will make up the bulk of our readership and course candidates, POET will also be of value to nurses working in walk-in and unscheduled care centres and to midwives and to GPs – particularly those working at a distance from further support.

It is our sincere hope that POET will build the confidence and competence of pre-hospital practitioners and thus contribute to reducing the incidence of maternal and fetal mortality and morbidity.

Malcolm Woollard,
Helen Simpson,
Kim Hinshaw
and Sue Wieteska
November 2009
Acknowledgements

A great many people have worked hard to produce this book and the accompanying course. The editors thank all the contributors for their efforts and all POET providers and instructors who took the time to send their comments during the development of the text and the course, in particular Bernadette Norman who completed a full review of the text.

We also acknowledge Rachel Adams at ALSG for her support. We are also greatly indebted to Kate Wieteska for producing the first draft of the line drawings that illustrate the text and thank the ALSG/CAI Emergency Maternal and Child Health (EMCH) programme and the ALSG Managing Obstetric Emergencies and Trauma (MOET) course for the shared use of some of their line drawings.

Finally, we thank, in advance, those of you who will attend the POET course; no doubt, you will have much constructive critique to offer.
Contact details and website information

ALSG: www.alsg.org
BestBETS: www.bestbets.org

For details on ALSG courses visit the website or contact:
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Updates
The material contained within this book is updated on approximately a four-yearly cycle. However, practise may change in the interim period. We will post any changes on the ALSG website, so we advise you to visit the website regularly to check for updates (url: www.alsg.org – updates are on the course pages). The website will provide you with a new page to download and replace the existing page in your book.

References
To access references visit the ALSG website www.alsg.org – references are on the course pages.

On-line feedback
It is important to ALSG that the contact with our providers continues after a course is completed. We now contact everyone 6 months after his or her course has taken place asking for on-line feedback on the course. This information is then used whenever the course is updated to ensure that the course provides optimum training to its participants.
CHAPTER 1

Obstetric services

OBJECTIVES

Having read this chapter, the practitioner should be able to:

- understand the relationship between the different professional groups involved in the management of the obstetric patient
- understand the function and importance of hand-held records and how to use them effectively

ORGANISATION OF OBSTETRIC SERVICES, EPIDEMIOLOGY OF OBSTETRICS AND GYNAECOLOGICAL EMERGENCIES AND ROLE OF THE AMBULANCE SERVICE, GENERAL PRACTITIONER AND MIDWIFE

The organisation

Obstetrics is a multidisciplinary specialty in which midwifery and medical staff work together to provide optimal care. The majority of care is performed in the out-of-hospital setting and by community midwives. Inpatient antenatal care is now uncommon and not usually for long periods. Similarly, the postnatal length of stay for all women, even those with Caesarean section, has also been reduced, with the majority of care occurring in the community.

General practitioners (GPs) have in recent years become less and less involved in all aspects of pregnancy care, although there are still a small number who are involved in care in labour.

Place of delivery

Women undergo a risk assessment prior to delivery to help them choose where to deliver. This assessment is undertaken by their
midwife in conjunction with medical staff, if required, and will involve assessment of previous medical history, previous obstetric history and the progress of the current pregnancy. They will then be offered advice to help them choose the place of birth.

A woman may choose to have a home delivery, deliver in a midwifery-led unit which may or may not be attached to a consultant-led unit or in a consultant-led unit. Although in the majority of cases women ‘choose’ the appropriate place to deliver, midwives have a duty of care to support the woman’s final choice of place for delivery even if there are factors that make this a high-risk decision. Occasionally this causes difficulties, for example, in home delivery where access is poor, there is no phone signal or the home environment is less than ideal. Some women with a high-risk pregnancy also request home delivery.

**Mode of delivery**
The majority of deliveries are uncomplicated but the national Caesarean section rate is 23%. However, this rate varies significantly between units (range 15–30%). Caesarean section is major surgery and can have significant associated risks for both mother and baby.

**Common 999 emergencies**
- labour +/- delivery (term or preterm)
- bleeding antenatally or postnatally (including miscarriage) and postoperative gynaecological haemorrhage
- abdominal pain other than labour
- eclampsia (this is now less common, 2:10,000 cases due to the use of magnesium sulphate in hospital in at-risk cases; however, this does mean that one of the more common places to have a fit, will be in the community)
- prolapsed umbilical cord

**Transfer**
This occurs where risk factors develop before or during labour and after birth that necessitate moving the woman or baby from one location to another.

Transfer may be required from all places of delivery.

**Transfer from home delivery**
The commonest reasons for transfer are concerns about the progress of labour, fetal or maternal well-being, or neonatal well-being.
Transfer from midwifery-led unit

The commonest reasons for transfer are concerns about labour progress, fetal or maternal well-being, or neonatal well-being.

Transfer from a consultant-led unit

The commonest reason for transfer is the need to access a neonatal cot for the fetus either because the unit they are in does not have the appropriate neonatal facilities or all the cots are full. Occasionally women need to be moved to other units for maternal specialist care.

In all these scenarios, a midwife (or medical staff) will accompany the women and will be an invaluable source of advice and knowledge if problems occur during transfer. See Table 1.1 for the roles undertaken by clinical staff.

Top tip

If delivery is imminent, divert to the nearest unit rather than the planned unit.

Table 1.1 Roles of medical staff.

<table>
<thead>
<tr>
<th>Clinical condition</th>
<th>Paramedic</th>
<th>Midwife</th>
<th>GP (if on scene)</th>
<th>Obstetrician (via telephone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess</td>
<td>Assess</td>
<td>Assess</td>
<td>Assess</td>
<td>Advice on most appropriate receiving unit</td>
</tr>
<tr>
<td>Initiate holding treatment</td>
<td>ALS</td>
<td>Obstetric support</td>
<td>Assist with ALS Obstetric expertise</td>
<td>Advice on most appropriate receiving unit</td>
</tr>
<tr>
<td>Assist with ALS Obstetric expertise</td>
<td>Assist with ALS Obstetric support*</td>
<td>Advice on most appropriate receiving unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advice on timing/need for transfer</td>
<td>Advice on referring crew</td>
<td>Advice on timing/need for transfer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advice on Obstetric expertise</td>
<td>Obstetric expertise</td>
<td>General issues</td>
<td>Obstetric expertise</td>
<td></td>
</tr>
</tbody>
</table>

*Some GPs have specific expertise in obstetrics.
CHAPTER 1

Roles

Top tip
Many features of the clinical management of an obstetric patient during secondary transfer are similar to that required in the home or during primary hospital admission. For example, remember to transport the patient in the 15–30° left lateral tilt position.

Top tip
Scoop and run is often the way forward with obstetric emergencies.

Further information on the management of inter-hospital transfers generally and neonatal transfers specifically can be found in the STaR (P. Driscoll et al. 2006) and PaNSTaR (S. Byrne et al. 2008) textbooks respectively.

Admissions procedures
These depend on local policies. Obstetric patients are usually admitted directly to the maternity unit, such as a triage or assessment unit or labour ward. In the case of major trauma, obstetric patients should be transferred to the emergency department. In the case of medical problems admit via medical pathways.

In many units, cases with early pregnancy problems will be admitted to the gynaecology department via an early pregnancy assessment unit.

USING PATIENT HAND-HELD RECORDS
Most maternity units in the UK provide women with their own maternity hand-held notes (see Fig. 1.1). Women are reported to feel better informed by holding responsibility for these notes, and are more involved in their maternity care. Carrying these notes also gives them increased satisfaction in the promotion of communication between themselves and health care providers (DH 2006).

Many instances of adverse perinatal and maternal mortality and morbidity are potentially avoidable, and are often linked to a lack of communication (Elbourne et al. 1987). The hand-held maternity notes are, therefore, an important link for health care providers to improve care and reduce error.
Figure 1.1 Example front cover of Patient hand-held records.

Although there is widespread variation in maternity hand-held notes throughout the UK, the general principles apply throughout:

- The front cover will display the woman’s name, address, named midwife, consultant and GP.
- Information within the notes for the woman to read, including appropriate advice line numbers, screening tests and routine visits.
- The notes will identify whether the woman is on the low- or high-risk pathway of care. This is dependent on factors identified within this pregnancy or previous pregnancies and current medical condition.
- The antenatal section will display all screening tests performed, routine antenatal visits, scan results and fetal growth monitoring.
- There will be a section for the woman to complete a birth plan, in discussion with her midwife.
There is a labour and postnatal section, which also includes detailed information regarding the baby, such as condition at delivery, findings on the neonatal examination and details on feeding.

All investigations and screening tests will be reported.

**Most hand-held notes have an alert page or box.** This will identify any complications or potential complications, and may show a plan of care to address these complications. **Any health professional can and should annotate this page.**

There will be a section for correspondence between health care professionals, identifying potential problems and formulating plans of care. **Any health professional can and should annotate this page.**

Ambulance crews attending an obstetric patient who has not been transported to hospital should leave a copy of their patient report form in the hand-held records.

It is paramount that the hand-held notes accompany the woman for all hospital admissions and routine antenatal visits. However, the notes may not have been issued to a woman in very early pregnancy if she has not booked through her midwife. It is still worth checking with her.

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**SUMMARY OF KEY POINTS**

It is important that you are aware of the roles of other health care professionals in the care of the obstetric patient. Remember that any health professional can and should annotate the alert page in the patient’s hand-held notes.
CHAPTER 2
Law, ethics and governance related to pregnancy

OBJECTIVES
Having read this chapter, the practitioner should be able to:
• discuss the impact of obstetric-related incidents on litigation claims made against UK ambulance services
• describe the process of gaining consent from adult patients and minors
• discuss the importance of maintaining patient confidentiality and the legal context for this
• debate the appropriateness of pronouncing death in obstetric cases
• state the common causes of complaints
• define negligence and describe the components necessary to demonstrate its proof
• discuss the impact of varied cultural issues on the provision of obstetric care in the pre-hospital setting
• state the professional responsibilities of pre-hospital practitioners
• describe the process of medicines management in the pre-hospital setting
• discuss the role of the employer and the employee with respect to the Health and Safety at Work Act 1974

INTRODUCTION
A significant proportion of the more costly litigation claims made against UK ambulance services arise from pre-hospital obstetric incidents. Although in a 10-year period, obstetric cases consisted of only 13 of the total 272 claims, the average value of these cases was £815,000. Four were valued at more than £1 million. Claims were based on either an alleged failure to identify and manage a problem or a lack of appropriate equipment for the treatment of a
preterm baby. The largest claim was for £3,375,000 and related to an alleged lack of equipment to care for a baby born at 26 weeks (Dobbie and Cooke 2008).

Although the numbers of women and babies dying as a result of obstetric emergencies in the UK are small, some of these deaths might be prevented if effective training in the prompt recognition and management of these cases is undertaken by pre-hospital providers (Woollard et al. 2008). Although it could be argued that antenatal provision of preventive obstetric care is more effective than treating problems after they arise, the Confidential Enquiry into Maternal and Child Health (CEMACH) report suggests that many of the pregnant women who died ‘had chaotic lifestyles and found it hard to engage with maternity services’. One of its ‘top ten’ recommendations states:

All clinical staff must undertake regular, written, documented and audited training for:

- The identification, initial management and referral for serious medical and mental health conditions which, although unrelated to pregnancy, may affect pregnant women or recently delivered mothers
- The early recognition and management of severely ill pregnant women and impending maternal collapse
- The improvement of basic, immediate and advanced life support skills. A number of courses provide additional training for staff caring for pregnant women and newborn babies.

There is also a need for staff to recognise their limitations and to know when, how and whom to call for assistance. (CEMACH 2007c)

In 1999, a new obstetrics and gynaecology section was added to the paramedic manual and became a mandatory part of the course, and subsequently part of the requirements for paramedic registration (Dawson et al. 1999). It was expected that these materials would be taught to student paramedics over five days, and that paramedics who had already qualified in earlier years, would receive update training as a component of their mandatory three-yearly re-qualification classes. Anecdotal reports suggest, however, that these educational aspirations are often not met, with training sessions being limited in duration and often not being delivered by practicing obstetricians and midwives.

All registered health care professionals are ultimately responsible for their own competence, and this extends to identifying their own training needs and taking steps to ensure these are met. A strong motivation for doing so, other than the obvious one of
being able to meet patient’s needs, is individual accountability for practice. A failure to provide acceptable standards of care, not only risks the patient’s welfare but also the practitioner’s registration and ability to earn a living in their chosen career. Although obstetric emergencies are rare, the consequences of mishandling them can be particularly severe for mother and baby, and also for the pre-hospital practitioner.

CONSENT

Although it is incumbent upon all health care providers to practise only in the interests of their patients, this principle is sometimes misunderstood by paternalistic practitioners as overriding the wishes of the patient themselves. However, the need to obtain consent before providing treatment is paramount: all competent adults have an inherent right to self-determination, even if their wishes may result in harm to themselves. Significantly, in UK obstetric practice, the fetus itself has no legal rights independent of the mother until after delivery has occurred. One example is a mother who declines delivery by emergency Caesarean section when there is obvious evidence of potential hypoxia affecting the fetus in labour. If she is deemed to be competent in terms of making that decision, to enforce the operation would likely be viewed as an assault under criminal law.

Consent should, wherever possible, be provided on an informed basis. This requires that the patient not only understands what precise intervention is proposed, but has also been advised of the potential benefits and possible adverse effects of the treatment, and of the relative advantages and disadvantages of alternative therapeutic options. They must also understand that they can decline/refuse proposed treatment if they wish, but should be fully informed of the potential consequences of doing so, to themselves and their baby. Failure to fully explain to a patient what might go wrong if they do not receive the proposed care risks a charge of professional negligence. In these circumstances, it is critically important that the discussions should be carefully documented in detail in clinical records. Patients who decline/refuse treatment (or a recommendation for admission to hospital) should always be advised that they can call for further help at any time, and should be informed about any symptoms that might indicate their condition is deteriorating. Remember, administering treatment to a competent adult against their will exposes the practitioner to the possibility of being prosecuted for assault under criminal law. Simply ‘threatening’ to provide treatment against a person’s wishes could be judged as assault in common law.