

# EXTENDED MIDIRS ReView

## Saving mothers' lives: reviewing maternal deaths to make motherhood safer: 2006–08

The Eighth Report of the Confidential Enquiries  
into Maternal Deaths in the United Kingdom



Sara Wickham

March 2011 saw the publication of the eighth full report of the Confidential Enquiry into Maternal Deaths in the United Kingdom, covering the triennium from 2006 to 2008. This enquiry looks at all childbearing women who died in the United Kingdom during this period, no matter whether their death was directly or indirectly related to pregnancy. Experts assess the cases individually and pull out key issues and lessons from the findings for health professionals. As can be seen from the abstract of this report overleaf, there was a slight decline in maternal deaths overall, which is attributed to a reduction in deaths from thromboembolism and, to some extent, haemorrhage, but an increase in deaths related to genital tract sepsis, particularly from Group A streptococcus. Unlike previous Confidential Enquiry reports, a summary of this lengthy and in-depth document is not being mailed out to all registered practitioners, although the full report, executive summary and midwifery summary are all freely available on the internet (CMACE 2011; link provided in reference list). This extended ReView article seeks to outline and discuss some of the main findings and recommendations from the report with a focus on the issues that midwives and others involved in birth can address in an attempt to further reduce the maternal mortality rate.

## Going 'back to basics'

The report opens with a foreword which gives the issues and the current report a context, and the 'top ten' recommendations that emerged from this enquiry are summarised overleaf.

The recommendation addressing the notion of going 'back to basics' is very interesting, and this notion is the basis for a new section of the report, which, like the foreword and 'top ten', comes even before the introduction. It is described by the writers as an 'aide memoire' which is expanded upon in later chapters and which brings together 'some key overall good practice points ... into the following main categories:

- improving basic medical and midwifery practice, such as taking a history, undertaking basic observations and understanding normality
  - attributing signs and symptoms of emerging serious illness to commonplace symptoms in pregnancy
  - improving communication and referrals.'
- (CMACE 2011:10)

The chapter that incorporates this discussion considers common symptoms, including: pyrexia, sore throat, abdominal pain, diarrhoea and vomiting, breathlessness, headache, anxiety and unexplained physical symptoms; it also considers booking, history-taking and basic observations (including communication, especially between midwives and GPs, and the assessment of a woman's risk status). The section that covers genital tract sepsis (which is also discussed further below) is particularly detailed and this is reproduced on p30.

Elsewhere in the report it is noted that,

*'A lack of clinical knowledge and skills among some doctors, midwives and other health professionals, senior or junior, was one of the leading causes of potentially avoidable mortality this triennium. One of the commonest findings in this Report was the initial failure by many clinical staff, including GPs, Emergency Department staff, midwives and hospitals, to immediately recognise and act on the signs and symptoms of potentially life-threatening conditions ... This lack of clinical knowledge and skills was not only the case when distinguishing the signs and symptoms of potentially serious disease from the commonplace symptoms of pregnancy in primary care or the Emergency Department but also once a woman was hospitalised. There were a number of healthcare professionals who either failed to identify that a woman was becoming seriously ill or who failed to manage emergency situations outside their immediate area of expertise, and did not call for advice or help' (CMACE 2011: 41).*

## Maternal deaths Directly related to pregnancy

This section of the report looks at six key areas, and the main findings and recommendations of each are summarised here:

### • Thrombosis and thromboembolism

- Eighteen women died from thrombosis and thromboembolism in 2006-2008. This is a significant fall from the 2003-2005 triennium, in which 41 women died from thrombosis and thromboembolism. *'It seems likely that the unprecedented fall in deaths is the result of better recognition of at-risk women and more widespread thromboprophylaxis' (CMACE 2011:57).*

## Saving mothers' lives: reviewing maternal deaths to make motherhood safer: 2006-08. The Eighth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom

In the triennium 2006-2008, 261 women in the UK died directly or indirectly related to pregnancy. The overall maternal mortality rate was 11.39 per 100,000 maternities. Direct deaths decreased from 6.24 per 100,000 maternities in 2003-2005 to 4.67 per 100,000 maternities in 2006-2008 ( $p = 0.02$ ). This decline is predominantly due to the reduction in deaths from thromboembolism and, to a lesser extent, haemorrhage. For the first time there has been a reduction in the inequalities gap, with a significant decrease in maternal mortality rates among those living in the most deprived areas and those in the lowest socio-economic group. Despite a decline in the overall UK maternal mortality rate, there has been an increase in deaths related to genital tract sepsis, particularly from community acquired Group A streptococcal disease. The mortality rate related to sepsis increased from 0.85 deaths per 100,000 maternities in 2003-2005 to 1.13 deaths in 2006-2008, and sepsis is now the most common cause of Direct maternal death. Cardiac disease is the most common cause of Indirect death; the Indirect maternal mortality rate has not changed significantly since 2003-2005. This Confidential Enquiry identified substandard care in 70% of Direct deaths and 55% of Indirect deaths. Many of the identified avoidable factors remain the same as those identified in previous Enquiries. Recommendations for improving care have been developed and are highlighted in this report. Implementing the Top ten recommendations should be prioritised in order to ensure the overall UK maternal mortality rate continues to decline.

Centre for Maternal and Child Enquiries (CMACE) (2011). Saving mothers' lives: reviewing maternal deaths to make motherhood safer: 2006-08. The Eighth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom. *BJOG: An International Journal of Obstetrics and Gynaecology* 18(Suppl 1):1-203. <http://onlinelibrary.wiley.com/doi/10.1111/j.1471-0528.2010.02847.x/pdf>

## ‘Top ten’ recommendations

The following is a précis of the ‘top ten’ recommendations. The authors stress that these are in no particular order:

- 1) Pre-pregnancy counselling – Women with pre-existing medical illness, including psychiatric conditions, whose conditions may require a change of medication should be informed of how this may relate to their pregnancy. Pre-pregnancy counselling services should be commissioned as an integral element of local maternity services.
- 2) Professional independent interpretation services should be provided for all women who do not speak English. Women continue to be ill-served by members of their family or local community as interpreters.
- 3) Referrals to specialist services in pregnancy should be prioritised as urgent. Good communication between professionals is essential.
- 4) Women with potentially serious medical conditions require immediate and appropriate multidisciplinary specialist care.
- 5) There is a need for ‘back to basics’ clinical skills and training for the identification and management of serious obstetric conditions or emerging potential emergencies; the understanding, identification, initial management and referral for serious commoner conditions which may be unrelated to pregnancy; the early recognition and management of severely ill women and impending maternal collapse and the improvement of basic, immediate and advanced life support skills.
- 6) There remains an urgent need for the routine use of a national modified early obstetric warning score (MEOWS) chart in all pregnant or postpartum women who become unwell and require either obstetric or gynaecology services. This will help in the recognition, treatment and referral of women who have, or are developing, a critical illness during or after pregnancy. Pregnant or recently delivered women with unexplained pain severe enough to require opiate analgesia require urgent senior assessment/review.
- 7) All pregnant women with pre-eclampsia and a systolic blood pressure of 150-160mmHg or more require urgent and effective anti-hypertensive treatment. Treatment should be considered before this is the overall picture suggests rapid deterioration and/or where development of severe hypertension can be anticipated.
- 8) All pregnant and recently delivered women need to be informed of the risks and signs and symptoms of genital tract infection and how to prevent its transmission and all health care professionals should be aware of the signs and symptoms of sepsis.
- 9) All maternal deaths must be subject to high-quality local review.
- 10) The standard of the maternal autopsy must be improved.

- Risk factors were present in 16 of the 18 women who died, with obesity being the most significant, and the recommendations in this area focus on:

- assessing risk
- offering thromboprophylaxis to at-risk women
- being aware that women are at risk from the very beginning of pregnancy until the end of the puerperium
- taking particular care of vulnerable women who may not be able to follow advice or self-administer injections
- ensuring that any woman who experiences chest symptoms for the first time in pregnancy is offered careful assessment with a low threshold for investigation.

### • Pre-eclampsia and eclampsia

- The report includes the deaths of 19 women who died from eclampsia or pre-eclampsia and three women who died as a result of acute fatty liver of pregnancy.
- Recommendations include specific guidance on diagnosis and treatment, for example:
  - epigastric pain in the second half of pregnancy should be considered to be the result of pre-eclampsia until proven otherwise
  - any discussion between clinical staff of a woman with pre-eclampsia should include explicit mention of systolic pressure
  - management protocols should recognise the need to avoid very high systolic blood pressures as these are associated with a greater risk of intracerebral haemorrhage.

### • Haemorrhage

- There was a decline in the number of women who died from haemorrhage, with nine direct maternal deaths, one associated with uterine rupture, and two late direct deaths that are not

counted in the overall death rate but were reviewed as it was felt that they offered useful lessons.

- While this decline means that haemorrhage is now the sixth leading cause of direct maternal deaths, it is still an important cause of maternal mortality and unit protocols and regular skills training are recommended.
- Significant learning points in this chapter relate to anaemia, which can magnify the effects of: haemorrhage; controlled cord traction, where it is noted that, *‘moderate or excessive traction on the cord before placental separation is inappropriate’* (CMACE 2011:71) and uterine inversion, for which *‘the appropriate initial management ... is attempted replacement’* (CMACE 2011:71).
- Other recommendations include that:
  - early senior multidisciplinary team involvement is essential
  - all clinicians should be aware of guidelines where women decline blood transfusion
  - it remains important that women who have had a previous caesarean section have an ultrasound scan to assess placental location
  - women who have caesarean sections should have regular observations taken and recorded on a Modified Early Obstetric Warning Score (MEOWS) chart for 24 hours. Abnormal scores should be immediately investigated
  - women with major placenta praevia should be offered admission from 34 weeks if they have experienced bleeding; women who have not experienced bleeding need careful counselling regarding the decision to be admitted or to stay at home and those who elect to stay at home should have the risks explained to them.
- **Amniotic fluid embolism (AFE)**
  - This has fallen from the second to the fourth leading cause of direct deaths, with 13 women dying of AFE.

- Several examples of excellent practice were noted, 'including prompt peri-mortem caesarean section' (CMACE 2011:77).
- While the recommendations in this area focus more on autopsies and post-mortem diagnosis of AFE, learning points include that:
  - AFE 'should no longer be regarded as a condition with near-universal maternal mortality. High quality supportive care can result in good outcomes for both mother and baby depending on the place of collapse' (CMACE 2011: 77).
  - 'AFE may be confused with other presentations, including eclampsia, septic or anaphylactic shock and pulmonary embolism, but ultimately the immediate action taken should be resuscitative and the initial treatment is unlikely to differ' (CMACE 2011: 77).

## • Deaths in early pregnancy

- 'Although fewer women died during 2006-08 of causes directly resulting from complications arising from early pregnancy (before 24 completed weeks of gestation) than in any previous triennium, substandard aspects of care were identifiable in a majority of the 11 women discussed in this chapter' (CMACE 2011: 81).
- One key learning point relates to handovers, noting that unless 'communication between hospital doctors is meticulous, truncated shift patterns may result in failure to appreciate a woman's deteriorating clinical status' (CMACE 2011: 81).
- Other recommendations include that:
  - all women of reproductive age presenting to Emergency Departments should have a pregnancy test
  - gastrointestinal symptoms are early indicators of ectopic pregnancy, particularly diarrhoea and dizziness. These should be emphasised to all clinical staff
  - if an intrauterine sac is not located in an early pregnancy scan, active exclusion of tubal pregnancy should follow
  - induced abortion care should include 'a strategy for minimising the risk of infective morbidity, at a minimum antibiotic prophylaxis' (CMACE 2011: 81).

## • Sepsis

- In contrast to several other direct causes of maternal death, mortality from sepsis has risen to the point that 'it has become the leading cause of **Direct** maternal death in the UK for the first time

### Back to basics: sepsis

Associated 'red flag' signs and symptoms that should prompt urgent referral for hospital assessment, and, if the woman appears seriously unwell, by emergency ambulance:

- pyrexia > 38°C
- sustained tachycardia > 100 bpm
- breathlessness (RR > 20; a serious symptom)
- abdominal or chest pain
- diarrhoea and/or vomiting
- reduced or absent fetal movements, or absent fetal heart
- spontaneous rupture of membranes or significant vaginal discharge
- uterine or renal angle pain and tenderness
- the woman is generally unwell or seems unduly anxious, distressed or panicky.

A normal temperature does not exclude sepsis. Paracetamol and other analgesics may mask pyrexia, and this should be taken into account when assessing women who are unwell. Infection must also be suspected and actively ruled out when a recently delivered woman has persistent vaginal bleeding and abdominal pain. If there is any concern, the woman must be referred back to the maternity unit as soon as possible, certainly within 24 hours. (CMACE 2011:17)

## 'Genital tract sepsis: specific recommendations

### Education

- All pregnant and recently delivered women need to be informed about the risks and signs and symptoms of genital tract infection and how to prevent its transmission. Advice should include verbal and written information about prevention, signs and symptoms, and the need to seek advice early if concerned, as well as the importance of good personal hygiene. This includes avoiding contamination of the perineum by washing hands before and after using the lavatory or changing sanitary towels, and is specially necessary when the woman or her family or close contacts have a sore throat or upper respiratory tract infection.
- All healthcare professionals who care for pregnant and recently delivered women should have regular training in the early recognition of abnormal vital signs and serious illness. They should be aware of the signs and symptoms of severe sepsis and the need for urgent assessment and treatment to avoid the often rapid progress of this condition. This is particularly important for community midwives who may be the first to pick up any potentially abnormal signs during their routine postnatal checks.

### Identification and monitoring

- Sepsis is often insidious in onset, and carers need to be alert to any changes that may indicate developing infection. In the community, vital signs should always be checked in women who have any signs or symptoms of possible infection, and if infection is likely, the woman must be referred to the obstetric services as soon as possible. In hospital, Modified Early Obstetric Warning Scoring system (MEOWS) charts should be used to help in the more timely recognition, treatment and referral of women who have, or are developing, a critical illness.

### Immediate antibiotic treatment may be life saving

- If sepsis is suspected in the community, urgent referral to hospital is indicated. In hospital, high-dose intravenous broad-spectrum antibiotics should be started immediately without waiting for the results of investigations, as once infection becomes systemic the woman's condition can deteriorate extremely rapidly over a period of a few hours.

### Guidelines

- Guidelines for the detection, investigation and management of suspected sepsis should be available for all maternity units, Emergency Departments, GPs and community midwives. A national guideline to cover the identification and management of sepsis in pregnancy, labour, the postnatal period and beyond, which should include specific information about Group A streptococcal infection, would raise awareness of sepsis, support investigations and management, and help healthcare organisations respond in a timely and consistent way. This should be a priority. (CMACE 2011: 85)

since these Confidential Enquiries commenced in 1952' (CMACE 2011: 86). Overall, 29 women died from this cause between 2006 and 2008.

- This finding was so worrying to those undertaking the Confidential Enquiries that early data and recommendations were released in order that clinicians could be aware of this before the start of the UK winter (CMACE 2010), and CMACE have — somewhat unusually — begun the chapter discussing this issue with a key message, 'Be aware of sepsis – beware of sepsis' (CMACE 2011: 85).
- Because this is such a key and new area of concern, we have quoted the specific recommendations from the genital tract sepsis section in full in the box above.

## • Anaesthesia

- The assessors reviewed 127 cases (where notes were available) in which anaesthetic services were involved in the care of a woman who died from either a *Direct* or *Indirect* cause. This was 49% of the total maternal deaths.
- They found that the deaths of seven women were directly associated with anaesthesia and in another 18 cases it was considered either that anaesthetic management contributed to the outcome or that lessons could be learned.
- Specific recommendations include that:
  - the recognition and management of severe illness in a pregnant woman requires teamwork and an anaesthetist and/or critical care specialist should be involved early
  - obstetric and gynaecology services should have a defined local guideline to ensure that they can obtain rapid access to and help from critical-care specialists.

## Maternal deaths *Indirectly* related to pregnancy

A further three areas were considered in this section of the report: cardiac disease, other indirect deaths and deaths from psychiatric cause. Of these, cardiac disease is the commonest cause of indirect maternal death, with 53 women dying in the last triennium from heart disease associated with or aggravated by pregnancy. CMACE (2011) recommend a low threshold for instigating further investigation of pregnant women and new mothers *'who complain of chest pain that is severe, or radiates to the neck, jaw or back, or is associated with other features such as agitation, vomiting or breathlessness, tachycardia, tachypnoea, orthopnea or acidosis ... especially ... for women who smoke, are obese or have hypertension'* (page 109).

Other indirect deaths *'are defined as deaths resulting from previously existing disease or diseases that develop during pregnancy and which do not have direct obstetric causes but which are aggravated by the physiological effects of pregnancy'* (CMACE 2011:119-20). Key recommendations in this area relate to some of the points listed in the 'top ten' recommendations on page 29, namely, the appropriate and speedy referral of women to appropriate specialists alongside the provision of interpreters for women who do not speak English. Issues have arisen because clinicians do not always consult with relevant experts and because physicians who do not work directly with pregnant women need to know more about the interaction between pregnancy and the conditions which they are treating. Other key points in this area include the note that multiple admissions or attendances for emergency care are often an indication for referral to

specialists in other disciplines, and any undiagnosed pain which requires opioids *'demands immediate consultant involvement and investigation'* (CMACE 2011:119).

Deaths from psychiatric causes continue to be of concern, with CMACE (2011) reporting limited uptake of previous recommendations in this area. They re-emphasise the importance of asking a woman about her psychiatric history at the booking visit and referring women with a history of serious affective disorder or other psychoses to psychiatric services for regular monitoring and support even if they are well. The importance of both priority care pathways and continuity of care for pregnant and postpartum women is emphasized, not least because of the way in which psychiatric problems in women at these times are often of sudden onset and rapid deterioration. Risk assessment of pregnant women needs to take account of *'the distinctive clinical picture of perinatal disorders and the violent method of suicide ... [yet] ... caution needs to be exercised when diagnosing psychiatric disorder if the only symptoms are either unexplained physical symptoms or distress and agitation ... particularly ... when the woman has no prior psychiatric history or when she does not speak English or comes from an ethnic minority'* (CMACE 2011:132).

## Deaths apparently unrelated to pregnancy

This section includes two different categories. As in previous reports, the majority of deaths classified as **coincidental** to pregnancy are from 'unnatural' causes, such as road traffic accidents, murder or unintentional overdose of street drugs, but this category also considers the deaths of women who had malignancy or other medical conditions, such as pneumonia, especially where they were only a few weeks pregnant and their pregnancy was discovered only at autopsy. The category of 'apparently unrelated' deaths also includes **late** deaths, where women died between 43 and 364 completed days after the end of pregnancy. Most of these late deaths have causes which fall under a category elsewhere in the report (for instance, sepsis or cardiac disease) and, while the deaths are not counted in the actual numbers, the assessors look at these cases in the relevant sections to see if additional lessons can be learned.

The section on road traffic accidents (page 144 of the report) is well worth reading; the stories of these women are complex and most were not the random victims of accidents caused by others. Nonetheless, in one case there was clear evidence of a woman not wearing a seat belt and giving women advice about this remains a key recommendation. Domestic abuse continues to be highlighted in a separate section of the report. Thirty four of the women who died from any cause in the last triennium *'had features of domestic abuse'* (CMACE 2011:146) and, as with the section on sepsis, this is an important area. Rather than précisising the learning points from this section, these have been reproduced in full below.

## 'Domestic abuse: new and existing learning points from 2006 to 2008

This Enquiry continues to recommend that routine enquiry, 'Asking the question', should be made about domestic abuse, either when taking a social history at booking or at another opportune point during a woman's antenatal period. Midwives should give high priority to 'Asking the question' and to giving information to all women about domestic abuse. The antenatal booking appointment may be the appropriate time to 'ask the question' or the midwife may decide to delay until the following appointment when a relationship has already been established.

All women should be seen alone at least once during the antenatal period to facilitate disclosure of domestic abuse.

Any member of the maternity team who notices that a woman has an injury, for example a black eye, should ask sympathetically, but directly, about how this occurred and be prepared to follow up this enquiry with information, advice and support as needed.

The recent report *Responding to violence against women and children* recommended, as does this Report, that health service providers and purchasers should have clear policies on the use of interpretation services that ensure that women and children are able to disclose violence and abuse confidently and confidentially.

When routine questioning is introduced, this must be accompanied by:

- The establishment of an appropriate method of recording the response on the woman's records, in such a way that protects her from further harm from the perpetrator, if abuse is disclosed.
- The development of local strategies for referral to a local multidisciplinary support network to which the woman can be referred if necessary.

Information about local sources of help and emergency help lines, such as those provided by Women's Aid, should be displayed in suitable places in antenatal clinics, for example in the women's toilets, or printed as a routine at the bottom of hand-held maternity notes or cooperation cards.

Women who are known to suffer domestic abuse should not be regarded as 'low risk'. They should be offered care that involves other agencies and disciplines as needed for the individual's situation, within a supportive environment. If they choose midwifery-led care, the midwife should receive support and advice from an experienced colleague, for example the Named Midwife for Safeguarding or a Supervisor of Midwives.

It must be remembered that health professionals, too, are victims of abuse and that domestic abuse occurs across all social classes and within all ethnic groups. (CMACE 2011:146)

## Midwifery

The final chapters of the report identify and discuss the key practice issues which have been raised by the review for different professional groups. When reading the report, it is easy to forget that, as well as tragedies caused by substandard care, the assessors also found examples of exemplary care, and this is highlighted in the chapter on midwifery. Because the summary is no longer being mailed out to midwives, the emphasis will be on the individual to source and read the report, and the chapter on midwifery highlights key issues and learning points for midwives. Again, the specific recommendations are reproduced in full below.

### 'Midwifery practice: specific recommendations

- Carry out, record and act upon basic observations for both women at low and higher risk of complications.
- Recognise and act on symptoms suggestive of serious illness, including sepsis, as outlined in the Back to basics section of this Report.
- Provide pregnant women and new mothers with information about the prevention and signs and symptoms of possible genital tract sepsis and the need to seek advice early if concerned, as well as the importance of good personal hygiene.
- Assess the mother's risk adequately throughout the continuum of pregnancy and the postnatal period, re-assessing as needed if circumstances change.
- Refer and escalate concerns to a medical colleague of appropriate seniority.
- Make early referral to psychiatric services of women with serious mental health problems in line with the advice in Back to basics.
- Ensure the availability and use of professional interpreting services for women who need them.
- Provide continuity of care for vulnerable women to promote engagement with the service' (CMACE 2011:149)

## Reflecting on the report

As a midwife, I always find the Confidential Enquiries reports to be salutary, if also depressing, reading. The most depressing aspect is that many of these women might not have died if they had had better care. However, it is also important to celebrate the fact that lots of women have been saved, for example where guidelines relating to venous thromboembolism based on previous reports have led to a significant reduction in deaths in this category. I have already spoken to a number of senior midwives and other clinicians who particularly welcome the focus on 'the basics'. One midwifery manager, who shall remain nameless, feels that this report is so important that she printed out 160 copies of the midwifery summary and attached them to the March payslips going to every midwife in her unit! There is much to be learned, and I would encourage all readers to study the document for themselves.

I have to admit that, as much as I value the work that has been carried out, on occasion I found it difficult to reconcile some of the language used with the importance that we place on the concepts of choice and woman-centred care. A good example of this appears in the midwifery chapter, where it is noted that, '[t]here were instances where midwives should have taken a supportive but challenging approach to ensure

that women received appropriate care that was in the best interests of themselves and their babies' (CMACE 2011:150) and, later, 'at times, a midwife may be the woman's best advocate by challenging her and helping her to see that the course of action she is suggesting, although not the woman's choice, is in her best interest' (CMACE 2011:157). I can't help but feel that the importance of the message may be better conveyed by the use of words such as 'proactive' rather than 'challenging', as I think everybody would agree that the woman ultimately makes the decision about her own care but one of the key messages from this report is that detailed discussion and information-giving around risks and benefits needs to occur.

I do not want to over-emphasise this, however; it is a small gripe with a stunningly presented, careful analysis of a hugely important area and it is up to each of us to read it for ourselves and decide what we will take from it in order to improve our practice and the experiences of the women in our care. This is not a cold, statistical report; it is about real women who died and the inclusion of vignettes illustrates the issues in a way which is really tangible for those of us who care deeply about childbearing women, women who had aspirations and dreams and a future ahead of them. The final line of the midwifery chapter stands by itself, and I cannot think of a better way of closing this ReView other than by quoting it directly:

**'If there is a single take-home message for midwives it is this: listen to the woman and act on what she tells you.'**

(CMACE 2011:157)

## References

Centre for Maternal and Child Enquiries (CMACE)(2011). Saving mothers' lives: reviewing maternal deaths to make motherhood safer: 2006-08. The Eighth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom. *BJOG: An International Journal of Obstetrics and Gynaecology* 118(Suppl 1):1-203. <http://online.library.wiley.com/doi/10.1111/j.1471-0528.2010.02847.x/pdf> [Accessed 22 March 2011].

Centre for Maternal and Child Enquiries (CMACE)(2010). *CMACE emergent theme briefing #1: genital tract sepsis. Saving mothers' lives 2006-08: briefing on genital tract sepsis.* [http://www.cmace.org.uk/Publications-Press-Releases/Emergent-Theme-Briefings/Microsoft-Word---GT\\_Sepsis\\_0508\\_final\\_v2-style.aspx](http://www.cmace.org.uk/Publications-Press-Releases/Emergent-Theme-Briefings/Microsoft-Word---GT_Sepsis_0508_final_v2-style.aspx) [Accessed 22 March 2011].



## Sara Wickham

is a midwife, teacher, author and researcher who divides her time between working as the Editor of *Essentially MIDIRS* and as an independent midwifery lecturer and consultant. She has lived and worked in the US and New Zealand as well as the UK and is the author of more than 200 books and articles relating to birth and midwifery.