

**Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer (2003-2005)
December 2007**

**ERRATA
April 2008**

Chapter 1

Table 1.3 Numbers and rates per 100,000 maternities of maternal deaths reported to the Enquiry by cause; United Kingdom: 1985-2005.

Please see page 2 for an amended table 1.3. The amendment is to the 2003-2005 column for 'Early pregnancy deaths'. The total 'other deaths should be 1, not 3.

Table 1.4 Maternal deaths by type of antenatal care; United Kingdom: 2003-05.

The amendment has occurred in the *Coincidental* column. The previous version incorrectly had '55' deaths as 'Not stated'. This was a typographical error.

| Type of antenatal care | Type of Death | | | | | All deaths n (%) |
|---|---------------|---------------|---------------------------------|-------------------|------------------|---------------------|
| | Direct n | Indirect n | Direct and Indirect n (%) | Coincidental n | Late Direct n | |
| Team-based or "shared" care | 54 | 60 | 114 (39) | 17 | 6 | 137 (33) |
| Consultant led unit only | 15 | 39 | 54 (18) | 9 | 1 | 64 (15) |
| Midwife only | 11 | 16 | 27 (9) | 8 | 0 | 35 (8) |
| Midwife and GP | 5 | 4 | 9 (3) | 6 | 3 | 18 (4) |
| Death before booking or after miscarriages or TOP | 22 | 9 | 31 (11) | 5 | 0 | 36 (9) |
| Unaware of pregnancy | 5 | 1 | 6 (2) | 1 | 0 | 7 (2) |
| Suboptimal antenatal care: | | | | | | |
| Concealed pregnancy | 3 | 2 | 5 (2) | 0 | 0 | 5 (1) |
| No antenatal care | 4 | 6 | 10 (3) | 4 | 0 | 14 (3) |
| Late booker/poor attender* | 11 | 24 | 35 (12) | 5 | 1 | 41 (10) |
| Not stated | 2 | 2 | 4 (1) | | 0 | 59 (14) |
| All | 132 | 163 | 295 (100) | 55 | 11 | 416 (100)** |

* Booked after 22 weeks gestation or had missed over four antenatal appointments

**Percentages have been rounded to the nearest whole percentage

Chapter 5

Table 5.1 Direct deaths attributed to amniotic fluid embolism and rates per 100,000 maternities; United Kingdom: 1985-2005.

The amendment has occurred in the 'Triennium' column. The previous version incorrectly repeated 1985-87 in the second row. The data in this row correlates to the 1988-90 triennium. This was a typographical error.

| Triennium | Number | Rate | 95 per cent CI | |
|-----------|--------|------|----------------|------|
| 1985-87 | 9 | 0.40 | 0.21 | 0.75 |
| 1988-90 | 11 | 0.47 | 0.26 | 0.83 |
| 1991-93 | 10 | 0.43 | 0.23 | 0.80 |
| 1994-96 | 17 | 0.77 | 0.48 | 1.24 |
| 1997-99 | 8 | 0.38 | 0.19 | 0.74 |
| 2000-02 | 5 | 0.25 | 0.11 | 0.59 |
| 2003-05 | 17 | 0.80 | 0.50 | 1.29 |

Chapter 14

Table 14.1 Coincidental deaths occurring during or up to, and inclusive of, 42 days after, the end of pregnancy; United Kingdom: 2003-05.

| Cause of Death | Number |
|--------------------------------|---------------|
| Unnatural Deaths | |
| Road traffic accident | 23 |
| Murder | 10 |
| Overdose of street drugs | 4 |
| House fire | 1 |
| Cancer (see Chapter 11) | 16 |
| Medical condition | 1 |
| All Coincidental deaths | 55 |

Chapter 18

CEMACH wishes to apologise for any confusion that may have arisen in its statements on Perimortem Caesarean section in Chapter 18 “Emergency Medicine”. CEMACH fully endorses the recommendation in the Managing Obstetric Emergencies and Trauma (MOET) Course Manual to perform perimortem caesarean section within 5 minutes of a cardiac arrest in the interest of maternal resuscitation.

The relevant statements in CEMACH Saving Mothers Lives. Dec 2007 Chapter 18 should be changed as follows:

New guidance Page 230:

Perimortem caesarean section is part of the resuscitation procedure in any women who arrests in the second half of pregnancy. It should be undertaken to facilitate maternal resuscitation within 5 minutes of the arrest if there is no initial response to advanced life support in the tilted position.

This replaces the following statement:

Perimortem caesarean section should only be carried out when a maternal cardiac arrest has been witnessed within the previous five minutes; the outcomes of any other circumstances are universally poor. In addition the baby must be delivered within five minutes of the procedure being started to facilitate resuscitation.

New guidance Page 233:

These findings underscore the guidelines from the Managing Obstetric Emergencies and Trauma course (MOET), which make it clear that perimortem caesarean section is part of the resuscitation procedure in any women who arrests in the second half of pregnancy. It should be undertaken to facilitate maternal resuscitation within 5 minutes of the arrest if there is no initial response to advanced life support in the tilted position.

This replaces the following statement:

These findings underscore the guidelines from the Managing Obstetric Emergencies and Trauma course (MOET), which make it clear that perimortem caesarean section should only be carried out when the mother's cardiac arrest has been witnessed within the previous five minutes. The outcome of any other circumstance is universally poor. In addition the baby must be delivered within five minutes to facilitate resuscitation.

This guidance is clearer and is intended to guide policy within Emergency Departments.

Annex A - Early Obstetric Warning System

Since publication in December 2007 it has been brought to CEMACH's notice that the Obstetric EWS chart used by Aberdeen Maternity Hospital was originally developed by Stirling Royal Infirmary. This had been presented at the Obstetric Anaesthetists' Association meeting in Glasgow in May 2006.

CEMACH apologises to Drs Fiona McIlveney, Chris Cairns and their colleagues at Stirling Royal Infirmary for not acknowledging their important role in its development. Requests for copies of the original chart in MS Excel format may be made to Dr Fiona McIlveney at:

Fiona.Mcilveney@fvah.scot.nhs.uk

Reference

International Journal of Obstetric Anesthesia (2006) 15, S1-S43 Abstracts of free papers presented at the annual meeting of the Obstetric Anaesthetists' Association, Glasgow 11-12 May, 2006.

"Early-warning scoring in obstetrics". P Harrison, C Hawe, F McIlveney. Department of Anaesthesia, Stirling Royal Infirmary, Stirling, UK.

Chapter 1

Table 1.3 Numbers and rates per 100,000 maternities of maternal deaths reported to the Enquiry by cause; United Kingdom: 1985-2005.

| Cause of death | Triennia | | | | | | | Triennia | | | | | | |
|--------------------------------|------------|------------|------------|------------|------------|------------|------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 1985-87 | 1988-90 | 1991-93 | 1994-96 | 1997-99 | 2000-02 | 2003-05 | 1985-87 | 1988-90 | 1991-93 | 1994-96 | 1997-99 | 2000-02 | 2003-05 |
| | Numbers | | | | | | | Rates per 100,000 maternities | | | | | | |
| Direct deaths | | | | | | | | | | | | | | |
| Thrombosis and thromboembolism | 32 | 33 | 35 | 48 | 35 | 30 | 41 | 1.41 | 1.40 | 1.51 | 2.18 | 1.65 | 1.50 | 1.94 |
| Pre-eclampsia/eclampsia* | 27 | 27 | 20 | 20 | 16 | 14 | 18 | 1.19 | 1.14 | 0.86 | 0.91 | 0.75 | 0.70 | 0.85 |
| Haemorrhage* | 10 | 22 | 15 | 12 | 7 | 17 | 14 | 0.44 | 0.93 | 0.65 | 0.55 | 0.33 | 0.85 | 0.66 |
| Amniotic fluid embolism | 9 | 11 | 10 | 17 | 8 | 5 | 17 | 0.40 | 0.47 | 0.43 | 0.77 | 0.38 | 0.25 | 0.80 |
| Early pregnancy deaths | 16 | 24 | 17 | 15 | 17 | 15 | 14 | 0.71 | 1.02 | 0.73 | 0.68 | 0.80 | 0.75 | 0.66 |
| Ectopic | 11 | 15 | 9 | 12 | 13 | 11 | 10 | 0.48 | 0.64 | 0.39 | 0.55 | 0.61 | 0.55 | 0.47 |
| Spontaneous miscarriage | 4 | 6 | 3 | 2 | 2 | 1 | 1 | 0.18 | 0.25 | 0.13 | 0.09 | 0.09 | 0.05 | 0.05 |
| Legal termination | 1 | 3 | 5 | 1 | 2 | 3 | 2 | 0.04 | 0.13 | 0.22 | 0.05 | 0.09 | 0.15 | 0.09 |
| Other | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.14 |
| Genital tract sepsis** | 9 | 17 | 15 | 16 | 18 | 13 | 18 | 0.40 | 0.72 | 0.65 | 0.73 | 0.85 | 0.65 | 0.85 |
| Other <i>Direct</i> | 27 | 17 | 14 | 7 | 7 | 8 | 4 | 1.19 | 0.72 | 0.60 | 0.32 | 0.33 | 0.40 | 0.19 |
| Genital tract trauma | 6 | 3 | 4 | 5 | 2 | 1 | 3* | 0.26 | 0.13 | 0.17 | 0.23 | 0.09 | 0.05 | 0.14 |
| Fatty Liver | 6 | 5 | 2 | 2 | 4 | 3 | 1* | 0.26 | 0.21 | 0.09 | 0.09 | 0.19 | 0.15 | 0.05 |
| Other causes | 15 | 9 | 8 | 0 | 1 | 4 | 0 | 0.66 | 0.38 | 0.35 | 0.00 | 0.05 | 0.20 | 0.00 |
| Anaesthetic | 6 | 4 | 8 | 1 | 3 | 6 | 6 | 0.26 | 0.17 | 0.35 | 0.05 | 0.14 | 0.30 | 0.28 |
| All Direct | 139 | 145 | 128 | 134 | 106 | 106 | 132 | 6.13 | 6.14 | 5.53 | 6.10 | 4.99 | 5.31 | 6.24 |
| Indirect | | | | | | | | | | | | | | |
| Cardiac | 23 | 18 | 37 | 39 | 35 | 44 | 48 | 1.01 | 0.76 | 1.60 | 1.77 | 1.65 | 2.20 | 2.27 |
| Psychiatric <i>Indirect</i> | - | - | - | 9 | 15 | 16 | 18 | - | - | - | 0.41 | 0.71 | 0.80 | 0.85 |
| Other <i>Indirect</i> | 62 | 75 | 63 | 86 | 75 | 90 | 87 | 2.73 | 3.18 | 2.72 | 3.91 | 3.53 | 4.51 | 4.12 |
| <i>Indirect</i> malignancies | - | - | - | - | 11 | 5 | 10*** | - | - | - | - | 0.52 | 0.25 | 0.47 |
| All Indirect | 84 | 93 | 100 | 134 | 136 | 155 | 163 | 3.70 | 3.94 | 4.32 | 6.10 | 6.40 | 7.76 | 7.71 |
| Coincidental | 26 | 39 | 46 | 36 | 29 | 36 | 55 | 1.15 | 1.65 | 1.99 | 1.64 | 1.37 | 1.80 | 2.60 |
| Late | | | | | | | | | | | | | | |
| <i>Direct</i> | - | 13 | 10 | 4 | 7 | 4 | 11 | | | | | | | |
| <i>Indirect</i> | - | 10 | 23 | 32 | 39 | 45 | 71**** | | | | | | | |

* Three cases of uterine rupture are discussed in Chapter 4, and one of fatty liver in Chapter 2

** Including early pregnancy deaths due to sepsis.

*** Includes one death from choriocarcinoma which ideally should be regarded as a *Direct* death

**** Rise due to improved case ascertainment

- Data not previously collected separately