Centre for Maternal and Child Enquiries
Improving the health of mothers, babies and children

CENTRE FOR MATERNAL AND CHILD ENQUIRIES

SAVING MOTHERS' LIVES: 2003-2005

POST PROJECT REVIEW REPORT

JULY 2010

CMACE Mission statement

Our aim is to improve the health of mothers, babies and children by carrying out confidential enquiries and related work on a nationwide basis and by widely disseminating our findings and recommendations.

This work was undertaken by CMACE. The work was funded by the National Patient Safety Agency, the NHS Quality Improvement Scotland, the Department of Health, Social Services, Public Safety of Northern Ireland, the Channel Islands and the Isle of Man. The views expressed in this publication are those of CMACE and not necessarily those of its funding bodies.

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1 INTRODUCTION

This report presents findings of a post project review conducted by the Centre for Maternal and Child Enquiries (CMACE) on the national confidential enquiry into maternal deaths. The Enquiry findings were reported in *Saving Mothers' Lives: Reviewing maternal deaths to make motherhood safer 2003-2005* (SML) issued in 2007[1]. The aim of this report is to provide an assessment of how the SML report and recommendations have been received and put into practice as well as perceived barriers to implementation. This report also presents stakeholders' perception of CMACE's efforts to disseminate the findings and their suggestions on ways to improve CMACE's approach. The outcome of this review will assist CMACE in developing future reports and recommendations with the aim of improving maternal and child health in the UK.

This report comprises findings from a post project review survey conducted over the winter of 2010 together with a summary of dissemination activities undertaken between December 2007 and April 2010.

2 KEY FINDINGS AND LESSONS LEARNT

The findings in this review of the triennial report for 2003-2005 demonstrate very strong support for the SML work, particularly from clinicians in hospitals. The SML report was described by service providers as instrumental in prompting service improvements at a local level. Whilst 3% of Clinical Directors and Heads of Midwifery considered that their units complied with the report's 'top-ten' recommendations prior to its publication in 2007, 83% considered that the recommendations were being met by mid 2010. Evidence for the usefulness of the report is also illustrated by 94% of Midwifery Education Leads having used the report and/or the 'top ten' recommendations in the delivery of lectures on specific topics and in assessment of clinical skills. Moreover, there has been extensive reference made to the report within recently published Clinical Negligence Scheme for Trusts (CNST) maternity standards as well as other documents, including the Kings Fund Safe Births report and Standards for Maternity Care; Report of a Working Party published

[1] This report was issued by the Confidential Enquiry into Maternal and Child Health (CEMACH). On the 1st July 2009 CEMACH became an independent charity with the new name Centre for Maternal and Child Enquiries (CMACE).

by the Royal College of Obstetricians and Gynaecologists (RCOG). The SML report is likely to have had additional impact through its contribution to these national service drivers.

The indications are that recent innovations in the maternal death enquiry and the SML approach have been helpful in further reinforcing the messages at the level of clinicians practicing in hospitals. The introduction of a 'top ten' recommendations has been well received. CMACE introduced a programme of interactive workshops with service providers in 2008 specifically to focus on implementation of the 'top ten' recommendations by focusing on case studies from the enquiry. The introduction of interactive workshops using findings and recommendations from the SML report has been very successful. To date, 24 SML interactive workshops have been requested and held with service providers, and there is continued interest in these events. This was in addition to wide circulation of the report's findings, including a conference programme around the UK and availability of the report for free download from the CMACE website. The diversity of the dissemination activities afford a range by which care providers can learn about and incorporate into their practice the report's findings and recommendations.

The main challenges for service providers and commissioners in implementing the recommendations were stated to be funding, the negotiation of a co-ordinated approach across primary and secondary care, and poor integration of IT systems impacting upon data collection and audit. These were in addition to competing priorities created by the plurality of recommendations and guidance issued by the range of different organisations involved in improving maternity services. In this context, the SML report was one of many relating to maternity care published in 2007-08. Comments provided by commissioners indicate the risk of SML recommendations being 'lost in the noise' of many bodies producing guidelines/reviews/recommendations. Confidential enquiry into maternal deaths is a specific and unique methodology, but comments were received that recommendations would be most powerful if they are linked to other national guidance produced by bodies such as NICE and the Royal Colleges.

A major learning point for CMACE from this post project review is the need to ensure engagement not only of hospital clinicians, but also of commissioners of services at

Primary Care Trust (PCT) level. A total of 29% of all commissioners who were sent a questionnaire responded. Compared with clinical leaders in hospital maternity services, commissioners were less likely to respond to the survey, and their responses about the report were less positive.

PCTs and funding bodies are clearly a key audience group given their role in the allocation of funds, which was identified as a challenge to implementation of the recommendations by service providers.

The findings of this survey provide strong support for CMACE to continue its commitment to producing Saving Mothers' Lives reports and to the development of the maternal death enquiry. The report should continue to reflect the unique and rich nature of the confidential enquiry process with the judicious use of women's stories as vignettes to illustrate the origins and context of the report's recommendations.

3 POST PROJECT REVIEW SURVEY

3.1 Objectives and Methods

The survey comprised of a questionnaire designed to elicit views from service providers, commissioners, national bodies and educators on:

- Knowledge and perception of the report and its recommendations
- Implementation of the recommendations
- Suggestions for the development of future SML reports and recommendations.

In January 2010 a questionnaire and cover letter were sent with a pre-addressed return envelope to the following groups:

- Clinical Directors and Heads of Midwifery at each NHS acute trust providing maternity services in England, Wales, Northern Ireland and Scotland
- Directors of Public Health and lead commissioners for maternity services at every Primary Care Trust (PCT) in England and Health Boards in Northern Ireland (NI), Wales and Scotland
- Forty-six leads for midwifery education
- Seventeen National Bodies.

The questionnaire consisted of three sections covering:

1. Knowledge of report/recommendations
2. Implementation of recommendations
3. Effect of report/recommendations.

3.2 Respondents

Completed questionnaires were returned between February and April 2010 by 40% (233/579) of recipients. Respondents comprised 38% (68/178) of Clinical Directors of maternity services, 55% (97/176) of Heads of Midwifery, 29% (52/179) of Directors of Public Health at a PCT or Health Board, 37% (17/46) of representatives from midwifery educational institutions and 41% (7/17) of national bodies.

Numbers of individual responses for each question are indicated in the following sections of this report.

3.3 Maternity Care Providers

This section gives further detail regarding the responses provided by the 68 Clinical Directors and 97 Heads of Midwifery who responded to the survey.

Knowledge of the report and recommendations

Q Have you read part or all of the SML 2007 report?

Q How did you access the report or the 'top ten' recommendations?

- Ninety-eight percent (160/163) of respondents had read the CMACE report.
- Almost seventy percent (112/163) of respondents had been sent the report by CMACE, 37% (61/163) had attended a CMACE conference where they received the report and a further 36% (58/163) downloaded the report from the CMACE website.

Dissemination of the report

Q Has your Trust/Health Board held any events to disseminate the report and its recommendations?

Q Did the report lead your Trust/Health Board to undertake an assessment of your service in relation to the 'top ten' recommendations?

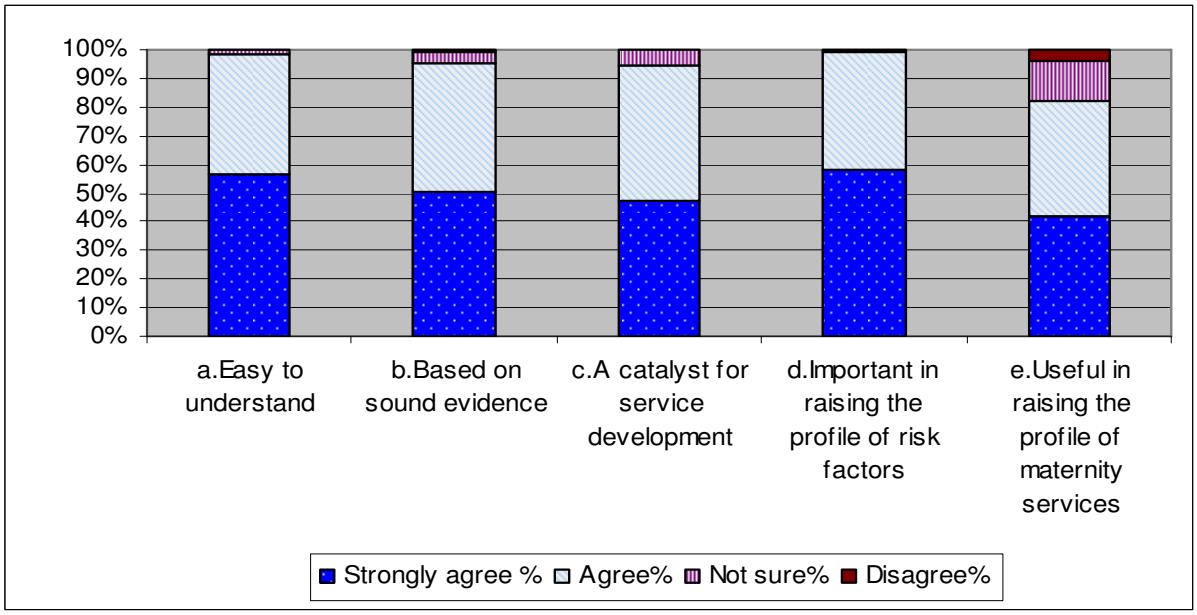
- Eighty-seven percent (142/164) of respondents had attended an internal meeting where the SML report was discussed. Sixty-two percent (101/164) held a seminar or a staff-training event in relation to the 'top ten' recommendations.
- Sixty percent (98/162) of respondents' Trusts/Health Boards undertook an assessment of their service in relation to the 'top ten' recommendations. Of those, 86% (83/97) conducted a gap analysis and 20% (19/97) a focused audit.

Perception of the report and recommendations

Q In your professional opinion, how would you rate the CMACE Saving Mothers' Lives 2003-2005 report and its recommendations?

- Ninety-nine percent (162/164) of respondents agreed or strongly agreed that the report was easy to understand and that it was important in raising the profile of risk factors for pregnant women associated with poor outcome.
- Ninety-five percent (156/164) of respondents agreed or strongly agreed that the report was based on sound evidence.
- Ninety-three percent (153/164) of respondents agreed or strongly agreed that the report was a catalyst for service development.
- Eighty-two percent (134/164) of respondents agreed or strongly agreed that the report was important in raising the profile of maternity services within their PCT/Trust/Health Board.

Figure 1: Service providers' rating of CMACE report and recommendations, 2010



Auditing service provision

Q Please indicate whether standards have been audited by your Trust/Health Board.

Table 1 overleaf presents responses by Clinical Directors and Heads of Midwifery about auditing services before the publication of the report and by the December 2009 date stipulated alongside the recommendations. An increase in audit of all of the 'top ten' recommendations can be seen in the table.

Table 1: Auditing of service provision pre- and post-SML report by service providers, 2010 (N=165)

	Pre-SML report		By Dec 2009	
Preconception Care	n	%	n	%
Number and % of women with pre-existing medical conditions for whom specialist preconception counselling is offered.	15	9%	24	15%
Number and % of pregnant women at booking, or women attending for assisted reproductive technologies or pre-pregnancy counselling, who have their Body Mass Index (BMI) calculated and noted.	58	35%	75	45%
Access to care				
Number and % of women who have had an antenatal care "booking visit" and hand maternity record completed by 12 completed weeks of gestation.	66	40%	123	75%
Number and % of women referred who were sent a date for their first booking appointment by 12 weeks of their pregnancy, or within two weeks of referral for women with gestations greater than 12 weeks.	56	34%	112	68%
Migrant women				
Number and % of pregnant women new to the UK, and who have not previously had a full medical examination in the UK, who have had a complete history taken and physical examination performed during their pregnancy and which is recorded in their notes.	14	8%	21	13%
Systolic hypertension requires treatment				
The number and proportion of women with pre-eclampsia and a systolic blood pressure of 160 mm/Hg or more on two or more occasions who were given anti-hypertensive treatment.	44	27%	83	50%
Caesarean section				
Number and % of women having a caesarean, its type and underlying indication, as classified in the National Institute for Health and Clinical Excellence (NICE) guideline on Caesarean section.	114	69%	134	81%
Number and % of women who have had a previous caesarean and who have had a placental localisation scan.	67	41%	76	46%
Clinical skills				
Every maternal death, and serious untoward incident, should be critically reviewed and the lessons learnt actively disseminated to all clinical staff, risk managers and administrators. The precise educational actions taken as a result must be recorded, audited and regularly reported to the Trust board by the clinical governance lead.	118	72%	136	82%
Percentage of staff who have participated or contributed to a serious untoward incident review and who confirm having received feedback from the clinical governance lead about the action.	50	30%	71	43%
The provision of courses and a record of attendees should be regularly audited to reinforce, familiarise, and update all staff with local procedures, equipment and drugs.	107	65%	131	79%
Number and % of staff who have their training requirements in relation to safety and clinical skills identified and addressed in their annual appraisal report.	82	50%	108	65%
Number and % of all cardiac arrest teams who know where the maternity unit is and are able to gain immediate access to it.	36	22%	40	24%
Early warning scoring system				
A version of the MEOWS charts has been adopted and (relevant) staff trained in its use.	2	1%	7	4%

Implementation of the report and recommendations

Q Is there someone within your Trust/Health Board specifically designated to ensure implementation of the Saving Mothers' Lives 'top ten' recommendation?

- Sixty-seven percent of respondents (109/162) indicated that there was someone specifically designated at their trust to ensure compliance with SML recommendations.

Q Were these recommendations met by your unit prior to the report publication in 2007?

Q Does your unit meet some or all of these recommendations now?

Q Was this development partly or fully assisted by the publication of this report?

- Three percent (5/160) of Clinical Directors and Heads of Midwifery reported that all of the recommendations were met by their unit prior to the report publication in 2007, whereas 94% (151/160) reported that some recommendations were met.
- Eighty-three percent (128/155) of Clinical Directors and Heads of Midwifery indicated that all of the recommendations were met by their unit at the time of the survey in winter 2010. Eighty-one percent (100/124) of those believe that the publication of the SML report partly or fully assisted their units in developing their maternity services to meet the report recommendations.

Effect of the report and recommendations

Q As a result of the 'top ten' recommendations has your Trust/Health Board sought any additional funding/resource to enable implementation of the recommendations?

Q Was your Trust/Health Board successful in receiving this funding/resource?

Q In your opinion have any developments been partly or fully assisted by the SML report?

- Thirty-eight percent (59/157) of Clinical Directors and Heads of Midwifery indicated that their Trusts/Health Boards sought additional funding/resource to enable implementation of the recommendations. Of those, 60% (33/55) were successful in receiving the funding.
- Eighty-six percent (133/155) of all Clinical Directors and Heads of Midwifery believe that service development in their Trusts/Health Boards was partly or fully assisted by the SML report.

Q Have you used the Saving Mothers' Lives report and/or the 'top ten' recommendations as evidence for policy, research activity or guidance in your organisation?

Q We are interested in finding examples of initiatives that may be considered an example of good practice in relation to the report and its recommendations

- Ninety-five percent (148/156) of Clinical Directors and Heads of Midwifery stated that they used the SML report and/or the 'top ten' recommendations as evidence for policy or research or as guidance in their organisation.

Clinical Directors and Heads of Midwifery gave several examples of how the SML report and recommendations helped them in implementing new initiatives in their organisation. These included development of local guidelines and policies, various service developments, increased attention for vulnerable women, enhanced workforce planning including recruitment of specialist midwives and additional staff training. Some examples of specific comments are provided in Box 1 and Box 2.

Box 1: Good practice initiatives by Clinical Directors of service providers in response to the SML report

"MEOWS chart developed and implemented. 'Prompt' skills session adopted to ensure update of clinical skills. Relevant guideline developed, and clinical pathways adopted and implemented. 'Pre' booking clinic arranged to facilitate information giving."
Northumbria Health Care NHS Trust

"Policy amended and practice changed to ensure women who have had previous caesarean section and now have an anterior low lying placenta are now referred to a tertiary centre for further investigations to exclude morbidity adherent placenta. If confirmed as such they will be given the option to deliver there. 'Meet and Greet' booking appointment has been introduced whereby women are seen between 6-8 weeks and given their hand-held notes."
South Tyneside NHS Foundation Trust

"Monthly drills often interdepartmental e.g. cardiac arrest in casualty of pregnant women. Monthly workshops - felt to be less stressful for staff than drills and staff will come in off duty to attend."
South Eastern Health and Social Care Trust

"The key area of work resulting from the CMACE report in Somerset has been to develop a midwifery group and management of obesity in pregnancy linked to the Somerset Obesity Care Pathway."
Bridgwater Hospital, Somerset PCT

"Epilepsy in Pregnancy: In 2008 a review of maternity service provision for women with epilepsy was undertaken on a Trust wide basis (across three sites). This review included a staff survey questionnaire (obstetricians and midwives).
A series of recommendations were made: 1) To develop a Trust wide (now Health Board) multi-professional policy (this is almost completed). The new policy/protocol will include an audit tool. 2) To implement an in-service education programme for health professionals as lack of training was identified - from April 2010 all midwives with the Health Board will attend annual mandatory training on epilepsy in pregnancy. The Epilepsy Specialist Nurse has carried out training for obstetricians in 2009 and will continue to do this. A link midwife for epilepsy has been established in each hospital antenatal clinical site (three in total)."
Abertawe Bro Morgannwg University NHS Trust

"We have produced a DVD on our maternity services for the Trust website which is translated in to 13 different languages and sign language. Women are advised to contact their midwife or GP as soon as they find out they are pregnant and given a telephone number.
Innovation award from NICE for development of CTG sticker; Incorporated Early Warning Scoring into HDU charts. PROMPT Intrapartum training course endorsed by RCOG and RCM developed at NBT."
United Bristol NHS Trust

Box 2: Good practice initiatives by Heads of Midwifery of service providers in response to the SML report

"A trivial pursuit game for midwives to update their knowledge of medical conditions. A training programme for community midwives to ensure key skills and recommendations based on CMACE. Presentation to ensure primary care have knowledge of key recommendations."
Powys Teaching Local Health Board

"Team dedicated to refugees and asylum seekers"
Mayday Healthcare NHS Trust

"Access to translation facilities for women who do not speak Welsh or English developed by the Health Board. Training sessions developed for all staff in recognising and managing severely ill women and on the introduction of the MEOWS scoring system.
Antenatal policy revised to ensure that women are booked by 10 weeks and definitely within 2 weeks of referral."
North West Wales NHS Trust

"Clinical skills - maternity unit piloted new 'staff passport' which contains details of mandatory training/other training, equipment training applicable to each job role i.e. Midwife Registrar, Maternity Care Assistants (MCAs), it has now been taken up Trust wide. The 'staff passport' is now used at appraisals and supervisory reviews to monitor compliance. We had already implemented a maternity MEOWS chart prior to 2007 report due to a SUI - we shared this with other trusts after the report."
Yeovil District Hospital NHS Foundation Trust

"The evidence relating to booking before 12 weeks gestation is being used continually to improve access to care for all those women booking for confinement with the Belfast HSC Trust. This is especially important in relation to early antenatal screening, management of screening results and planning of specialist care for those who require it. For example testing for syphilis."
Belfast Health and Social Care Trust

"Development of Maternal medicine team: consultant appointed; lead midwife; specialist midwives in diabetes and mental health. MEOWS chart; training in recognition of deteriorating patient; HDU training. High risk obstetric/anaesthetic clinic for women with high BMI.
Monitor and regular visit to pregnant/postnatal women who are patients on medical/surgical wards in acute trust. Guideline for interventional radiology. Prophylactic placement of uterine artery catheters prior to caesarean section when necessary (e.g. placenta accreta, percreta)"
St George's Healthcare NHS Trust

Challenges in implementation

Q We are also interested in finding out the challenges or barriers that trusts have experienced in implementing new initiatives in response to the recommendations.

Thirty-seven percent (61/165) of all Clinical Directors and Heads of Midwifery listed challenges and barriers that service providers experience in implementing the recommendations. These included resource constraints including midwifery staff shortages, financial constraints and poor information systems. Challenges in implementing some recommendations that require collaboration with primary care or other health services were also reported. Examples of the perceived challenges and barriers can be seen in Box 3 and Box 4.

Box 3: Challenges reported by Clinical Directors of service providers in response to the SML report

"Main challenge is auditing practice, the resources required and limited by the information systems in place."

"Barriers to implementing all 10 steps - in my view related to lack of investment in midwifery and allied staffing i.e. maternal support workers -Important for midwives to make the real difference they know they can when not as stretched as they currently are - the will is there to improve safety but need the resources as well."

"Despite negotiations with the PCT have been unable to set in place agreement for local GPs to carry out medical checks on migrant women, the acute Trust has to bear this cost/time to carry them out in appropriate cases."

"This unit is CNST Level 3 compliant. Biggest issue in reviewing and monitoring actions required in working with PCTs and obtaining feedback."

Box 4: Challenges reported by Heads of Midwifery of service providers in response to the SML report

"With reference to pre-conception care the trust is experiencing difficulty in implementing the recommendations. The trust does not have control of the provision of this service. Pre-conception care is provided by other NHS agencies in this area."

"Our main barrier to some of audits has been problems with an electronic system that has left us short of data. Shortage of midwifery staff is another problem."

"If recommendations not adopted by commissioners of service, resources do not follow to implement more challenging recommendations."

"Implementation of VTE prophylaxis. NICE guidance does not include all risk factors as identified in report. Often needs cross organisational joint working e.g. PCTs and Acute Trusts - can be a challenge."

3.4 Commissioners, including Primary Care Trusts

The questionnaire was sent to named Directors of Public Health or lead commissioners for maternity services at a total of 179 primary care trusts in England and health boards in Northern Ireland, Wales and Scotland. Twenty-nine percent (52/179) of recipients responded to the survey. Eighty-one percent (42/52) of respondents had read the report.

Table 2: Description of PCT/Health Board respondents, 2010

Size of population	**N=51**	**Percentage**
Level 1: Up to 300,000	23	45%
Level 2: 300,000-600,000	20	39%
Level 3: 600,000 and above	8	16%
Number of service providers per PCT/Health Board	**N=49**	
1	30	61%
2	12	24%
3	3	6%
4 or 5 trusts	4	8%

Perception of the report and recommendations

Q In your professional opinion how would you describe the SML report and its recommendations?

- One hundred percent (47/47) agreed or strongly agreed that the report and its recommendations were easy to understand.
- Ninety-eight percent (45/46) agreed or strongly agreed that the report and its recommendations were useful for shaping policy and guidelines.
- Ninety-three percent (43/46) agreed or strongly agreed that the report and its recommendations were based on sound evidence.
- Eighty percent (37/46) agreed or strongly agreed that it was a catalyst for service development.
- Seventy-eight percent (36/46) agreed or strongly agreed that the report and its recommendations were a stimulus for further research into maternity outcomes.
- Fifty-two percent (24/46) agreed or strongly agreed that the report and its recommendations were influential in steering funding for maternity services.
- Forty-three percent (20/46) agreed or strongly agreed that the report and its recommendations were influential for political lobbying activity.

Dissemination of the report and recommendations

Q Please list any PCT events to disseminate the report and its recommendations.

- Forty-eight percent (22/46) had an internal meeting to discuss the report and its recommendations.
- Thirteen percent (6/46) held a seminar or training for their staff in relation to the 'top ten' recommendations.

Commissioning of the report and recommendations

Q When commissioning maternity services do you refer to the SML report or 'top ten recommendations as evidence?

Q Since the report publication in 2007, have you commissioned audits or reviews of maternity services in your area?

Q As a result of this publication have you made any changes in your commissioning for maternity services? And what was the level of change?

- Eighty-three percent (38/46) refer to the SML report or 'top ten' recommendations as evidence when commissioning specific maternity services.
- Forty-six percent (21/46) commissioned audits or reviews of maternity services in their area.
- Sixty-four percent (29/45) made changes in their commissioning of maternity services in their area.

PCTs provided some interesting examples of good practice. Some of the specific comments are presented in Box 5

Box 5: Good practice initiatives by PCTs/Health Boards in response to the SML report

"Monitor % of women having first full booking visit with 12 completed weeks of pregnancy (DH vital signs indicator)."
Trafford PCT

"Development of pre-pregnancy counselling services across the county for women with diabetes this includes practice information and posters advertising the service. Also guidance developed for obesity - BMI over 30. Development of a maternity pathway."
Derbyshire County PCT

"Combined with maternity matters self assessment to review and redesign maternity services and a service of local consultation events on the shape of services for the future."
Warwickshire PCT

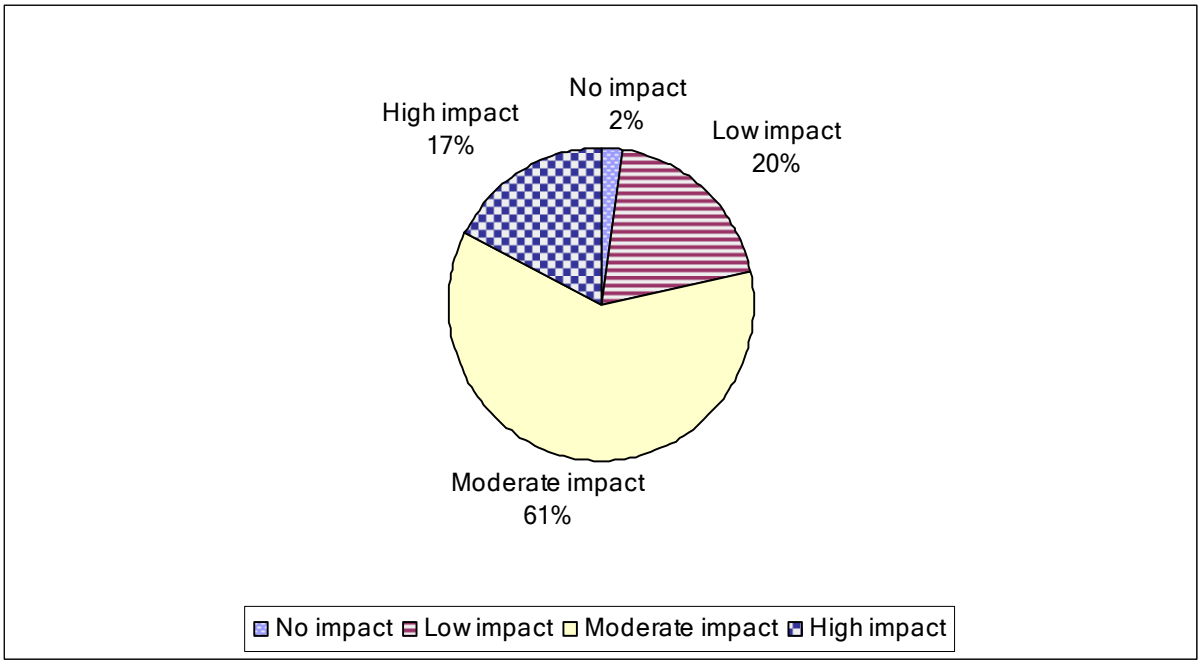
"Obesity in pregnancy working group, only just set up so no outputs yet but an area we are actively addressing."
Somerset PCT

Q In your opinion how much of an impact have the SML recommendations had on the way in which you have commissioned maternity services?

Please list the challenges that PCTs have experienced in implementing recommendations.

Seventeen percent (8/46) believe that the report had a high impact on the way in which they have commissioned maternity services, whereas 61% (28/46) indicated a moderate impact and a further 20% (9/46) a low impact. Reasons given for low or no impact included: 1) that work was already underway before the publication of the report, 2) the 'top ten' recommendations were not specifically included within some PCTs' specifications, 3) some recommendations were highlighted through other national guidance. Figure 2 illustrates the impact of the SML recommendations on the commissioning of services as perceived by PCT directors.

Figure 2: Impact of CMACE report and recommendations on the commissioning of maternity services, 2010 (N=46)



Information provided by the PCT and commissioner respondents included suggestions on how CMACE could improve future reports. Their specific comments are given in Box 6 and Box 7.

Box 6: Challenges experienced by PCTs/Health Boards in implementing the SML recommendations

"The recommendations and rationale are clear. Linking into NICE guidance and NHS performance systems may improve the uptake of recommendations."
Halton and St Helens PCT

"Detailed clinical recommendations do get lost in commissioning so would be more appropriately targeted through CNST etc."
Islington PCT

"Volume of national guidance/directives already supporting agenda. Whilst every maternal death is a concern, the numbers of maternal deaths small = less profile in terms of priorities. Also issue of maternal morbidity as priority for prevention."
Hull PCT

"If you very rarely experience a death then sometimes it is hard to focus staff's attention to the fact that it is and can be a very real possibility. However documents and research as produced by CMACE give an opportunity to stop and check yourself and really think about if you could go one step further in providing best care, and safe quality care."
Wiltshire PCT

"Getting funding to change current services to meet CMACE recommendations."
Wandsworth PCT

Box 7: Suggestions by PCT/Health Boards' on improving future SML reports and recommendations

"Guidance on effectiveness and cost effectiveness of suggested recommendations e.g. BMI monitoring and pain and bleeding in early pregnancy."
North East Essex PCT

"More information on evidence based practice. Performance measures commissioning templates."
Warwickshire PCT

"Establish link between report and existing initiatives/drivers and indicate any gaps that the CMACE report is providing evidence on."
Hull PCT

"Incompatibility of IT systems is a barrier e.g. between PCTs, local authorities, maternity providers; Professional boundaries can also present a challenge; Resources often a barrier if not carefully managed."
Oldham PCT

3.5 Leads for Midwifery Education

The questionnaire was sent to Leads for Midwifery Education in a total of 46 universities in England, Northern Ireland, Wales and Scotland. Thirty-seven percent (17/46) of recipients responded to the survey. Ninety-four percent (16/17) of respondents had read the report. One hundred percent (16/16) of respondents agreed or strongly agreed that the report was easy to understand and was based on sound evidence. Ninety-four percent (15/16) agreed or strongly agreed that the report was a stimulus for further research into maternity outcomes. Fifty-six percent (9/16) agreed or strongly agreed that the report was influential in steering funding for education.

Q Overall, how useful have the SML report and the 'top ten' recommendations been to your organisation?

- Eighty-eight percent (14/16) believe that the report and the 'top ten' recommendations were very useful to their organisation. The remaining 12% (2/16) believe they were somewhat useful.
- Ninety-four percent (15/16) of respondents reported that they used the report and/or the 'top ten' recommendations in the delivery of lectures on specific topics and in assessment of clinical skills. Moreover, 88% (14/16) used it in curriculum development, 69% (11/16) based written assessments on the report and its 'top ten' recommendations and 44% (7/16) used it in research activities.

Q We are interested in finding examples of innovation in education that may be considered an example of good practice (e.g. post-registration module, study day, audit). Has your organisation taken any such action in response to the Saving Mothers' Lives report?

Information on action taken in response to the SML report is given in Box 8 below. Leads for Midwifery Education also provided suggestions on how to improve future SML reports, as shown in Box 9.

Box 8: Good practice initiatives by Leads for Midwifery Education in response to the SML report and recommendations

"Women and mental health module delivered at degree and masters level which is inter-professional."
University of Hull

"Development of what we call ESCAPE study days which we've predominantly aimed at 'Emergency Skill Drills' for midwives working in the community."
University of Worcester

"Used in the preparation for supervision of midwives programme."
Kings College, London

"Development of a high risk pregnancy module for post registration midwives."
University of Hertfordshire

Box 9: **Suggestions by Leads for Midwifery Education on improving future SML reports and recommendations**

"Would be useful for recommendations to be multi-professional."
University of Hull

"I cannot understand why in the 2007 report there wasn't an index like previous report. I think the index make it more user friendly. We consult the document very often in midwife education."
Staffordshire University

"Well prepared and user friendly - continue in current format."
Birmingham City University

"I think it is excellent that innovations and examples of best practice are included in the report, and these are attributed to specific units or Teams/Consultants. As a result we have made contact with, for example, the person who spoke at the midwifery conference we host annually."
University of Worcester

"I found the national dissemination workshops helpful for midwife teachers. The local based ones were also helpful particularly those aimed at supervisors of midwives. I liked the format of the last report with the key recommendations. Continue to keep the midwifery specific chapter."
University of Plymouth

3.6 National Bodies

Thirty-five percent (6/17) of national bodies responded to our survey. These comprised the Department of Health, Social Services and Public Safety Northern Ireland, the

Obstetric Anaesthetists' Association, the Royal College of Midwives, the Royal College of Obstetricians and Gynaecologists, the National Collaborating Centre for Women and Children's Health and the Faculty of Public Health. They all stated that the report and recommendations were easy to understand, useful in shaping polices and guidelines, a catalyst for service development and influential for political lobbying.

Respondents commented on how their organisation had responded to the SML report and how CMACE could improve future reports. Their specific comments are given in the Box 10 and Box 11.

Box 10: Good practice initiatives by national bodies in response to the SML report

"CMO letter to all Trusts in Northern Ireland recommending report and asking for summary of actions based on recommendations."
Department of Health, Social Services and Public Safety (NI)

"1)Revised guidelines for VTE 2)Producing guidelines for obesity in pregnancy with CMACE 3)Produced guidelines on placenta praevia accrete, blood transfusion in org 4)Organising a pre-congress study day on perinatal mental health with CMACE, RCM, RCGP - in Belfast British Congress of O&G 5)Two good practice advise will be produced - 1 perinatal mental health and 2 cardiac disease in pregnancy 6)Engaged with RCGP and RMC to look at GPs role in maternity care."
Royal College of Obstetrics and Gynaecology (RCOG)

"The OAA has created a Guidelines Working Group to review guidelines on a range of topics submitted from hospitals around the country. The best ones are put on the members area of the website (www.oaa-anaes.ac.uk) as good examples which other hospitals can use to adopt or adapt. For example MEOWS"
Obstetric Anaesthetists Association (OAA)

"The maternal mortality triennial reports have formed a key part in many of the guidelines produced by [our organisation]. It has many references to the Saving Mothers' Lives document."
Not attributed

Box 11: Suggestions by National bodies on improving future SML reports and recommendations

"1) Annual and regional reviews and to engage with SHAs as to how they would improve the services.2) CMACE reports need to be widely circulated - publishing it as a supplement of the BJOG will give a better visibility, will be indexed, will have more downloads and a financial arrangement can be made with journal for downloads. 3) Request evidence all trusts have presented the findings to all staff by email/paper/presentation. This could be a metric by NHS LA/CNST."

Royal College of Obstetrics and Gynaecology

"Please bring back detailed case vignettes. Please beware of recommending universal uptake of invalidated interventions which will inevitably make significant demands on clinical practice without proven benefit - e.g. MEOWS charts. More dissemination of information. Maybe each trust should have a CMACE day or two each year to discuss the report internally and how they are going to adopt the recommendations."

Obstetric Anaesthetists Association

4 DISSEMINATION ACTIVITIES

In addition to the specific post project review survey, CMACE has conducted a wide range of dissemination activities to promote uptake of the recommendations from the report *Saving Mothers' Lives: 2003-2005*. To date these activities include:

- Ten conferences/ events with a combined total of 1393 delegates
- Twenty four Saving Mothers' Lives interactive workshops with 991 participants
- Five peer review papers and 38 invited presentations
- The Saving Mothers' Lives reports were also placed on the CMACE website in December 2007 which made it available worldwide for download.

4.1 Conferences

The report was launched in December 2007 with three national conferences held in London, Cardiff and Manchester (with a video link to Glasgow) with a combined total of 1081 delegates. In addition there were a further 6 local events promoting the recommendations throughout 2007 and 2008, which 540 delegates attended.

4.2 Interactive Workshops

Twenty-four SML interactive workshops have been held since the report was launched up until mid-June 2010, and 991 delegates from a variety of clinical and operational backgrounds have participated. The workshop programme is ongoing, so CMACE is continuing to deliver workshops on this publication after the completion of the post project review report. Commonly, Trusts commission CMACE to provide the workshop, and CMACE charges a modest fee to ensure that it can undertake this work without it impacting adversely on the resources available for the enquiry itself. The workshops have been held across England, in the Channel Islands and Ireland and were attended by representatives of all professional groups as illustrated in Figure 3 and Table 3 overleaf. Interactive workshops have been particularly successful in engaging midwives who represent a wide spectrum of managerial, supervisory and clinical roles. CMACE will continue to work with all other health professionals and commissioners involved in the clinical care of mothers with the aim of increasing their representation and participation in interactive workshops.

Figure 3: SML interactive workshops held between 2008 and June 2010, by geographic location

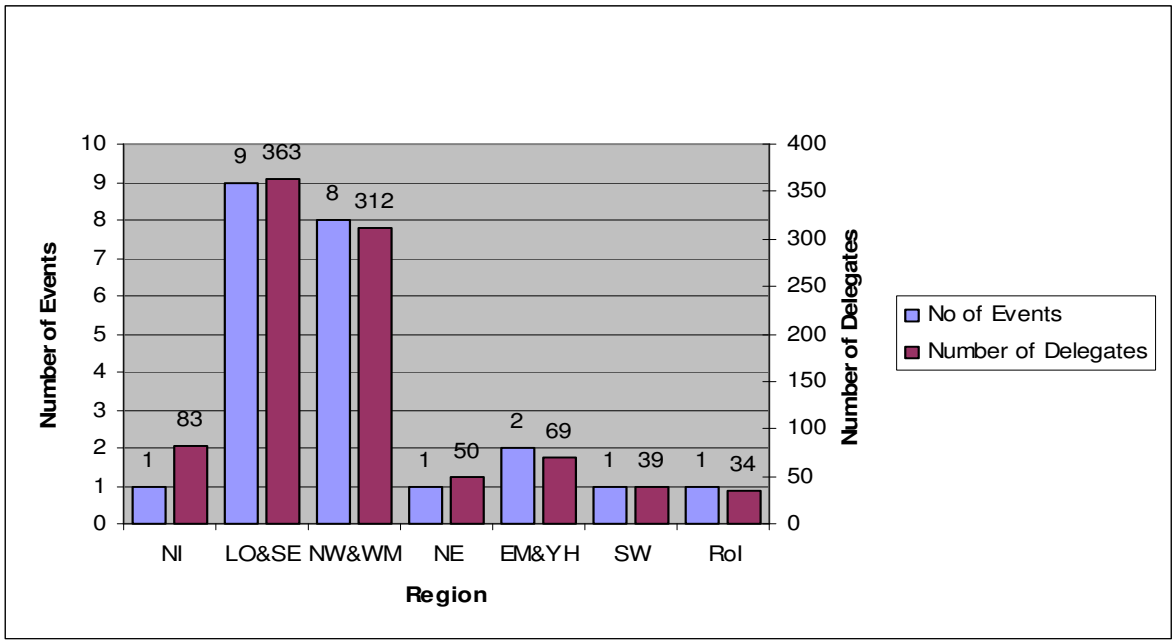


Table 3: Delegates attending SML workshops, by speciality

Speciality	Number
Clinical Midwives	452
Supervisors of Midwives	210
Obstetricians	110
Midwifery Managers	85
Anaesthetists	17
Midwifery Educators	13
Psychiatrists/Mental health specialists	11
Theatre Nurses/Staff	11
Clinical Governance / Risk Managers	10
GP/Other Doctors	9
Student Midwives	9
Paediatricians/neonatal nurses	8
Matrons	6
Public Health Consultants	5
Commissioners	3
Others*	32
Total	991

* Examples of those categorised as 'Other' include an Audit Officer, MSLC chair person, Women's health counsellor, Emergency Department Nurse and a Maternity Support Worker.

The aims of the workshops are to disseminate the enquiry findings and to encourage participants to consider ways in which they can implement the recommendations within their practice. The workshops incorporate presentations on the report findings, 'top ten'

recommendations and the specific needs and experiences of women. These are followed by work in breakout groups where participants from a variety of specialties examine case studies adapted from the enquiry with the support of an expert clinician as facilitator. The cases illustrate the origins of report recommendations and stimulate analysis and appraisal of both individual and local practice. Participants are asked to:

- consider what would happen if the woman were cared for by their service and if this case could occur in their unit
- identify examples of local good practice
- propose actions required, both within their own practice and the wider service, to meet the report recommendations
- present good practice and action points to the wider audience within a feedback session.

Participants' views on the usefulness of the case histories in illustrating the 'top ten' recommendations and the usefulness of the feedback session, where proposed action points are shared, are presented in Figures 4 and 5, respectively. None of the participants ticked the 'not at all useful' option, which was one of the response categories offered.

Figure 4: Delegates' views on the usefulness of the case histories in illustrating the top ten recommendations

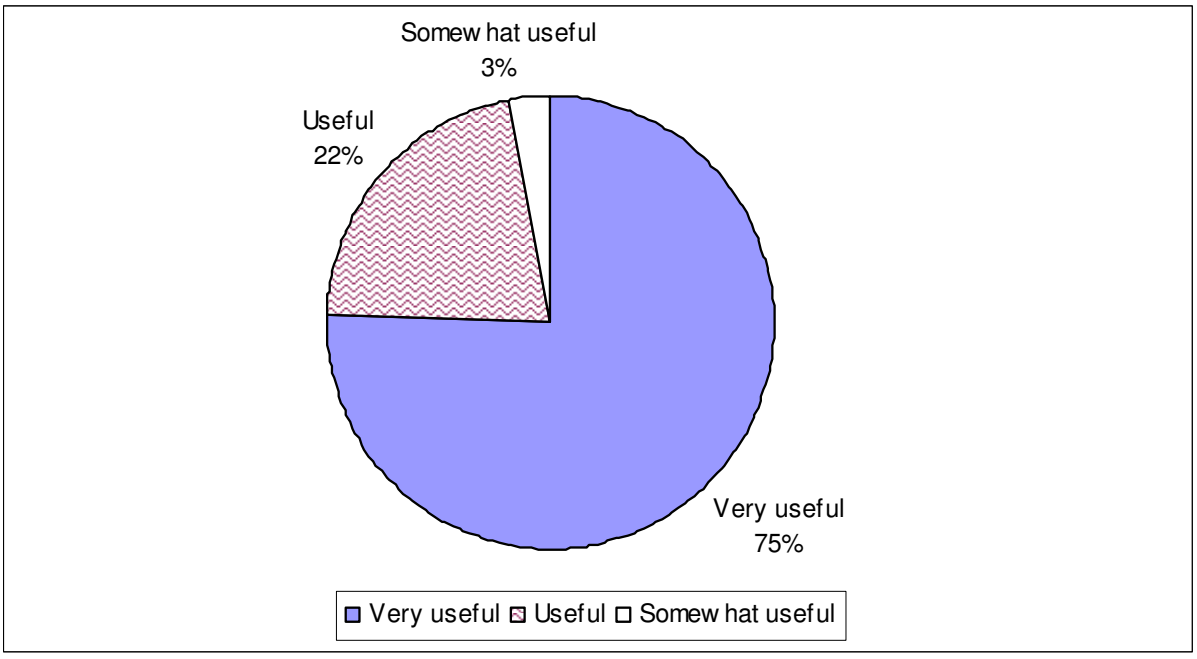
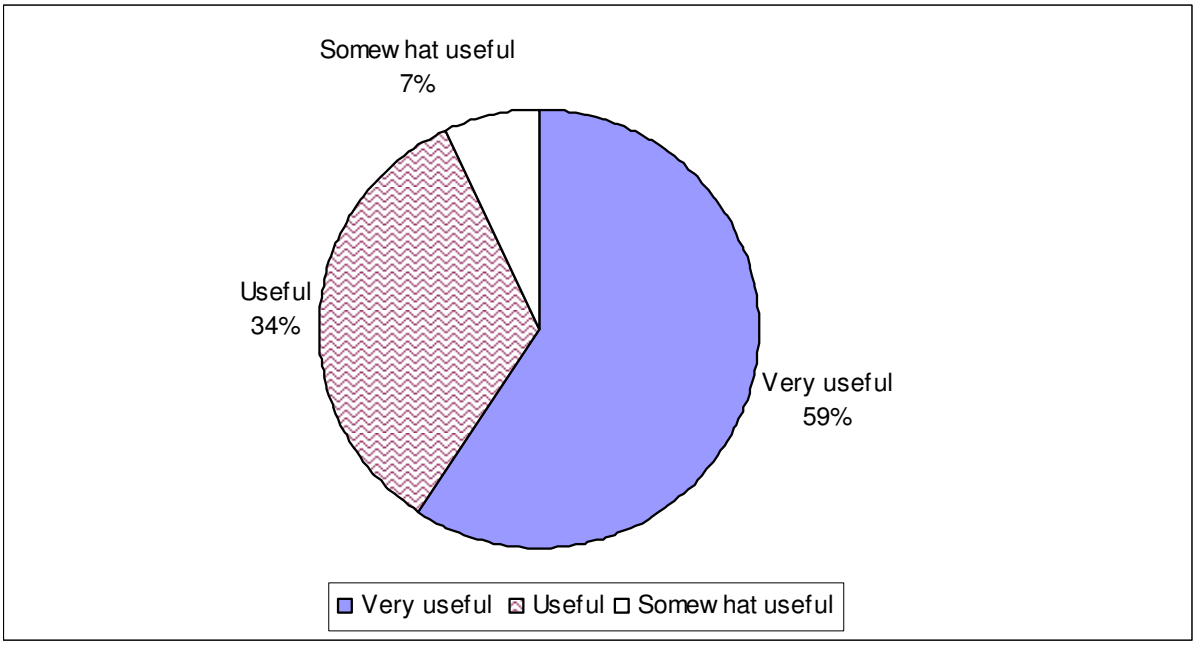


Figure 5: Delegates' views on the usefulness of the workshop feedback session



The good practice and action points are presented within the feedback session at the end of the day; these points and ensuing discussion form the basis of a workshop report written by CMACE. This report is distributed to all participants to take forward in practice with the aim of improving services and ultimately outcomes. The action points identified within all of the workshops broadly fall into four common overarching themes: strengthening communication, areas for policy development, specific training needs and organisation of services. Seven trusts contacted 9-12 months after an interactive workshop gave examples of how action points identified at the workshop had been addressed. These included introducing training for midwives on detection of mental illness, implementing MEOWS, the recruitment of a perinatal psychiatrist with funding secured from the PCT and the introduction of letters and SMS text messaging to encourage attendance at booking appointments.

4.3 Publications and Abstracts

Members of the Maternal Death Enquiry writing panel produced nine publications relating to the *Saving Mothers' Lives: 2003 – 2005* report, details of which are in the table below. In addition to this, between January 2008 and March 2010, a total of 38 invited presentations have been given either by writing panel members or by CMACE at events such as the 1st – 4th United Emirates Conference in Dubai, the SMART conference in Italy, Maternal Mortality Review in New Zealand, SSAFA-FH Armed Forces Conference, Lithuanian Society of Obstetrics and Gynaecology Conference, BMJ 7th National Conferences: Current Issues in Midwifery and The Nursing and Midwifery Council Conference.

Table 4: **Publications produced relating to Saving Mothers' Lives: 2003 – 2005 report**

Month/Year	Author/s	Title	Publication	Reference
Jan'06	Saravanakumar K, Rao S G, Cooper G M	The challenges of Obesity and obstetric anaesthesia	Current Opinion in Obstetrics & Gynaecology	18: 631-635
Jan'07	Thomas J S, Koh S H, Cooper G M	Haemodynamic effects of oxytocin given as i.v. bolus or infusion on women undergoing caesarean section	British Journal of Anaesthesia	98: 116-9
Jun'07	Moore PAS, Cooper GM	Obstetric anaesthetic deaths in context	Current Opinion in Anaesthesiology	20; 191 -4.
2007	Lewis D, de Swiet M	Chapter 1 Maternal Mortality: the global picture	Maternal Medicine ed. Greer IA, Nelson-Piercy C, Walters B, Churchill Livingstone Edinburgh	2007: l -13
Nov/Dec'08	Millward-Sadler H	The Maternal Autopsy	Chapter for 'The Hospital Autopsy 3rd Edition: A Manual of Fundamental Autopsy Practice'	2008
Jan'08	Cooper G, McClure J	Anaesthesia chapter from Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer 2003 -2005	British Journal of Anaesthesia	100; 17-22
Feb'08	Nelson-Piercy C	Medical Deaths in Pregnancy	Clinical Medicine	2008; 8: 11-12
Feb'09	Neilson J	Maternal Mortality	Obstetrics, Gynaecology and Reproductive Medicine	2009; 19 33-36
Jan'10	Harper A, Nelson-Piercy C	Postpartum pyrexia of unknown origin	Obstetrics, Gynaecology and Reproduction Medicine	2010; 20 57-62

5. APPENDIX A: CITATIONS OF THE SAVING MOTHERS' LIVES: 2003 – 2005 REPORT

Since February 2008, CMACE has monitored citations of its reports as part of evaluating the impact of its work. Between January 2008 and 10 June 2010, a total of 79 citations of Saving Mothers' Lives was logged. Details are available below in Table 5.

Table 5: Publications which have cited the 'Saving Mothers' Lives: 2003 – 2005' report

Month/ Year	Authors	Title	Publication	Reference
Feb'08	King's Fund	Safe Births: Everybody's business	N/A	2008
Feb'08	Bick, D	Maternal mortality in the UK: The impact of the increasing complexity of women's lives.	British Midwifery Journal	24, 1-2
Feb'08	Mander, R	Saving Mothers' Lives (formerly Why Mothers Die): Reviewing maternal deaths to make motherhood safer 2003 - 2005.	British Midwifery Journal	24, 8-12
Mar'08	Einav S	External Cephalic Version for Breech Presentation With or Without spinal Analgesia in Nulliparous Women at Term: A Randomised Controlled Trail. In Reply	Obstetrics and Gynecology	111: 3 776-777
Mar'08	Glaze S, Ekwalanga P, Roberts G, et al	Trends in Peripartum Hysterectomy	Obstetrics and Gynecology	111: 732-738
Mar'08	Melarkode K	Saving Mothers' Lives : A Response	British Journal of Anaesthesia	100: 561
Mar'08	M. J. Scrutton*, M. Kinsella, I. Gardner, N. Wharton	Successful delivery in a morbidly obese patient after failed intubation and regional technique	British Journal of Anaesthesia	100(4):564-565
Mar'08	Knight M, Nelson-Piercey C, Kurinczuk J, et al	A prospective national study of acute fatty liver of pregnancy in the UK	GUT Online: An International Journal of Gastroenterology and Hepatology	57: 951-956
Apr'08	Ray A, Hildreth A, Esen UI.	Morbid obesity and intra-partum care	Journal of Obstetrics and Gynaecology	28: 301
Apr'08	Timmis A, Jodrell K	CEMACH: a student perspective	The Practising Midwife	11 (4)
May'08	Chaulear C	Serious primary post-partum haemorrhage, arterial embolisation and future fertility: a retrospective study of 46 cases	Human Reproduction	10.1093 Pf 1-7
Jan'08	RCOG	Standards for Maternity Care: Report of a Working Party	N/A	June 2008
Jun'08	Mistry H, Ramsay M.M, Broughton Pipkin F, et al	BMFMS: Maternal Medicine	Archives of Disease in Childhood	93 (Supplement 1) Fa 67 - Fa 80
Jun'08	Nallapeta S, Arya R, Vause S	BMFMS: Labour and Delivery	Archives of Disease in Childhood	93 (Supplement 1) Fa50 - Fa 67
Jun'08	Preston R	Challenges in obstetric anaesthesia and analgesia	Canadian Journal Anaesthesia	55:386-389
Jul'08	Anawo Ameh C, van den Broek N	Increased Risk of Maternal Death Among Ethnic Minority Women in the UK	The Obstetrician & Gynaecologist	10: 177 - 182
Jul'08	Oates M	Review Postnatal Affective Disorders. Part 1: an introduction.	The Obstetrician & Gynaecologist	10:145-150
Jul'08	Conlon O, Lynch J	Review Maternal Depression; risk factors and treatment options during pregnancy.	The Obstetrician & Gynaecologist	10:151-155

Jul'08	Viguera A, Emmerich, A, Cohen L	A 35 year old woman with postpartum confusion, agitation and delusions.	New England Journal of Medicine	359:509-515
Jul'08	Benhamou D	Maternal mortality from eclampsia in developing countries: some progress , but still a major challenge	Canadian Journal Anaesthesia	55:397
Aug'08	Musters C, McDonald E, Jones I	Management of postnatal depression	British Medical Journal	337:a736
Oct'08	Zwart JJ, Richters A, Ory F, de Vries JI, et al	Eclampsia in the Netherlands	Obstetrics and Gynecology	112:820
Oct'08	Woollard M, Simpson H, Hinshaw K, et al	Training for pre hospital obstetric emergencies	Emergency Medical Journal	25:392
Oct'08	Coley S	Obstetrics for anaesthetists	British Journal Anaesthesia	101:581-582
Oct'08	Oates M	Postnatal affective disorder. Part 2: prevention and management	Obstetrics and Gynecology	10:231-235
Oct'08	Oates M	Author's Reply	Obstetrics and Gynecology	10:277-278
Oct'08	Saglli H, Mohamed K	Pregnancy of unknown location: an evidence-based approach to management	Obstetrics and Gynecology	10:224-230
Nov'08	Benhamou D, Auroy Y, Amalberti R	Monitoring quality and safety in anaesthesia: are large numbers enough?	Anesthesia & Analgesia	107:1458
Nov/ Dec'08	Cook J, Bewley S	Acknowledging a persistent truth: domestic violence in pregnancy	Journal of the Royal Society of Medicine	101:358-363
Nov/ Dec'08	Brooks R, Mott A	Domestic violence: what should paediatricians do?	Archives of Disease in Childhood	93:558-560
Nov/ Dec'08	Enright K, Kidd A, MacLeod A	Postpartum emergencies	Emergency Medicine Journal	**26**:310 doi:10.1136/emj.2008.064188
Nov/ Dec'08	Marik P, Plante L	Venous Thromboembolic Disease and Pregnancy	New England Journal of Medicine	359:2025-2033
Nov/ Dec'08	Millward-Sadler H	The Maternal Autopsy	The Hospital Autopsy 3rd Edition: A Manual of Fundamental Autopsy Practice'	2008
Nov/ Dec'08	Bates S, Greer I, Pabinger I, et al	Venous Thromboembolism, Thrombophilia, Antithrombotic Therapy, and Pregnancy: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition)	Chest Journal	133:844S-886S
Nov/ Dec'08	McWilliam A, Smith A	National UK audit projects in anaesthesia	Continuing Education in Anaesthesia, Critical Care & Pain	8:172-175
Nov/ Dec'08	Marcovitch H	Reducing deaths: the weapons at our disposal	Clinical Risk	14:165
Nov/ Dec'08	Casey P, Oates M, Jones I, Cantwell R	Invited commentaries on... Abortion and mental health disorders	The British Journal of Psychiatry	193:452-454
Nov/ Dec'08	Dhanjal M	Contraception in women with medical problems	Obstetric Medicine	1:78-87
Jan'09	Morrell C J, Slade P, Warner R, et al	Clinical effectiveness of health visitor training in psychologically informed approaches for depression in postnatal women: pragmatic cluster randomised trial in primary care	British Medical Journal	338:a3045
Jan'09	Galvagno Jr SM, Camann W	Sepsis and acute renal failure in pregnancy	Anesthesia & Analgesia	108: 572
Mar'09	Burt C, Durbridge J	Management of cardiac disease in pregnancy	Continuing Education in Anaesthesia, Critical Care & Pain	10.1093/bjaceaccp/mkp005

Feb/Mar' 09	Gidiri M, Greer I	Pregnancy after bariatric surgery: no problem?	Obstetric Medicine	2:11-16
Feb/Mar' 09	Knight M, Kurinczuk J, Spark P, et al	Inequalities in maternal health: national cohort study of ethnic variation in severe maternal morbidities	British Medical Journal	338:b542
Mar'09	Enright K, Kidd A, MacLeod A	Postpartum emergencies	Emergency Medicine Journal	26:310
Mar'09	Roos-Hesselink J, Duvekot J, Thorne S	Pregnancy in high risk cardiac conditions	Heart	95:680-686
Apr'09	Poon L, Kametas N, Maiz N, et al	First-Trimester Prediction of Hypertensive Disorders in Pregnancy	Hypertension	53:812-818.
May'09	Garland M	Obstetric emergencies during labour	InnovAiT	2:291-298
May'09	Seepana S, Allamsetty S, Simon C	Pre-eclampsia	InnovAiT	2:284-290
Aug'09	Milne F, Redman C, Walker J, et al	Assessing the onset of pre-eclampsia in the hospital day unit: summary of the pre-eclampsia guideline (PRECOG II).	British Medical Journal	339: b3129
Oct'09	Durrani A, Cantwell R	Characteristics of patients seen by a community perinatal mental health service	Psychiatric Bulletin	33: 368-370
Oct'09	Jones I, Smith S	Puerperal psychosis: identifying and caring for women at risk	Advances in Psychiatric Treatment	15:411-418
Nov'09	McCready S, Russell R	A national survey of support and counselling after maternal death	Anaesthesia	64: 1218-7
Nov'09	Herrey A, Germain S, Nelson-Piercy C, et al	An ethical dilemma: severe ischaemic mitral regurgitation and acute coronary syndrome in a 49-year-old pregnant woman	European Journal of Echocardiography	11 (2): 195-197
Nov'09	Tower C	Pregnancy in peri- and postmenopausal women: challenges in management	Menopause International	15:165-168
Dec'09	Chappell L	Commentary: Complex medical conditions in pregnancy need appropriate multidisciplinary input	British Medical Journal	339:b5179
Jan'10	Currie J, Hogg M, Patel N, et al	Management of women who decline blood and blood products in pregnancy	The Obstetrician & Gynaecologist	12:13-20
Jan'10	Prata N, Gerdts C	Measurement of postpartum blood loss	British Medical Journal	340:c555
Jan'10	Zhang W-H, Deneux-Tharaux C, Brocklehurst P, et al	Effect of a collector bag for measurement of postpartum blood loss after vaginal delivery: cluster randomised trial in 13 European countries	British Medical Journal	340:c293
Jan'010	McDonnell N	Cardiopulmonary arrest in pregnancy: two case reports of successful outcomes in association with perimortem Caesarean delivery	British Journal Anaesthesia	104(1): 115 - 116
Feb'10	Bowater S E, Thorne S A	Management of pregnancy in women with acquired and congenital heart disease	Postgraduate Medical Journal	86:100-105
Feb'10	Hinova A, Fernando R	The preoperative assessment of obstetric patients	Best Practice & Research Clinical Obstetrics & Gynaecology	24 (3): 261-276
Feb'10	Walfish M, Neuman A, Wlody D	Maternal haemorrhage	British Journal Anaesthesia	103 Suppl 1: i47

Feb'10	Harper MA	Postpartum pyrexia of unknown origin	Obstetrics, Gynaecology and Reproductive Medicine	20:2
Mar'10	Argent VP	Pre-hospital risks of the reconfiguration of obstetric services	Clinical Risk	16:52-55
Mar'10	NHS Litigation Authority	CNST Maternity Clinical Risk Management Standards	N/A	Version 1 2010/2011
Apr'10	Al-Foudri H, Kevelighan E, Catling S	CEMACH 2003–5 Saving Mothers' Lives: lessons for anaesthetists	Continuing Education in Anaesthesia, Critical Care & Pain	10.1093/bjaceaccp/mkq009
Apr'10	Davison J	Medical Disorders in Pregnancy: A Manual for Midwives	The Obstetrician & Gynaecologist	12:141
Apr'10	Abu-Ghazza O, Hayes K, Chandraharan E, Belli A-M	Vascular malformations in relation to obstetrics and gynaecology: diagnosis and treatment	The Obstetrician & Gynaecologist	12:87-93
Apr'10	Nandi A, Gangopadhyay R	Management of women who decline blood and blood products in pregnancy	The Obstetrician & Gynaecologist	12:138
May'10	Raleigh VS, Hussey D, Seccombe I, Hallt K	Ethnic and social inequalities in women's experience of maternity care in England: results of a national survey	Journal of the Royal Society of Medicine	103:188-198
May'10	Bolaji I, Gupta S	Medical management of interstitial pregnancy with high serum beta-selective human chorionic gonadotrophin	Ultrasound	18:60-67
May'10	Ratnavelu N, Daly M J	An unusual cause of diarrhoea in a young female	QJM: An International Journal of Medicine	10.1093/qjmed/hcq070
May'10	Knight M, Kurinczuk, Spark P	Extreme Obesity in Pregnancy in the United Kingdom	The Obstetrician & Gynaecologist	115(5)
Jun'10	Zwart J, Jonkers M, Richters A, et al	Ethnic disparity in severe acute maternal morbidity: a nationwide cohort study in the Netherlands	European Journal of Public Health	10.1093/eurpub/ckq046
Jun'10	None	Misoprostol for postpartum haemorrhage	Drug and Therapeutics Bulletin	48:66-69