

### What is already known on this topic

Factors associated with adverse outcomes relate to recognised national shortages of midwives, inadequate fetal monitoring, and poor interpretation of cardiotocographs in birth asphyxia cases

Further problems are failure to respond to cardiotocographic abnormalities and delay in summoning medical assistance and involving senior staff

### What this study adds

All maternity units experience midwifery staffing shortages, and most units rely on bank midwives to maintain minimum staffing levels

Adverse events occur as a result of midwifery staffing shortages; “near misses” due to staffing shortages occur frequently and remain unreported

Poor skill mix of midwives exists at times, and midwifery shortages prevent uptake of opportunities for training or updating

No contingency plans existed in any of the units to cope with the unexpected surges in demand for care that occur frequently on labour wards. During intensely busy periods, when shortfalls were most acute, senior midwives in charge of the shift were unable to provide support for inexperienced midwives.

Unless protected time is provided for midwives for training in interpretation of cardiotocographs and emergency obstetric management,<sup>1-3 5 8</sup> training during working hours will remain low owing to staffing shortages. Implementation of information technology has also increased the midwifery workload, and we suggest that clerical aspects of midwives' work could be delegated.

Although team midwifery systems may meet the challenges of *Changing Childbirth*,<sup>9</sup> relatively inexperienced midwives occasionally have to work in an intensive care situation on the labour ward with high risk cases. When such work is sporadic, the development of necessary skills becomes very difficult, creating stress for the midwife and risk for the client. Skill mix within the labour ward also depends on cover provided from other teams, but independent planning of duty rosters means that overall labour ward skill mix becomes less predictable. Consideration should be given to whether the risks generated by team midwifery systems outweigh the benefits of attempting to provide continuity of care.

### Conclusion

We observed many latent failures (“accidents waiting to happen”) in this study. Inadequate midwifery staffing levels and ineffective deployment of midwives remain essential failings in the system of care and are the foundation of many adverse events and “near misses.”

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**Competing interests:** None declared.

**Ethical approval:** The North West multicentre research ethics committee approved the study, as did each of the seven trusts' local research ethics committees.

- 1 Maternal and Child Health Research Consortium. *Confidential enquiry into stillbirths and deaths in infancy*. (Fourth Annual Report.) London: Department of Health, 1997.
- 2 Vincent M, Ennis CA. Obstetrical accidents: a review of 64 cases. *BMJ* 1990;300:1365-7.
- 3 Wilson J. Protecting clients—protecting yourself: the legal and risk management issues of midwifery. Presentation to Application of Clinical Risk Management to Midwifery Conference, Nottingham Trent University, Nottingham, 9 September 1996.
- 4 Department of Health. *Why mothers die: report on confidential enquiries into maternal deaths in the United Kingdom 1994-1996*. London: Stationery Office, 1998.
- 5 National Health Service Litigation Authority. *Clinical negligence scheme for trusts: clinical risk management standards*. Bristol: Willis, 2000.
- 6 Reason J. *Managing the risks of organizational accidents*. Oxford: Oxford University Press, 1997:126.
- 7 Van der Shaff TW. Development of a near miss developmental system at a chemical process plant. In: Van der Shaff TW, Hale AR, Lucas DA, eds. *Near miss reporting as a safety tool*. Oxford: Butterworth-Heinemann, 1991.
- 8 Royal College of Obstetricians and Gynaecologists, Royal College of Midwives. *Towards safer childbirth: minimum standards for the organisation of labour wards*. London: RCOG Press, 1999.
- 9 Department of Health. *Changing childbirth: report of the Expert Maternity Group*. London: HMSO, 1993.
- 10 United Kingdom Central Council for Nursing, Midwifery and Health Visiting. *Statistical analysis of the UKCC's professional register 1 April 1997 to 31 March 1998*. London: UKCC, 1998:9-14.
- 11 Dimond B. Crisis in midwifery staffing: the legal aspects. *Br J Midwifery* 1998;6:755-7.

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### Corrections and clarifications

#### *Improving compliance with requirements on junior doctors' hours*

Confusion at the editing stage about material submitted for the web and for the paper journal resulted in figure A being omitted from the web and another being labelled incorrectly in this Quality Improvement Report by Hilary D Cass and colleagues (2 August, pp 270-3). Figure A is now available on the web (<http://bmj.com/cgi/content/full/327/7409/270/DC2>). The figures labelled Figure 2a phase 1 and Figure 2b phase B should have been labelled figures Ba and Bb. The remaining figures (1a, b, c, and d; 2a, b, c, and d; and 3a and b) all belong to the web supplement and should have been posted after the text.

#### *Antidepressant prescribing and suicide*

We wrongly spelt out DDD in two of the letters on this subject in the 2 August issue (by Joanna Moncrieff and by Wayne D Hall and colleagues (p 288 and p 289 respectively)). DDD stands for defined daily dose (not daily dependent dose, as we wrote).

#### *A strategy to reduce cardiovascular disease by more than 80%*

Some data in the “Efficacy” section of the Results did not accurately reflect the data in table 1 in this paper by N J Wald and M R Law (28 June, p 1419-23). In the fifth paragraph of that section, the fourth sentence should cite the relative risks of an IHD (ischaemic heart disease) event for the four interventions as “0.39, 0.54, 0.84, and 0.68 [not 0.66].” Later in that same sentence, 34% should read 32%.