

# **Maternity services in the NHS**

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# **REFORM**

**December 2005**

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The authors would like to thank Andrew Haldenby and Henry de Zoete of *Reform* for their assistance on this report.

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## Executive Summary

- This report reviews the key trends in midwifery and obstetric staffing over the last 30 years and examines how these and national policies have affected the ability of NHS maternity services to respond to choice while at the same time providing a low risk and pleasant environment for mothers, fathers and their babies.
- In 1993 the *Changing Childbirth* report by the House of Commons expert maternity panel recommended more involvement of midwives, development of their roles, and greater patient choice over place of delivery and the professional providing care. Twelve years on, and despite a considerable expansion of obstetrician (but not midwife) numbers, progress has been at best modest.
- What was rightly envisaged was a plurality of provision of midwifery and obstetric antenatal and delivery services, from low risk midwifery-led birthing units to high risk obstetrician-run maternity units. Instead there has been considerable centralisation of services. In England, the number of practising units has fallen from 527 in 1973 to 341 units in 1996 and 282 in 2004.
- The fall has occurred predominantly among units conducting less than 2,000 deliveries annually. As a result a much greater proportion of births take place in larger units. The largest English unit is Liverpool Maternity with 8,084 deliveries in 2003. In contrast, the largest maternity unit in France has 4,000 births per year and the largest unit in Germany has 3,000.
- Risk assessment at pregnancy booking is rudimentary. “Low risk” midwifery-led birthing units do exist, with high levels of patient satisfaction, but low risk women are seen too frequently in large, high risk units. High risk women find it difficult to get appointments for consultations and investigations as a result.
- The justification for this centralisation has been to save money and improve patient safety but it is far from clear that this has been achieved:
  - The Kennedy commission reviewed three hospitals in which concerns had been raised over a two year period (Northwick Park in London, New Cross in Wolverhampton, and Ashford St Peters in Chertsey). In all three, serious deficiencies were identified including poor reporting of adverse incidents. It is implausible that similar findings would not have been made in many other hospitals had they been subject to similar detailed review.

- Only 18 units achieved Level 2 of the clinical negligence scheme for trusts (CNST) in 2004.
- In 2003 the Euronatal Working Group found that the NHS appeared to have the highest rate of suboptimal care.
- In terms of staffing, the service gives every appearance of being under strain:
  - The current numbers of midwives are below recommended levels and insufficient to provide one to one care. Midwife numbers (expressed as whole time equivalents per delivery) have fallen slightly over the last 30 years in the NHS, despite a considerable expansion in the midwives' role. Total midwife hours worked have fallen by 14 per cent between 1994 and 2004.
  - In addition, departments now have to deal with audit, risk management, implementation of NICE guidelines and the plethora of directives that are now a feature of daily clinical life. Such work is important but it takes staff away from giving patient care and dealing with real obstetric emergencies.
  - Although the number of obstetricians has risen by 50 per cent over the last thirty years, and rapidly in the last five years, even the larger maternity units do not enjoy 24 hour 'on site' consultant cover.
  - Few maternity units are operating at below capacity, and in none is there an ability to respond to upturns in activity. Most units have midwifery staffing below the optimum levels and a significant number are under-staffed in relation to their funded establishment. It is the same with obstetricians and sonographers. A sudden increase in booking numbers of even 5 per cent to any unit is likely to place severe strain on both staffing, resources and space, with no mechanism for these units to respond to choice being exercised.
  - Mothers are to some extent able to choose their birthing unit but the funding systems that underpin such choice have led to dangerous consequences. The better units have tended to find themselves overrun by demand and unable to cope. This can lead to a drop in the quality of services and in the worst cases lead to greatly increased clinical risk. The recent tragedies at Northwick Park can be partly explained by this.
  - Even under the payment by results system there is a real risk that a unit that takes on an increase in demand will not see the extra money that their increased activity merits. Instead increased funds simply go to the Trust that the unit is part of rather than directly to the unit. This

is an acute problem in a time when NHS funding is becoming distinctly more restricted.

- Maternity services are likely to come under greater pressure in the future. Policy makers must be realistic about how lifestyle change with much older mothers and more early births are raising the amount and quality of care required; not only obstetric and midwifery, but also neonatal.
- Reforms to patient choice and funding would enable the development of more midwifery led units and more home births with close links to centres which can offer emergency care and rapid transfer when difficulties do arise. The health reform principles apply just as much to maternity services as to elective services. A modern framework for maternity services should meet certain conditions:
  - **Choice from a variety of providers, whether NHS, charitable or private, for antenatal care and delivery.** Historically the NHS in England has commissioned a very limited number of independent maternity providers. Independent provision can however emerge and play a very useful role. The lack of such provision and competition is undoubtedly part of the reason for poorer performing services.
  - **Funding that directly and transparently follows the mother to the maternity unit that carries out the delivery, associated medical treatments and ante-natal facilities.** There must be a link between a unit's activity and income.
  - **Integrated systems of care involving cooperation and networks between high and low risk providers.** Competition should occur between integrated units or networks, offering all levels of care, rather than between high and low risk units.
  - **An end to the drive towards larger, more centralised delivery units across the UK.** Although such mergers are currently often driven by the problems of staffing small neonatal intensive care units, other European countries use improved neonatal transport networks to achieve excellent outcomes without the need for an equivalent centralisation of maternity care.
  - **All maternity units must have the financial autonomy in order to be able to respond to increased demand,** including the ability to hire new staff and purchase new facilities.
  - **Increased presence of senior doctors on labour wards.** Competing maternity hospitals marketing themselves on the level of consultant availability in labour, and women voting with their feet, is a strong

driver keeping senior doctors on labour wards in the rest of Europe. It will have a similar effect here.

- **Expansion in both midwifery and obstetric training numbers combined with an increased focus on the quality of training.** There is anecdotal evidence to suggest that some NHS strategic health authorities will, in the current harsh financial climate, actually make training cut-backs. This is unacceptable.
- **Greater provision of scans, screening and tests by the independent sector.** New networks can involve independent diagnostic providers, ameliorating the current very difficult issues surrounding the provision and access to screening.

## 1. Background

The first half of the 20th century saw dramatic improvements in the safety of childbirth. The cause was the availability of antibiotics, blood transfusion and safe Caesarean sections, all delivered by a rapidly expanding professional cadre of midwives and obstetricians working in a range of new, private, charitable, and government funded dedicated maternity hospitals.

Not only did staff numbers rise but standards were lifted by the statutory registration of midwives in 1902, and the founding of the British College of Obstetrics & Gynaecology in 1929 (the forerunner of the Royal College). Alongside all these developments were improvements in nutrition, and a wider availability of contraception.

Antenatal care as we now know it developed in 1940s. Since the fall in maternal mortality appeared to be predominantly technology-led it was not surprising that the initial drive was towards more consultant-led care based in hospital, albeit with most deliveries conducted by midwives. This did not alter with the foundation of the NHS in 1947, and by the 1970s most births had moved to hospital.

This period after the formation of the NHS saw a continued steady fall in the risk of mothers (maternal) or babies (perinatal) dying in association with pregnancy, no doubt linked to the increase in technological and hospital based care. Labour was often induced for relatively minor indications; electronic fetal monitoring became popular and Caesarean section rates began their seemingly inexorable rise.

However it was not clear to what extent technology or general health improvements had caused the better fetal outcomes, and in the 1980s and 1990s there was a backlash. Women's groups and the evidence-based medicine movement began to question the wisdom of many medical practices and in particular the need for all women to give birth in hospital. Claims were made that non-interventionist midwife-led care, secured the best outcomes with consultant intervention reserved for a minority of severely ill women or those at high risk of complications.

Conflict developed between the need to provide well-staffed and well-disciplined delivery and neonatal care units 24 hours a day, and the need to provide parents with a pleasant environment and real choice over the details of their management. The former required centralisation in large units and restriction of the availability of certain choices such as home birth, water birth and the numbers of family members present at delivery. The latter requires a choice of providers, big and small units, and things like home and water births for a few. Safe and pleasant deliveries both require the presence of a dedicated midwife who can stay with mothers all through labour.

In this report we have reviewed how the NHS ensures *safe* childbirth separately from the way in which it provides *real parental choices and a pleasant environment*. We also investigate the key trends in midwifery and obstetric

staffing over the last 30 years, and how these and health policy affect the ability of NHS maternity services to respond to choice while at the same time providing a low risk and pleasant environment for mothers, fathers and their babies.

### **Changing Childbirth**

In 1993, the *Changing Childbirth* report by the House of Commons expert maternity panel recommended, among other things, more involvement of midwives, development of their roles, and greater patient choice over the professional providing care and where to deliver. In 2003, the House of Commons Select Committee reviewed whether some of the *Changing Childbirth* indicators had been met. The authors' views are recorded alongside the view of the House of Commons Select Committee in Table 1 below.

As Table 1 shows, relatively few of the *Changing Childbirth* targets have been achieved. A few pilot services were introduced in the 1990s. These were a form of midwifery that enabled most women to know the midwife who cared for them during delivery. This was known as "Team Midwifery" and while some teams still exist they require immense dedication by the midwives, are labour intensive and rarely sustainable in practice. Most have ceased to operate. Team midwifery fails to fit in with the lifestyle of many midwives who have families of their own. It is very demanding on family life to be constantly available for a delivery at home or in hospital for even a small number of women.

Previous developments in maternity care had relied for their implementation on the altruism and dedication of a relatively small number of high status staff who were proud to be working in the new NHS. This seems to have worked less well recently, with the expansion in the number of obstetrician and midwife posts.

Instead of providing one-to-one care in labour, or ensuring a consultant presence for the most complex deliveries, many dynamic midwives and doctors have tended to concentrate on developing other services such a prenatal screening for congenital abnormalities, and anti-smoking and anti-domestic violence campaigns. In addition, whole departments now have to deal with audit, risk management, implementation of NICE guidelines and the plethora of directives that are now a feature of daily clinical life. Of course such work is important but it takes staff away from giving patient care and dealing with real obstetric emergencies.

The difficulties already experienced in providing 24 hour senior cover are only likely to worsen with the impact of part time working and the limitation on total hours worked imposed by the European Working Time Directive.

As a result of these trends, and despite an expansion of obstetricians, ten years' on, progress towards achieving the aspirations of *Changing Childbirth* is at best modest.

<b>Table 1: Changing Childbirth indicators and whether they have been achieved</b>		
<b>Changing Childbirth indicators of success (from 1993)</b>	<b>Opinion of the House of Commons Select Committee</b>	<b>Opinion of the Reform authors and comments</b>
All women should be entitled to carry their own notes	“Significant but not complete success”	Yes
Every woman should know one midwife who ensures the continuity of her care – The named midwife	Not commented on individually	Not necessarily. While “named midwife” details will often be written on the notes this doesn’t necessarily mean the indicator has actually been achieved
At least 30 per cent of women should have the midwife as the lead professional	Not commented on individually	Possibly. Regional variations
Every woman should know the lead professional who has a key role in the planning and provision of their care	Not commented on individually	No. Aspirational – many will not meet consultant for instance
At least 75 per cent of women should know the person who cares for them during their delivery	Not commented on individually	No
Midwives should have direct access to some beds in all maternity units	“Some progress”	Not widespread but some progress
At least 30 per cent of women delivered in a maternity unit should be admitted under the management of a named midwife	“Significant but not complete success”	No. Lip service is paid to this by admitting women under “midwife led” care but almost never under the care of a named midwife
The total number of antenatal visits for women with uncomplicated pregnancies should have been reviewed in the light of the available evidence and the RCOG guidance	“Significant but not complete success”	Yes. Required for NICE compliance
All front line ambulances should have a paramedic able to support the midwife who needs to transfer a woman to hospital in an emergency	Not commented on as report did not cover ambulance services	Yes
All women should have access to information about the services available in their locality	“Some progress”	Variable. Depends on GPs and services etc locally
<i>Sources: Changing Childbirth, Department of Health, 1993; Choice in Maternity Services, House of Commons Health Select Committee, 2003</i>		

What was envisaged was a plurality of provision of midwifery and obstetric antenatal and delivery services, from low risk midwifery-led birthing units to high risk obstetrician run maternity units. For this to succeed risk assessment at pregnancy booking must be well organised and implemented. In reality it is rudimentary. Very few units have managed to select even the low target of 30 per cent of pregnancies as of sufficiently low risk for a midwife to be the lead professional. Instead low risk women are seen too frequently in high risk units, and high risk women find it difficult to get appointments for consultations and investigations as a result.

## 2. Current state of maternity services

There are about 650,000 birth registered annually in England and Wales (about another 50,000 births take place in Scotland per year.) This number has fallen slowly from a peak of 706,000 in 1990 to 643,000 in 2004. 98 per cent take place in hospital or other type of maternity unit, and over 99 per cent within the NHS.

### Centralisation

Since 1973 there has been a steady fall in the number of maternity units. In England alone 527 units conducted deliveries in 1973 and 341 in 1996. There is some doubt about the precise figures for more recent years. Department of Health tables of registered deliveries by unit listed only 188 units in 2003. However Birth Choice UK, an independent website, lists 282 delivery units. Either the Department of Health omits some smaller GP units, or BirthChoice UK is continuing to list small units that have closed, or both. Wherever the truth lies, the numbers of maternity units is falling and the fall has occurred predominantly among smaller units, those conducting less than 2,000 deliveries annually.

Births per year	1,000-1,999	2,000-2,999	3,000-3,999	4,000-4,999	5,000-5,999	6,000-6,999	7,000-7,999	8,000+
1973	121	58	25	13	0	0	0	0
1996	104	63	28	31	0	0	0	0
2003	27	56	50	27	9	2	0	1

*Source: Department of Health, BirthChoice UK and MacFarlane A, Mugford M, Henderson J, Furtado A, Stevens and J, Dunn, A Birth Counts, 2000*

The largest English unit is Liverpool Maternity with 8,084 deliveries in 2003. To put this in perspective, the largest maternity unit in Germany is the Humboldt maternity department in Berlin which, after the closure of two smaller units nearby, now has just over 3,000 deliveries per year. Very few other units in Germany have more than 2,000 deliveries per year. The Höchst hospital, the largest maternity unit in Frankfurt, had 1,800 deliveries in 2004. France has also centralised maternity care like England but to a much smaller extent. The Jeanne de Flandre Hospital in Lille, the largest maternity hospital in France, has just over 4,000 births a year.

The justification for this centralisation has been to save money and improve patient safety but the effect has been to remove patient choice. We will examine the evidence that safety has been achieved later.

## Midwives

The total number of midwives employed in the NHS in England rose from 22,385 in 1997 to 24,844 in 2004. Since birth numbers are slightly lower than in 1997 this sounds like an impressive rise.

**Table 3: Numbers of midwives and number of maternities in hospital or community health services, England, 1997-2004**

	Head count	Whole time equivalents	Rate per 1000 maternities	Number of maternities
1997	22,385	18,000	34.7	643,095
1998	22,841	18,000	34.7	635,901
1999	22,799	17,800	35	621,872
2000	22,572	17,600	34.3	604,441
2001	23,075	18,000	33	594,634
2002	23,249	18,100	33	596,122
2003	23,941	18,400	34.5	621,469
2004	24,844	18,800	34	639,721

*Source: Department of Health*

Increasing numbers of midwives now work only part time. According to the Nursing and Midwifery Council report, *Statistical Analysis of the Register* the ratio of full to part-time working in the UK has changed from 59.5 per cent: 40.5 per cent in 1994, to 38.6 per cent: 61.4 per cent in 2004. The total number of working midwives has actually fallen over the same period.

**Table 4: Ratio of midwives working full and part time, 1994 and 2004, UK**

	Number working full time	Working full time, per cent	Number working part time	Working part time, per cent	Total number of working midwives
1994	20,889	59.5	14,238	40.5	35,127
2004	12,999	38.6	20,688	61.4	33,687

*Source: Statistical Analysis of the Register, Nursing and Midwifery Council, August 2005*

This substantial move to part-time work has had some highly significant effects. Despite rising headcount numbers of midwives when expressed as whole time equivalents there has been almost no change. The current rate of 34 whole time equivalent (wte) midwives per 1000 maternities in England is now slightly lower than in 1997 when it was 34.7 per 1000.

Figures before 1997 were collected slightly differently and are not directly comparable with later ones. Nevertheless Macfarlane et al report midwife staffing levels as whole time equivalents back as far as 1975.<sup>1</sup> Using their counting methods the numbers of wte midwives in England rose hardly at all in the 20 years from 18,579 in 1975 to 19,548 in 1996. Department of Health figures for England show that from 1997 to 2004 the number of wte midwives has stayed at roughly 18,000 with a slight increase recently to 18,800. These figures suggest that, measured as whole time equivalents, midwife staffing levels have hardly altered for 30 years.

The change in ratio of part-time versus full-time staff has also significantly affected the actual number of midwife working hours. Assuming that the number of hours worked by a full time midwife is 37.5 per week and the median number worked by a part-time midwife is 22.5 per week, it is possible to roughly estimate the total number of hours worked over time. Using this assumption we found that in the UK as a whole there has apparently been a 14 per cent reduction in the total number of hours worked per week by midwives in the period between 1994 and 2004. The table below shows the extent of the fall and the assumptions made in its calculation.

Department of Health figures suggest an increase in the number of wte midwives which goes against our findings regarding the number of midwife working hours. Although our figure for the number of working hours refers to the UK not just England and there has been a decrease in the number of working hours per week over this period from 40 hours. We have also taken into account the number of working midwives according to the Nursing and Midwifery Council's register and the full time and part time ratio which has inverted in the period 1994 to 2004. Nevertheless the two data sources (Department of Health and Nursing and Midwifery Council) do highlight a discrepancy that we are unable to resolve.

<b>Table 5: Number of working midwife hours per week, UK</b>				
	<b>1994</b>	<b>2004</b>	<b>Change</b>	<b>Percentage change</b>
Full time hours per week	783,338	487,463	-295,875	-37.8
Part time hours per week	320,355	465,480	+145,125	+45.3
<b>Total hours per week</b>	<b>1,103,693</b>	<b>952,943</b>	<b>-150,750</b>	<b>-13.7</b>
<i>Source: Statistical Analysis of the register, Nursing and Midwifery Council, August 2005 Assumptions: full time hours per week = 37.5; part-time median hours per week = 22.5</i>				

<sup>1</sup> MacFarlane A, Mugford M, Henderson J, Furtado A, Stevens and J, Dunn, *A Birth Counts*, 2000

Over this period the role of the midwife has expanded hugely with many more midwives involved in other areas such as prenatal testing, giving anti-smoking advice, screening for depression and domestic violence. There has also been a considerable increase in the number of midwives deployed away from the “frontline” to management roles including risk management, and dealing with patient complaints in the NHS. It is notable that the above estimate for the reduction in midwifery hours does not take account of this significant trend.

The figures above suggest that each wte midwife deals on average with 29.4 births per year. This appears a modest number but midwives have many other duties besides delivering babies. In addition to those mentioned above, they provide antenatal and post partum care, help women breast feed and some have moved into management and teaching.

A detailed exercise in workforce planning (Birthrate Plus, Ball et al, 2003) conducted in 64 units in 2001 suggested that “that an initial ratio of 28 hospital births: w.t.e. midwife per annum might be appropriate.” This analysis considered only the need for midwives to provide antenatal, intrapartum and postpartum care for hospital and home births. It does not take account of midwives performing other specialist roles such as: consultant midwives, audit/risk management, feeding support, ultrasound etc.

### **Vacancies**

Data from the Royal College of Midwives suggests that midwife vacancy rates rose from 2.3 per cent in 2003 to 5.4 per cent in 2004. This may suggest dissatisfaction with working conditions since there are more midwives on the register than there are employed in the NHS. In the whole of the UK in 2005 there were 32,745 midwives registered of which 26,150 were in England (the England only breakdown is not available for 2004 but in that year the total UK figures were higher at 33,687). According to Department of Health statistics for 2004 (the latest available) only 24,844 were employed either full or part time in the NHS. This suggests that about 2,000 midwives on the register are not working. There is no data on the numbers who have allowed their registration to lapse.

### **Age distribution**

The age distribution of working midwives is also skewed upwards. Only 1 per cent of working midwives are aged under 25 and only 6 per cent under 30.<sup>2</sup> This may be partly a function of a predominantly female workforce with relatively high numbers of the younger ones taking time off for childbearing. This age demographic of midwives, however, has changed markedly in this direction in the last 20 years. This is likely to lead to workforce problems in the future although the number of retiring midwives is less than the number graduating according to Department of Health statistics. It is likely that the

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<sup>2</sup> *Statistical Analysis of the register*, Nursing and Midwifery Council, August 2005

number of formal retirees is considerably less than the number who actually stop practising but do not formally retire.

### International comparisons

Available international figures for midwife numbers are expressed as midwives per 100,000 population. The figure for England expressed this way is approximately 38 per 100,000. It appears that only Australia and Poland have more midwives. Table 6 below tabulates the incomplete data available for these statistics.

<b>Table 6: Midwives per 100,000 population, 1996-2004</b>									
	France	Germany	Holland	Denmark	Poland	Australia	Canada	USA	UK
2004								0.1	38
2003	26.08		11.96						
2002	25.34	10.44	11.3	22.32	56.87				
2001	24.88	9.53	10.75	22.3	56.53				
2000	24.37	9.35	10.22	21.08	56.92	40	1.16		
1999	23.75	9.01	9.97	21.24	58.68	60.20			
1998	23.57	9.28	9.65	20.82	63.19				
1997	22.43	9.27	9.11	19.85	64.24				
1996	21.69	9.23	8.74	18.87	63.81		0.56		
<i>Source: World Health Organisation, American College of Nurses-Midwives</i>									

However, international comparisons like this are unhelpful and incomplete. In most other developed countries the majority of normal deliveries are conducted by doctors, assisted by obstetric nurses. Midwives, as independent professionals, conduct very few deliveries. Even in Holland, long famed for the high number of deliveries conducted at home by midwives, the majority of deliveries take place in hospital where doctors supervise the delivery with an obstetric nurse. The obstetric nurses are not included in international midwifery statistics.

In summary, midwife numbers expressed as whole time equivalents per delivery have fallen slightly over the last 30 years in the NHS, despite a considerable expansion in the midwives' role. Current staffing is below recommended levels and insufficient to provide one to one care.

### Medical staff - obstetricians

Medical staff numbers rose steadily over the same period. Between 1975 and 1998 medical staffing as a whole rose by over 50 percent.<sup>3</sup> From 1999, when registrars in training and consultants were reported separately, registrar numbers levelled off but consultant numbers increased by 40 per cent.

	<b>Specialist registrar headcount</b>	<b>Consultant headcount</b>
2004	1,099	1,413
2003	973	1,353
2002	1,014	1,308
2001	950	1,219
2000	939	1,146
1999	1,001	1,057

*Source: Department of Health, and MacFarlane A, Mugford M, Henderson J, Furtado A, Stevens and J, Dunn, A Birth Counts, 2000*

A consideration here regarding international comparisons is that a “specialist” doctor in Europe is not necessarily directly equivalent to an NHS consultant. The European training schemes for specialists are typically three years shorter than that for a UK consultant and the number of specialists is generally greater throughout Europe.

<sup>3</sup> MacFarlane A, Mugford M, Henderson J, Furtado A, Stevens and J, Dunn, *A Birth Counts*, 2000

### 3. Performance

It is difficult to overemphasise the importance of maternity care. Although maternal and perinatal deaths are now both at very low levels, the day of delivery remains in prospect the most dangerous day in most individuals' entire life. Since any deaths of mothers or babies are premature they have an importance well above the level implied by the raw numbers when measured as healthy years of life lost.

Although most cases of physical or mental handicap result from factors outside the control of any doctor or midwife, there remain a small number of babies with cerebral palsy which may be avoidable through good maternity care. It is generally accepted that severe asphyxia at the point of delivery can cause some types of cerebral palsy and there is little doubt that severe premature delivery can do the same. Of course not all such cases are avoidable but some are. It is hardly surprising that in most NHS hospitals the potential medico-legal claims arising from alleged negligent care in labour causing brain damage now dwarf all other medical claims combined.

Modern medical and midwifery care is perhaps even more important for the mother. In a typical maternity unit conducting 3,000 deliveries per year no less than 15 healthy women will be prevented from dying in childbirth every year.<sup>4</sup> Their lives will often have been saved by a relatively minor or routine intervention, a course of antibiotics, a blood transfusion, some antihypertensive drugs or a timely caesarean delivery. Often neither the staff involved nor the patient will realise that a young mother's life has been saved.

However, the provision of a safe environment for mothers and babies in labour is not easy to achieve. It requires leadership, discipline, and constant efforts from all staff. It requires the system to work well not just on weekday mornings but in the middle of the night during half-term week. It requires senior staff not only to make themselves available at all times but to closely monitor the skills of the juniors, and to check the CVs of locums properly. To not only have local guidelines but ensure that everyone knows them, to audit compliance and take steps when it is found to be lacking. To make sure that emergency drills not only happen, but are conducted sufficiently carefully to ensure that everyone who participates can deal with the emergency correctly when it actually happens.

#### Provision of safe delivery

Many of the centralising changes in the UK maternity service have been introduced with the aim of improving safety. The idea being that large units are better able to provide better quality neonatal and maternal intensive care without the need to transfer sick babies or mothers around the country.

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<sup>4</sup> Kaunitz et al., *American Journal of Obstetrics and Gynaecology*, 1984, 150: 826-32. Assumes a conservative estimate of 500 per 100,000 for maternal mortality ratio without medical treatment. Women from religious groups in America who refuse all medical care in pregnancy have a maternal mortality ratio of 872 per 100,000.

However, it is not automatic that above a certain size larger units will achieve this. They may be more difficult to manage efficiently. Staff may avoid taking responsibility for clinical decisions or for aspects of organisation in the hope that others will do it for them. In this next section of the report we examine whether this centralisation has achieved this.

The highly centralised NHS maternity service has not generally achieved better perinatal or maternal mortality figures than other comparable European countries (see tables in the Appendix). However, it is probably not justified to use routine maternity statistics to make meaningful comparisons about the quality of care in different European countries. The reason is that statistics are often collected in different ways, and with different degrees of accuracy. Countries with good collection methods may appear to have worse outcomes as a result. Also many maternal and fetal deaths are either unavoidable or related to social factors outside the control of the maternity system.

### **Audits of suboptimal care**

A better method is to compare the frequency of suboptimal care. This has never been done for all maternities. However, in 2003 the Euronatal Working Group compared the frequency of suboptimal care leading to perinatal death in a range of countries. They set up an independent audit panel which reviewed 1619 perinatal deaths in regions of ten European countries.

Suboptimal care was defined by the same panel of assessors and on the basis of the same agreed “evidence-based” criteria for all countries. The percentage of cases graded as having suboptimal factors present which either might, or probably did, contribute to the bad outcome are shown in table 8.

The NHS appeared to have the highest rate of suboptimal care which might have contributed to the deaths. The authors rightly caution against making the inference that substandard practice is really more common in England than other countries. Nevertheless this hardly suggests that the centralisation achieved by the NHS has resulted in better care.

**Table 8 - Numbers and percentages of evaluated cases of perinatal death graded as “suboptimal factor(s) identified which might have contributed to the fatal outcome” or “suboptimal factor(s) present which are likely to have contributed to the fatal outcome”**

Country	Total deaths evaluated	Substandard care might have caused the death	Per cent	95 per cent confidence interval
Finland	163	52	32	25-39
Sweden	129	46	36	28-44
Norway	139	55	40	32-48
Spain	102	45	44	35-54
Netherlands	157	76	48	41-56
Scotland	85	43	51	40-61
Belgium	188	96	51	44-58
Denmark	260	133	51	45-57
Greece	105	54	51	42-61
England	215	115	54	47-60
Total / Average	1543	715	46	44-49

*Source: Differences in perinatal mortality and suboptimal care between 10 European regions: results of an international audit, Richardus, J et al, BJOG: An International Journal of Obstetrics and Gynaecology, 2003, Vol 110, No 2*

### **Medico-legal claims**

More than half of the potential claims for negligent injury in the NHS arise from maternity care. These are predominantly cases of brain damage or other birth injury allegedly caused by substandard care at delivery.

The NHS has addressed this problem by introducing the Clinical Negligence Scheme for Trusts (CNST). Currently all maternity Trusts make contributions to a fund for paying out such claims in proportion to the number of deliveries they conduct. The CNST scheme classifies trusts into three “levels”. Trusts which achieve success at level one receive a 10 per cent discount on their CNST contributions, with discounts of 20 per cent and 30 per cent available to those passing the higher levels.

Trusts are normally assessed against the CNST Standards once every two years, although they may request an earlier assessment if they wish to move up a level. Trusts not achieving level one are assessed every year.

The CNST assesses maternity services in the UK against eight clinical risk standards, which, if in place, demonstrate that high quality and safe care for mothers and babies is being provided and that the service has a ‘safety awareness culture’ embedded in its clinical practices. The CNST refined its standards in 2003. Only 18 units achieved Level 2 in 2004.

The scheme sounds sensible and some of the standards, such as minimum numbers of hours of consultant presence on the labour ward for units of different size, are clearly important. But other standards are believed by many doctors and midwives to be rather bureaucratic. It is claimed that time is wasted compiling the evidence for such assessments.

### **Special inquiries**

The Kennedy commission reviewed three hospitals in which concerns had been raised over a two year period: Northwick Park in London, New Cross in Wolverhampton, and Ashford St Peters in Chertsey. In all three, serious deficiencies were identified. These included poor reporting of adverse incidents and poor handling of complaints, poor staff working relationships, inadequate training and supervision of clinical staff, services isolated both geographically and clinically, and staff shortages with poor management of temporary employees. It is implausible that similar findings would not have been made in many other hospitals had they been subject to similar detailed review.

### **Confidential enquiries**

The triennial Confidential Enquiries into maternal deaths, which was instituted in 1950s has for a long period been a jewel in the crown of British obstetrics. Every three years notes from all maternal deaths in the country are collected and the records reviewed by a panel of expert obstetricians, midwives, anaesthetists and pathologists to identify the cause and any avoidable factors. Over the years its identification of areas of practice where avoidable factors are common has repeatedly been a catalyst for change. The result has been a dramatic fall in maternal mortality.

The Confidential Enquiry format has been imitated in many other countries and in the UK in the form of CEPOD and CESDI. Originally the enquiries were performed by consortia of the Royal Colleges with funding from the Department of Health. More recently they have been combined into one organisation CEMACH within the department of Health.

CEMACH does not normally compare care between Britain and other countries. However they recently reviewed the care of women with diabetes in pregnancy in the UK. The report found that only 38 per cent of women with diabetes are entering pregnancy with good control (HbA1c value of less than 7 per cent). The authors contrasted this with Holland where a recent survey showed that 75 per cent of diabetic women were this well controlled pre-pregnancy.<sup>5</sup>

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<sup>5</sup> Evers IM, de Valk HW, Visser GHA, *Risk of complications of pregnancy in women with type 1 diabetes: nationwide prospective study in the Netherlands*, BMJ 2004, 328:915–18

## Surveys of the provision of evidence-based obstetrics

Pregnancy care was one of the first areas of medicine to be placed on a firm evidence-based footing. Prior to the 1980s, consensus about effectiveness had been largely restricted to obviously effective treatments such as antibiotics for puerperal fever, blood transfusion for major haemorrhage and Caesarean for obstructed labour. Since then, largely as a result of the work of Iain Chalmers and his colleagues from Oxford, there is now firm evidence for many treatments of much smaller but still worthwhile benefit.

Examples include steroids to prevent breathing problems after pre-term delivery, Caesarean section for breech births, and magnesium sulphate in preference to other anti-convulsants for eclampsia. There is strong evidence from a number of randomised controlled trials that just providing a supportive person to sit with women in labour reduces many adverse outcomes. Supported women use less pain killers are more satisfied and are more likely to have a normal delivery.<sup>6</sup>

Although there have been some delays in implementing the findings of well conducted randomised controlled trials, in general the NHS has implemented evidence-based medicine fairly well. A careful audit in 2002 of compliance with five evidence-based standards indicated a considerable change in practice after unequivocal evidence became available.<sup>7</sup> Rates of administration of steroids for pre-term labour jumped from 0-80 per cent up to 62-95 per cent between 1988 and 1996. Rates of use of the ventouse as instrument of first choice, of prophylactic antibiotics at Caesarean section, and use of polyglycolic acid sutures for perineal repair all also rose dramatically, albeit with a number of units continuing to have low rates of compliance with the evidence based standard. Although the study was unable to measure precisely compliance with the evidence based standard of use of Magnesium sulphate for eclampsia, anecdotal evidence suggest that this is now almost universal in the NHS. Unfortunately there is little comparative evidence from the rest of Europe on the implementation of these standards.

However when it comes to the provision of midwife support in labour, the NHS seems unable to reliably provide this service. A survey of 676 recently delivered women, carried out between January and April 2005 by the National Childbirth Trust, revealed that over a quarter (27 per cent) had not received one-to-one care in labour.

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<sup>6</sup> Hodnett ED, Gates S, Hofmeyr G J, Sakala C, *Continuous support for women during childbirth*, The Cochrane Database of Systematic Reviews 2003, Issue 3

<sup>7</sup> Wilson B, Thornton JG, Hewison j, Lilford RJ, Watt I, Braunholz D, Robinson M, *The Leeds University Maternity Audit Project*, *Int J Qual Health Care*, 2002, 14(3): 175-81

## Consultant care

By the 1990s, many consultants in the NHS had almost opted out of emergency obstetrics, preferring in many units to leave the normal deliveries to midwives and the complicated deliveries to middle grade doctors in training.

In 1999 an anonymous consultant in an NHS district general hospital calculated that over the preceding three years (out of about 9000 deliveries, around 750 of them attended by medical staff) he and his three colleagues had done six normal deliveries, 19 instrumental deliveries, two vaginal breech deliveries and 26 emergency Caesarean sections between them.<sup>8</sup> The letter provoked a reply from the president of the Royal College of Obstetricians and Gynaecologists who argued for an expansion of the number of consultants but did not dispute the truth of the original observation.<sup>9</sup>

The National Sentinel Caesarean Section Audit provides another insight into consultant involvement with complicated obstetrics.<sup>10</sup> This report does not give direct figures for consultant involvement at Caesarean section. However it set consultant presence at 10 per cent of potentially complicated Caesareans (e.g. placenta praevia, placental abruption, at full cervical dilatation, in obese women, for premature deliveries less than 32 weeks for multiple pregnancy and women with multiple previous Caesarean sections) as an auditable standard. This modest target was achieved with overall a consultant present in theatre for 21 per cent of these cases.

In summary the NHS seems to have done relatively well in implementing the medical aspects of evidence based medicine but less well with the midwifery aspects. The reason is probably due to genuine understaffing. When it comes to providing safe care, however, there is little or no evidence that the NHS is doing better than Europe and some evidence that we are doing worse. This may be a reflection of a relatively low level of consultant presence in the labour and delivery suite.

## Environment and experience

As such lifesaving treatments have become accepted as routine and straightforward, so the emphasis has shifted from saving lives to improving the experience of pregnancy and childbirth. Most modern units now have 24 hour anaesthetic cover to provide an epidural service and now encourage parents to write birth plans describing the type of care they would like to receive and partners are welcomed. Facilities for water birth, aroma-therapy, acupuncture, special cushions and bean bags to encourage mobility in labour are widely available.

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<sup>8</sup> Anon, *Consultants are stretched to their limits*, BMJ, July 1999; 319:256

<sup>9</sup> Shaw, RW, *Reply from Royal College of Obstetricians and Gynaecologists*, BMJ, July 1999; 319:256

<sup>10</sup> Thomas, J, Paranjothy, S, *National Sentinel Caesarean Section Audit Report*, Royal College of Obstetricians and Gynaecologists Clinical Effectiveness Support Unit, 2001

Nevertheless, the provision of a friendly environment for labour is also difficult to achieve. It is more than just the handing out and collecting in of birth plan forms. It is acting on them, or explaining why they need to be deviated from.

In later sections we will examine how NHS maternity services compare with others in these two elements of a high quality service: provision of safe delivery and a friendly environment for labour.

### **Patient surveys**

There have been no comparative surveys of satisfaction with maternity care around Europe. A survey conducted by the Picker Institute in 1999/2000 reported higher rates of dissatisfaction with seven dimensions of health care in the UK than Germany, Sweden or Switzerland.<sup>11</sup> The US had better scores than the UK on five of the seven dimensions. However, maternity patients were excluded and the authors rightly caution against making quality judgments from these sorts of data.

Surveys, as a method of judging preferences, are not very good. Women tend to say that they want the sort of care with which they are already familiar.<sup>12</sup> A recent Department of Health survey showed that around 80 per cent of women are pleased with the care they receive when they have their baby.<sup>13</sup> The most interesting aspect of the poll was that almost 50 per cent of new mums think they are not given enough choice about where and when they could attend ante-natal classes. This touches on the key issue of choice in maternity services. We will return to what this means for the service and how it can be changed later in the report.

### **Campaigning groups**

Maternity care has been the subject of political and public attention in England for many years. This contrasts strongly with other countries in Europe, for example the Netherlands and Germany. Tyler compared maternity campaigning groups in England, the Netherlands and Germany.<sup>14</sup> In England and the Netherlands almost all organisations had originated as genuinely grass roots organisations founded by individuals with negative experience of the services provided. However, the Dutch and English groups tended to behave very differently.

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<sup>11</sup> Coulter, A, Cleary, PD, *Patients' experiences with hospital care in five countries*, Health Affairs, 2001, 20: 244-252

<sup>12</sup> Hundley, V, Ryan, M, *Are women's expectations and preferences for intrapartum care affected by the model of care on offer?*, BJOG: An International Journal of Obstetrics & Gynaecology, 2004, 111 (6), 550-560

<sup>13</sup> *Majority of women happy with birth experience, survey finds*, Department of Health press release, 8 December 2005

<sup>14</sup> Tyler, S, *Comparing the campaigning profile of maternity user groups in Europe – can we learn anything useful?*, Health expectations, 2002, 5: 136-147

The Dutch groups did little or no campaigning and tended to confine their activities to providing support to individual patients. In contrast, campaigning was the reason for their existence for most English groups, and they were generally vibrant organisations with a regular supply of new members.

In Germany there were relatively few such grass roots organisations and instead organisation had tended to be driven by maternity care providers. Again, like the Netherlands the groups did little campaigning, but in Germany the reason seemed to be that the organisations were relatively weak with few new members joining.

This suggests that, judged by their actions, both Dutch and German patients are less dissatisfied with the maternity care they receive than those in England.

England and the Netherlands both have relatively centralised systems controlled by the professionals. However, the Dutch system is much more diverse with high numbers of very low tech deliveries occurring at home as well as many very interventionist deliveries in hospitals. In contrast Germany has a multitude of separate providers from which patients can choose.

## 4. Policy recommendations

*Reform* supports the aims of an NHS which is patient-led with a variety of providers. Maternity services have achieved the former – mothers are to some extent able to choose their birthing unit – but the funding systems that underpin such choice has led to dangerous negative consequences.

Though choice of delivery unit is offered to women at the time of booking for their pregnancy, this is in many cases highly restricted except in the case of women living in urban areas with several local units easily accessible. Few maternity units are operating at below capacity, and in none is there an ability to respond to upturns in activity. For example, most maternity units have midwifery staffing below the optimum Birthrate Plus levels, and a significant number are under-staffed in relation to their funded establishment. This is the same with obstetricians and sonographers. A sudden influx in booking numbers by even 5 per cent to any unit is likely to place severe strain on both staffing, resources and space, with no mechanism for these units to respond to choice being exercised.

When accompanied by an appropriate funding system, choice is a significant driver of improved standards. At present, even under the payment by results system, there is a real risk that a unit that takes on an increase in demand will not see the extra money that its increased activity merits. Instead increased funds simply go to the Trust of which the unit is part rather than directly to the unit. The Trust then does what it wishes with the extra money with a high possibility that little will end up in the particular unit.

This means that where preferences have been expressed the better units have tended to find themselves overrun by demand with which they are then unable to cope because funding has not been proportionately increased. This can lead to a drop in the quality of services and in the worst cases to greatly increased clinical risk. The recent tragedies at Northwick Park can be partly explained by this. The position of maternity staff having to fight for increased funding while carrying out increased activity is a particularly acute problem in a time when NHS funding is becoming distinctly more restricted.

The management of maternity services is a real problem. The NHS has an appalling record of investing in formal training for managers. In most units – the most senior posts are the Clinical Director (an obstetrician) and the Head of Midwifery (a midwife). Neither is routinely required to have anything but a professional background. This is not good enough for this highest risk of services. Further, there is very rarely a senior manager charged with developing services, writing a 5 or 10 year plan, or responding to changes in population demographics and birthrates.

### Recommendations

A new more pluralistic system for delivery would require investment in clinical and training networks and partnerships. It is perfectly feasible to have more midwifery led units and more home births, but these services must

have close links to centres which can offer emergency care and rapid transfer when difficulties do arise. Different kinds of centre should be seen as mutually supportive and complementary. There is plenty of scope for new collaborations between midwives and obstetricians to provide both better birth experience and safer care for high risk pregnancies. This will take investment – both financial and in time.

Such partnership is critical to management of the whole area of medical legal liability which is understandably seen as a threat by both professionals and funders. We have seen real gains in terms of ‘high tech’ breakthroughs – for example improved survival of very low birth weight babies; and there are ‘low risk’ midwifery led birthing units throughout the UK with high levels of patient satisfaction. The challenge is to connect care in the ‘high’ and ‘low’ tech extremes of the same spectrum to create the conditions both for a much improved and consistent patient/parent experience for the majority of those that fall in the ‘mid-range’ of risk and medical input.

Higher standards of clinical governance require shared protocols and more investment for information technology in shared records. This would be the basis also for a more open partnership with patients so that they can exercise choice of delivery unit with the help of more timely information about the risks associated with those choices. We must be realistic about how lifestyle change with much older mothers and more early births are raising the amount and quality of care required-not only obstetric and midwifery, but also neonatal.

Real patient choice of certain aspects of antenatal care and birthing unit is desirable but the framework that it works within must be sound. This framework must meet certain conditions:

- **Parents must be able to choose from a variety of providers, whether NHS, charitable or private, for both aspects of antenatal care and their delivery.** Historically the NHS in England has a very limited number of independent maternity providers. This, however, does not mean that independent provision would not materialise nor play a very useful role. The lack of such provision and competition is undoubtedly part of the reason for poorer performing services.
- **Funding must directly and transparently follow the mother to the maternity unit that carries out the delivery, associated medical treatments and ante-natal facilities.** There must be a link between a unit's income and the activity it carries out. Only under these circumstances can services respond to increased demand by accurately purchasing more facilities and hiring more staff etc. Otherwise there is a real danger - which is already present to certain extent – that choice will lead to popular units becoming overstretched and therefore increasing clinical risk and compromising performance.
- **There must be an integrated system of care involving cooperation and networks between providers, high and low risk.** There is scope for new

kinds of joint enterprises between obstetricians and midwives using all technologies. These networks would then compete with each other to provide services. Although we support competition between independent maternity units as a driver for raised standards, we do not advocate competition between high and low-risk units. High-risk units might wastefully entice in low-risk mothers or low-risk units might dangerously retain care of high-risk women. Rather we recommend that low and high-risk units are integrated, and that competition occurs between such integrated units, each providing a full spectrum of care in pregnancy.

- **There must be an end to the drive towards larger, more centralised delivery units across the UK.** The current trend to merge medium size 2,000-3,000 delivery maternity units into giant 5,000 or 6,000 plus delivery units is not evidence based. Competition between such medium-sized units should be a driver for higher standards. Although such mergers are currently often driven by the problems of staffing small neonatal intensive care units, other European countries use improved neonatal transport networks to achieve excellent outcomes without the need for an equivalent centralisation of maternity care. Although there is a driver towards further centralisation of maternity units in the form of the European Working Time Directive and its influence on medical cover, we can see no evidence of benefit to patients in closing down smaller maternity units. The German experience suggests that it is possible to provide a high quality of care in smaller units using the integrated model. The drive to centralisation in this country has often lead to maternity services being provided at a considerable distance to women, with no clear gain in improved outcome for mother or baby.
- **All maternity units must have the freedom and autonomy to respond to increased demand.** Units must have control over their budgets including the hiring of new staff and purchasing of new facilities. Part of this is greater freedom for a unit to choose the pay and terms and conditions of their staff. With this freedom must come the employment and training of better managers to adequately cope with the extra demands that autonomy brings. Units must be free standing and financially responsible. This will see them buying and sharing services with other trusts in an integrated system of care.
- **Increased presence of senior doctors on labour wards.** Although there has been obstetric consultant expansion, there is nowhere near enough and even the larger maternity units do not enjoy 24 hour 'on site' consultant cover. Competing maternity hospitals marketing themselves on the level of consultant availability in labour, and women voting with their feet, is a strong driver keeping senior doctors on labour wards in the rest of Europe. It will have a similar effect here.
- **Both midwifery and obstetric training numbers must be expanded combined with an increased focus on the quality of training.** The figures for the age range of midwives show that while in the next five years there

will be more midwifery graduates than retirees there is still likely to be a shortage of midwives in the future. It is also likely that the official number of retirees does not include the number of midwives who stop practising but do not retire. A further emphasis on quality of training must also be a priority. There is anecdotal evidence to suggest that some NHS Strategic Health Authorities will in the current harsh financial climate actually make training cut-backs. This is unacceptable.

- **Greater provision of scans, screening and tests by the independent sector.** There are currently very difficult issues surrounding the provision and access to screening across the country. The new integrated approach that we suggest would go a long way to ensuring access and consistent quality of screening in what is currently a poor performing area.

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## Appendix

<b>Table 9: Neonatal mortality, deaths per 1 000 live births</b>				
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
France	2.8	2.9		
Germany	2.7	2.7		
Japan	1.8	1.6	1.7	1.7
Netherlands	3.9	3.9	3.8	3.6
New Zealand	3.8	3		
Switzerland	3.6	3.6	3.6	
United Kingdom	3.9	3.6	3.5	
United States	4.6	4.5	4.7	
<i>Source: OECD Health Data 2005</i>				

<b>Table 10: Perinatal mortality, deaths per 1 000 total births</b>				
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
France	6.8	6.9		
Germany	6.1	5.9		
Japan	3.8	3.6	3.7	3.5
Netherlands	7.8	7.9	7.6	7.4
New Zealand	6.4	5.9		
Switzerland	7.8	8		
United Kingdom	8.1	6.7	6.9	
United States	7	6.9	6.9	
<i>Source: OECD Health Data 2005</i>				

<b>Table 11: Maternal mortality, deaths per 100 000 live births</b>				
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
France	6.5			
Germany	5.6	3.7	2.9	
Japan	6.6	6.5	7.3	6.1
Netherlands	8.7	6.9	9.9	4
New Zealand	8.8	5.3		
Switzerland	6.4			
United Kingdom	7	7	6	8
United States	9.8	9.9	8.9	
<i>Source: OECD Health Data 2005</i>				

<b>Table 12: Infant mortality, deaths per 1 000 live births</b>					
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004*</b>
France	4.4	4.5	4.1	3.9	4.31
Germany	4.4	4.3	4.2	4.2	4.2
Japan	3.2	3.1	3	3	3.28
Netherlands	5.1	5.4	5	4.8	5.11
New Zealand	6.3	5.6			5.96
Switzerland	4.9	5	4.5	4.3	4.43
United Kingdom	5.6	5.5	5.2	5.3	5.22
United States	6.9	6.8	7		6.63
<i>Source: OECD Health Data 2005; *CIA World Factbook</i>					

<b>Table 13: Caesarean section, procedures per 1000 live births</b>				
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
France	171.1	178.3		
Germany	208.9	220	236.7	
Japan				
Netherlands	118.7	136.4	135.2	135.3
New Zealand	201.7	212.1	222.4	222.9
Switzerland			242	251
United Kingdom	222.8	225.6	216.7	220.8
United States	229	244	261	276
<i>Source: OECD Health Statistics 2005</i>				

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