Maternity and Newborn Clinical Working Group

BACKGROUND AND CONTEXT

As part of the Healthcare for London work programme, six clinical working groups were set up each to look at a specific area of healthcare in terms of:

- Current issues
- What would best practice look like?
- Barriers to best practice, why does this not happen now
- What could be changed to ensure implementation of best practice?
- How can this be brought about?

This paper sets out the conclusions of the Maternity and Newborn working group. The work of the group was informed by a number of reports, in particular:

- Royal College of Midwives: Submission to Healthcare for London review, March 2007.
- Royal College of Obstetricians and Gynaecologists: Submission to Healthcare for London Review, March 2007.
- Making it Better for Mother and Baby: Sheila Shribman, National Clinical Director for Children, Young People and Maternity Services, Department of Health, February 2007.
- London Maternity Services Review, Progress Report, Debbie Graham, Midwifery Lead, NHS London, January 2007.
- Planning Place of Birth, Intrapartum care. National Collaborating Centre for Women's and Children's Health. Commissioned by the National Institute for Health and Clinical Excellence, March 2007.
- Structured review of birth centre outcomes, The Maternity Research Group of the National Service Framework (NSF) for Children, Young People and Maternity Services, July 2005.

- Maternity Matters: Choice, access and continuity of care in a safe service. Department of Health, April 2007.
- Recorded delivery: a national survey of women's experience of maternity care 2006 National Perinatal Epidemiological Unit, March 2007.
- National Institute for Clinical Excellence. Caesarean Section Clinical Guideline RCOG 2004.

KEY RECOMMENDATIONS

The key recommendations of the working group are as follows

Key Recommendations

- Women's social and medical needs should be assessed at an early stage, and then reassessed during their pregnancy, with their care based on these assessments.
- Antenatal care should be provided in local, one-stop settings, and postnatal care should be provided in local, one-stop settings as well as at home.
- As many women as possible should receive continuity of care throughout the antenatal, labour and postnatal periods.
- Women should be offered a genuine and informed choice of home birth, birth in a midwifery unit or birth in an obstetric unit.
- There should be a significant increase in the number of midwifery units, with each obstetrics unit having an associated midwifery unit, either co-located or stand-alone depending on local circumstances.
- Obstetrics units should have at least 98 hours a week consultant presence.
- All women should receive one-to-one midwifery care in established labour.
- Maternity networks – involving maternity commissioners and all providers – should be formally established across London and be linked with neonatal networks.

CURRENT & FUTURE ACTIVITY AND PROVIDER STRUCTURE IN LONDON

Activity

Currently around 115,000 women deliver in NHS hospitals within London each year. Between 1998 and 2005, there has been an increase in women delivering of around 2% per annum, although this has varied considerably across London. Future numbers of women delivering are expected to increase by about 7% over the next 10 years to give a total of around 124,000 in 2015/16.

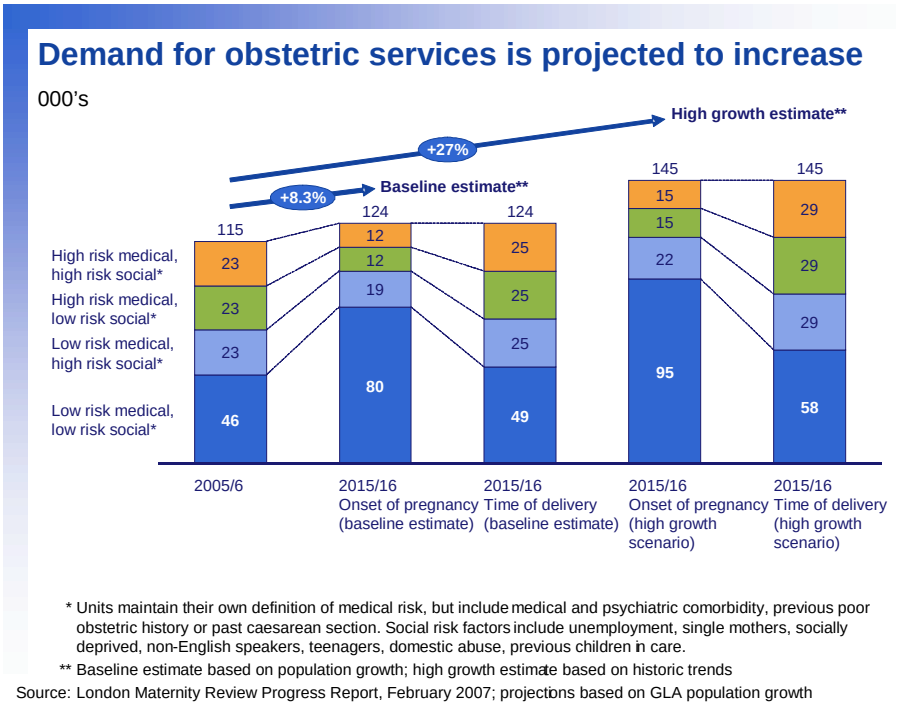
The London maternity services review has divided women into four groups based on social and medical factors as shown in the table below. The percentages reflect data collected in two sites in London[1]. The definition of social complexity includes single mothers, women living in the most deprived boroughs, asylum seekers, homeless people, late bookers, poor attenders and other factors. These were based on factors associated with poorer maternal and perinatal outcomes. The definition of medical complexity was based on individual maternity unit criteria.

This grouping was intended to determine the level of obstetric and midwifery involvement in care and was not intended to determine the actual place of birth or predict the actual outcome of pregnancy and birth.

Level One (65% at onset, 40% at delivery) • Low social complexity • Low medical complexity	Level Two (15% at onset, 20% at delivery) • High social complexity • Low medical complexity
Level Three (10% at onset, 20% at delivery) • Low social complexity • High medical complexity	Level Four (10% at onset, 20% at delivery) • High social complexity • High medical complexity

If these figure are mapped to the projected number of women delivering in London, this would mean that by 2015, nearly 70,000 (60%) women would be classified as medical low complexity at the time of delivery – see below:

[1] Debbie Graham, 2006, referred to in London Maternity Review, Progress Report, February 2007.



* Units maintain their own definition of medical risk, but include medical and psychiatric comorbidity, previous poor obstetric history or past caesarean section. Social risk factors include unemployment, single mothers, socially deprived, non-English speakers, teenagers, domestic abuse, previous children in care.

** Baseline estimate based on population growth; high growth estimate based on historic trends

Source: London Maternity Review Progress Report, February 2007; projections based on GLA population growth

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Provider Structure

Maternity services across London are provided and managed by 27 NHS Acute Trusts and three private hospitals and commissioned by the 31 London Primary Care Trusts (PCTs). In addition, some maternity care is provided by self-employed midwives who mainly contract their services directly with the woman, with a small number contracting with NHS maternity services.

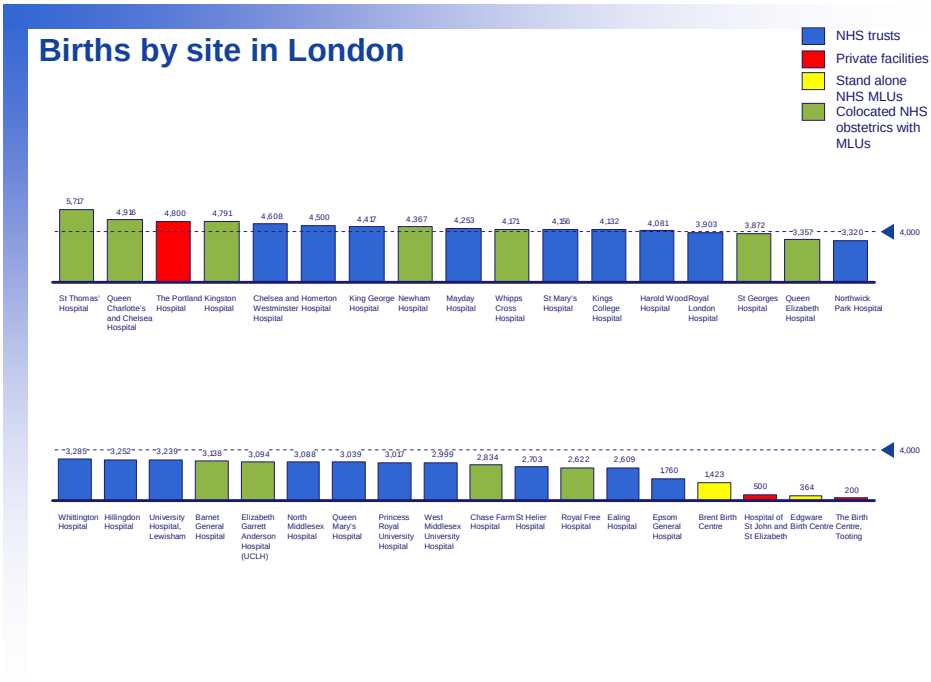
At the moment, the majority (97%) of women deliver in obstetric or co-located midwifery units in hospitals. About 2% of women in London deliver at home compared to 2-3% nationally, though this figure hides significant variations – for example, Torbay in South Devon has a home birth rate of 11.7%. The figure for South East London is higher than the rest of London at 3.6%, mainly due to the presence of three caseloading midwifery practices associated with King's College Hospital. The midwives in these practices positively promote homebirth as an option for low risk women for all social groupings. Around 38% of women across England are currently offered a home birth at booking interview[2].

Another 600 (0.5%) of women in London give birth in stand alone midwife-led units – the Edgware Birth Centre with around 400 births per annum and the Brent birth centre with around 200. Numbers for women giving birth in co-located units

[2] Recorded Delivery: a survey of women's experiences of maternity care 2006, NPEU 2007

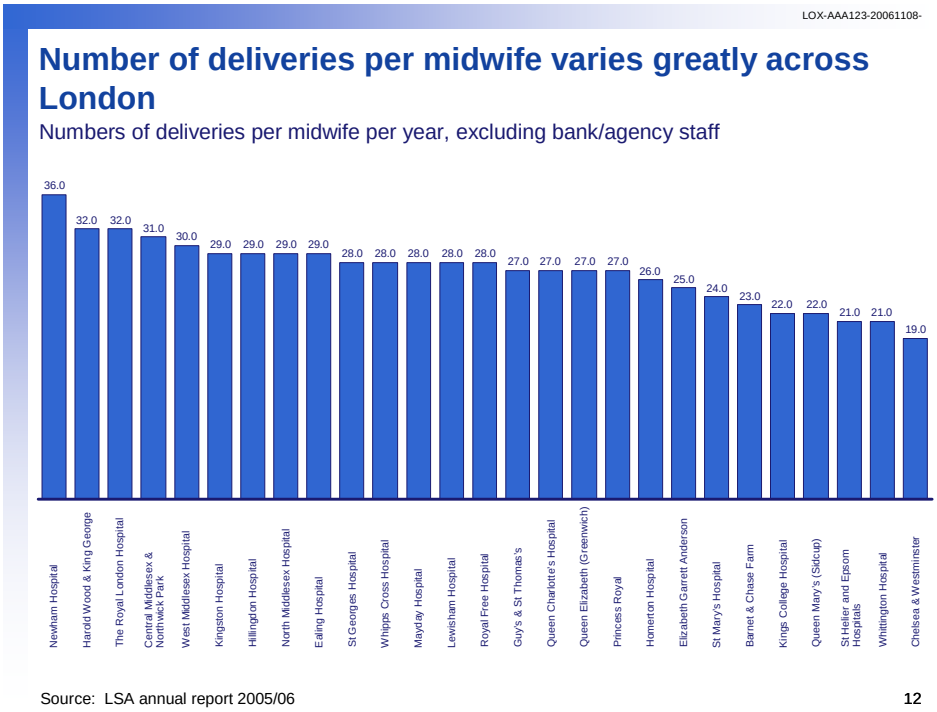
are not available, but we do know there are eleven co-located units including the home from home birth centre at Guy's and St Thomas' with 1,265 births (20% of all births in the hospital) in 2005/6 and 194 women at Mayday in its first four months since opening.

The numbers of deliveries per NHS Trust in London are shown below:



Source: LSA, as of December 2006

There are currently highly variable numbers of deliveries per practising midwife across London varying from 1:19 births to 1:36, excluding bank and agency staff – see below:



These ratios do however have to be treated with caution as many trusts use bank and agency staff continuously, either to cover gaps in the service due to absence such as sick leave, or because midwives chose to work for a bank/agency to allow greater flexibility in their working lives. Birthrate plus, the standard tool used for measuring the required number of midwives against activity, recommends a ratio of 1:27 for high risk births and 1:35 for low risk births.

There are 315 consultant obstetricians working in London. It is not, however, clear how many sessions these obstetricians contribute to the maternity services. Some will have sessions in gynaecology and others sessions in fetal medicine. Increasingly, support workers are being recruited to maternity services.

The population of London is highly diverse – with some boroughs having extremely high rates of perinatal and infant mortality delivery. In 2006, 22% of women who gave birth were born outside the UK.

CURRENT ISSUES

The working group identified a number of issues facing maternity services in London at the moment. These are summarised into three areas – antenatal care, birth and postnatal care.

Antenatal care

The main issues identified included:

- **Lack of early identification of women with medical complications,** for example women with diabetes or women taking anti-epileptics. These women should be given pro-active advice about the risks associated with pregnancy such that appropriate pre-conception care is given, and it should be ensured that there is early access to high-quality antenatal care. This should be the responsibility of the primary care giver, in many cases the GP but could also be professionals in specialist services a woman is already accessing. There are concerns that this is not happening as well, or as consistently, as it should.

- **Lack of high quality processes for referring women with social complexity**. Current services do not sufficiently identify, target and provide care for women with social complexity who could be identified through a needs assessment. A significant minority of women need active attempts to be made to engage them with services, early access to care and more coordinated care across multiple agencies.

- **Inappropriate use of resources**. A number of areas were identified where resources may not be optimally deployed. For example current practices of

    - Women with no medical or social factors always seeing a GP before having access to a midwife

    - Time spent by midwives collecting routine information and doing routine tests – much of this could be done by support workers

    - Time spent by midwives travelling around between GP practices, women's homes and/or hospitals

    - The provision of all postnatal care in all women's homes – while some women will benefit from home visits, others may prefer postnatal care provided in a community care centre, particularly if such care facilitates social support and builds social capital

- **Variable quality of care** – the adherence to good practice, as described by the National Institute for Health and Clinical Excellence (NICE) is variable – some

centres are adopting NICE guidance in full, others are not. In addition, there are different criteria used in different hospitals, and between different obstetricians, in deciding eg when women need to be admitted to hospital antenatally. There is a need for more benchmarking and auditing of practices – this is beginning to happen through work by the Foundation Trust Network, Dr Foster and the Healthcare Commission.

- **Services are not as user-friendly** as they could be. For example, some women may want to receive antenatal care in a different network to where they will give birth but may find that it is hard to do this and ensure continuity of care. There is also often little continuity of service provider antenatally, in labour and postnatally due to historical boundaries which determine catchment areas in which midwives work.

Birth

- **There is a lack of real choice for women in terms of choosing location for birth** (obstetric unit, midwife-led unit, home birth). Many women cannot currently give birth in a location of their choice – for example, as shown earlier, there are a limited number of midwifery units across London and the very variable home birth rates suggest that this choice may be more available to some women than others. Further, women are currently being turned away from the hospital of their choice. For example, there are women who want to give birth at St Mary's hospital, at Guy's and St Thomas' and at Chelsea and Westminster but are refused access as the units are physically constrained. Some women are also unable to have a home birth due to lack of suitably experienced midwives or due to limited resources having to be concentrated on hospital labour wards.

- **Increasing home birth rates requires an active strategy to do so.** If services positively promote home birth, numbers increase more quickly than if provision is only in response to women's requests. For example Southampton has increased the number of women choosing and giving birth in their home or in the local birth centre by 6% through deployment of a caseload midwifery model[3].

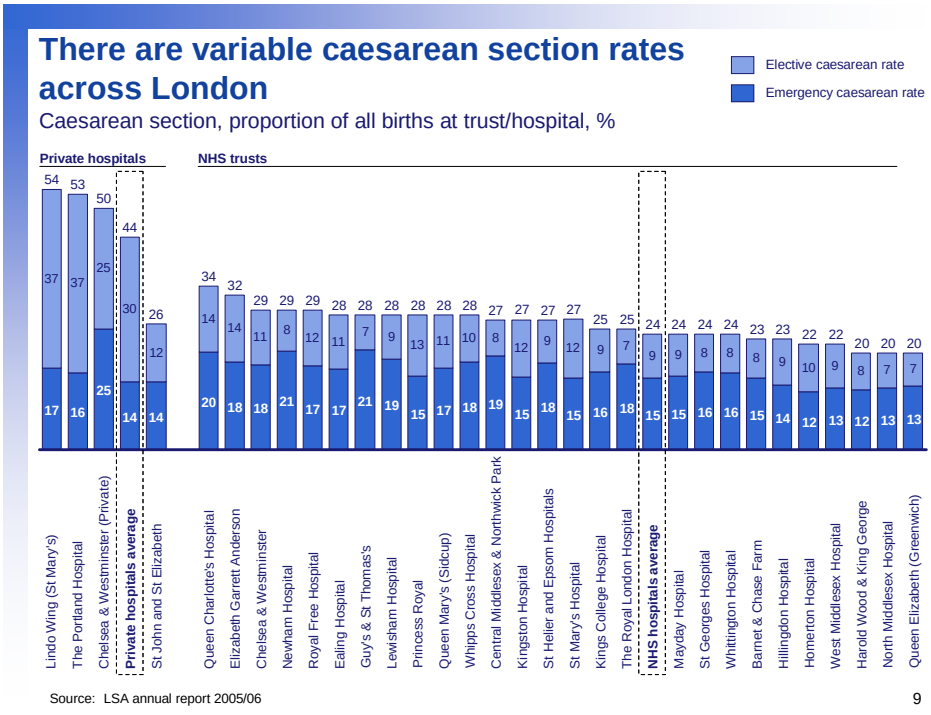
- **Lack of guaranteed 1:1 midwife care during labour care**. Women consistently cite 1:1 care as the most important factor for them, but many complain that they do not get it. Although maternity services are striving to

[3] *Maternity Matters*, Department of Health, 2007

provide one-to-one care in labour, a recent study found that 56% of women were left alone for periods of time during the labour and 64% shortly after the birth.[4]

1:1 care in labour should be a minimum standard[5] but many units cite low numbers of midwives as a limitation. However, the variation in births per midwife between hospitals in London and case studies of different models suggests that there may be scope to change practices to improve the potential to offer 1:1 care with the same level of resources through more effective utilisation of midwives in the Trust.

- **Caesarean rates are too high**. Current section rates are 27% on average across London, though there is considerable variation – North West London had a rate of 33% compared to 25% in North East London. There are similar variations across units as shown below, despite similar populations.



The variation in rates across London supports the evidence that clinical practice and professional attitudes impact on rates. There is evidence that a change in culture can have a dramatic impact on the caesarean section rate – for example,

[4] Recorded Delivery: a survey of women's experiences of maternity care 2006, NPEU 2007

[5] Minimum Standards of care on the Labour Ward, RCOG/RCM

the section rate at Northwick Park Hospital has recently fallen from 33% to 25%. Caesarean sections are associated with higher use of resources, for example, longer postnatal lengths of stay in hospital than vaginal births. The World Health Organisation has set a target of no more than 15% of births by caesarean section.

- **Sub-optimal levels of consultant presence on the labour ward per week.** There is increasing recognition that high quality obstetric care requires consultant presence on the labour ward. The review into maternal deaths at Northwick Park Hospital identified that of the ten maternal deaths, six did not have consultant obstetrician input[6]. High caesarean section rates have also been associated with lack of consultant presence[7],[8].

  The Clinical Negligence Scheme for Trusts sets standards for staffing maternity units. These are derived from the recommendations of a joint RCOG/RCM working party. At the moment, dedicated consultant obstetric presence is required on the labour ward for only forty hours per week.

  The Royal College of Obstetricians and Gynaecologists (RCOG) has suggested in their submission that units should be moving towards 168 hours of consultant presence per week on the labour ward with implementation as set out in the table below.

Size of unit (births/year)	**2,500 – 4,000**	**>4,000**	**> 5,000**	**> 6,000**
End 2005	40 hours/wk	40 hours/wk	40 hours/wk	60 hours/wk*
End 2006	40 hours/wk	40 hours/wk	60 hours/wk	168 hours/wk
End 2007	40 hours/wk	60 hours/wk	168 hours/wk	168 hours/wk
End 2008	60 hours/wk	168 hours/wk	168 hours/wk	168 hours/wk
2015	168 hours/wk	168 hours/wk	168 hours/wk	168 hours/wk
Number of sites in London	17	12	0	1

* in 2005/06

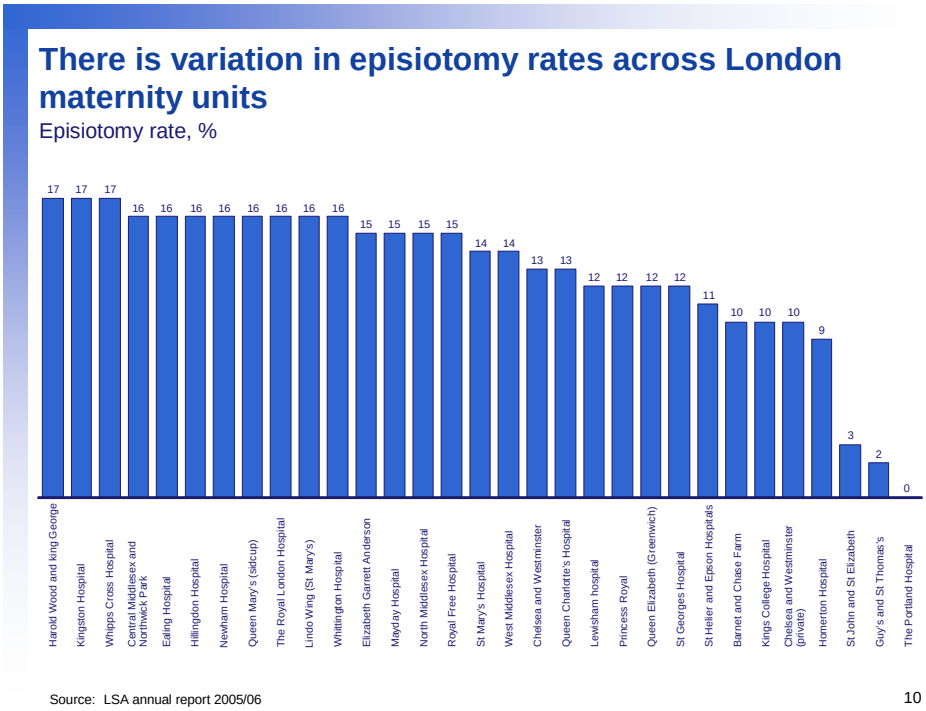
6 Healthcare Commission, Review of maternal deaths at Northwick Park Hospital, 2005.

7 Ontario Women's Health Council, Attaining and Maintaining Best Practices in the Use of Caesarean Sections, June 2000

8 NHS Institute for Innovation and Improvement. Focus on Caesarean Section. 2006.

Given the numbers of obstetricians that will be required to provide this level of presence, this will necessitate fewer obstetric units than at present if 168hrs, or even 98 hours, is to be sustainable with the available workforce and the cost of maintaining the necessary numbers, particularly under the European Working Time Directive (EWTD).

- **Variable quality of care.** There is little data available publicly to compare outcomes of care across units in London. There is, however, data on episiotomy rates which shows a high degree of variation – see below:



Source: LSA annual report 2005/06 10

Postnatal care

The main issues identified included:

- **Concerns about poor quality care for women in postnatal wards.** Concerns were highlighted about fundamental components of service delivery in hospital such as cleanliness and hygiene, visiting arrangements, noise, rest and support for infant feeding and baby care[9].

[9] Wray J 'Seeking to Explore what Matters to Women about Postnatal care' British Journal of Midwifery 2006; 14 (5): 246 – 254

- **There are currently highly variable rates of breastfeeding across London**[10].
- **There is also variation in postnatal care in the community**. Postnatal care in the community is highly valued by women and high-quality postnatal visiting is associated with a reduction in maternal and neonatal morbidity. However, the availability of postnatal care seems to be more dependent on availability of midwives than on assessment of need.[11].

10 http://www.dh.gov.uk/en/Policyandguidance/Healthandsocialcaretopics/Maternalandinfantnutrition/DH_4071692

11 Shaw E, Levitt C, Wong S, et al. Systematic review of the literature on postpartum care: effectiveness of postpartum support to improve maternal parenting, mental health, quality of life, and physical health. Birth 2006;33(3):210-20.

ALTERNATIVE MODELS OF CARE

The working group looked at a number of different models of midwifery-based care – three from London, and one from New Zealand. While New Zealand is a more rural setting than London, it does have a midwifery-based model of maternity care, unlike many other countries with a more traditional obstetric model of care.

The Albany Midwifery Group in SE London

The Albany Midwifery group operates in the Peckham area of SE London. The group consists of six midwives who are sub-contracted by King's College Hospital.

They take all women, not just low risk, and offer 1:1 care during pregnancy and labour. They deliver the baby at home, or in hospital. In 2006 46% of their births took place at home and 54% in hospital.

Antenatal care is provided in a local leisure centre. Postnatal care is provided in the women's homes or in the leisure centre. The group achieves high rates of breastfeeding and low intervention rates. 78.8% of their women are exclusively breastfeeding at 28 days. Their spontaneous vertex delivery rate is 82% and their ventouse/forceps rate 3%.

The six midwives are self managing – they cover their workload of 36 deliveries per midwife between themselves and cover each other's holiday, sick and training leave. Each midwife works for 9 months of the year and takes 3 months off.

The midwifery resource includes access to exclusive use of consulting room and office base as well as guaranteed space for weekly provision of antenatal and postnatal groups. They also have a dedicated (or part time) administrator improving the ability to organise groups, allocation of work, data collation and provision of reports for contract and for commissioners.

Clinical governance arrangements are put in place by King's College Hospital. The group are supported by a named obstetrician and a named neonatologist.

Lilac and Blue team, St Mary's Hopsital

Two caseload groups were set up in 2003 to care for disadvantaged women in the local area. The two groups are known as Lilac and Blue teams. There are 6 midwives in each group providing 24 hour a day continuity of care for 36 women per year per midwife.

For women with no complications, the midwife is the lead professional and for those with complications, the midwife works closely with a nominated consultant obstetrician for each group.

The groups specifically target disadvantaged women focusing on the most deprived areas. An audit in 2003/4 found higher rates of home births, lower rates of instrumental births and caesarean sections, and higher rates of breastfeeding, than for women managed traditionally at St Mary's hospital.

The one-to-one group practice caseload programme at Guy's and St Thomas' Hospital

This programme has been running since July 2005 and consists of three group practices with a planned target caseload of 36 births a year per midwife.

A recent study has compared maternal and neonatal outcomes for 592 women receiving caseload care with all women receiving standard care (n=5733). There were no differences in parity or mean age between the women in the caseload practices and the rest of Guy's and St Thomas', though the caseload women live in more deprived areas.

Over one year, the home birth rate increased from 2% to 9%, and 20% of women gave birth in the home from home unit based in Guy's and St Thomas' hospital. The group achieved high rates of continuity of care with a total of 62% of women attended during birth by a midwife/partner and 90% by one of the practice midwives.

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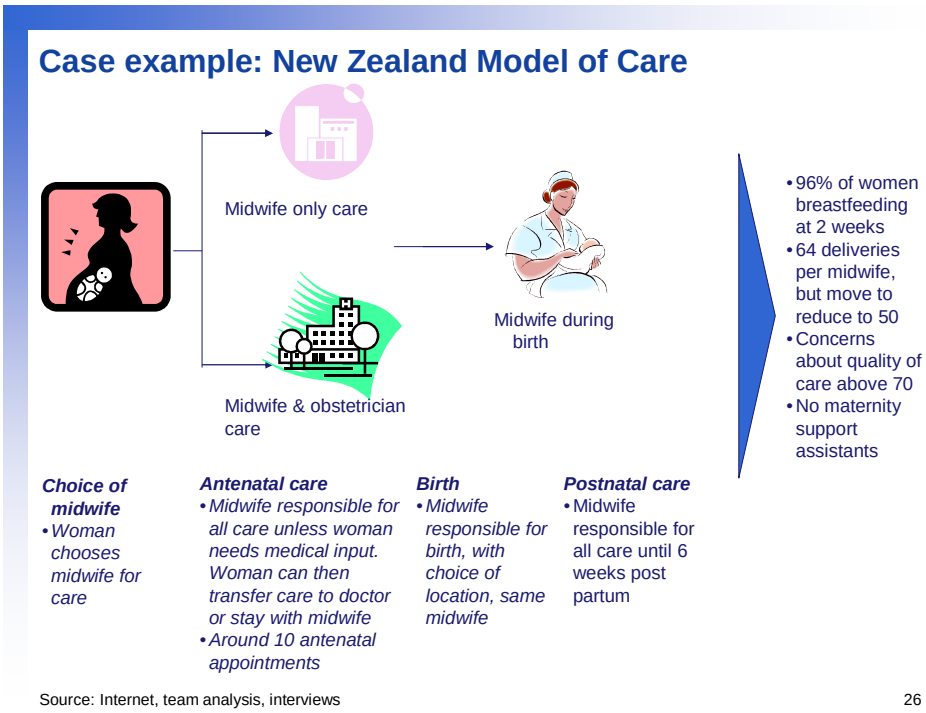
Compared to women receiving standard care, women receiving caseload care had a higher vaginal birth rate (62% vs 58%) and lower caesarean section rate (27% vs 29%), lower rates of instrumental births (11.6% vs 13%), a higher breastfeeding rate (82% vs 77%) and lower induction (12 % vs 14%) and epidural anaesthesia rate (33% vs 27%). The antenatal missed appointment rate was lower (1.6% vs 18%) as was the pre-term birth rate (5.6% vs 8%) with Apgar scores < 7 remaining at the same level as the rest of the Trust at 3% .

The burnout scores in caseload midwives were significantly lower than that for midwives working in other areas of the community and hospital.

Compared to Albany, this group does not depend on midwives being available 24 hours a day and as a result does not achieve the same levels of continuity of care. This may be related to the lower rates of home births and breastfeeding achieved, but the comparison with traditional care is still positive.

New Zealand[12]

The New Zealand model is summarised in the diagram below:



Women have direct access to midwives and a choice of the midwifery group with which they deliver. The midwife is responsible for all care during pregnancy. If the woman requires obstetrician input, the midwife and obstetrician can provide joint care, or can transfer to the obstetrician.

The midwife provides on average ten antenatal appointments, using similar guidelines to the NICE guidelines in England and Wales and about 7 to 10 postnatal appointments.

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[12] Karen Guililliand, New Zealand College of Midwifery

The midwives deliver the baby, ensuring 1:1 care during labour and care for the mother until 4-6 weeks post-natally. They achieve very high rates of breastfeeding with 96% of women breastfeeding at two weeks.

Currently the average case load of deliveries per midwife is 64. Some midwives take on more than this, though there have been concerns about quality over 70 deliveries. The Royal College of Midwives in New Zealand has recommended a ratio of 50 deliveries per midwife on average.

There are no support workers in New Zealand as the midwives prefer to provide full care themselves.

GOOD PRACTICE

The working group identified specific areas of good practice in relation to pre-conception planning, booking and antenatal care, birth and postnatal care. The group also took particular note of issues related to safety/outcomes and cost of particular models of care. The following assumes that maternity care is provided within maternity networks. These are not formally established across London.

Pre-conception planning

- There should be more pro-active identification of women. GPs are responsible for this and it should be reflected in GP contracts and could be included as part of the commissioning Quality Outcomes Framework (QOF) as specific items for data collection and benchmarking

Booking and antenatal care

- Women should be able, and encouraged, to book directly with a midwife. They do not need to see a GP first although some GPs may remain women's first point of contact and should be able to refer women into the appropriate model of care.
- The booking visit should be provided as close to home as possible. Each woman will have a named midwife as a key point of contact. This midwife will ensure that she understands the choices available to her, how to access care appropriate to her needs And will be responsible for her care as stated in Maternity Matters.[13]
- Some women in London do not have a GP when they become pregnant and midwives should ensure they become registered with a GP as soon as possible.
- There should be clear liaison and communication pathways between midwife and GP practices and health visitors to ensure a holistic approach to pregnancy and the future care of mothers, babies and families. If a GP wishes to be actively involved in antenatal care he/she should be seen and see themselves as an integral part of a maternity network and be expected to deliver care to the standards agreed within the network.
- Provision of written information on screening and options for maternity care should be available to women. Choice should be based on information about the

[13] *Maternity Matters*, Department of Health, 2007

services available locally, who can access them and the reasons for giving some women access to particular services.

- Prior to the first booking/screening assessment appointment and before 8 to 10 weeks women should have the option of an individual consultation or telephone discussion or group attendance with a midwife.

- There should be much stronger messages about health and greater commitment to commission evidence-based approaches to health improvement e.g. smoking, diet, and exercise.

- There should be early screening of women once pregnant and the guidelines of the National Screening Committee should be followed. New guidelines for Down's Syndrome Screening will necessitate careful consideration as to the location of expertise and expensive screening equipment. It may be logical for initial maternal and fetal screening to take place at a central location.

- There should be more systematic and coordinated screening of women at an early stage in order to allocate them to different care pathways based on a comprehensive needs assessment. It should, however, be acknowledged that social and medical needs/complexity can change and that throughout pregnancy the level of care provided should be adjusted based on continuous risk profiling.

- There should be early identification of parenting needs to identify any need for use of the Common Assessment Framework to plan educational support, support for parenting and where indicated, care of any children in need or children in need of protection in line with Local Safeguarding Board guidelines.

- Antenatal care should adhere to NICE standards. Clear evidence based pathways for care for different conditions should be agreed between networks and commissioners with the aim of preventing unnecessary hospital admission and encouraging locally based care close to home. Where possible opportunities for self care should be explored eg a woman with a high blood pressure may be able to undertake blood pressure monitoring and urinalysis at home.

- There should be an increase in maternity care provision based or provided in polyclinics and/or children's centres. This supports continuity from maternity to universal child health promotion and targeted parenting and family support services. Provision of antenatal care in centres will also ensure more efficient use of midwife time and provide one-stop services for women through co-location of, for example, ultrasound and phlebotomy.

- Greater consideration should be given to caseloading midwives, providing all care for women antenatally and postnatally and being on call for their women in labour. The number of groups caseloading may depend on available resources both in terms of the number of midwives able to work in this way and on financial resources in the network.

- If all women cannot have the highest standard of continuity provided by a caseloading model consideration should be given to those who may be most likely to benefit from continuity of carer throughout the whole of their pregnancy, birth and postnatal care ie those with greater social and medical complexity.

- Women with mental health problems, other social problems and medical problems should be offered targeted support

- Some midwives should have particular expertise in order to provide specialist care for women with complex social and medical needs. The exact number of midwives/areas of expertise will depend on the needs of the local population but there may, for example, be midwives focusing on young unsupported women, on women with mental health problems and women who use drugs. Midwives providing care to women with complex medical needs will be working with the obstetric team.

Birth

- Women should be offered a choice of home birth, birth in a midwife led unit (either stand alone or collocated with an obstetric led unit), or obstetric led unit, based on ready access to full information about available models of care.

- The aim should be to actively encourage women who are suitable to choose midwifery led care reserving obstetric led care for women with medical and obstetric complications.

- Home Birth should be offered as a meaningful alternative, recognising that there needs to be a strategy in place in each maternity network to ensure adequate numbers of appropriately trained and confident midwives are available to support the increased numbers of homebirths which active promotion is likely to generate.

- Women should understand the risks and benefits associated with all birth options – hospital as well as home. They should be provided with information about the quality of care (including, for example, risk adjusted apgar scores, episiotomy

rates, tear rates, infection rates, caesarean section rates) and the transfer rates between units.

- All women should have 1:1 care in labour. 1:1 care has been shown to significantly improve outcomes[14]. This may be achieved using the current midwifery workforce but further work needs to be carried out to establish this. It would require significant changes in the ways midwives work, the development of appropriately trained assistants and a review of established support roles.

- Obstetric units should provide at least 98 hours of consultant cover. This will require fewer obstetric units than now in order to ensure there is an adequate workforce, that staff gain sufficient experience and that the units are affordable.

- There should be clearly agreed standards regarding the transfers from one model of care within a network to another e.g. providers and the London Ambulance service should agree response times for different situations and there should be clearly agreed pathways of care which should include the stage for transfer between units.

- All units need to have high quality multidisciplinary teams. There need to be strong links across a network of maternity providers, with common clinical governance processes, clear protocols for transfer between units, high quality monitoring of outcomes and active support for women to make choices based on high quality information.

Safety/outcomes

The evidence as to the safety of different places of birth is limited, but has been summarised in the NICE guidelines on intrapartum care[15] (still in consultation) and is set out below. The Department of Health has commissioned a research study, the Birthplace Study. This will examine all aspects of place of birth and associated safety and will report in 2009.

Home Birth

- The NICE guideline found women who have a planned homebirth have a higher rate of spontaneous vaginal birth, a reduced likelihood of caesarean section and more likelihood of an intact perineum, compared with those who planned birth in an obstetric unit.

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14 *Continuity of caregivers for care during pregnancy and childbirth (Review).* Hodnett, Cochrane Collaboration, 2007.

15 *Planning Place of Birth, Intrapartum care.* National Collaborating Centre for Women's and Children's Health, Commissioned by the National Institute for Clinical Excellence, March 2007.

- The same guideline notes that the intrapartum perinatal mortality rate is the same as, or higher, for home births as for hospital based births. This is likely to be in the group of women in whom intrapartum complications develop and who require transfer into the obstetric unit. If birth is planned and takes place at home, the IPPM is likely to be the same as in a low risk group of women giving birth in an obstetric unit.

- When unanticipated obstetric complications arise, either in the mother or the baby, during labour at home, the outcome of serious complications is likely to be less favourable than when the same complications arise in an obstetric unit.

- While not the prime reason for supporting home births, they do have lower costs than hospital based care.

Stand-alone midwifery units

- Available data indicates that women who planned birth in a standalone unit have a higher rate of spontaneous vaginal birth and of an intact perineum compared with those who planned birth in an obstetric unit.

- The financial viability of stand alone midwife units has been questioned but data from Stroud suggests that they can be viable with around 500 births per annum so long as they also provide antenatal and post natal services. Another option for smaller units is to consider innovative staffing arrangements for example having midwives on call and staffing the unit with support workers. This model is acceptable in regulatory terms. It assumes that women who stay in the unit for postnatal care will be straightforward. The support worker would act in the same capacity as a woman's relative providing basic support and calling the midwife if any complication develops.

- This model may, however, mean less women choose stand alone units. The Edgware Birth Centre review suggested that the reason women choose stand-alone units rather than homebirth is because a midwife is always there.

- The NICE guideline referred to above found no relevant information to assess serious risk to mother or baby compared to obstetric units.

Co-located midwifery units

- The NICE guideline found that women who planned birth in a co-located midwifery unit had more spontaneous vaginal birth and intact perineums compared with those who planned birth in an obstetric unit.

- There may be a higher perinatal mortality when birth is planned in a co-located unit, compared with planned care in an obstetric unit, however the difference is of borderline statistical significance.
- Sub group analysis of the Cochrane review of alongside midwifery units has suggested that staffing arrangements may influence outcomes. Where staff were shared between an alongside unit and an obstetric unit, there were no significant differences in women's and babies outcomes including perinatal mortality. In trials where staff were separate there was evidence of significant reductions in interventions and a statistically significant increase in perinatal mortality.
- The NICE review found 24 – 30% of women in labour (nulliparous about 35%; parous about 12%) will transfer to an obstetric unit.

Obstetric led unit

- Women giving birth in an obstetric unit will have access to full obstetric and neonatal facilities as well as epidural analgesia.
- The NICE guideline found there are lower rates of spontaneous vaginal delivery and intact perineum compared to births outside an obstetric unit. It is however possible to increase the spontaneous vertex delivery rate in obstetric unit through a focus on decreasing caesarean section rates using, for example, the National Institute for Improvement and Innovation Implementation Package.[16]
- There is an increasing drive to ensure 98 hours of dedicated consultant presence on obstetric unit. This will require larger units in order to ensure consultant presence and ensure sufficient volumes of work to maintain skills and expertise.
- Very large units will need to have two obstetricians (& associated staff) present for at least 98 hours. The RCOG suggest there should be two teams to manage 8,000 or more births per annum, though recognise that there are examples internationally of very large units (e.g. Singapore which has 18,000 deliveries per annum) where each team manages 6,000 births with excellent clinical outcomes.
- When calculating the size and number of obstetric units needed that calculation should be based on the number of women who plan to birth in hospital plus the number of women who transfer in for birth.

[16] National Institute for Innovation and Improvement.

Transfer in labour

The NICE review suggests that between 4% and 20% of women in labour (nulliparous 30 – 55%; parous 1 – 15%) will transfer to an obstetric unit. Data from the Edgware Birth Centre shows about 12% of women in labour will transfer to the obstetric unit.

- The RCOG, in its evidence to the working group, has highlighted that, if women need to transfer from home or a stand alone midwifery or an alongside midwifery led unit this should ideally take place within 15 – 20 mins[17]. There are three possible reasons for transfer:
    - A need for a type of pain relief which is not available at home or in a midwife led unit. The time the transfer takes is not critical from the point of view of safety but the longer it takes the longer the woman will not have access to her chosen form of analgesia.
    - Where the labour has started to deviate from normal but is not yet abnormal but because the woman is at home it is best to transfer before an abnormality does develop. Typically this would be poor progress in labour or meconium stained liquor but a normal fetal heart rate.
    - An abnormality which develops rapidly in labour for example an abnormal fetal heart rate. Then the time may be critical. Given the time taken to call an ambulance, wait for the ambulance to arrive and then transfer a woman to an obstetric unit, there can be a chance of adverse
- There is a need to remember that transfer times within a hospital can take longer than an acceptable standard. The transfer times even in hospital should be monitored and that information also provided to women. The length of time to transfer will be less critical than when there is clear abnormality.
- The training and regular updating of midwives working at home or in midwifery units will need to ensure that they can cope with the sudden emergency and that they know how to access expert advice and support.

Postnatal care

- There is a limited evidence base to support the current model of care and indeed any other model of care.

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[17] Submission to Healthcare for London from RCOG, February 2007.

- Postnatal care should be based on an individual assessment of need as recommended in the NICE guidelines[18]. Some women may benefit from high levels of support both in hospital and at home. Other women may require very little intervention other than access to routine screening such as neonatal hearing tests and the Guthrie test but may value a number to contact in case of problems.

- There is evidence that women who receive continuity of care are more likely to be satisfied with their postnatal experience.

- There is some data to suggest that home visiting is highly valued by women and, for some women, may have a significant impact on maternal and neonatal morbidity. There is also the potential, for some women, to offer post natal care in a polyclinic type setting to improve convenience for women

- Maternity networks should ensure that there is potential for women to go home direct from labour ward and ensure that, for example, the first exam of newborn is provided flexibly enough to support women choosing when they want to leave hospital.

- Some women will require extensive support postnatally from the wider professional team for example women with mental health problems will benefit from close support from midwives and the mental health team.

- There needs to be far greater focus on supporting breastfeeding - the government has a commitment to reduce health inequalities with a target to increase breastfeeding initiation rates by 2% points per annum, focusing especially on women from disadvantaged groups of the population. The evidence suggests that targeting service improvements and increasing breast-feeding rates in disadvantaged groups increases breastfeeding rates in the whole population faster[19].

- Re-organization of roles and personnel on postnatal wards may allow midwives and other trained breastfeeding support staff to spend time on this important aspect of care.

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[18] NICE:*Routine postnatal care of women and their babies* July 2006

[19] Dykes F. *Infant Feeding Initiative: A Report evaluating the Breastfeeding Practice Projects 1999 – 2002,* Department of Health, 2003

IMPLICATIONS FOR FUTURE ORGANISATIONAL MODEL OF CARE ACROSS LONDON

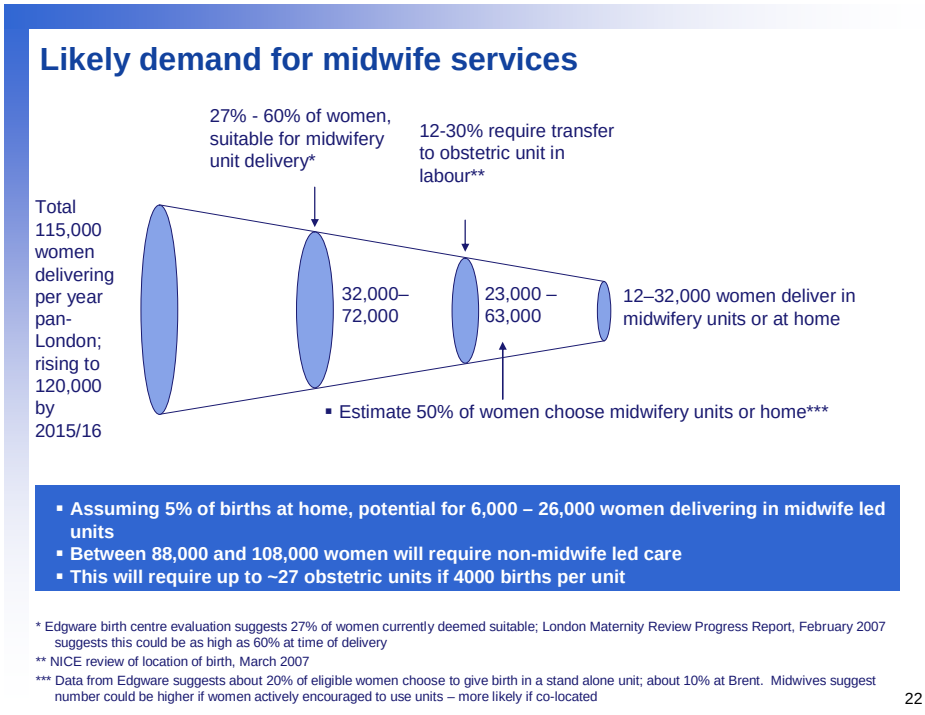
By 2015/16, there will be around 120,000 women delivering across London.

There is little evidence as to the optimum size of an obstetric unit but as noted earlier, larger units will be required to ensure at least 98 hours of consultant presence while above 6000 births there may be a need to introduce a second team of staff. Some units will be designated as more specialist units and provide level 3 NICU. Other units might provide obstetric care with level 2 NICU. It is likely that due to maternal choice, some obstetric units will grow considerably. This will result in other obstetric units becoming non viable.

Midwifery units and home-births could provide care for up to 60% of births – those categorised as low medical complexity and low and high social complexity at the time of delivery. Experience in Edgware[20] suggests that currently clinicians are categorising only 27% of women as suitable for a stand alone midwifery unit.

Some women will choose midwifery units over obstetric units, others will make the opposite choice. In addition, a number of women will be transferred out of units during labour. The diagram below shows an estimate of the number of women delivering in a midwifery unit or at home.

[20] *Evaluation of the Edgware Birth Centre* Saunders D, Boulton M, Chapple J, Ratcliffe J, Levitan J, Barnet Health Authority 2000



This analysis shows that there could be between 12 and 32,000 births (up to 26% of total) in midwifery units or at home in London. These numbers could be higher if women were more actively encouraged to use such units and if units were co-located.

Different models for London

Based on the assumptions outlined above, four models of care for a sector of London (population 1.6m; about 24,000 women delivering per annum) could be described. These models are by no means exhaustive but outline four possible ways of providing future maternity care in London. The models may need to be adapted to the local needs of different sectors with more than one model possibly being used pan-London. The numbers in the models are indicative and may vary depending on local circumstances. The number of births needed to make midwifery led units viable will depend on the model of care and the range of work undertaken in the unit but it is thought that a midwifery led unit will need to have approximately 500 births to be viable.

	Number obstetric units	Births in obstetric units	Number co-located midwifery units	Births in midwifery led units	Births in Stand alone Midwifery units	Home births
Model 1	4	18,000	2	2000	2000	2,000

Model 2	5	17,000	5	5,000	0	2,000
Model 3	3	14,000	2	3000	3000	4,000
Model 4	4	14,000	4	4,000	2,000	4,000

IMPLICATIONS FOR NEONATAL CARE

Approximately 10 per cent of babies require some sort of specialist support at birth with up to 3 per cent needing intensive care.

The development of services for neonatal care in London over the last four years has been guided by the report of the Department of Health expert working group on neonatal intensive care services published April 2003.

Neonatal services are based on a careful definition of the types of care babies might require and are now provided in managed clinical networks where hospitals with differing types of neonatal units work together. This should ideally allow the majority of families to receive their care as close to home as possible and yet to know in advance where care will be provided should a problem arise with their baby.

The concept of neonatal networks and neonatal categorization and organization is largely well embedded within London but it is clear that there remain outstanding issues around capacity and staffing.

In this context it is imperative that maternity services and neonatal networks develop in close and complementary alignment, forming true perinatal networks with shared ideals for the care of the pregnant woman and her baby through all phases of her pregnancy and after birth.

It is therefore imperative to consider more fully the scope of services that are required in order to deliver a first class maternity service. This can perhaps be done most easily by looking at the stages in a family's pathway from pre-conception issues, through the stages of pregnancy to birth and the neonatal period.

Preconception/Antenatally

- preconception counselling should be available in primary care settings and/or in specialist services
- there should be well defined links for neonatologists and paediatricians into the network of maternity services
- there should be prescribed multidisciplinary meetings to maintain good communication about pending workload, optimal time for delivery and for audit purposes
- parents should be able to visit the neonatal unit and to talk to members of staff
- protocols should be drawn up within networks for in utero and ex utero transfers

Resuscitation at Birth

- In 2 per 1000 low risk births the baby will require resuscitation and regardless of place of births all professionals involved should be competent in basic neonatal life support skills
- This must be adequately resourced
- Guidelines as to the availability of neonatal staff at births in respect of the need for them to be present and the grade must take into account the nature of the unit and the geography.
- The key to ensuring adequate resuscitation is training and good communication

Postnatal Care

- All babies should have an initial physical examination to define any obvious abnormality. This can be undertaken by midwives.
- A further screening examination should take place within 48 to 72 hrs of birth. This can be undertaken by paediatricians or by suitably trained midwives or GPs who examine enough babies to maintain their competency.
- Imaginative ways of providing this screening test need to be thought through in maternity networks so that women are not unnecessarily kept in hospital to have it provided.

Transitional care

- Up to 25% of babies on a postnatal ward may require “transitional” care which usually involves some form of regular observation.
- Consideration will need to be given within networks as to how to provide such care especially if staffing of stand alone midwifery units means that no qualified member of staff is available 24hrs a day.
- Adequate high quality transitional care may prevent some mothers being unnecessarily separated from their babies.

UNDERPINNING ENABLERS

"Maternity Matters: Choice, access and continuity of care in a safe service" describes very clearly how commissioners and providers will be able to use a number of the elements of the health reform agenda to facilitate improvements and innovation in the maternity services they offer. Reference to Chapter 3 and Appendices A, B and C of this document will be essential if services are to be delivered to a high quality.

In London the working group believes that the development of maternity networks will be essential if the highest quality maternity services are to be delivered and that it will be particularly important to focus on:

New models of midwifery care

The clinical working group proposes

- A model which supports women to choose midwifery led care from first confirmation of pregnancy. The woman's choice would be based on an assessment of her needs and some women would be encouraged to choose specific group practices of midwives with specific expertise to ensure their needs are met. The midwives would be working largely out of children's centres and/or polyclinics. Midwives could be self employed, working in small independent organisations, employed by a local care provider (e.g. a GP practice) or employed by a hospital. Care would be taken to ensure that despite plurality of providers care did not become fragmented by working through a maternity network to meet service level agreements.

- That midwifery services should be organised so that as many women as possible receive continuity of care throughout the antenatal, labour and postnatal periods

- A redesign of the workforce provision is required to free up midwives such that all women receive 1:1 care throughout labour.

To support the above points

- Modernisation initiatives which have led to greater efficiencies in other areas of the health service should be shared with maternity services providers to ensure the best use of resources.

- Support workers could take on routine administrative tasks currently done by midwives and may be able to take on some clinical tasks under appropriate delegation from midwives. This should not however detract from holistic care. See Maternity Matters for examples.

- Additional workforce requirements to deliver these recommendations should be assessed and costed against the benefits associated with them and there should be an agreed training programme and role for support workers/midwifery assistants

- Efforts to attract midwives to return to the profession and to improve retention should be linked to offering midwives a choice of working in a variety of models of care. Mavis Kirkham's research work 'Why Midwives Stay'[21] clearly shows that midwives who can make this choice and feel autonomous in their working life are more likely to stay in the profession.

- Independent midwives have over the years made a contribution to the provision of maternity services in London. In future they may be unable to do so unless they are able to get indemnity insurance from an NHS body. Maternity networks should work with independent midwives to find innovative ways of ensuring that their contribution is retained.

- Some GPs may want to keep control of referral processes and continue to have midwives providing antenatal care in their surgeries whilst not actually providing maternity care themselves. Their involvement in discussions about why changes are planned will be essential.

High quality IT and information

- The provision of high quality maternity services requires electronic health records enabling women to move around easily within the systems and ensuring good communication between multidisciplinary teams.

- IT is required to underpin linkages between all maternity service providers in a network including the whole pathway of care to capture activity and outcome data wherever care is delivered – home / children's centre / polyclinic /birth centre/hospital

- IT should be available across a network to help identify women with complex medical and social needs and support the provision of appropriate services

- Women self monitoring may be supported by the introduction of innovative IT programmes such as telemedicine however further evidence is required as to the benefits arising from such programmes.

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[21] Kirkam, M, *Why Midwives Stay*, Department of Health, 2006

- There needs to be far more information about services to inform women's choice. This information needs to focus on the benefits and risks associated with different models of care. There will need to be a positive communication campaign about homebirth and stand alone midwifery units which specifically address women's concerns regarding the support that they will receive and the arrangements for transfer should that be necessary.

Planning and commissioning of services

- There should be a London commissioner for maternity services who should commission services across a series of networks.
- A London wide focus should ensure consistency of services and sharing of good practice.
- Maternity service planning should be undertaken in partnership with other organisations including local authorities. Local providers, commissioners, service users and staff are best placed to determine the most effective method of ensuring improved access to care of the most vulnerable in their communities.
- Services should be provided in a way which focuses on holistic care, good communication between professionals and takes into account the need for ongoing care of the mother , child and family.
- Local Service Agreements should be in place between commissioners and maternity/perinatal networks. The Local Service Agreement that has been developed in North West London and that is used as an example of a possible LSA in the Maternity Commissioning Toolkit could be used to monitor quality. The LSA is based on the recommendations of the National Service Framework in the main as well as the Confidential Enquiry into Maternal and Child Health and NICE guidelines.
- Frameworks should be outcomes based and should consider influencing and monitoring numbers of low birth weight babies, caesarean section rates, apgar scores, episiotomies, and 1:1 midwife care in labour.
- Performance metrics should be used to monitor contracts. They should include metrics to assess health equity, access to services and outcomes for mother, baby and parenting , and breastfeeding rates.
- Commissioners should ensure that every provider is integrated into a Clinical Governance Framework.

Research and education

- Consideration should be given to whether there should be locality maternity research networks overlaying the maternity and perinatal networks in order to facilitate research.
- Further consideration should be given to the impact on midwifery education providers.

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