

## Newcastle JSNA: Pregnancy and Maternity December 2008

### ‘Where are we now?’

#### Facts and Figures

#### Number of births

The majority of women are judged to be at low risk of developing complications during the pregnancy or childbirth, but around 20-25% of mothers are assessed as needing closer surveillance or more specialist care (Consultation document, 2005).

Figure 1 – Number of births and live births for Newcastle PCT (using mid-year population estimates)									
	2003			2004			2005		
	Males	Females	All	Males	Females	All	Males	Females	All
Women aged 15-44		62,000			62,100			62,900	
All Births	1,475	1438	2,913	1,521	1,422	2,943	1,499	1,499	2,998
Live Births	1,466	1429	2,895	1,507	1,411	2,918	1,486	1,493	2,979

Source: ONS [population](#) and birth data

#### Birth rate

The crude birth rate and fertility rate for Newcastle PCT is lower than the average for England.

Figure 2 - Birth rates for Newcastle PCT compared to the North East (NE) region, and England and Wales (E&W) totals									
	2003			2004			2005		
	Newc.	NE	E & W	Newc.	NE	E & W	Newc.	NE	E & W
Crude Birth Rate <sup>1</sup>	10.9	10.6	11.8	10.9	11	12.1	11.1	11.1	12.1
Standardised Fertility Ratio <sup>2</sup>	83	94	100	80	95	100	78	95	100
General Fertility	47.5	51.9	57	47.5	53.6	58.4	47.4	54.4	58.5

<b>Rate<sup>3</sup></b>									
<b>Period Fertility Rate<sup>4</sup></b>	1.44	1.64	1.72	1.46	1.71	1.79	1.48	1.74	1.8

<sup>1</sup> Live births per 1,000 resident population

<sup>2</sup> Observed live births as a % of the expected LB (expected = no. that would occur if the population of the area experienced the age-specific fertility rates of EW)

<sup>3</sup> Live births per 1,000 women aged 15-44

<sup>4</sup> The average no. of live-born children that would be born per woman if women experienced the age-specific fertility rates of this year throughout their child bearing life span

Source: ONS birth data

## Infant mortality

Infant mortality (deaths in the first year of life) are slightly lower in Newcastle than in the rest of the North East or England as a whole; however, the numbers are very small (43 infants of 9,118 born between 2004 and 2006) and are therefore not statistically significant.

Figure 3 – Mortality in infancy per 1,000 live births 2004-06

	Number of live births	Infant age under 1 year		Infant age under 28 days		Infant age under 7 days	
		Number of deaths under 1 year	Rate per 1,000 live births	Number of deaths under 4 weeks	Rate per 1,000 live births	Number of deaths under 1 week	Rate per 1,000 live births
ENGLAND	1,855,960	9,339	5.0	6,466	3.5	4,939	2.7
NORTH EAST	85,248	420	4.9	272	3.2	196	2.3
Newcastle upon Tyne	9,118	43	4.7	21	2.3	13	1.4

Source: [www.nchod.nhs.uk](http://www.nchod.nhs.uk)

## Home births

Figures from Birth Choice UK suggest that home birth rates within the region have stayed fairly static over the last 9 years. The combined Tyne and Wear area had 1.50% home birth rate in 2006, which was an increase from 1% in 2000. The figure for Newcastle was 1.90%.

Figure 3 – Home birth rates in Newcastle upon Tyne 2000-2006

Local Authority	All Birth (2006)	2006	2005	2004	2003	2002	2001	2000
<b>Tyne and Wear</b>	<b>12387</b>	<b>1.50%</b>	<b>1.30%</b>	<b>1.10%</b>	<b>1.20%</b>	<b>1.10%</b>	<b>1.20%</b>	<b>1%</b>
Newcastle upon Tyne	3196	1.90%	1.50%	1.30%	1.30%	1.40%	1.40%	0.90%
North Tyneside	2225	1.60%	1.20%	1.20%	1.40%	1.50%	1.50%	1.00%
Northumberland	2973	0.91%	0.87%	0.93%	0.45%	0.88%	0.73%	0.43%

Source: Home birth rates have been derived from information collected at birth registration provided to Birth Choice UK by the Office for National Statistics.  
<http://www.birthchoiceuk.com/Frame.htm>

## Trends

### Predicted birth rates

Figure 5 - Predicted increase in births in Newcastle upon Tyne 2007-2012							
LA/PCO Area	Increase from 2006 figures	2007	2008	2009	2010	2011	2012
Northumberland		0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
Newcastle		6.3%	6.3%	9.6%	12.8%	12.8%	13.4%
North Tyneside		-1.3%	3.0%	3.0%	3.0%	7.3%	7.3%
Average		1.93%	3.37%	4.47%	5.53%	6.97%	7.17%

Source: Workforce plan, 2008

Based on the average rate to maintain the current ration of births per Midwife, over the next five years (from 2008), 21.74 midwives would need to be recruited in Newcastle and Northumbria Foundation Trusts (Workforce plan, 2008).

## Targets

### Teenage pregnancy

Newcastle has a target of a 55% reduction in the under-18 conception rate by 2010, from the baseline year (1998) rate of 52.8 per 1000 females aged 15-17 to a rate of 23.8 (with an interim target of a 15% reduction by 2004 to a rate of 44.9) (Teenage Pregnancy Strategy Review, 2006).

There are no specific targets for pregnancy and maternal care.

## Performance

### Indicators

The core dataset published by the Department of Health provides an indicative list of indicators to assist partnerships in preparing their JSNA (DH, 2008)<sup>1</sup>. The core dataset for pregnancy and maternity includes:

1. JSNA Indicator 2. - Current births
2. JSNA Indicator 26 – Under-16 conception rate
3. Under 18 conceptions (NI 112 and Vital Sign VSB08)

### Local consultation (What has community said so far?)

<sup>1</sup> [The JSNA Core Dataset](#) DH, 2008

There has been extensive consultation about maternity services in the last five years.

A **Review of Maternity Services** was undertaken in 2003 by the Northumberland, Tyne and Wear Strategic Health Authority (NTW SHA) in partnership with local NHS organisations. The review documents were widely distributed for discussion and comment over a three month period. A large number of responses were received and most people agreed that:

- Uncomplicated pregnancy and childbirth should be seen as a natural event.
- The concept of midwife-led care should continue to be supported.
- The development of a network of maternity services across Northumberland, Tyne and Wear incorporating closely linked midwife led units, medical units and a specialist unit at Newcastle RVI was the right approach.
- There was a need for local solutions to be developed which would address differing issues in different communities.
- Safety is paramount and there were concerns about how access to doctors would be provided for women in midwife-led units if problems developed during labour or birth.

Following publication of the review there has been further consultation. A number of issues, concerns and questions were raised during the consultation, including:

- *There is a need to understand clearly the reasons for change* - Local people want a clear understanding about why change is necessary and why a particular model is seen to be optimal. There is a strong feeling that efficiency gains or cost savings alone are insufficient justification for major alterations to care provision.
- *Safety issues* - In particular, this related to the absence of on-site medical support during or after labour in midwife-led units, and the risks associated with transferring mothers between hospitals in the later stages of labour. Safety was the most important issue for most people. The availability of epidural pain relief was frequently mentioned in relation to this.
- *Location of medical-led units* - This was of particular importance to women in the rural areas rather than those in Newcastle.
- *Involvement of relevant health professionals in the planning process* - People were keen to see midwives and GPs involved in the planning of services, as well as consultants, NHS managers and the Ambulance Service.
- *Availability of choice for mothers* - For some this was about choosing where they should be able to have their babies whilst others felt it was important to be able to have a doctor at hand even if they fell into the category of low risk.
- *Specialist care for newborn babies* - The importance of maintaining safe care for newly born babies was stressed and it was felt that this should be a significant factor in planning the new model.

- *Environment* - Women who had given birth in midwife-led units reported very positive experiences and were supportive of midwife-led care. It was not clear whether this is an option for women in Newcastle.

**A New Model of Maternity Care in Newcastle, North Tyneside and Northumberland (2005)** explores options for changing the way maternity services are organised across Northumberland, North Tyneside and Newcastle to ensure the provision of high quality, sustainable, and ever improving maternity care throughout the area. The focus is the type and capacity for maternity units in order to provide both choice and safe, high quality services.

Following full public consultation and subsequent approval by PCT Boards across North of Tyne, the proposals were implemented from 1 August 2007. A clinical network involving lead clinicians was established to ensure that changes in working practice remained safe. This involves excellent collaboration between provider Trusts. Changes in where women give birth across North of Tyne are monitored on a regular basis. Trend data is now emerging and will be considered by commissioners in the coming months. A survey will also be undertaken to establish patients and carers views on the impact of the changes.

**Newcastle City Council Health and Adult Services Scrutiny Panel** responded to the above consultation and noted that:

- Mothers in Newcastle upon Tyne would have access to the same services as at present, with the additional ability to choose to attend a midwife-led unit if they so wish;
- Capacity at the Royal Victoria Infirmary was planned to expand to accommodate increased referrals from outside Newcastle;
- The NHS believed that recruitment of trained midwives in the region was not a constraint, and that the new organisation would improve retention of staff;
- Consultations were also being held with the overview and scrutiny committees of other affected local authorities, with Public and Patient Involvement Forums, with the National Childbirth Trust, and with other groups, facilitated by Community Action on Health.

**Community Action on Health** (2005) conducted a series of discussion groups with local community groups and organisations in Newcastle upon Tyne. These groups included members of West End Women and Girls Projects, Health Action Groups in Byker, Fawdon, Lemington, Newburn, Westerhope and Denton along with delegates at the Community Action on Health Community Conference.

The report presents the main points from those discussions as well as comments from other consultation work undertaken by Community Action on Health around maternity services. These are presented in line with the seven questions asked by 'A New Model of Maternity Care in Newcastle, North Tyneside and Northumberland' [Consultation document – Appendix 1: comments sheet p 28].

*What do you think about the proposal to develop a network approach to maternity care?*

The comments cover communication and transport. They report that respondents understood the reason for a network approach but were concerned about the number of women already using the RVI (especially if resulted in Newcastle women having to travel out of the city to have their babies) and communication between units and with GPs and midwives. Their concerns about travel were that the good transport links into Newcastle might increase the number choosing the RVI as well as the time and cost for some women of travelling to hospital units much further from their homes.

Most preferred the option(s) where the RVI is the tertiary unit and the Midwife-led units being at North Tyneside and Hexham.

*What do you think about the expansion of midwife-led units?*

All respondents agreed that the midwife was the professional they had had most contact with during their pregnancy and labour and they were very confident to have the midwife present throughout the labour. Many women reported very positive experiences. However, many women would prefer to have an obstetrician available in case there were complications and many raised questions and concerns about the availability of pain relief in a midwife led unit. Epidural anaesthesia would only be available in a medical led unit. A number of women said that the absence of this would mean they would choose not to use a midwife led unit despite the high level of care on offer.

*What do you think about ensuring choice of unit based on risk assessment?*

Most people involved felt unsure about what this would mean. Women who were older mums felt that they may be deemed as high risk when in fact what they would like is a very un-medical approach to the pregnancy. They also felt that even if a woman had been considered a low risk she should still have the choice of a medical unit with the options that offered such as epidural anaesthesia

*Any other comments on anything else to do with maternity services and the review?*

The review made little mention of home birth as an option.

Respondents reported 'isolation' on the post natal wards and the feeling that there were not enough staff.

However, most women spoke of the high standard of care they received by their community midwife and the midwives and other staff in the hospital. They would like the midwifery service to develop the practice of talking the women through their birth experience as soon after the birth as possible. Those who had had this experience said it made them feel much happier. For some women the fact they had never talked about their labour had clearly left them deeply scarred for years afterwards.

More resources in the community to develop projects such as drop-in antenatal groups and more breast feeding support in the community.  
More information on how mainstream services work with outside agencies and how these links could be developed, e.g. how the community midwives will fit into the new Children's Centres and how other voluntary organisations could be pulled in to deliver work with particularly vulnerable clients.

The recently published **Health Care Commission Maternity Services Review**. report for Newcastle Hospitals NHS Foundation Trust can be found [here](#). In summary it found Newcastle to be among the "best performing".

Information from **midwife-led units** in other parts of the country suggests that the number of women choosing midwife-led units is initially at the lower end of the expected range, and then steadily increases over the next 1 to 2 years as confidence in the unit grows. This has been demonstrated at Hexham Hospital since it became effectively midwife-led. (Consultation document)  
Interviews carried out with local mothers highlighted the key factors that influence maternal choice:

- safety issues, in particular how quickly medical support can be accessed in the event of complications;
- the availability of epidural pain relief;
- how 'local' services are seen to be;
- the information provided about midwife-led units, as well as the opinions of trusted local care providers (consultation document).

## **National and local strategies**

### **National**

The **National Service Framework for Children, Young People and Maternity Services** gives direction for the next ten years on the promotion of high quality, women and child-centred services – based on personalised care that meets the needs of parents, children and their families. This NSF recommends a network-based approach.

**Maternity Matters** introduced the choice commitment:

1. Choice of how to access maternity services
2. Choice of type of antenatal care
3. Choice of place of birth – to include home, local facility under the care of a midwife, in a hospital supported by a local maternity team including midwives, Anaesthetists and Consultant Obstetricians
4. Choice of postnatal care (see also the Workforce Plan)

**National guidelines, policies and procedures** such as those issued by the National Institute of Clinical Excellence (NICE), the Royal Colleges of Obstetricians and Gynaecologists (RCOG) and Midwives (RCM) and the Clinical Negligence Scheme for Trusts (CNST).

A maternity and newborn care clinical working group has been established to take forward the work to deliver the immediate actions set out in **Our Vision, Our future** (DH, 2008). The group will collaborate to deliver by January 2009 the immediate actions in **Our Vision, Our Future** for maternity and newborn care by way of the following tasks:

**Task 1** - Project plan, milestones and support resources agreed

**Task 2** - We will identify five standards that will apply across the whole region to improve the health of mothers in each of the following priority areas: Obesity, Smoking, Teenage Pregnancy, Breastfeeding and Alcohol

**Task 3a** - We will review maternity service provision to understand the impact of moving towards one to one midwifery care in labour

**Task 3b** - We will review maternity service provision to understand the impact of moving towards 98 hour consultant cover

**Task 4** - We will define a pathway that specifically enables better and earlier identification of high risk women

**Task 5** - The Board will ensure the establishment by January 2009 of a NE Managed Clinical Network for Neonatal Care

The **North of Tyne Annual Operating Plan** (2008) calls for further development of the implementation of maternity services review which is in line with the direction of travel in Maternity Matters.

### **Local strategies and priorities**

The **North of Tyne Maternity Partnership** works to improve health outcomes for women, children and families during pregnancy, child birth and post delivery across Newcastle, Northumberland and North Tyneside. The partnership does this by promoting integration of maternity care and associated services, by bringing together key partners across health, local authority, voluntary and community sectors, which have a significant contribution to make towards achieving this outcome. It aims to:

- Inform the strategic development and commissioning of maternity services by contributing to the development of the North of Tyne Annual Operating Plan (AOP) by highlighting areas for service improvement and redesign.
- Oversee service developments/redesigns once agreed through the AOP process.
- Working with local Be Health Outcome Groups, oversee the delivery of key outcomes, in particular by promoting breast feeding and reducing smoking in pregnancy.
- Work collaboratively to support the delivery of national and local service requirements as defined in the NSF for Children, Young People and Maternity, Maternity Matters and local Children's Plans.
- Work with the North of Tyne Maternity Clinical Network as required, to support effective implementation of the model of care for delivery as defined within the North of Tyne Maternity Review.

- Ensure effective processes are in place so that the views of patients, their families and local communities can influence the commissioning and delivery of services.
- Work collaboratively by sharing good practice across the patch, taking a North of Tyne approach to service development and redesign where appropriate.
- Encourage NHS bodies in their delivery of their statutory duty to work in partnership as prescribed in the Children Act 2004.

## Workforce planning

The Workforce Plan for North of Tyne (2008) presents a number of current and projected statistics relating to workforce providing maternity services.

<b>Figure 6 - Qualified Midwives employed by Foundation Trust</b>			
<b>Foundation Trust</b>	<b>Births by PCO 2006</b>	<b>Midwives (WTE)</b>	<b>Births: M/W ratio excluding Specialist Services</b>
Newcastle Hospitals	2,954	149.1	
Northumbria Healthcare	5,021	154.04	
<b>Total across both</b>	<b>7,975</b>	<b>303.14</b>	<b>26.31</b>

Note: ratio of midwives to births excludes non operational midwives

Source: Workforce plan

Across North of Tyne, there is low turnover of staff in midwifery, when compared to the regional average of 9%. It is the intention in both Foundation Trusts to give further consideration to skill mix to meet any increase in demand, for example by increasing the use of and extending the role of Maternity Support Workers.

<b>Figure 7 - Workforce projections against the different birth rate estimates.</b>							
<b>Newcastle upon Tyne</b>	<b>Actual</b>	<b>Projected</b>					
	2006	2007	2008	2009	2010	2011	2012
Newcastle Projections - births	7,975.00	8,477.43	8,477.43	8,740.60	8,995.80	8,995.80	9,043.65
Midwife to maintain ratio	303.14	322.24	322.24	332.24	341.94	341.94	343.76
<b>Variance</b>	<b>-</b>	<b>19.10</b>	<b>19.10</b>	<b>29.10</b>	<b>38.80</b>	<b>38.80</b>	<b>40.62</b>

Source: Workforce plan 2008

Issues to be considered when modelling future workforce requirements:

- Demography – high levels of deprivation, teenage pregnancies, other vulnerable groups e.g. BME communities, women misusing alcohol or other substances, mental health problems, low breast feeding rates, high level of smoking during pregnancy, increase in unaccompanied asylum seekers.
- Patient and public views and choice – increasing home births, increasing number of water births.
- Funding mechanisms – Payment by Results, tariffs.
- Integration of services into community settings including Children’s Centres.
- Specialist services – Special Care Baby Unit, Smoking in Pregnancy Service, Infant Feeding Support etc.
- Increased use of Midwifery led units and Midwifery led care.
- Screening – increasing range and frequency of ante and neo-natal screening.
- Opportunities to skill mix.
- Recommendation of “Birth Rate Plus” for midwife: birth ratio, compared to national average. (workforce plan)

The area has been fortunate so far in not having the difficulties with the recruitment and retention of midwives seen elsewhere in the country. However, there is concern in about the number of experienced midwives approaching retirement. There is an urgent need to develop positive retention strategies, including professional development programmes and the provision of a variety of professionally attractive working environments. Midwife-led units based in a network which also provides opportunities to work in a range of different units, would put local health organisations in a strong position to recruit staff.

### **Current activity and service provision (What are we doing now?)**

#### **Community-based care**

The substantial majority of antenatal and postnatal care for women with straightforward or complicated pregnancies takes place in the community. This community-based care is provided by community midwives and/or GPs throughout the area. It includes care and support for women who choose to give birth at home. The consultation stated that work was underway to improve community care with consideration being given to innovations such as basing midwives in Children’s Centres rather than GP surgeries.

#### **Hospital-based care**

The existing maternity arrangements already include both midwife-led units in community hospitals and hospital based services staffed by both doctors and midwives. The two types of unit can be described as follows:

- *Midwife-led units (known elsewhere as Birth Centres)* - A midwife-led maternity unit is one in which midwives are the professionals organising and providing the care during labour and immediately following the birth. They may exist either as stand alone units not linked with any health care facility, or be based in or next to a community hospital, a district general hospital, or a specialist centre. The emphasis in midwife led units is on providing midwifery care to predominantly low-risk women in a home-like

setting. In this area there are two midwife-led units, based in community hospitals in Alnwick Infirmary and Berwick Infirmary - they have been in place for many years serving the communities of north Northumberland. The maternity unit at Hexham General Hospital has also effectively been running as a midwife-led unit since May 2003, though this is currently a provisional arrangement.

- *Medical-led units* - Medical units in hospitals are those where the care is provided by midwives, supported by onsite doctors specialising in pregnancy (obstetricians), pain relief (anaesthetists) and baby care (neonatologists / paediatricians). Medical units provide facilities for a more specialised level of care and would therefore be more appropriate for expectant mothers who are assessed as having a higher risk of complications or where the risk is difficult to determine. They are able to provide the full range of medical assistance, including the use of forceps and Ventouse vacuum, emergency caesareans and epidural pain relief. They are also able to provide special care for babies who need it. There are three medical-led units in the North of Tyne area, one based at North Tyneside General Hospital, one at Wansbeck General Hospital and one at Hexham Hospital

### **Specialist or Tertiary Units**

In addition to providing care to women at lower levels of risk (many of whom will receive exclusively midwife-led care), these units provide a highly specialised level of care led by teams of midwives and doctors, including care for women or babies who have relatively rare conditions or complications requiring specialist support such as neonatal intensive care. Many of these conditions would be apparent prior to labour or birth. There is normally one specialist centre providing care over a large geographical area. In our case, this is based at the Royal Victoria Infirmary at Newcastle.

*Royal Victoria Infirmary* - Large maternity unit providing a range of midwifery, medical and specialist care for local women with straightforward pregnancies, as well as for women throughout the North of England with more severe pregnancy difficulties. A number of low-risk women from North Tyneside or Northumberland choose to have their babies in Newcastle. Women from Hexham assessed as not suitable for a midwife-led birth are referred here, as are those with complications during labour.

In 2004 there were 4,816 Births at the Royal Victoria Infirmary compared to:

- 1,668 at North Tyneside General Hospital
- 1,933 at Wansbeck General Hospital
- 325 at Hexham General Hospital
- 40 at Alnwick Infirmary
- 28 at Berwick Infirmary.

(Consultation document, 2005)

Newcastle PCT total spend on maternity services for 2007/08 was £6,539,000 (Newcastle PCT Annual Report, 2007/08)

## **‘What is this telling us’?**

### **What are the key inequalities?**

Women from areas with high deprivation are more likely to experience problems and poor outcomes in childbirth.

### **What are the key gaps in knowledge / services**

#### **Medical staff**

There is a national shortage of doctors seeking to train in obstetrics, which means that it is becoming increasingly difficult to recruit suitably qualified doctors to staff the existing maternity units (Workforce plan, 2008)

### **What are the risks of not delivering our targets?**

The primary targets in this area are to reduce teenage pregnancy. However, targets in the areas of reducing child poverty, obesity, smoking and other environmental or lifestyle areas are relevant to ensuring that the next generation arrives safely and with the best opportunities to grow and thrive that are possible. Thus the risks of not delivering in other areas known to affect maternal and child welfare will have an impact on maternal and infant mortality and wellbeing.

### **Is what we are doing working?**

David Evans, Medical Director, Northumbria Healthcare NHS Trust stated in the consultation document that:

*“Since it began operating as a midwife-led unit 18 months ago, Hexham Hospital has proved to be a very popular choice for local women. It is now delivering over 90% of its previous totals and is seeing women returning for second deliveries under this type of care. It has proved to be safe and effective, it offers elective caesarean sections and joins the units at Alnwick and Berwick in providing this pattern of service.” (p 34)*

### **What is coming on the horizon?**

#### **Workforce:**

Midwives have a special class arrangement that allows them to retire at age 55. The percentage of the workforce eligible to retire in the next 5 years in Newcastle Hospitals NHS Foundation Trust is 7.97%, compared to 15.02% in Northumbria Healthcare NHS Foundation Trust. This percentage equates to approximately 33.07 FTE Midwives over the next five years, 11.88 FTE in Newcastle and 21.19 FTE in Northumbria.

While the retirement profile is alarming, the Foundation Trusts all operate the flexible retirement scheme offered within the NHS. The retirement profile could therefore be misleading as the Foundation Trusts report a number of midwives over the last 2 years have been retiring and returning to practice. This allows the

employee to work 16 hours per week, without suffering any additional taxation, therefore the potential to loss of 1.00 FTE due to retirement could actually be a loss 0.6 FTE. This equates to 19.84 FTE instead of the potential 33.07 FTE as described above.

Based on the average rate to maintain the current ration of births per Midwife, over the next five years (from 2008), 21.74 midwives would need to be recruited in Newcastle and Northumbria Foundation Trusts (Workforce plan, 2008).

### **Medical staff**

The national shortage of doctors choosing to specialise in Obstetrics may also have an impact on local services.

### **Service redesign**

The implications of the service redesign may impact on the numbers of women choosing to attend the RVI.

### **What should we be doing next?**

1. Increase breast feeding rates (not sure if this is covered elsewhere in the JSNA)
2. Improve the identification of those with increased risk of poorer outcomes through the development of screening programmes and ensure the earliest possible entry into appropriate pathways of care
3. Increase the range of settings in which antenatal and post natal services are provided, including Children's Centre's
4. Increase availability of choice of birth setting (home, midwife led units and medical led units)
5. Ensure the skills and capacities of the workforce are developed to meet the needs of an integrated maternity service.

### **References**

[TR maternity partnership] - North of Tyne Maternity Partnership Terms of Reference

[Consultation document] A new model of maternity care in Newcastle, North Tyneside and Northumberland 2005 – consultation document

[CAOH 2005] – Community Action on Health, Maternity Services Review in Newcastle

Results of discussions with community groups and organisations October-November 2005

[Workforce plan] - NHS North of Tyne Maternity Matters Workforce Plan for Delivering Maternity Matters – June 2008

[Scrutiny panel] - Health and Adult Services Scrutiny Panel - October 2005

[ONS birth data] Birth data plus population projections - ONS – spreadsheet