

LEICESTERSHIRE  
*together* 

# LEICESTERSHIRE JOINT STRATEGIC NEEDS ASSESSMENT



## MATERNAL AND NEWBORN HEALTH

SEPTEMBER 2009



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## 12.1 KEY FINDINGS

- In 2007 there were 62 births per 1,000 women aged 15-44 nationally. This equates to over 6% of the potential childbearing population giving birth in 2007. In 2006/07 maternity and reproductive health accounted for 4.3% of total healthcare spend.
- Leicestershire County and Rutland NHS has below average general fertility rates with the highest rate amongst 30-34 year old women. This reflects a national trend for fewer babies to be born to women and those that give birth are older. However these effects are amplified in Leicestershire County and Rutland NHS.
- There is no statistical difference between the infant mortality rates for the Primary Care Trust and England.
- Low birth weight births across the Primary Care Trust are significantly lower than England and East Midlands rates. In 2007 there were 477 babies born with a low birthweight in the Primary Care Trust.
- 88% of women in Leicestershire County and Rutland access antenatal services by 12 weeks of pregnancy. There is no measurable improvement towards the 93% standard.
- There will be an estimated increase in the number of births across Leicestershire County and Rutland of 11%, from 7,400 in 2008 to 8,200 in 2021.
- The major issues facing maternity services are low early access to antenatal services, high smoking rates in mothers, low breastfeeding initiation rates and inequalities in health outcomes experienced by people affected by socio-economic deprivation (people in most deprived areas have low birth weights over 1.25 times those in the least deprived areas).

## 12.2 INTRODUCTION

*“Good maternal health and high quality maternity care throughout pregnancy and after birth can have a marked effect on the health and life chances of newborn babies, on the healthy development of children and on their resilience to problems encountered later in life.”<sup>1</sup>*

Within this chapter we review maternal and infant health across NHS Leicestershire County and Rutland. Information presented in the report NHS Leicestershire County and Rutland, Infant and Maternal Health Equity Audit 2008 is summarised.

## 12.3 NATIONAL PATTERNS IN MATERNAL AND NEW BORN HEALTH

In 2007 there were 62 births per 1,000 women aged 15-44 nationally (655,357). This equates to over 6% of the potential childbearing population giving birth in 2007. In 2006/07 maternity and reproductive health accounted for 4.3% of total healthcare spend<sup>2</sup>.

Of the 655,357 births, 629,207 births took place in NHS hospitals in 2006/07. Of these:

- over 20 per cent of labours were induced
- the caesarean rate remained stable in 2006-07 at 24.3 per cent (this was 24.1 per cent on a comparable basis in 2005-06); more than half these were emergency caesareans
- 11.5 per cent were instrumental deliveries
- an estimated 52 per cent of deliveries were 'normal deliveries' defined as those without surgical intervention, use of instruments, induction, epidural, spinal or general anaesthetic
- most women with spontaneous deliveries spent 0 or 1 day in hospital after delivery, women with instrumental deliveries 1 or 2 days and women with caesarean deliveries between 2 and 3 days
- recovery time in hospital following caesarean section is lessening. Approximately one quarter (27,407) spent four days or more recovering in hospital in 2006-07, compared to just under a third (31,393) in 2005-06
- during labour about one third of women had an epidural, general or spinal anaesthetic
- 13 per cent of women had an episiotomy
- 23 per cent of Asian women's babies weighed more than 3500g compared with 44 per cent of White women's babies and 34 per cent of Black women's babies. Low birth weights (under 2500g) comprised 10 per cent of Asian women's babies compared with 8 per cent of Black and 6 per cent of White women's babies.
- in 2006-07, about 35 per cent of deliveries were conducted by hospital doctors and 62 per cent by midwives.

The infant mortality rate (IMR) is defined as the number of deaths under the age of one year, per 1,000 live births. It is a sensitive measure of the overall health of a population, providing an important measure of the well-being of infants, children and pregnant women. International comparisons indicate that IMR is similar in the UK to most European countries, but in 2006 it was still higher than countries such as Spain, France, Italy and Germany. Although infant mortality in England is at an all-time low and falling, significant inequalities persist.

Between 2005 and 2007 9,397 babies died in England before reaching the age of 1 year. This is 4.9 deaths per 1,000 live births.

Being born into and growing up in poverty has a significant effect on health not only in infancy and childhood but later into adult life. The adverse effects of being born into poverty can be seen on measures of foetal development and outcome, almost

twice the levels of infant mortality, lower levels of breastfeeding and a large number of other adverse health outcomes throughout childhood and adult life.

## 12.4 MATERNAL AND INFANT HEALTH IN LEICESTERSHIRE COUNTY AND RUTLAND

### 12.4.1 Numbers of births and birth rates in Leicestershire County and Rutland

In 2007 there were 7,192 live births to women resident in Leicestershire County and Rutland.

Table 1 details the general fertility rates for the PCT. The general fertility rate (GFR) is the number of live births in a year per 1000 women of child-bearing age 15-44 years). The general fertility rate for Leicestershire County and Rutland is 54.5 births per 1,000 women or 5.5% of women of childbearing age gave birth in 2007. This rate is significantly lower than the England average. This means that women in LCR have on average fewer births and/or fewer women are having children than are occurring as an average nationally.

**Table 1: General fertility rate and total number of live and still births by local authority for Leicestershire 2007<sup>3</sup>**

	<u>Denominator</u> Female population aged 15-44	<u>Numerator</u> Live births to females aged 11-49	Birth rate per 1,000 female population aged 15- 44	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit
ENGLAND	10548132	655357	62.13	61.98	62.28
EAST MIDLANDS		52482	59.08	58.59	59.57
<b>NHS Leicestershire County and Rutland</b>	132070	7192	54.46	53.25	55.69
Rutland UA	6591	358	54.32	49.10	60.06
Blaby CD	17650	1078	61.08	57.64	64.71
Charnwood CD	35415	1746	49.30	47.09	51.61
Harborough CD	14842	895	60.30	56.58	64.25
Hinckley and Bosworth CD	19875	1030	51.82	48.83	54.99
Melton CD	9068	512	56.46	51.90	61.41
North West Leicestershire CD	17250	1043	60.46	57.00	64.12
Oadby and Wigston CD	11379	530	46.58	42.85	50.61

Source: Office of National Statistics. National statistics: vital statistics 1, births and mortality 2007 summary

## 12.4.2 Infant mortality rates

Table 2 details the infant mortality rates (IMR) across Leicestershire County and Rutland PCT. The rates presented here illustrate that there is no statistical difference between the infant mortality rates for the PCT and the England average.

During 2005-07, there were 109 deaths in children under the age of 1 year, i.e. infants. The infant mortality rate across Leicestershire County and Rutland NHS was 5.1 per 1,000 between 2005-2007 (95% CI 4.3 to 6.2) which was comparable with England's rate of 4.9 per 1,000 (95% CI 4.8 to 5.0).

**Table 2: Infant Mortality Rates by local authority in Leicestershire 2005-07 pooled<sup>4</sup>**

	No. of live births	No. of deaths <1yr	Rate per 1000 live births	95% CI lower level	95% CI upper level
ENGLAND	1904133	9397	4.9	4.8	5.0
East Midlands SHA	152279	781	5.1	4.8	5.5
<b>Leicestershire County and Rutland PCT</b>	<b>21248</b>	<b>109</b>	<b>5.1</b>	<b>4.3</b>	<b>6.2</b>
Rutland UA	1093	*	*	*	*
Blaby CD	3122	16	5.1	3.1	8.3
Charnwood CD	5026	31	6.2	4.3	8.8
Harborough CD	2612	9	3.4	1.8	6.6
Hinckley and Bosworth CD	3178	16	5.0	3.1	8.2
Melton CD	1526	*	*	*	*
North West Leicestershire CD	3069	17	5.5	3.4	8.9
Oadby and Wigston CD	1622	10	6.2	3.3	11.4

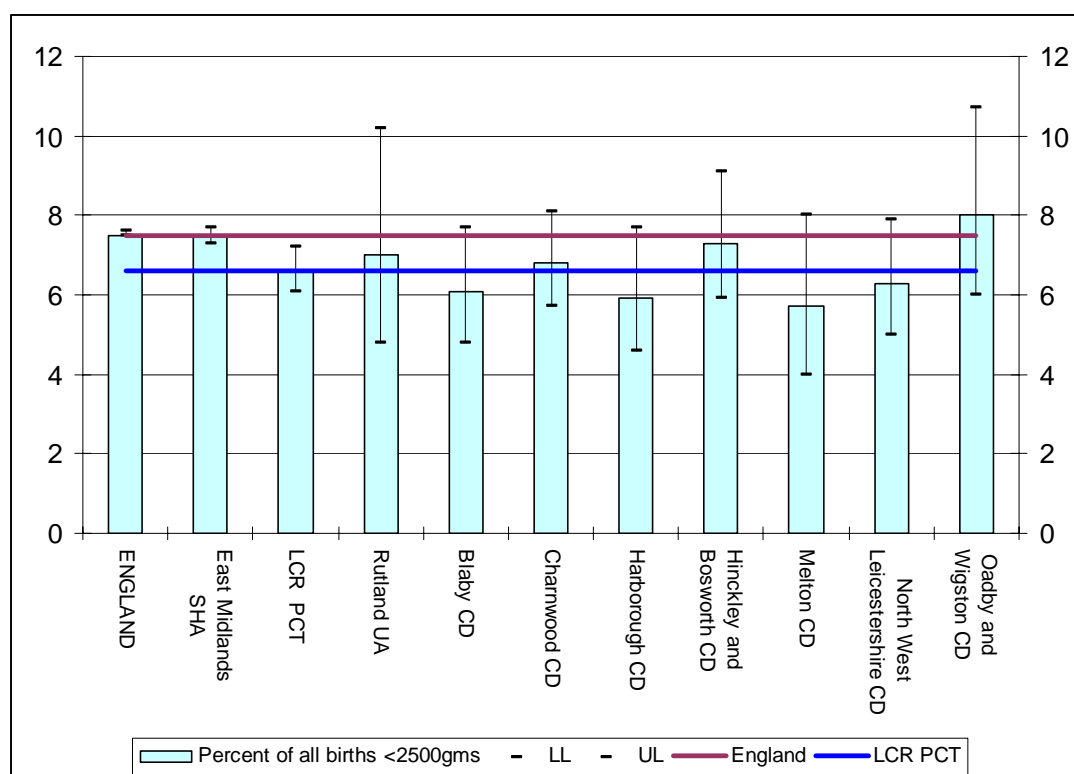
Source: Compendium of Clinical and Health Indicators NCHOD.

\*Represents potentially disclosive information of numbers of 5 or less or that may allow disclosure by subtraction that has been suppressed to protect anonymity.

## 12.4.3 Birthweight

A baby born weighing less than 2,500g is defined as low birthweight and less than 1,500g as very low birthweight. Birthweight is a strong predictor of health outcomes in childhood and adulthood. There were significantly fewer low birthweight births across Leicestershire County and Rutland NHS in comparison to England and East Midlands. In 2007 there were 477 babies born with a low birthweight in NHS Leicestershire County and Rutland (Figure 1). Very low birthweight births do not differ significantly within Leicestershire County and Rutland NHS or between Leicestershire County and Rutland NHS and regional or national rates.

Figure 1: Low birth weight babies<sup>5</sup>



Source: Compendium of Clinical and Health Indicators. Department of Health November 2007

## 12.4.4 Access to services

It is important that women make contact with maternity services early in pregnancy. This ensures that they receive the highest standards of care, have access to screening and possible consequent treatments early, and to receive early advice for a healthy pregnancy and baby.

NICE guidelines recommend that booking appointments should take place before 12 completed weeks of pregnancy and the 2008/09 NHS Contract for Acute Services sets a clinical quality performance indicator that:

“93% of women have seen a midwife or maternity healthcare professional, for assessment of health and social needs, risk and choice, by 12 completed weeks of pregnancy” (Quality standard 4a-7)

In December 2008, 88% of women in Leicestershire County and Rutland accessed antenatal services by 12 weeks of pregnancy. Throughout 2008, there was an average of 53 antenatal bookings made each month after 12 weeks of pregnancy. This hardly changed during 2008 and may reflect a subset of the population that persistently present late for antenatal care, such as teenage pregnancies. A case review of a sample of these late presenting pregnancies may identify their characteristics that would help targeted interventions to facilitate early presentation to services. It is important that women make contact with maternity services early in pregnancy in order to ensure the highest standards of care, to access screening

and possible consequent treatments early and to receive early advice for healthy pregnancy and baby (Table 3).

**Table 3: Access to antenatal bookings**

	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08
<b>No. of bookings made at 12 weeks or less</b>	391	411	422	375	396	415	342	375	351
<b>No. of bookings made after 12 weeks</b>	51	59	51	64	48	58	54	46	44
<b>Total no. of bookings</b>	442	470	473	439	444	473	396	421	395
<b>% of total bookings &lt;=12 weeks</b>	<b>88.5%</b>	<b>87.5%</b>	<b>89.2%</b>	<b>85.4%</b>	<b>89.2%</b>	<b>87.7%</b>	<b>86.4%</b>	<b>89.1%</b>	<b>88.9</b>

*Source: LDPR data from NHS LCR*

*This data refers to UHL bookings only and therefore does not include 25% of the births to NHS LCR residents who choose to birth elsewhere*

## 12.4.5 Smoking in pregnancy

Smoking in pregnancy is a cause of ill health for mother and baby. Babies born to women who smoke are more likely to be born prematurely and the incidence of low birthweight (less than 2,500g) is twice as high among smokers as non-smokers. Babies born to mothers who smoke are up to three times as likely to die from sudden unexpected deaths in infancy and smoking in pregnancy increases infant mortality by about 40%. Smoking is highest in the routine and manual social group and among mothers under 20 years old of whom approximately 45% smoke through their pregnancy.<sup>6</sup>

The local delivery planning guidance states that each NHS trust should deliver a one percentage point annual reduction in the proportion of women known to be smokers at the time of delivery. The overarching target is 15% mothers smoking at delivery by 2010.

For 2006/07 the health profile for Leicestershire County and Rutland NHS shows that the percentage of women recorded as smokers at delivery to be 23.4% if it is assumed that all of the 4% of unrecorded smoking status women are non-smokers. This was significantly worse than the England average (16.1%).<sup>7</sup> In returns for 2007/08 the proportion of women in Leicestershire County and Rutland NHS with unrecorded smoking status at delivery leapt to 19.5% making it impossible to assess progress towards targets in reducing the number of women known to be smokers at the time of delivery.

Using data pertaining only to births taking place at UHL for 2007/08, 12.1% (638/5278) of mothers from Leicestershire County and Rutland NHS are known to be smoking at delivery with only 2.3% not known. The shortfall in official local delivery plan report (LDPR) data is likely to be caused by missing information for mothers who birthed outside the county. These UHL figures show a large decrease

in known smokers from 2006/07 and meet the Priorities and Planning Framework target of 15% by 2010.

**Table 4: Leicestershire County and Rutland PCT Local Delivery Plan Returns for smoking status of mother at the time of delivery 2005/6 – 2007/08**

	Number of Maternities	No. not smoking at delivery	% not smoking at delivery	No. not known smoking status at delivery	% not known smoking status at delivery
2005/2006	6283	4663	74.2	268	4.3
2006/2007	6490	4775	73.6	260	4.0
2007/2008	7236			1412	19.5

*Source: Local Delivery Plan Return data*

## 12.4.6 Breastfeeding

A large body of published research has shown that breastfeeding has clear health benefits for both mothers and infants. Breastfed babies are less likely to suffer from conditions such as gastroenteritis, chest, urinary tract, or ear infections, diabetes in childhood, and childhood obesity. The Priorities and Planning Framework contains a target for breastfeeding to deliver an increase of two percentage points per year in the initiation rate (defined by the government as the mother puts the baby to the breast, or the baby is given any of the mother's breast milk, within the first 48 hours of birth), focussing especially on women from disadvantaged groups.

Early in 2000, the World Health Organisation commissioned a systematic review of the published scientific literature on the optimal duration of exclusive breastfeeding. As a result of this review, the World Health Organisation revised its guidance to recommend exclusive breastfeeding for the first six months of an infant's life. This revised guidance was adopted by the United Kingdom Health Departments from 2003 onwards.

Patterns of breastfeeding can be described using several different measures:

- The government target defines initiation of breastfeeding as "The mother puts the baby to the breast, or the baby is given any of the mother's breast milk, within the first 48 hours of birth"
- Incidence of breastfeeding is described as the proportion of babies who were breastfed initially, including if this was on one occasion only.
- Prevalence of breastfeeding is defined as the proportion of babies being breastfed at specific ages, including babies that also receive infant formula or solid food
- Duration of breastfeeding is the length of time that a mother who breastfed initially continues to do so, even if they were also giving other milk or solid food.

The Priorities and Planning Framework contains a target for breastfeeding to deliver an increase of two percentage points per year in the initiation rate, focussing especially on women from disadvantaged groups.

In 2007/08 the breastfeeding target was expanded to cover breastfeeding at 6 weeks.

**Table 5: Leicestershire County and Rutland PCT Local Delivery Plan Returns for breastfeeding initiation 2005/6 – 2007/08.<sup>8</sup>**

	<b>No. of maternities</b>	<b>No. initiating breastfeeding</b>	<b>% initiating breastfeeding</b>	<b>No. not known breastfeeding</b>	<b>% not known breastfeeding</b>
2005/06	6283	4121	65.6	175	2.8
2006/07	6490	4501	69.4	69	1.1
2007/08	7236			1333	<b>18.4</b>

*Source: Local Delivery Plan Return (LDPR) data. Submitted to the Department of Health via UNIFY system to monitor Primary Care Trust performance (local data analysis) – not available to public.*

Table 5 shows the proportion of new mothers that initiated breastfeeding. In the period 2005/06-2006/07 there was an increase in numbers initiating breastfeeding. However, the data for 2007/08 is insufficiently complete to draw any conclusions as 18.4% of maternities were recorded as not known for initiating breastfeeding. Unless the numbers of not known are less than 5% the data cannot be used to assess progress or for DH statistical purposes including Healthcare Commission performance ratings.

Using data pertaining only to births taking place at UHL for 2007/08 71.6% (3779/5278) of mothers from NHS Leicestershire County and Rutland are known to have initiated breastfeeding. The shortfall in official LDPR data is likely to be caused by missing information for mothers who birthed outside the county. These figures show an increase of just over 2% from 2006/07 which meets the Priorities and Planning Framework target.

Nationally breastfeeding initiation rates have steadily increased from 1995 onwards, and the Infant Feeding Survey (IFS) 2005 reported an incidence rate of 77% in England and Wales. NHS Leicestershire County and Rutland clearly has some way to go to reach these levels of breastfeeding initiation, which are likely to have risen at a national level since the 2005 survey.

## **12.5 PROFILING MATERNAL AND INFANT HEALTH**

### **12.5.1 Age**

The age of a mother is a factor that influences maternal and infant health. In particular, it influences birthweight with the smallest babies born to the youngest mothers (under 20) and the oldest mothers (over 40). In addition to this, mothers aged under 25 years are the least likely to breastfeed.

In both counties, there is a lower birth rate in the younger age groups than average (up to 24 years) and a higher birth rate for mothers aged 25-29. Across Leicestershire County the greatest number of births per 1,000 are amongst the 30-34 age group at 111.7, followed by the 25-29 age group at 109.9 births per 1,000. This reflects the national age trend for births, however it differs slightly from the East Midlands where the greatest number of births are in those aged 25-29. (Table 6)

**Table 6: Live births numbers and rates by age of mother and area of usual residence (county and unitary authorities in Leicestershire) in 2007<sup>9</sup>**

Area of usual residence of mother	Age of mother at birth						
	All ages	Under 20	20-24	25-29	30-34	35-39	40 and over
	<b>Numbers</b>						
ENGLAND	<b>655,357</b>	<b>41,778</b>	<b>122,968</b>	<b>173,229</b>	<b>182,613</b>	<b>110,424</b>	<b>24,345</b>
EAST MIDLANDS	<b>52,482</b>	<b>3,830</b>	<b>10,799</b>	<b>14,330</b>	<b>13,790</b>	<b>8,061</b>	<b>1,672</b>
Leicestershire county	<b>6,834</b>	348	1,048	1,855	2,057	1,281	245
Rutland UA	<b>358</b>	14	40	86	110	88	20
	<b>Rates per 1,000 women in age group</b>						
ENGLAND	<b>62.1</b>	<b>25.7</b>	<b>73.2</b>	<b>103.6</b>	<b>110.5</b>	<b>57.4</b>	<b>12.2</b>
EAST MIDLANDS	<b>59.1</b>	<b>26.5</b>	<b>73.3</b>	<b>110.5</b>	<b>105.3</b>	<b>49.0</b>	<b>9.7</b>
Leicestershire county	<b>54.5</b>	16.6	54.4	109.9	111.7	52.5	9.6
Rutland UA	<b>54.3</b>	7.7	100.5	118.9	123.7	66.3	14.0

Source: ONS Birth Statistics 2007, series FM1, no 36

## 12.5.2 Deprivation

Deprivation also influences a number of maternal health indicators, with those in the most deprived quintile significantly more likely to give birth to a baby weighing less than 2,500g (most deprived quintile proportion 8.0% compared to the Leicestershire County and Rutland NHS proportion of 6.5%). In addition to this, there is a clear relationship between breastfeeding on discharge from hospital and deprivation. In the least deprived quintiles almost double the proportion of babies receives breast milk than do not.

## 12.5.3 Geographical variations in maternal and infant health across LCR

Table 1 illustrates that Blaby, Harborough and North West Leicestershire Districts have the highest birth rates across Leicestershire County and Rutland (whilst rates in these areas are similar to the England average they are significantly higher than the LCR average)

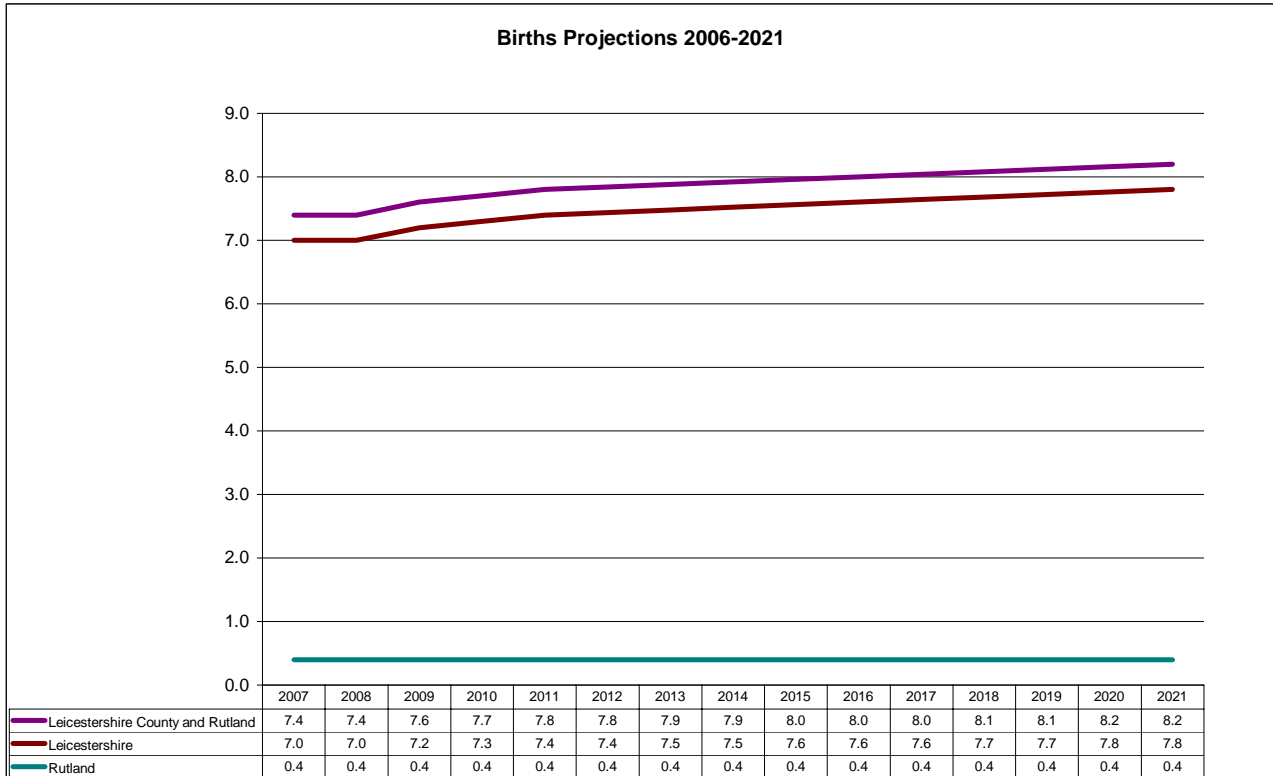
There is no statistical difference between infant mortality rates across the districts / counties covered by Leicestershire County and Rutland, Table 2

Low birth weights are illustrated in Figure 1. This illustrates that LCR as a whole has a lower percentage of small babies than is seen nationally. However, there is no statistical difference between the rates seen in the localities.

## 12.6 TRENDS IN BIRTHS OVER TIME

Office for National Statistics publish projected births figures as part of the population trend data. This illustrates that there will be an overall increase in the number of births across Leicestershire County and Rutland of 11%, from 7,400 in 2008 to 8,200 in 2021 representing a growth rate of 0.8% a year.

Figure 2: Birth Projections 2006-2021<sup>10</sup>

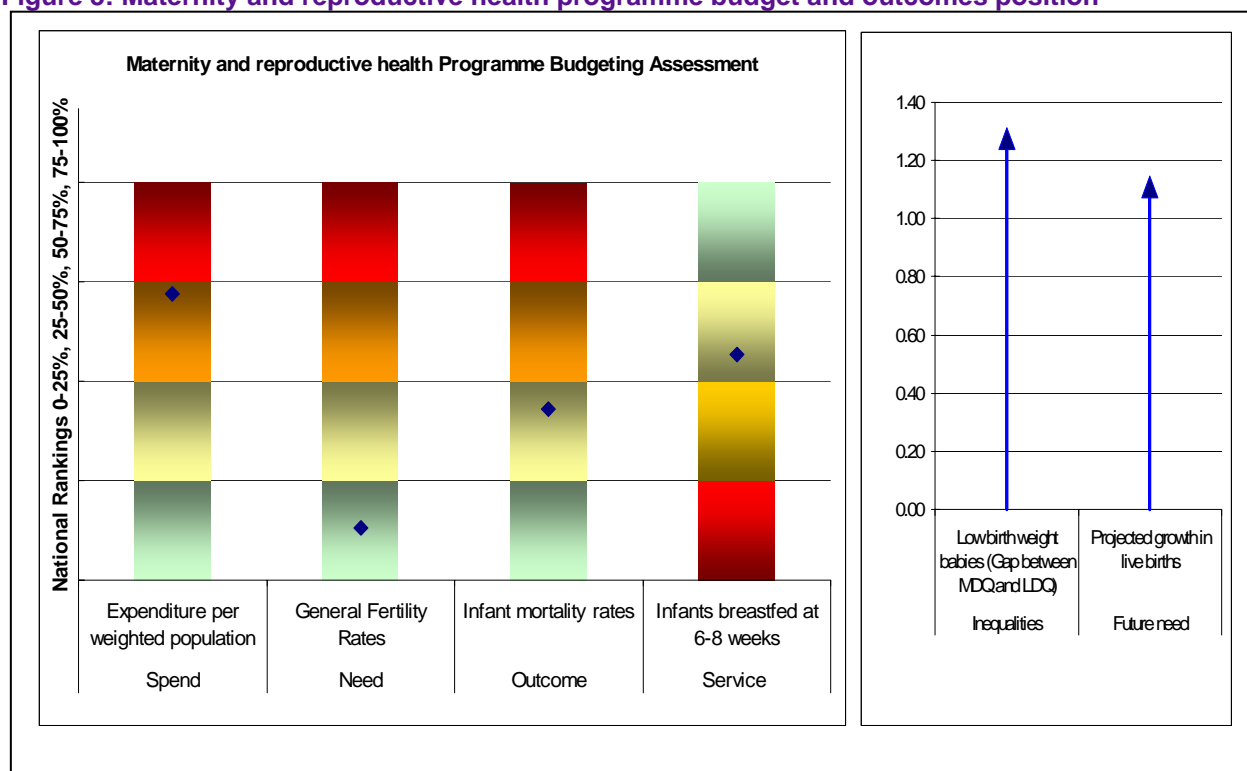


Source: ONS Population projections 2006

## 12.7 WHAT ARE THE KEY ISSUES FACING LCR FOR INFANT AND MATERNAL HEALTH

Figure 3 demonstrates that for spend the PCT is in the top 50% of PCTs in the country. However, the PCT has below average general fertility rates. The major issues facing the PCT with respect to maternal health are inequalities in health outcomes experienced by people affected by socio-economic deprivation (people in most deprived areas have low birth weights over 1.25 times those in the least deprived areas) and the anticipated growth in the number of births in the PCT between now and 2021 (11% increase on current prevalence).

**Figure 3: Maternity and reproductive health programme budget and outcomes position**



Source: Programme budget data, Compendium of Clinical Indicators, LDP return data, ONS population projections

## 12.8 REFERENCES

<sup>1</sup> Maternity Matters, Department of Health, April 2007

<sup>2</sup> 2006-07 Programme budgeting data.

<sup>3</sup> The Information Centre for health and social care

<sup>4</sup> Source: Compendium of Clinical and Health Indicators NCHOD. Represents potentially disclosive information of numbers of 5 or less or that may allow disclosure by subtraction that has been suppressed to protect anonymity.

<sup>5</sup> Source: Compendium of Clinical and Health Indicators. Department of Health November 2007

<sup>6</sup> Review of the Health Inequalities Infant Mortality PSA Target. DH 2007

<sup>7</sup> APHO and the Department of Health

<sup>8</sup> LDP data

<sup>9</sup> Source: ONS Birth Statistics 2007, series FM1, no 36.

<sup>10</sup> 2006-based subnational population projections, Source: Office for National Statistics, Crown Copyright 2008