



# Born Equal?

## A briefing on inequalities in infant mortality in London

### Key Messages for London

#### Patterns of infant mortality in London

- There are unacceptable inequalities in infant mortality in the Capital. If babies born to the more deprived routine and manual socioeconomic group had the same chance of surviving their first year of life as those in the general population, then 41 lives would be saved every year.
- Trends in infant mortality at a pan-London level are similar to the national picture where the gap between the routine and manual group and the population as a whole – the focus of the national target - has widened since the baseline.
- Of the many factors associated with infant death, the five most important in London are:
  - low birthweight babies
  - mothers who live in the most deprived parts of London
  - mothers who register their babies alone (sole-registered births)
  - mothers born in East or West Africa and the Caribbean
  - babies born to couples in the routine and manual groups.

These factors acting together and separately, explain the high rates of infant mortality in parts of London, especially in Eastern London and now in Northern London. At a neighbourhood level, all but three of London's most affluent boroughs have high risk neighbourhoods.

#### Achieving the infant mortality target in London

- Well-targeted local action needs to be more widely focussed than the traditionally deprived inner London areas. We have identified "at risk" deprived neighbourhoods in all but three of London's boroughs that need to be included.
- In the longer term, collective effort needs to be focussed on tackling the wider causes of infant mortality such as reducing child poverty, reducing the gap in educational attainment and improving employment opportunities. These measures, combined with well-targeted approaches via Sure Start and children's centres, will also impact positively on wider infant and child health.

#### Implications for NHS commissioners, providers and London's Healthcare Strategy<sup>1</sup>

- In the shorter term, there are a number of indicators that can be monitored to help provide better evidence to NHS commissioners that progress is being made locally. These include: smoking in pregnancy, initiation of breastfeeding and ethnic differences in gestation (age of the foetus) at first antenatal booking visit.
- Although imperfect, our summary risk profiles suggest that there is significant variation between these proxy outcomes across the Capital that remains to be tackled by maternity and primary care services. The utility of these indicators depends on gaining the commitment of all local acute trusts to better collection and recording of this routine information across *all* ethnic groups.

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## Introduction

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This briefing is part of a series following the publication of the white papers *Choosing health*<sup>2</sup> and *Our health, our care, our say*<sup>3</sup>. It explores the factors that contribute to infant mortality in the capital and ways in which commissioners might monitor the contribution of their local NHS to the national infant mortality target as well as contributing to maternity policy.

Further copies of the briefing and full report can be downloaded from the LHO website, [www.lho.org.uk](http://www.lho.org.uk).

### Background to the target

Addressing health inequalities is a national priority reinforced in subsequent health policy documents such as *Choosing health* (2004)<sup>2</sup> and *Our health, our care, our say* (2006)<sup>3</sup>. A target for reducing inequalities is included in the priorities for the NHS, with two specific targets or Public Service Agreements (PSAs) for reducing inequalities in life expectancy and infant mortality (Box E1).

### Box E1 National targets for inequalities in health

By 2010 to reduce\* the inequalities in health outcomes by 10 per cent as measured by infant mortality\*\* and life expectancy at birth.

... starting with children under one year, by 2010 to reduce by at least 10 per cent the gap in mortality between routine and manual groups and the population as a whole;

... starting with local authorities, by 2010 to reduce by at least 10 per cent the gap between the areas with the worst health and deprivation indicators (the spearhead group) and the population as a whole.

\*The baseline year is 1997-99 \*\*Infant mortality is the death of an infant before its first birthday, excluding still births.

### The PSA target does not include all risk groups

The PSA for reduction in inequality in infant mortality rates tracks the excess mortality in the 'routine and manual' group in the National Statistics Socio-Economic Classification (NS-SEC). This is defined as the percentage difference between the rate in routine and manual groups and that in the general population. The information collected is based on the occupation of the *father* in couples who register the birth. Thus children born to mothers who register their birth without the father are excluded. We have also looked at "sole-registered births" alongside the target as they constitute a key group of mothers at risk of infant death in London.

### Infant mortality: the national picture

In London, as in England and Wales, the overall infant mortality rate (IMR) has been falling in all groups since the baseline period (1997-1999). There is currently no trend data available for routine and manual groups for London. However the IMR in London in 2005 was similar to England and the IMR in England and Wales has been falling faster in the general population than in the routine and manual groups. The gap has fallen slightly from 19% in 2002-04 to 18% in 2003-05. However this compares with 13% higher than the baseline period. This recent slight narrowing is encouraging. However, the target to narrow the gap 10% by 2010 remains challenging.<sup>45</sup>

### Inequalities in infant mortality: understanding the risk factors in London

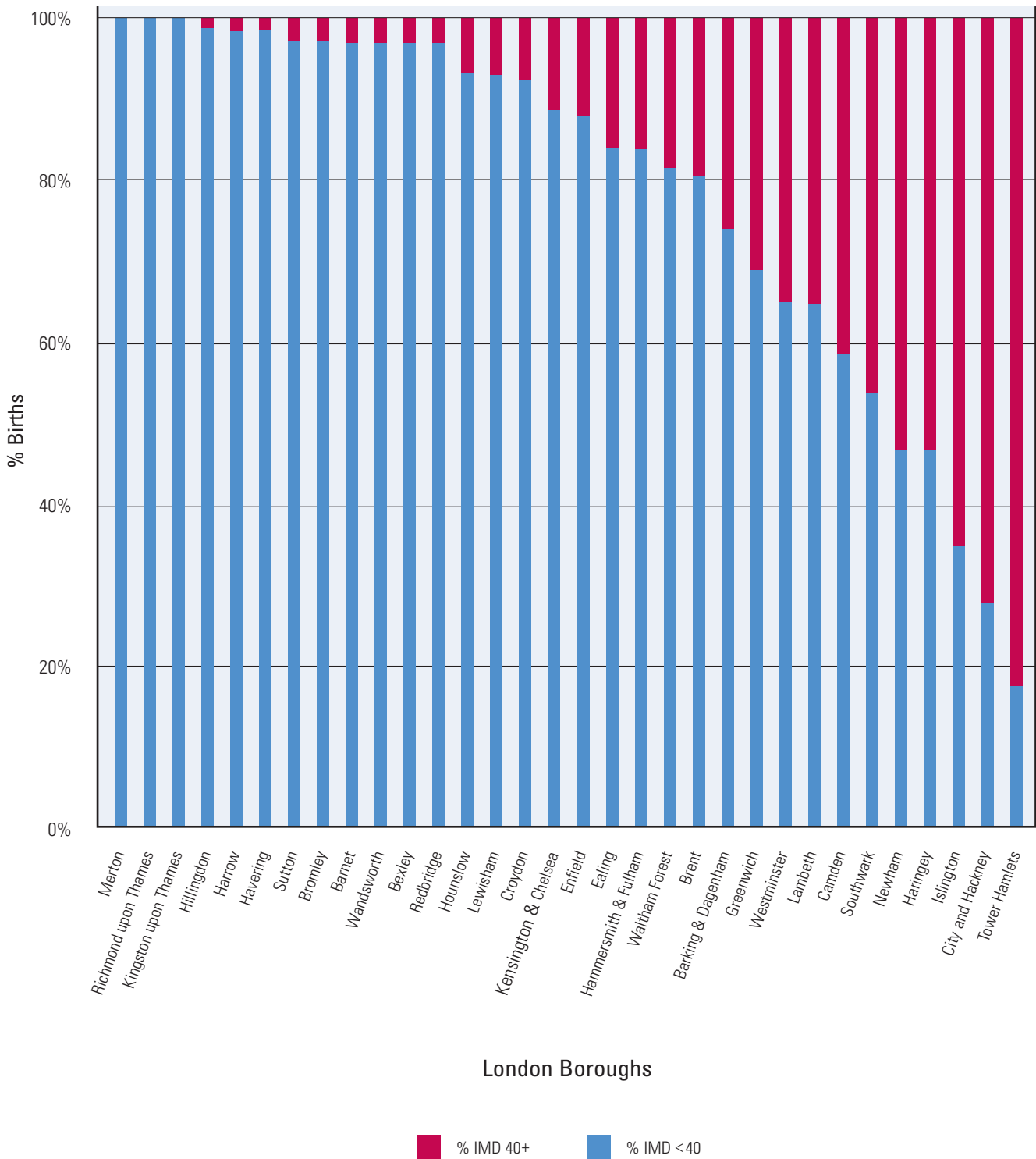
Large inequalities in infant mortality exist within London and a number of risk factors for infant mortality were identified.

- In London, the routine and manual group have an infant mortality rate (6.7 per 1000 live births) – 29% higher than the rate in the general population (5.2 per 1000 live births). This compares with a rate 22% higher in England (6.2 and 5.1 per 1000 live births respectively).
- The IMR in London is even higher in infants registered by the mother alone (sole registered) than the routine and manual group at 8.9 deaths per 1,000 live births. Although this group is not monitored for the target, they are a key target group for London.
- The IMR for infants born to mothers aged under 20 is also high at a rate in London of 8.7 per 1,000 live births. This includes a high proportion of sole registered births.
- London has more than twice the proportion of births to mothers born outside England & Wales compared to England & Wales as a whole – 47% compared to 20%.
- In London, deaths in the first year of life are more common among infants born to mothers born outside England & Wales, a rate of 5.9 per 1,000 in London, and as high as 10.9 in births to mothers born in West Africa.
- Low birthweight babies (less than 2500g) are at a higher risk of death in the first year of life than heavier babies with a rate of 10.8 per 1,000 births.

### The pattern of risk for infant mortality at local borough/Primary Care Trust (PCT) level

- The highest infant mortality rates, and the highest prevalence of most of the key risk factors in 2001-2003, was in the Central, East and North London boroughs, with the lowest levels found in outer and West London. However, rates fluctuate over time, and more recently (2003-05) the highest rates were found in Haringey and Harrow.
- Infant deaths are too few in number to be reliably monitored at a borough/Primary Care Trust (PCT) level. We have, instead, analysed the distribution of known risk factors for infant death between boroughs. Our analysis – at PCT and Local Authority (LA) level taken down to small (Super Output) areas of about 1500 people when possible – shows that high levels of these risk factors coincide with the more deprived boroughs, which in turn, have a higher proportion of births to the routine and manual groups (Figure E1 – see page 4).
- 42.7% of all couple births in more deprived areas were to fathers in routine and manual occupations. The IMR in 2001-03 was 7.4 per 1,000 live births in the most deprived areas compared to 3.3 in the least deprived group.

**Figure E1** Proportion of live births to mothers by deprivation score in London boroughs, 2001-2003



Source: ONS, DCLG, analysis by LHO

### Borough risk summaries for infant deaths in London

Table E1 provides a summary for each London borough of the prevalence of the 8 key risk factors for infant mortality as a proportion of total births in that borough. The risk factors are grouped and colour coded into quartiles for London. The amount each risk factor contributes will not necessarily be the same. However, this information enables risk factors to be identified for each borough, in particular those highlighted in the top quartile for London (red colour). Amber and green risk factors may still indicate an important public health burden and should not be ignored.

### Commissioning effective interventions: monitoring local NHS progress

We have selected 3 NHS interventions from the DH review of effective interventions that have a positive impact on infant mortality, that are locally modifiable and can be monitored using routinely available data:

- smoking in pregnancy
- initiation of breastfeeding
- early booking of antenatal care (for these data ethnic differentials can also be monitored)

Although the data are imperfect, we have undertaken an analysis of a sample of two years. The findings are summarised in table E2.

Table E2 shows all London PCTs and their performance on these routine local indicators, and in particular where improved data quality is needed. As there are no evidence-based targets for these indicators, arbitrary cut off points are used for each individual indicator. The data is grouped into three bands of colour from the worst (red) to the better (green). An amber and green colour still indicate possible areas for concern and should be interpreted with local knowledge. The NHS serving very deprived communities, such as Tower Hamlets for example, has the capacity to make a vital positive contribution to maternal or infant health indicators.

For example, early booking of the first antenatal appointment is a good precursor of better health for the mother and child, and is identified in London's Healthcare Strategy<sup>1</sup> as a key point for assessment of risks in the mother. To identify this, gestational age at booking is needed.

Table E2 provides information on both the proportion of deliveries coded with gestational age and the proportion who had booked an early first antenatal appointment (less than 12 weeks) for 2004/05 and 2005/06 (the sample years). Both pieces of information can be used to assess the quality and reliability of the information.

For example in Tower Hamlets PCT the proportion of mothers that booked early in both years is "green" and therefore indicates a high proportion of mothers booking early. In Tower Hamlets a high proportion of deliveries were coded with gestational age too – indicating that the data on early booking can be interpreted with some confidence. This is not the case however in Croydon or Bexley PCTs for example.

The smoking and breastfeeding indicators need to be interpreted in a similar manner. They currently form part of the London PCT quarterly public health performance monitoring system provided by the LHO .

This information can be used by commissioners to identify more accurately where improvements will benefit outcomes, and in data recording.

### Tracking variations in acute trust records

It is clear that any meaningful comparison or tracking of local progress by commissioners depends entirely on comprehensive, high quality data collected by acute trust maternity services. For early antenatal booking, it can be seen in London that there is a North/South divide in the completeness of coding of gestation at first antenatal appointment for 2004/05 and 2005/06. However, it also shows great variation between PCTs and across these two years (see table E2). For example, City and Hackney in 2004/05 had over 70% of deliveries coded but less than 10% in 2005/06. This is largely due to variation in acute trusts (see figure E2). Of the 27 acute trusts in London with 2000 deliveries or more in 2005/06, 8 did not provide any information on gestation at booking (figure E2). There may have been improvements in this data over the last year and it should be noted this data only looks at computerised records.

Figure E2 shows the huge variation not only between trusts but across years. For example, two hospitals (Chelsea and Westminster Hospital and St Mary's) had 0% coded in 2004/05 and over 60% in 2005/06 and West Middlesex with over 90% in 2004/05 and 0% in 2005/06.

**Table E1** Proportion of live births by risk factors for all local authorities, 2001-03

London Borough	Proportion of births sole registered by mother	Proportion of births in SOAs* with an IMD** score 40+	Proportion of births to mothers aged under 20	Proportion of births that are very low birthweight (<1500g)	Proportion of births that are low birthweight (<2500g)	Proportion of births to mothers aged 40 and over	Proportion of births to mothers born in West and East Africa and the Caribbean	Proportion of couple births in routine and manual groups
Barking & Dagenham	10.8	23.6	8.5	1.6	7.9	1.9	9.8	44.1
Barnet	5.2	2.6	3.1	1.4	7.8	4.6	7.3	16.5
Bexley	5.9	2.9	5.1	1.2	7.4	2.8	5.1	35.5
Brent	7.6	17.1	4.5	2.2	9.8	4.3	11.6	29.5
Bromley	5.4	2.6	3.9	1.2	7.2	4.1	3.2	21.7
Camden	8.0	41.0	4.0	1.5	7.6	5.0	3.5	25.3
City of London and Hackney	11.0	69.1	6.5	3.1	10.2	4.8	15.9	35.6
Croydon	10.3	6.1	5.9	1.8	9.1	3.8	11.4	32.0
Ealing	5.5	13.4	3.9	1.8	9.1	4.3	5.4	28.3
Enfield	7.6	11.7	5.4	1.6	8.0	3.6	9.3	30.3
Greenwich	11.6	30.9	6.8	1.5	8.5	3.3	13.2	31.1
Hammersmith & Fulham	7.6	13.7	3.6	1.9	7.4	4.8	4.7	18.7
Haringey	10.4	50.4	6.4	1.8	8.2	5.0	11.4	29.7
Harrow	4.6	1.1	2.8	1.6	9.0	4.2	10.9	21.9
Havering	5.2	1.4	4.6	0.9	6.3	3.0	2.3	34.0
Hillingdon	5.9	0.7	4.9	1.6	7.9	2.8	4.6	32.0
Hounslow	7.3	6.2	5.2	1.4	7.6	3.5	6.0	28.7
Islington	10.7	62.1	5.6	1.9	8.8	4.6	5.5	28.9
Kensington & Chelsea	5.2	11.1	2.2	1.3	6.8	6.6	2.8	12.1
Kingston upon Thames	3.5	0.0	3.4	0.9	6.7	4.2	2.8	19.1
Lambeth	13.6	33.0	6.9	3.0	10.0	4.7	16.8	28.2
Lewisham	11.8	6.5	5.9	2.0	9.1	4.7	16.5	33.8
Merton	5.2	0.0	3.6	1.3	6.7	4.1	6.6	21.0
Newham	9.3	50.0	6.6	1.7	10.3	2.7	13.3	42.2
Redbridge	5.7	3.0	3.7	1.3	8.4	3.3	7.0	22.2
Richmond upon Thames	2.6	0.0	1.6	1.0	5.9	6.3	1.7	12.4
Southwark	14.9	43.0	5.9	3.6	11.0	5.0	24.4	30.9
Sutton	5.5	1.4	4.3	1.3	6.9	2.9	3.3	26.8
Tower Hamlets	5.3	78.6	6.3	1.5	10.5	2.4	2.8	53.1
Waltham Forest	7.7	17.2	5.1	1.7	9.0	3.4	8.6	30.3
Wandsworth	6.1	2.8	3.6	1.5	6.8	4.1	6.6	17.3
Westminster	4.8	34.1	2.7	1.4	7.9	5.6	4.0	22.5

Bottom quartile

Lower middle quartile

Upper middle quartile

Top quartile

Data source: ONS, analysis by LHO

\* Super Output Area (SOA) is a geographical area containing on average 1500 residents

\*\* Index of Multiple Deprivation (IMD) 2004 DCLG

**Table E2** Local indicators known to have a positive impact on infant mortality by London PCTs

PCTs	% mothers smoking in pregnancy*	% smoking in pregnancy unknown	Projected to meet year end 2007/08 Q4**	% mothers initiating breastfeeding***	% initiating breastfeeding unknown	Projected to meet Year end 2007/08 Q4**	% early book (less than 12 weeks)	% of deliveries coded with gestational age at first antenatal booking	% of deliveries coded with ethnicity			
	2006	2006		2006	2006		2004/5	2005/6	2004/5	2005/6		
Barking & Dagenham	9.4	2	YES	66.3	2.2	YES	27.6	25.1	95.3	95.4	71.1	75.0
Barnet	14.4	1.7	YES	89.1	1.2	YES	4.6	7.2	83.7	83.5	85.8	88.7
Bexley	16.1	0	YES	72.1	0	YES	0.4	4.0	8.1	10.6	88.5	86.2
Brent	6.6	5.4	YES	67.8	6.8	PDR	10.7	14.1	65.3	71.8	72.8	84.3
Bromley	6.1	5.6	YES	72.3	0	PDR	0.1	16.7	0.7	0.6	64.8	65.4
Camden	7.0	1.5	NO	79.1	9.8	PDR	6.7	10.9	72.3	58.2	82.2	91.4
City & Hackney	7.5	2.8	NO	82.1	6.2	YES	8.4	24.2	72.5	7.9	78.1	83.3
Croydon	9	3.5	NO	80.6	3.2	YES	0.1	14.3	0.6	0.6	92.9	91.9
Ealing	6.5	2	YES	84	3.2	PDR	8.2	10.3	62.4	65.4	90.7	93.7
Enfield	17.5	0.5	NO	84.1	1.1	YES	14.2	19.3	77.6	63.0	93.5	96.3
Greenwich	12.4	2.1	YES	71.9	0	NO	2.0	3.7	38.5	36.6	95.8	94.0
Hammersmith & Fulham	7.2	2.7	NO	81.2	1.3	PDR	6.4	19.7	46.7	76.4	83.7	85.8
Haringey	12.3	1.5	NO	86.1	3.5	YES	5.7	13.7	42.3	28.6	87.0	90.8
Harrow	8.8	2.5	YES	66.6	7.4	YES	18.5	19.9	80.3	57.1	64.0	81.1
Havering	6.1	2.4	YES	63.6	3	NO	18.5	18.8	95.0	96.5	94.1	95.3
Hillingdon	13.5	0	YES	51.1	0	NO	3.8	5.2	65.4	82.8	62.0	78.6
Hounslow	11.1	1.3	YES	82.3	2.1	YES	10.5	22.6	82.7	24.0	97.1	98.5
Islington	12.6	1.8	NO	81.7	5	YES	5.4	15.7	41.2	14.8	80.7	89.6
Kensington & Chelsea	3.5	15.5	YES	87.7	1.1	PDR	2.2	18.4	16.3	73.1	80.2	74.6
Kingston	6.5	0	NO	89.5	0	PDR	0.1	8.6	1.8	1.6	91.0	95.6
Lambeth	5.5	2.3	YES	89.6	1.6	PDR	9.4	35.0	43.0	42.1	93.8	94.8
Lewisham	8.8	11.6	YES	83.9	6.6	PDR	2.4	26.4	10.2	11.2	81.1	71.2
Newham	5.8	3.9	NO	70.9	5.2	NO	11.1	19.3	81.8	23.9	94.2	91.4
Redbridge	5.1	4.5	NO	80.7	2.7	YES	42.1	43.1	97.5	96.4	90.4	89.8
Richmond & Twickenham	5.3	0	YES	91	0	PDR	4.2	23.1	33.2	13.5	91.0	94.1
Southwark	6.8	2.2	YES	86.8	1.4	PDR	7.2	27.9	38.7	38.3	94.0	94.7
Sutton & Merton	5.2	29.5	YES	71.4	19	YES	0.0	25.3	0.6	1.7	90.0	82.2
Tower Hamlets	4.4	0.9	NO	76.8	3	YES	54.8	64.1	92.8	89.1	93.0	94.3
Waltham Forest	9.9	13.6	NO	82.2	3.5	PDR	18.0	39.6	96.6	91.4	81.8	82.1
Wandsworth	6.5	2.7	YES	80.9	0.9	NO	0.9	24.0	7.5	28.4	83.8	83.7
Westminster	6.8	1.7	NO	80	5.4	PDR	2.2	12.4	14.5	77.4	79.7	83.1

PDR poor data recording in earlier years 03/04 and 04/05, unable to work out growth using this data

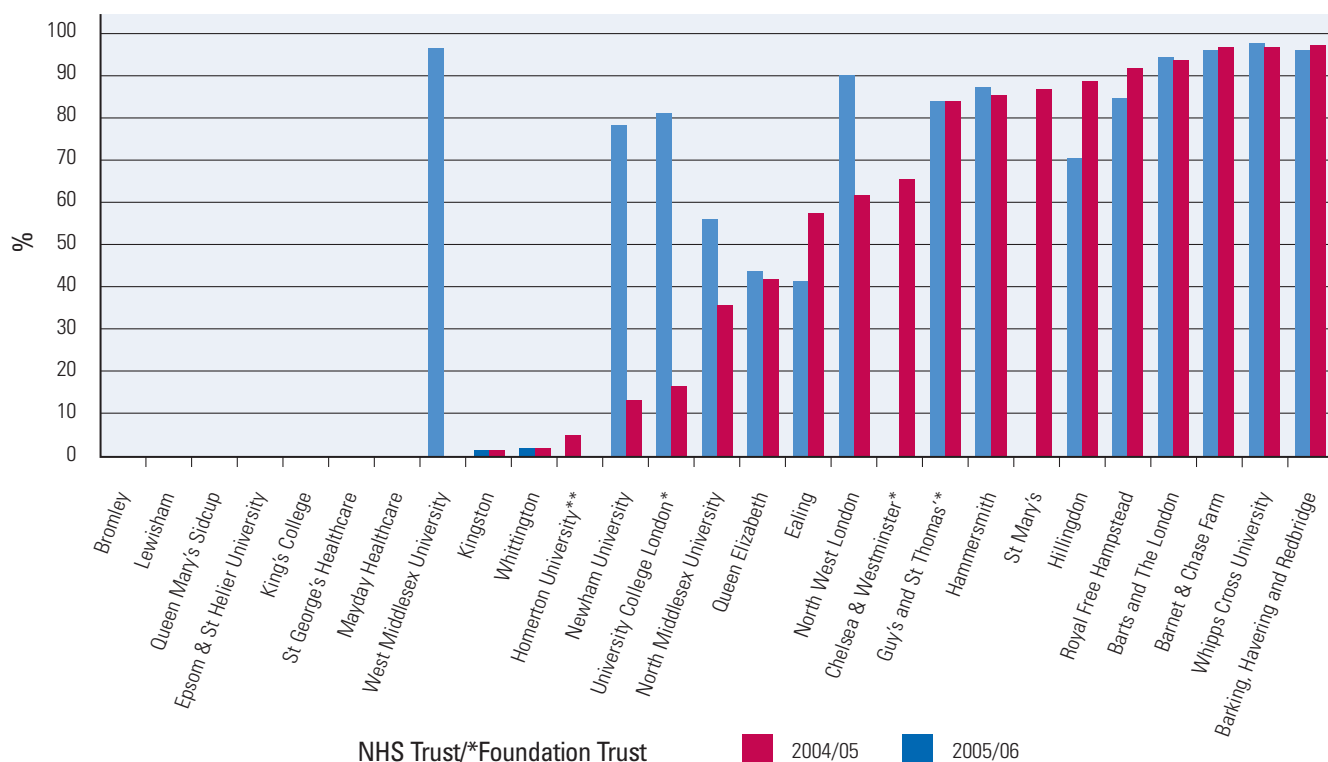
	>10%	>5%	NO	<75%	>5%	NO	<10%	<50%	<80%
	5-10%	1-5%		75-85%	1-5%	PDR	10-50%	50-80%	80-90%
	<5%	<1%	YES	>85%	<1%	YES	>50%	>80%	>90%

\* this is based on mothers known to have been smoking at time of delivery

\*\* this is based on LHO performance report data projected trends

\*\*\* within 48 hours of birth

**Figure E2** Proportion of all deliveries coded with gestation period at first antenatal appointment in 2004/05 and 2005/06 in each acute trust with over 2,000 London deliveries



Source: Maternity HES, 2004/05 and 2005/06

\*\* Homerton University hospital is only included in the 2005/06 analysis as it had less than 2,000 deliveries in 2004/05

## Tackling ethnic inequalities in access to antenatal care

There is a much higher risk of infant death among babies born to women who were themselves born in high risk countries. In London this means for women born in East or West Africa and the Caribbean. Because of this, influencing early access to effective antenatal care for these groups must be an integral part of helping to achieve the infant mortality PSA alongside implementing London's Healthcare Strategy<sup>1</sup>.

Figure E2 provides an example of a local analysis that could be carried out regularly if maternity data recording were more reliable and complete. We illustrate opposite with the example of North East London in 2004/05 which, at 91%, had the best data recording of gestation period at first antenatal booking and had 87% of deliveries coded with an ethnic group. This analysis was unfortunately not possible for 2005/06 due mainly to a significant reduction

in the proportion of deliveries coded in Newham University Hospital (see Figure E2).

Figure E3 shows the distribution of the risk factor across North East London in 2004/05 identifying ethnic groups at higher risk of late booking. If data recording improved, this analysis could be added to the quarterly performance dataset for all of London.

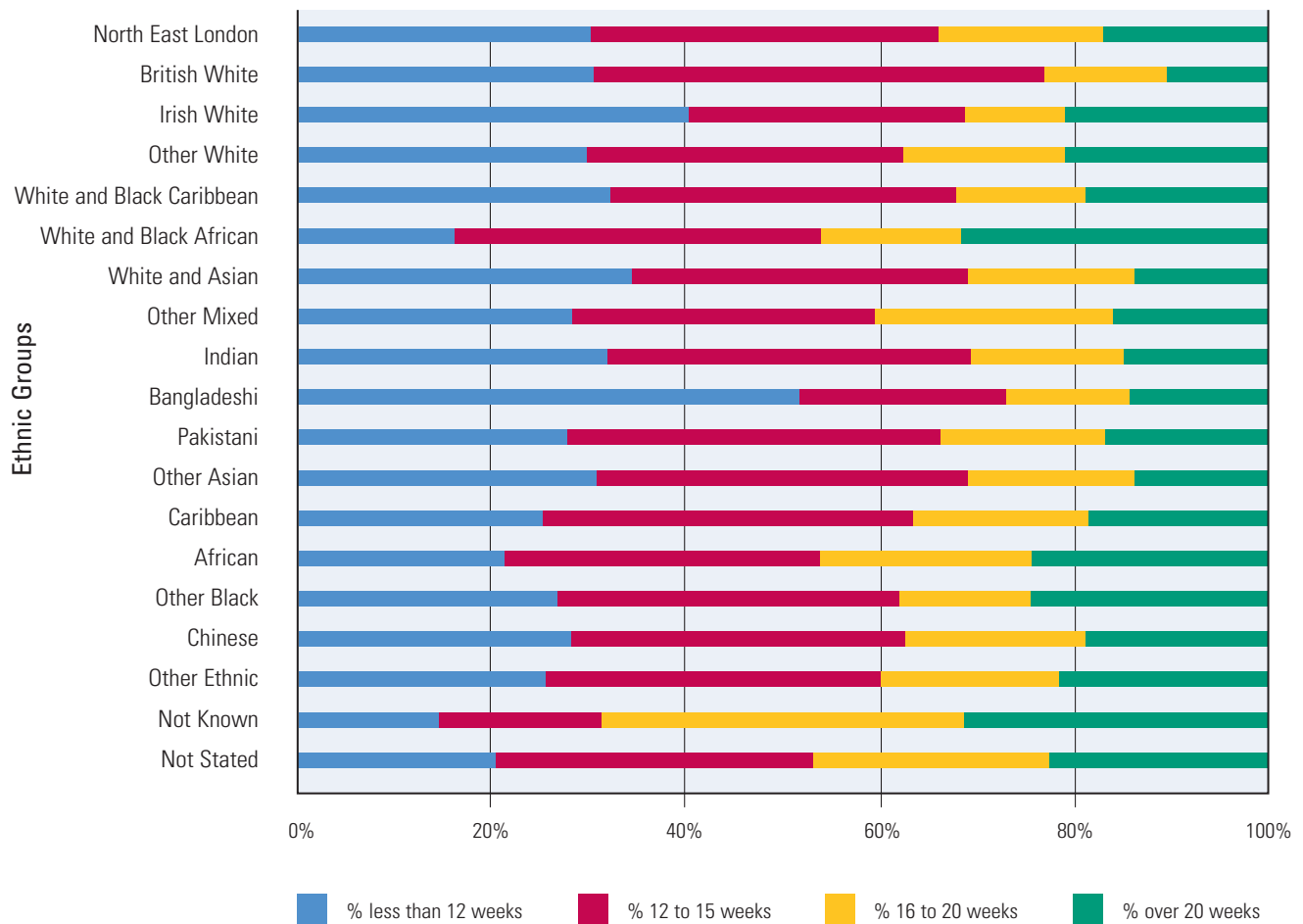
For North East London, the ethnic groups with the highest proportion of deliveries coded with gestational age who booked early (less than 12 weeks gestation at first antenatal booking) in 2004/05 was Bangladeshi, Irish White, and White and Asian (mixed). The ethnic groups with the highest proportion booking late (over 20 weeks)<sup>6</sup> are predominately in the Black ethnic groups in White and Black African (mixed), African and Other Black as well as the not known category. If this data is of sufficient quality, it may suggest two important findings. First, poor access to care for some of the most deprived

\* The groupings of early to late bookings (less than 12 wks, 12-15wks, 16-20wks and 20+ wks) were chosen from a report on early life mortality in East London and in consultation with colleagues.

communities (Bangladeshi women) can potentially be overcome, but also that women from some of the highest risk countries for infant death, are more likely to miss early opportunities for effective maternity care in North

East London. Ultimately differential access to maternity services by ethnic group is due to a combination of patient, primary care and maternity services factors that needs to be interpreted at a local level.

**Figure E3** The proportion of all deliveries with gestation period at first antenatal booking by ethnic group, North East London PCTs, 2004/05



## Key References

<sup>1</sup> *Healthcare for London: A framework for action*. London: NHS London, 2007

<sup>2</sup> Department of Health. *Choosing health: making healthier choices easier*. London: TSO, 2004.

<sup>3</sup> HM Government/Department of Health. *Our health, our care, our say: a new direction for community services*. London: TSO, 2006.

<sup>4</sup> Department of Health. *Review of the health inequalities infant mortality PSA target*. London: Department of Health, 2007.

<sup>5</sup> Department of Health. *Tackling health inequalities: 2003-05 data update for the national 2010 PSA target*. London: Department of Health, 2006.

<sup>6</sup> Macfarlane A, Grant J, Hancock J, Hilder L, Lyne M, Costeloe C, Hird M. *Early life mortality in East London: a feasibility study. Summary report. Fetal and infant death in East London*. London: City University, 2005.

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*The Health inequalities intervention tool* (2007)  
Association of Public Health Observatories (APHO).  
[www.lho.org.uk/HEALTH\\_INEQUALITIES/Health\\_Inequalities\\_Tool.aspx](http://www.lho.org.uk/HEALTH_INEQUALITIES/Health_Inequalities_Tool.aspx)

*London quarterly public health performance reports*,  
London Health Observatory. Available at:  
[www.lho.org.uk/DATAANDMETHODS/Local\\_Data/PublicHealthPerformance.aspx](http://www.lho.org.uk/DATAANDMETHODS/Local_Data/PublicHealthPerformance.aspx)

### LHO Choosing health series

*Choosing health. A briefing on reducing alcohol-related harm and encouraging sensible drinking in London* (2006).  
London Health Observatory.  
[www.lho.org.uk/viewResource.aspx?id=10367](http://www.lho.org.uk/viewResource.aspx?id=10367)

*Choosing health. A briefing on sexual health in London* (2005).  
London Health Observatory.  
[www.lho.org.uk/viewResource.aspx?id=9998](http://www.lho.org.uk/viewResource.aspx?id=9998)

*Choosing health. A briefing on tobacco in London* (2005).  
London Health Observatory.  
[www.lho.org.uk/Download/Public/9007/1/LHO\\_Download\\_Tobacco\\_Briefing\\_4.pdf](http://www.lho.org.uk/Download/Public/9007/1/LHO_Download_Tobacco_Briefing_4.pdf)

*Choosing health. A briefing on nutrition, physical activity and obesity in London* (2005).  
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### LHO Commissioning for equity series

*Commissioning for equity. Equal access equal care* (2007)  
London Health Observatory and London Development Centre.  
[www.lho.org.uk/viewResource.aspx?id=11962&rsid=http://www.lho.org.uk/](http://www.lho.org.uk/viewResource.aspx?id=11962&rsid=http://www.lho.org.uk/)

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### About the London Health Observatory (LHO)



The London Health Observatory provides information, data, and intelligence on Londoners' health and health care for practitioners, policy makers and the public.

We are one of a network of 12 Public Health Observatories set up across five nations of England, Wales, Scotland, Northern Ireland and the Republic of Ireland.

The LHO takes the national lead in monitoring health inequalities, ethnicity and health, and tobacco.

For further information on our work please visit our website: [www.lho.org.uk](http://www.lho.org.uk)

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