

Infant Mortality and Early Years in Birmingham

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Background

Aims:

- Provide a descriptive analysis of infant mortality and early years in Birmingham
- Highlight the importance of investment in IM and Early Years
- Highlight the known risk factors for infant mortality
- Describe what can facilitate improvements in service planning and delivery



Background (2)

Infant Mortality is the term used to describe the number of babies who are born alive but die before their 1st Birthday.

The Infant Mortality Rate (IMR) is defined as the number of deaths under the age of one year, per 1,000 live births. It consists of two components:

- the neonatal mortality rate: The number of neonatal deaths (those occurring during the first 28 days of life)
- the post-neonatal mortality rate: The number of infants who die between 28 days and less than one year

Mortality during the neonatal period is a good indicator of maternal and newborn health and care.



**On average
1 in 165
babies die in B'ham each
year**

In 2020 in Birmingham
90 babies did not live to see their first birthday

This means that at least **1.5** babies die each week before their first birthday.

This is over **2X** the number of children killed on our roads each year.

In Birmingham there are 3 main causes of death:

Being Born Too Early - Immaturity-related conditions

38%



Babies born with disabilities - Congenital anomalies

18%



All other causes – this does not include SUID or infections

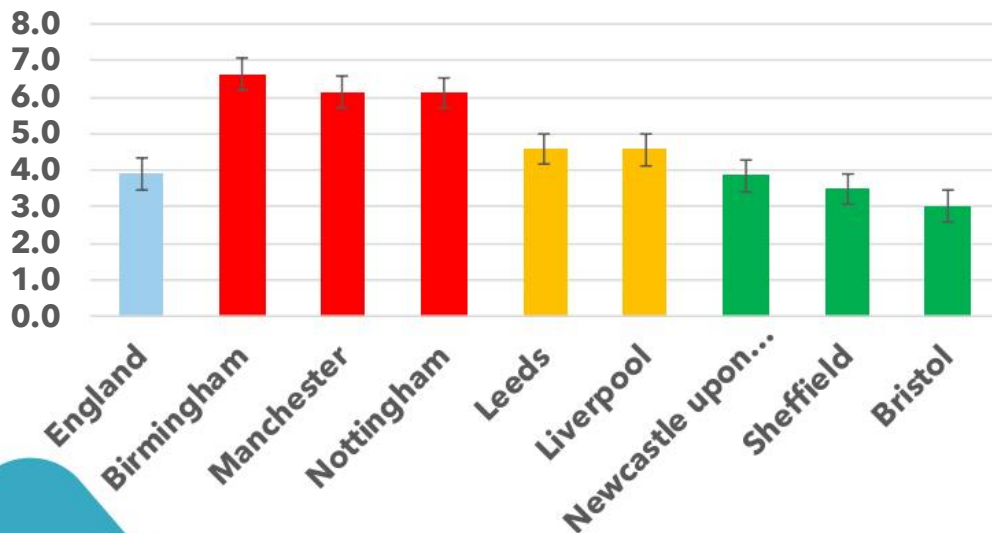
16%



Mortality is linked to deprivation and is greater in more deprived areas

Infant mortality in Birmingham (2018-20) is higher than England and the other Core Cities

Core City Infant Mortality 2018-20



IMRs have reduced from 2001-03 to 2018-20



England
5.3 (2001 - 03)



3.8 (2018 - 20)



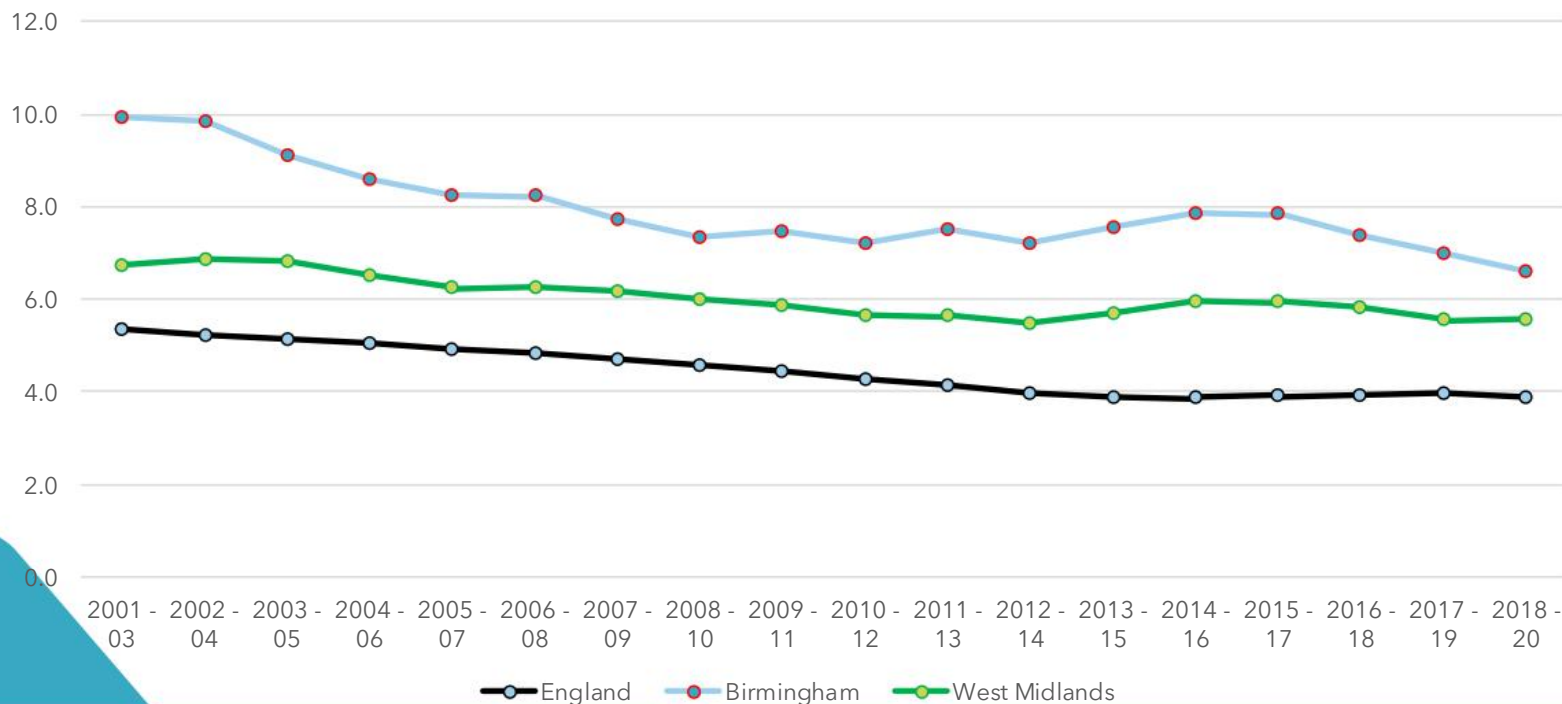
Birmingham
9.3 (2001 - 03)



6.6 (2018 - 20)

The infant mortality rate (IMR) in Birmingham in 2020, 6.6 per 1,000 live births, is **nearly double** that of England

Infant mortality in Birmingham (2001 – 2020 3 year rolling average) compared to West Midlands and England



Risk factors for infant mortality



The infant mortality rate for babies born to teenage mothers is **44% higher** than mothers aged 20-39



Low birth weight babies are **27x more likely** to die before the age of 1 year than babies of normal birth weight



The infant mortality rate for babies of mothers born in the Caribbean is **almost 2x higher** than for mothers born inside the UK



Babies born to mothers in the routine and manual group have a **4x** higher infant mortality rate than those born to mothers in higher managerial and professional groups

Economics of Infant Mortality



There are no current estimates of the total cost or economic impact of infant mortality at a regional or national level. Most direct costs can be attributed to the cost of treating preterm and low birth weight babies in hospital, but there are also indirect costs due to bereavement and the wider impact on families and communities.



Evidence demonstrates that spending on reducing teenage pregnancy is cost effective:
For every £1 spent on contraception, £11 is saved in other healthcare costs



Smoking in pregnancy accounts for 5-8% of preterm births.
The wider societal cost of smoking in pregnancy in Birmingham is estimated to be between £2 million and £5.4 million



The total annual cost to the public sector in **England** associated with children born preterm until age 18 is around **£1.24 billion**, total societal costs (including parental costs and lost productivity) are about **£2.48 billion**.

Reducing the rate of preterm birth, and through this infant mortality, even by a small amount, will have a significant impact on reducing these costs.

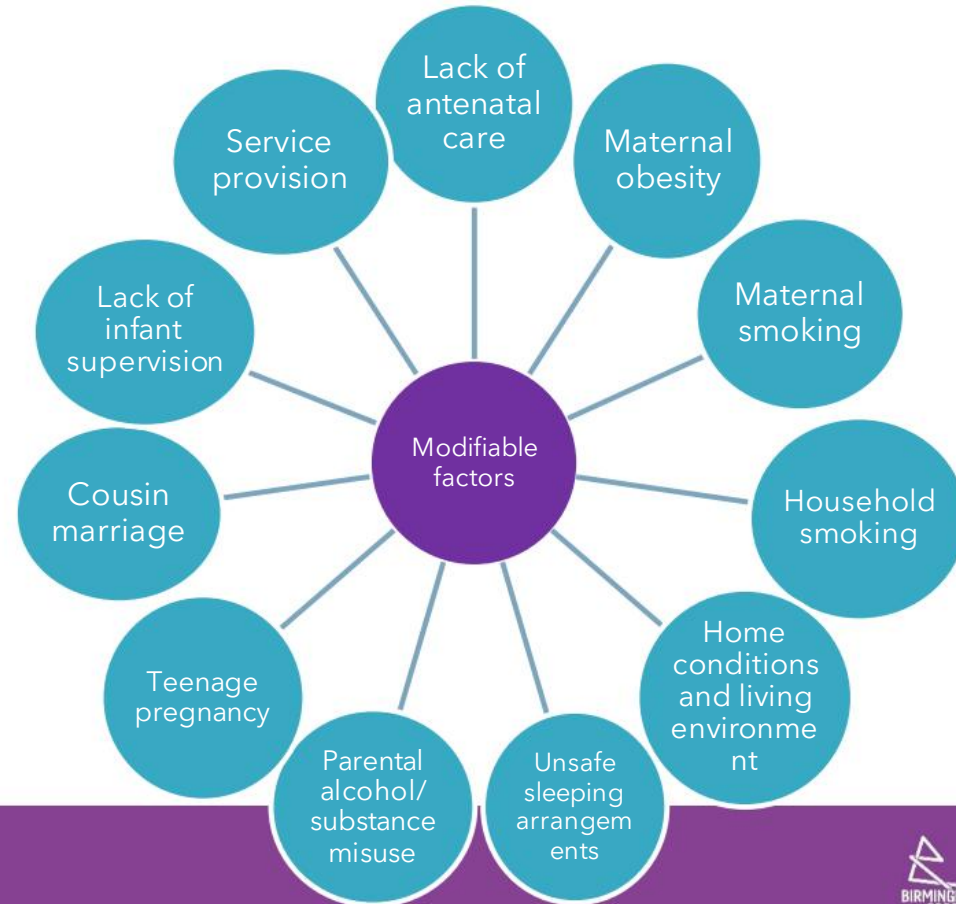


Every **£1** spent on prenatal care for low-income women saves **£3.38** on infant medical care during the first year of life



Investment to increase and sustain breastfeeding rates has been shown to provide a rapid financial return on investment

Modifiable factors



Reducing infant mortality – what needs to be done?

1

Co-ordination and leadership

Strong local leadership is vital for an effective cross agency approach to improving maternity and early years services and reducing infant mortality and to ensure that governance arrangements are in place so local areas can work together to deliver reductions in infant mortality

2

Commissioning

Integrated commissioning will ensure a whole systems approach to tackling infant mortality and improving infant and maternal health. Local authorities have to work closely with colleagues in ICBs, OHID, UKHSA and NHS England to ensure a seamless care pathway for families between services

3

Communication

Community engagement and understanding the preferences and needs of the local population is essential in developing flexible, responsive, acceptable services for the use of those who need them

4

Care pathways

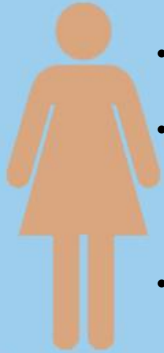
The development of clear care pathways is vital to support sustained improvements in service delivery and quality

Child poverty



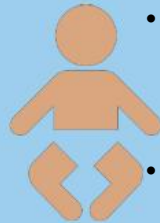
4 in 10 of children in Birmingham live in poverty

Mothers living in poverty are more likely to:



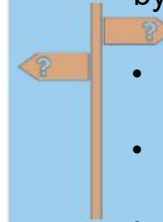
- be in poor health
- have more psychological problems in pregnancy
- smoke more

Babies born into poor families are:



- more likely to be born prematurely and have low birth weights
- 2x more likely to die within one year of birth than those born to affluent families

Addressing child poverty needs a long-term approach underpinned by:



- early intervention and prevention
- building on the assets of individuals and communities
- ensuring that children's and families' needs and abilities are at the centre of service design and delivery

Teenage pregnancy

Why it matters

1 in 45



teenage girls aged 15-17 years
in Birmingham become pregnant
every year

The impact of teenage pregnancy

44% higher risk of infant mortality



25% higher risk of low birth
weight babies at term

63% higher risk of child poverty



6x higher rate of maternal smoking

1/3 lower rate of breastfeeding
initiation



Recommended actions

10 factors for an effective local strategy



Access to antenatal care



Early booking is essential to ensure early engagement and assessment for informed choice and screening in early maternal care



Pregnant women should be supported to access antenatal care, ideally by 10 weeks. In Birmingham **1 in 4** women book after 12 week's gestation



Risk factors for late booking:

- Your age (<20 years)
- High parity
- Mother from a minority community
- Mother in temporary accommodation



16% of all pregnant women delay seeking maternity care until they are 5 months or more pregnant

Late booking and poor attendance for antenatal care are associated with poor outcomes for mothers and babies



1 in 20 women who dies on or after pregnancy booked after 20 weeks



Booking for maternity after 12 weeks is a risk factor for still births and neonatal deaths



Promoting early antenatal booking includes:

- Proactively providing clear information
- Identifying barriers to early booking
- Providing accessible services
- Working with other providers



Smoking in pregnancy

Smoking in pregnancy accounts for:



1 in 12

Premature births



1 in 5

Cases of low birth weight in babies carried to full term



1 in 14

Pre-term-related deaths



1 in 3

SUDI (Sudden Unexpected Death in Infants)



Pregnant women from unskilled occupations are **5x** more likely to smoke than professionals

Teenagers in England are **6x** more likely to smoke than older mothers aged 30-34



0.8 in 10 women smoke during pregnancy in Birmingham...**fewer than** that of England (1 in 10 women)

Reducing smoking in pregnancy includes:

- identification and referral of pregnant women who smoke
- sufficient expertise in local stop smoking services to meet the needs of pregnant women
- smoking cessation training for all health professionals working with pregnant women
- effective communication with women and their families
- effective communication between health professionals
- implementation of NICE guidelines

Smoking is the single most important modifiable risk factor in pregnancy

Maternal and infant nutrition



Breastfeeding is

□ best nourishment for infants

vital to improving maternal health

FREE and readily available

Breastfeeding in the first year of a baby's life for the period indicated reduces disease risk by:

3 months



6 months



4-6 months EXCLUSIVE breastfeeding



Mothers who breastfeed benefit from a **faster** return to pre-pregnancy weight and possible **lower** risk of breast and ovarian cancer

Barriers to breastfeeding include:



- Mother's ill-health
- Influence of sociocultural factors
- Inadequate information and support
- Lack of conducive surroundings outside the home

In Birmingham

7 out of 10 mothers breastfeed their babies in the first 48hrs after delivery



This falls to about **4 out of 10** mothers continuing at 6-8 weeks



Increasing breastfeeding is **crucial** to **improving** infant outcomes. **Actions** to increase breastfeeding include:

- Expanding the baby friendly hospital initiative in health care systems
- Provision of education and support during pregnancy and postnatally
- Limiting the marketing of breastmilk substitutes

Maternal and infant nutrition (2)



In Birmingham, **2 in 5** women aged 16+ years are obese

- age **over 35 years** is a predictive factor for maternal obesity
- **84.6%** of obese mothers are white Caucasian
- **1 in 3** pregnant women with BMI ≥ 35 kg/m² live in the **most deprived** quintile

Health impacts of maternal obesity

Poorer maternal health, including:

- cardiac disease
- spontaneous and recurrent miscarriage
- pre-eclampsia
- gestational diabetes

Poorer babies' health, including:

- macrosomia (weight more than 4.5kg)
- growth restriction
- congenital anomalies e.g. cleft lip and palate
- pre term or post date



Mortality and maternal obesity:

Maternal deaths, including:

- **1 in 5** maternal deaths from 2003 to 2005
- **1 in 2** maternal deaths from thromboembolism and heart disease

Stillbirths and infant deaths, including:

- **1 in 3** stillbirths
- **1 in 4** late foetal deaths
- **1 in 3** neonatal deaths



Women who are obese are grouped as high risk during pregnancy and require additional antenatal screening, intervention and monitoring.

Additional healthcare resources are essential due to pregnancy complications and increased use of neonatal intensive care.

In France, healthcare costs both pre- and postnatally were **higher** in women with BMI greater than 29kg/m² due to longer hospital admissions

Addressing maternal obesity requires seamless collaboration between professionals incorporating community-based public health services starting from preconception. Interventions should include:

- provision of health education on weight management, healthy eating, physical activity and ongoing support before, during and after pregnancy
- modifying lifestyle and environmental factors through behaviour change techniques focusing health education and weight control interventions at maternity care units within neighbourhoods most at risk



SUDI

For each baby who dies from a SUDI, risk factors include:

Deprivation
3.5x
higher risk

Low birth
weight
5 x
higher risk

Mothers
aged under
20 yrs.
X 2 higher risk

Bed sharing
X 2
higher risk

Smoking
X 5
higher risk

What works to reduce Sudden Unexpected Deaths in Infancy (SUDI)

Ensuring that
infants sleep
in the supine
position –
'back to sleep'

Keeping the
baby's head
uncovered by
placing the baby
in the 'feet to
foot' position

Ensuring
that infants
sleep in a
separate cot

Ensuring that
infants sleep in
the same room
as their
parents

Reducing
parental
smoking

Encouraging and
supporting
mothers to
breastfeed their
baby

Changing knowledge and behaviour through clear communication about the risk factors for SUDI

Vaccination

VACCINES

Timely and complete immunisation of children is one of the **most important** aspects of prevention

There are infant deaths that could be **prevented** if a vaccine had been given on time

SAVE

DTaP/IPV/HiB coverage in Birmingham in 2018-19 was the **worse than** in England



1.2 in 10 children in Birmingham did not complete the primary immunisation course by their first birthday

LIVES

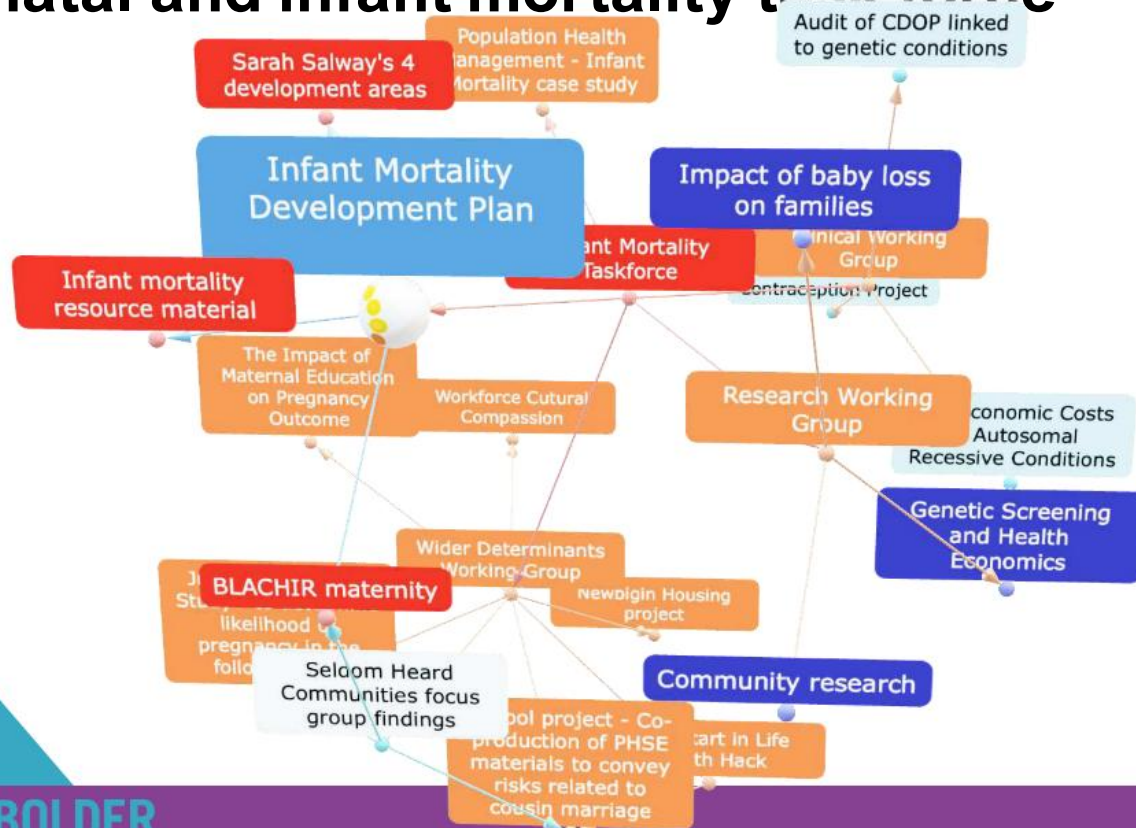
Actions to improve uptake include:

- improving **data collection** and reporting
- a **comprehensive commissioning** approach
- **staff engagement** to promote uptake
- **Effective communication** to families



**A BOLDER
HEALTHIER
BIRMINGHAM**

Perinatal and infant mortality task force



Acknowledgements

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