7.1.2 Maternal and infant health

Why is this issue important?

Ensuring women are as healthy as possible during their pregnancy is important to guarantee the best possible start in life for their child. Their well-being also helps prevent against future public health challenges for families and the health care system.

A number of complex and interacting risk factors have been shown to be associated with an increase in low birth weight and infant mortality. Deprivation/social inequality, maternal obesity, non-white ethnicity of infant, maternal age under twenty were independently associated with an increased risk of infant mortality.[1] One of the major risk factors is smoking in pregnancy which can increase the risk of infant mortality by about 40%.

Still birth rates in the most socio-economically deprived areas of the UK are twice as high as those in the least deprived. However women from socio-economically deprived areas have higher rates of other risk factors including smoking, obesity and teenage pregnancy.[2] Heavy alcohol consumption in pregnancy or taking drugs can increase the risk of low birth weight and can cause physiological and neurological damage to the baby[1]. Breastfeeding is one of the most important contributors to infant health. It provides benefits for an infant's growth, immunity and development[1].

Perinatal[3] mental health is one of the six High Impact Areas identified by the Department of Health where health visitors can make a significant contribution to the Healthy Child Programme and 0-5 agenda[4].

Perinatal mental health during pregnancy and in the first year after the birth of the baby is important since up to 20% of women can be affected by a range of mental health issues. Teenage mothers often have higher rates of poor mental health for up to three years after the birth. Other risk factors include previous history of mental illness, traumatic birth, stillbirth or miscarriage, domestic violence, social isolation and poor attachment[5].

Reducing maternal substance misuse and obesity, improving breastfeeding rates and implementing perinatal mental health interventions are therefore crucial to improve maternal and infant health.

Key outcomes

- ***Infant mortality (Public Health Outcomes Framework and NHS Outcomes Framework)***
- ***Low birth weight of babies (Public Health Outcomes Framework and NHS Outcomes Framework)***
- ***Breastfeeding and Mood Review (Public Health Outcomes Framework, Child Health Outcomes Framework)***
- ***Excess weight in adults (Public Health Outcomes Framework)***
- ***Smoking status at time of delivery (Public***
- ***Health Outcomes Framework)***
- ***Under 18 conceptions (Public Health Outcomes Framework)***

Impact in Brighton & Hove

Infant mortality: In 2015, the number of under 18 conceptions for Brighton & Hove was 27.1 per 1,000 15-17 year olds (2015)[6] and this remains above the England rate (23.4 per 1,000) and the South East rate (19.0 per 1,000). Trend data suggests that while under 18 conceptions have reduced in the past, this is now plateauing and there is now a harder to reach group.[6]

In the period 2012-2014 in Brighton & Hove there were 39 infant deaths. To be able to compare this with other areas this is converted into a rate per 1,000 live births. For the period 2012-2014 the infant mortality rate in the city was 4.3 per 1,000 live births.[7] This is slightly higher than the rate for our comparator group of local

[1]Department of Health: Tackling inequalities in maternal and infant health outcomes. Report of the Infant Mortality National Support Team; 2010. http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_122844.pdf [Accessed 25/07/2016].

[2]Houses of Parliament: Infant Mortality and Stillbirth in the UK. http://researchbriefings.files.parliament.uk/documents/POST-PN-0527/POST-PN-0527.pdf [Accessed 25/07/ 2016]

[3]The period around childbirth.

[4]Department of Health: Early Years High Impact Area 2 – Maternal (Perinatal) Mental Health https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413129/2902452_Early_Years_Impact_2_V0_1W.pdf [Accessed 25/07/2016]

[5]Public Health Matters: Perinatal Mental Health. https://publichealthmatters.blog.gov.uk/2015/12/09/perinatal-mental-health-how-can-our-new-interactive-tool-help/ [Accessed 25/07/2016]

[6]BH Connected: Q2 Performance Report. http://www.bhconnected.org.uk/sites/bhconnected/files/Q2%20Performance%20Report%202015-16%20%283Dec15%29.pdf [Accessed 25/07/2016]

[7]Chimat. Child Health Profile, Brighton & Hove 2014: http://fingertips.phe.org.uk/profile/child-health-profiles/data#page/0/gid/1938132948/pat/6/par/E12000008/ati/102/are/E06000043 [Accessed 25/07/2016]

authorities but similar to England at 4.0 per 1,000 live births.

Multiple births: The incidence of multiple births has risen in the last 30 years. In 1980, 10 women per 1000 had multiple births in England and Wales compared with 16 per 1000 in 2011. This increase in multiple births is due mainly to the use of assisted reproduction techniques, including in vitro fertilisation (IVF). Older women are more likely to have a multiple pregnancy and, because the average age at which women give birth is rising, this is also a contributory factor. Multiple births currently account for 3% of live births.

Many women pregnant with twins or triplets will have an uncomplicated pregnancy which will result in a good outcome for both mother and babies. However multiple pregnancies have higher risks compared with a singleton pregnancy. The stillbirth rate for twin births is also 2.5 times that for singleton births.

For Brighton & Hove residents for the ten year period 2005-2014[8]:

- There were 34,733 live births and 153 still births.
- 4% of all births were multiples.
- Of the 153 stillbirths, 18 (12%) were multiples and 135 singletons.
- In terms of still birth rates, the stillbirth rate for singletons is 4.0 still births per 1,000 live and still births (95% confidence interval 3.4-4.8) and the still birth rate for multiples is 13.9 per 1,000 live and stillbirths (95% confidence interval 8.8-21.8). The higher rate in multiple births reflects the picture nationally.

Low birthweight: Office for National Statistics (ONS) Vital Statistics tables from 2014 show that of the 2,987 live births in the city, 7.4% were considered low birth weight (the babies weighed less than 2500gms).[9] This is the same as the rate in England but higher than the South East (6.6%). There has been little change in these rates in recent years.

Infants in care: The level of children in care under the age of one has gone up slightly to 8% (2016) which is higher than the England average of 5% and statistical neighbour average of 6%.

Perinatal mental health: At the national level, it is estimated that between 10 and 20% of women suffer mental health problems during pregnancy and after childbirth.[4] Numbers at the local level are unreliable and data collection is incomplete. However a major risk factor for perinatal mental health in Brighton & Hove is substance misuse. Parents in drug and alcohol treatment are substantially higher for Brighton and Hove (254.4 per 100,000 children aged 0 to 15 years – 2012/2013 data) compared to England (145.9 per 100,000 children aged 0 to 15 years).[10] This varies according to relative levels of deprivation across the city as well as provision for treatment.

Where we are doing well

Whilst the infant mortality rate in Brighton & Hove varies more year on year, which would be expected given the small number of infant deaths in the city, the trend is in line with the decreasing trend for England.[11]

Breastfeeding: In 2011/12 a breastfeeding take-up strategy was implemented across the city with key partners working together to promote breastfeeding. The percentage of mothers who breastfeed their babies in the first 48 hours after delivery has increased to 88% (2014/15 figures)[6] and the trend is now roughly similar year on year. In 2015/16 breastfeeding prevalence at 6-8 weeks was 74.5%[12] and for two years Brighton & Hove has had the highest exclusive breastfeeding at 6-8 weeks in England (57% for the year in 2015/16).[13]

Brighton & Hove figures are substantially higher than the England average; nationally only 43.8% of all infants are totally or partially breastfed 6 to 8 weeks after birth 2014/15.[7] However, there are variations across the city with lower rates in more deprived areas.

[8]Produced by Brighton & Hove Public Health Intelligence team from Office for National Statistics Annual Birth files.

[9]Office for National Statistics Vital Statistics tables. Brighton and Hove Public Health Directorate 2014 reissue http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/datasets/birthsummarytables [Accessed 25/07/2016]

[10]National Child and Maternal Health Intelligence Network: Mental Health in Pregnancy, the postnatal period and babies and toddlers (Brighton & Hove local authority): http://atlas.chimat.org.uk/IAS/profiles/profile?profileId=66&geoTypeId= [Accessed 25/07/2016]

[11]Office for National Statistics Vital Statistics: Population and Health Reference Tables http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/vitalstatisticspopulationandhealthreferencetables [Accessed 25/07/2016]

[12]Sussex Community NHS Trust: Patient Information Management System, Brighton & Hove 2016

[13]Public Health England https://www.gov.uk/government/statistics/breastfeeding-at-6-to-8-weeks-after-birth-2015-to-2016-quarterly-data [Accessed 16/08/2016]

7.1.2 Maternal and infant health

Maternal smoking: National data shows that the percentage of mothers smoking at delivery is almost half the national average. In 2014/15, 6.4% of Brighton & Hove mothers were smoking at the time of delivery and this has been a decreasing trend since 2008.[14] Nationally 11.4% of mothers are smokers at the time of delivery. However this is self-reported and evidence shows under-reporting is likely to occur.

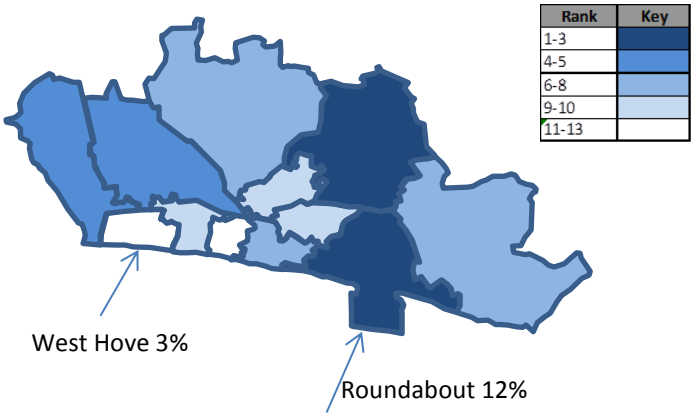
Multiple births: In Brighton and Hove, Brighton & Sussex Universities Hospitals NHS Trust have a very clear protocol for care of mums with multiple pregnancies and this is consistent with NICE and best practice guidelines.

Local inequalities

Even given the caveats around self-reported maternal smoking, the measure does show clear inequalities across the city when mapped at children's centre area level (Figure 1). The most deprived areas have significantly higher rates of maternal smoking at delivery: 12% in Roundabout; 12% in Moulsecoomb. In Conway Court, only 4% of women are smoking at the time of delivery.

As is the case nationally, there is a gradient effect of age seen locally (Figure 2).

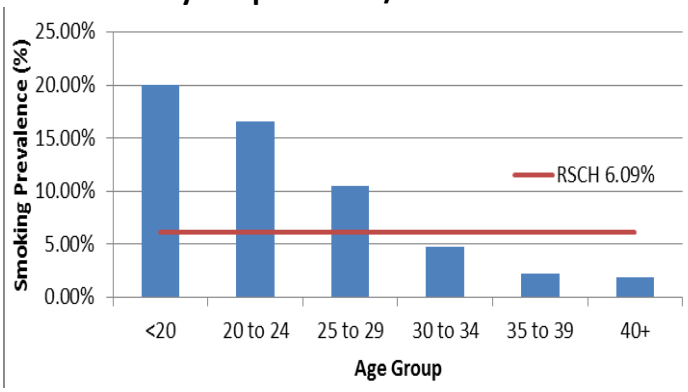
Figure 1: Maternal smoking at the time of delivery by children's centre area, 2014/2015



Source: Public Health Directorate. Birth Notification Files 2014/2015

For mothers under the age of 20 years, 20% smoke at the time of delivery. For those aged 20-24 years 17% smoke. This falls dramatically to just 2% of mothers aged 35 years or over (Figure 2). However, maternal smoking has fallen in every age group since it was first recorded in 2003/04. Prevalence in White British mothers is higher (8%) than the overall average (6%) and this group comprise 88% of the smoking at delivery population.

Figure 2: Smoking status around time of delivery (% of known smoking status) by age group, births at Royal Sussex County Hospital 2014/2015



Source: Public Health Directorate, Birth Notification files

In contrast to the pattern for maternal smoking, the youngest mothers (<20 years) are least likely to initiate breastfeeding (68%). There is a clear age gradient effect (Figure 3), with breastfeeding rates increasing with maternal age up to a rate of 95% among mothers aged 35 years or over. There has been little change in this effect over time.

Highest prevalence is among White other mothers (96%) and Black African mothers (98%) having significantly higher rates. White Irish (80%), White British (86%) and Mixed White and Black Caribbean mothers (83%) have the lowest prevalence. A local study of breastfeeding practices amongst Gypsies and Travellers found that New and Welsh Travellers were more likely to breastfeed compared to Gypsy or Irish Travellers. Barriers to breastfeeding identified included embarrassment, lack of privacy, no family tradition of breastfeeding and the convenience of bottle feeding.[15]

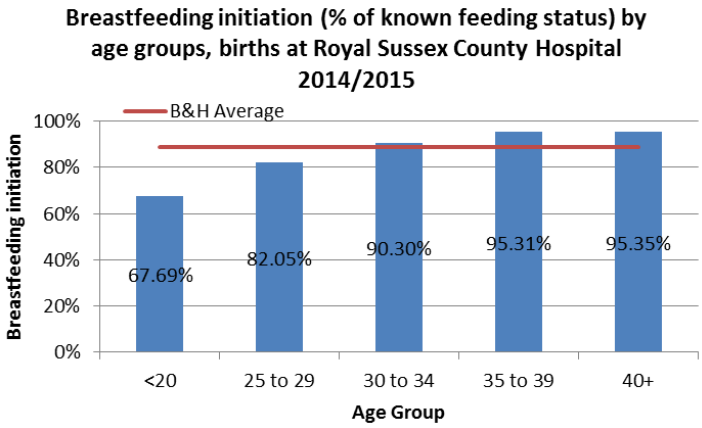
There is a strong link between adult female obesity prevalence and deprivation in the general population. Nationally the percentage of women attending antenatal appointments with a recorded height and weight that were obese (BMI over 30) was 21 per cent. However due to the current lack of good data on prevalence of obesity in adults and on maternal obesity it is not possible to map this across the city.

[14] Data.gov.uk: Maternal Smoking at Delivery: https://data.gov.uk/dataset/maternal-smoking-at-delivery-ccgois-1-14 [Accessed 25/07/2016]

[15] Gavin, Michelle. Maternity Services Breastfeeding within the Travelling Community Brighton & Hove. November 2014- January 2015. FFT.

There are variations in low birth weight in the city with the lowest rate in Preston Park at 1.2% which is significantly below the Brighton rate of 6.3%. The highest rate is in Central Hove at 10.28%.

Figure 3: Breastfeeding initiation (% of known feeding status) by age groups, births at Royal Sussex County Hospital 2014/2015



Source: Public Health Directorate, Birth Notification files

Similarly to previous years, in 2016 breastfeeding rates remain generally lowest in the East area of the city and highest in the Central area (Figure 4).

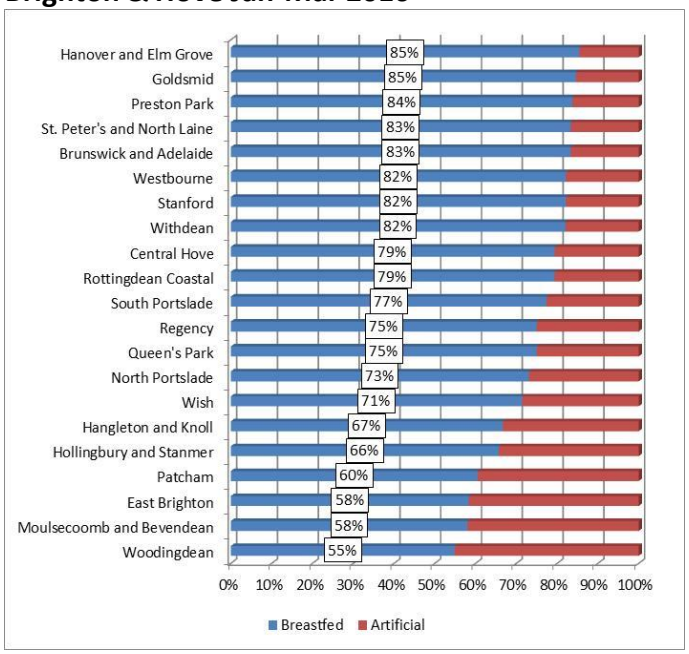
The breastfeeding prevalence for 2016 in the 20% most deprived areas is 55% compared to 85% in the rest of the city.

Infant mortality varies by maternal age. Rates are highest for mothers under 20, fall between the age of 20-34 years after which they again increase but to a lower rate than for the youngest mothers.

National evidence shows that infant mortality varies with socio-economic position. The lowest rates are in the highest social classes (managerial and professional), and the highest rates are in the lowest social classes (routine and manual occupations). The infant mortality rate for mothers born outside the UK is also higher although likely to reflect underlying factors such as mother's age, socio-demographic characteristics.[16]

In Brighton & Hove, health visitors conduct an assessment of maternal mental health and attachment during the antenatal visits and the new birth visits and 6-8 week reviews. If depression or mental health difficulties are identified, then they are referred to their GP and offered a UP or UPP service depending on need. Health visitors can offer six listening visits or refer to the Well-being services. They also offer PND groups and liaise with professionals involved with the family, including mental health services.

Figure 4: 6-8 week breastfeeding rates by ward, Brighton & Hove Jan-Mar 2016



Source: Patient Information Management System, Sussex Community NHS Trust

Predicted future need

We would not expect to see significant increases in infant mortality in the city.

The impact of a new service provided for pregnant mothers by Brighton and Sussex University Hospital Trust (BSUH) and within the community should reduce over time the prevalence of maternal smoking and obesity and improve maternal and infant health. The service will support pregnant mothers by offering a referral to a smoking cessation service for those who smoke or a referral to a dietician within BSUH for those with a BMI greater than 30.

The number of children looked after under the age of one continues to rise and this may result in an increased need for preventative targeted antenatal and postnatal support.

The number of births in Brighton & Hove is projected to remain roughly stable and therefore we would not expect to see any significant rise in perinatal mental health problems. A multidisciplinary steering group including midwifery, health visiting and mental health

[16]ONS: Childhood, Infant and Perinatal Mortality in England and Wales: 2012, Statistical bulletin https://www.ons.gov.uk/.../2014-01-30/pdf [Accessed 25/07/2016]

services is meeting to develop a local Perinatal Mental Health Pathway which includes parent-infant psychology.

What we don't know

The low number of infant deaths in the city means it is not possible to identify local inequalities.

Whilst we have data for parents in treatment for substance misuse we currently do not have a clear picture of the prevalence of maternal substance misuse. Similarly we do not know the prevalence of maternal obesity in the city but have recently started to collect local data through the new service provided by BSUH to reduce the prevalence of maternal smoking and obesity. This data, together with the forthcoming national maternity data set, will help us get a better understanding of the prevalence of smoking and obesity in pregnancy. We do not know with certainty why the city has historically and until recently had a significant number of looked after children under the age of one. Evidence from local services would suggest that parental drug misuse is an important factor.

Many pre and postnatal mental health issues and perinatal depression go unrecognized and are under detected and under reported[4]. There is also a lack of recognition and awareness of mental ill health and its signs and symptoms particularly in some black and ethnic groups. Substance misuse is a major risk factor in Brighton & Hove but statistics are only collected on parents in treatment, and not those experiencing problems but not receiving treatment.[17] Therefore numbers are likely to be much higher than those reported.

Key evidence and policy

The National Perinatal Epidemiology Unit produced evidence maps providing an overview of the effectiveness of interventions targeting:

- infant mortality and its major medical causes (preterm birth, major congenital anomalies and sudden unexpected infant death).
- major potentially modifiable risk factors for infant mortality (smoking in pregnancy and the postnatal period, maternal obesity and risk factors for sudden unexpected infant death).[18]

In 2010 the Department of Health produced a report[1] from the Infant Mortality National Support Team on Tackling Health Inequalities in Infant and Maternal Health Outcomes, with recommendations for commissioners for maternal and infant health improvements and the reduction of infant mortality. It shows how areas can narrow the gap by looking at current examples of good practice.

In 2014 the Department of Health published[4] six Early Years High Impact Areas developed to help inform the commissioning of the health visiting service and integrated children's early years service.

In 2016, Public Health England produced an NHS RightCare Commissioning for Value Focus Pack: Maternity and Early Years.[15] Smoking is still the biggest identifiable risk factor of poor birth outcomes.

In 2016, NHS England announced nine working areas to improve maternity services which include supporting local transformation, promoting good practice for safer care and improving access to perinatal mental health services to make care safer and more personalised.[19]

Because of the increased risk of complications, women with multiple pregnancies need more monitoring and increased contact with healthcare professionals during their pregnancy than women with singleton pregnancies. This coupled with a considerable variation in antenatal care and outcomes for multiple pregnancies led to the publication by NICE of: Multiple pregnancy: antenatal care for twin and triplet pregnancies guidelines [CG129][20] in September 2011 and Multiple pregnancy: twin and triplet pregnancies quality standard [QS46][21] in September 2013.

Recommended future local priorities

The following actions are taken forward by the maternal health steering group, which comprises service commissioners and providers:

[17]NHS England: RightCare Commissioning for Value Focus Pack: Maternity and Early Years, Brighton & Hove. https://www.england.nhs.uk/resources/resources-for-ccgs/comm-for-value/south-region/#20 [Accessed 25/07/2016]

[18]https://www.npeu.ox.ac.uk/infant-mortality [Accessed 25/07/2016]

[19]NHS England: Maternity Transformation Programme https://www.england.nhs.uk/ourwork/futurenhs/mat-transformation/ [Accessed 25/07/2016]

[20] National Institute for Health and Care Excellence. Multiple pregnancy: antenatal care for twin and triplet pregnancies. 2011. Available at https://www.nice.org.uk/guidance/cg129 [Accessed 17/10/2016]

[21] National Institute for Health and Care Excellence. Multiple pregnancy: twin and triplet pregnancies: Quality standard [QS46]. Available at: https://www.nice.org.uk/guidance/qs46 [Accessed 17/10/2016]

7.1.2 Maternal and infant health

1. Collect and analyse data on prevalence of drinking, smoking and obesity in pregnancy.
2. Monitor the uptake of smoking cessation and post pregnancy weight management and programmes from women who were referred by the BSUH service. This will be achieved through closer working between service providers and midwifery.
3. A local mental health pathway is being developed to improve success of interventions for women. This will enable collection of better local data on prevalence of perinatal mental health issues to help identify early predictors of maternal depression.
4. Improve communication between midwives and health visitors, which is particularly relevant in the context of the health visiting ante-natal at about 34 weeks of pregnancy.
5. All pregnant women should be screened for substance misuse at the midwifery booking appointment and if appropriate given brief advice or referred for extended brief interventions (NICE Guidance).
6. Continue to target breastfeeding support in areas of inequality and to younger mothers.
7. Testing and monitoring women with an increased risk of complications during pregnancy.[2]

Key links to other sections

- Healthy weight
- Pregnancy and maternity
- Alcohol
- Substance misuse
- Smoking
- Teenage pregnancy and teenage parents
- Maternity care

Further information

ChiMat Infant mortality profiles
http://atlas.chimat.org.uk/IAS/dataviews/infantmortalityprofile

Last updated

September 2016