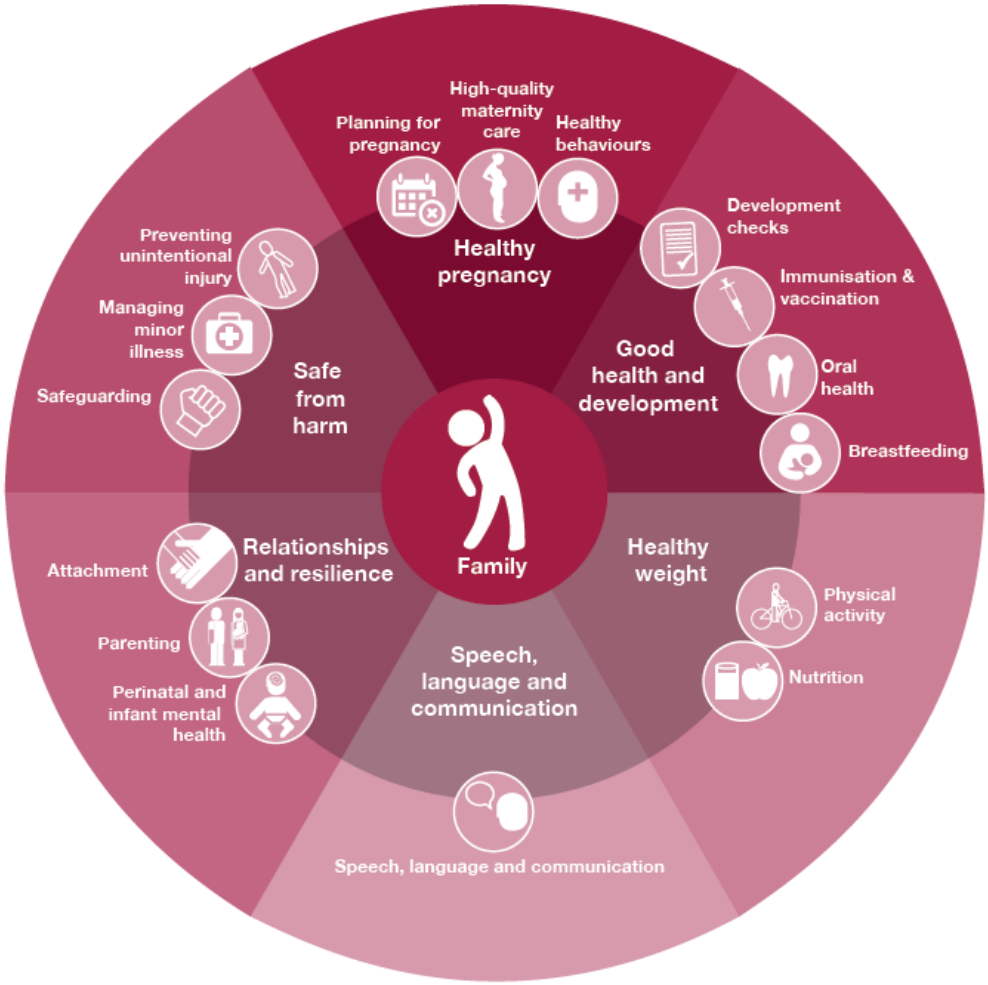
Public Health England

Protecting and improving the nation's health

Early years in the East Midlands December 2016



Source:www.chimat.org.uk/beststart

About Public Health England East Midlands

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

Public Health England East Midlands covers the local authority areas of Derby City, Derbyshire County, Nottingham City, Nottinghamshire County, Leicester City, Leicestershire County, Rutland County, Lincolnshire County and Northamptonshire County. The population of the area in 2014 was over 4.6 million people.

Public Health England
Wellington House
133-155 Waterloo Road
London SE1 8UG
Tel: 020 7654 8000
www.gov.uk/phe
Twitter: @PHE_uk
Facebook: www.facebook.com/PublicHealthEngland

Prepared by: Natalie Cantillon, Principal Public Health Intelligence Analyst, Tammy Coles, Health and Wellbeing Manager and Jasmine Murphy, Public Health Consultant, PHE East Midlands
For queries relating to this document, please contact: LKISEastMidlands@phe.gov.uk

Published December 2016
PHE publications gateway number: 2017122

Foreword

The early years of a child's life are crucial to achieving good health outcomes and reducing health inequalities for the whole of the lifecourse. Influences on pregnancy and early childhood impact on a child's physical and emotional health laying down the foundations that last into adulthood.

Making sure that mothers have a healthy pregnancy to enable the safe delivery of healthy babies, with a good birth weight is important. We know from the evidence that premature and low birth weight babies have poorer outcomes, with those born in our most deprived communities being affected the most. Building upon a baby's development in the womb, the first two years of a child's life are a critical period in ensuring children are ready to learn, ready for school and have the best life chances.

There is much we can do as a health and social care community to embed a preventative culture within our maternity and early years settings. There are some good examples of work taking place across the East Midlands in tacking maternal smoking, supporting maternal mental health and breastfeeding. The transformation of maternity services programmes, with the establishment of Local Maternity Systems and Sustainability and Transformation Plans (STP's) are an opportunity to further develop sector led improvement and collaborative approaches to ensure early years inequalities are addressed and the prevention agenda is firmly embedded.

This report has reviewed the available data for the early years of life across the East Midlands. Public Health Outcomes Framework indicators were reviewed across the region and we know there are a number of challenges. Whilst some areas across the East Midlands have bigger challenges than others it is important that we continue to work together to celebrate our successes, share good practice and continue to ensure that the children of the East Midlands really do get the best start in life, developing and growing into healthy, happy and resilient adults.

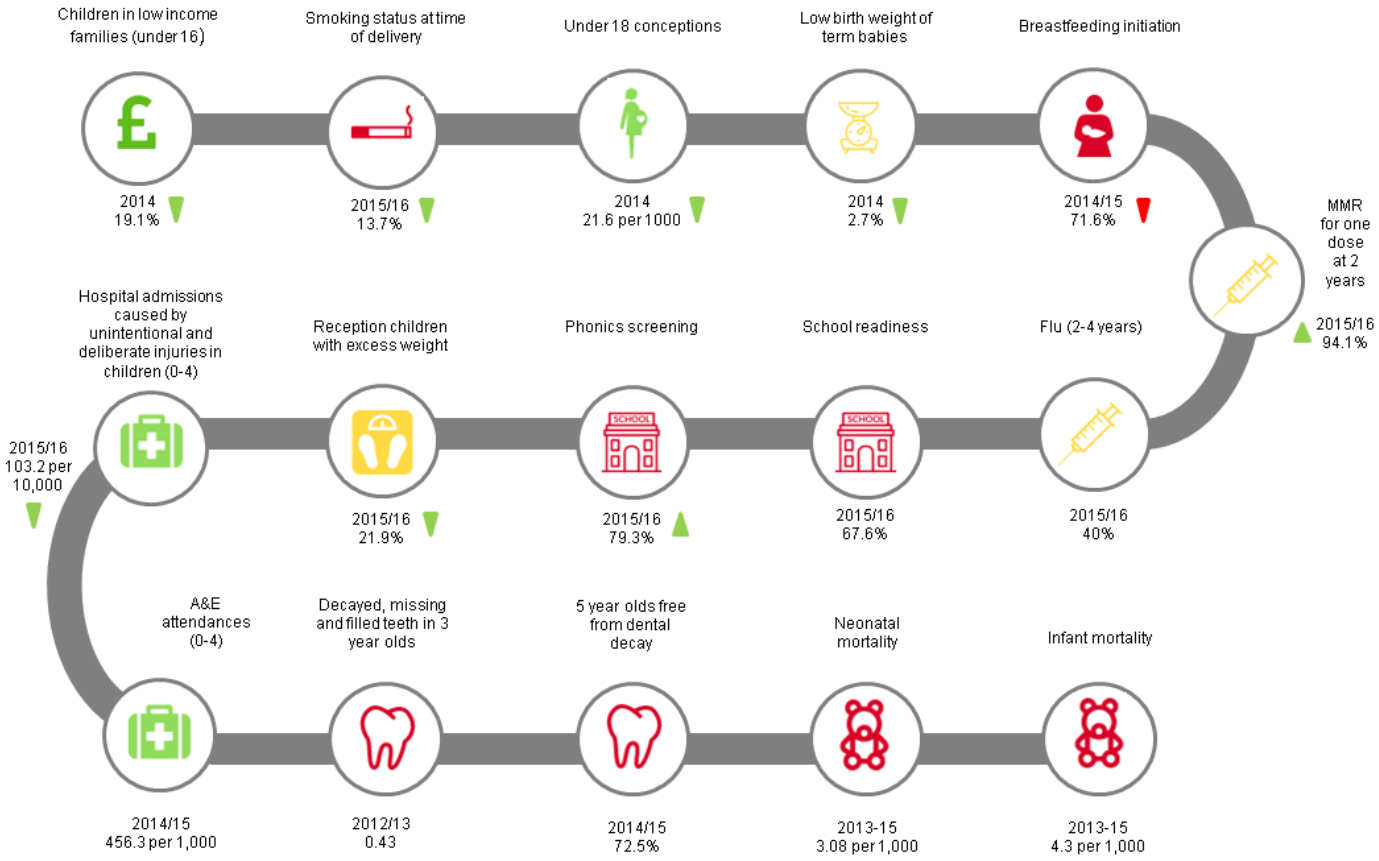
Alison Challenger, Director of Public Health, Nottingham City Council

Contents

Summary

Giving children the best start in life has been identified through a review of the indicators within the Public Health Outcomes Framework as an area where the health outcomes across the East Midlands have a number of challenges. The report focuses on areas where there are identified challenges with the health outcomes for the population, reviews the work that is happening across the East Midlands PHE Centre and makes recommendations to further improve outcomes.

In 2015 in the East Midlands, there were an estimated 278,657children aged 5 years and under in the East Midlands and 53,641 babies were born.



Key

Graphics shown in **green** indicate that the East Midlands is statistically significantly better when compared to England.

Graphics shown in **orange** indicate that the East Midlands is statistically similar when compared to England.

Graphics shown in **red** indicate that the East Midlands is statistically significantly worse when compared to England.

Arrows where shown show recent trends and are coloured by significance testing

Data source: https://fingertips.phe.org.uk/profile-group/child-health

Images via http://www.flaticon.com/

Areas where targeted action is required to improve outcomes

- In 2012-14 the rate of stillbirth for the East Midlands was 4.5 per 1,000 total births. This is similar to the national figure of 4.7; however, across the region this ranges from 7.8 in Corby to 1.8 in South Derbyshire
- In terms of infant mortality the East Midlands has the third highest rate nationally at 4.3 per 1,000 live births, which is significantly worse than the national figure of 3.9
- 13.7% of women smoke at the time of delivery in the East Midlands; this equates to 5,833 women in 2015/16 and is significantly worse than England (10.6%)
- The proportion of women initiating breastfeeding in the East Midlands has reduced significantly from 72.5% in 2010/11 to 71.6% in 2014/15 and is consistently significantly worse than England (74.3%)
- 67.6% of children in the East Midlands are achieving a good level of development at the end of reception class (the first year of school) which is significantly worse than England (69.3%)
- The oral health of children living in the East Midlands is a concern where levels of oral health for 3 year olds are the worst in England with only 84.8% of children in the region being free from dental decay
- Comparing local authorities against their Charted Institue of Public Finance and Accountancy (CIPFA) neighbours as a benchmark, the areas with the highest number of red indicators in the Child Health Profiles are Northamptonshire followed by Nottingham and Lincolnshire

Recommendations

The report has focused on areas where there are identified challenges with the health outcomes for the early years population in the East Midlands.

To address these challenges it is recommended that the East Midlands PHE Centre develops an outcome focussed early years action plan which should focus on:

- Working with the public health and wider NHS system to develop sector led improvement and collaborative approaches to ensure early years inequalities are recognised and addressed in:
    - Sustainability and Transformation Plans (STP's)
    - Maternity Transformational and Local Maternity System delivery plans
    - Local Transformation Plans for Children and Young People's mental health
    - the sustained delivery of the Healthy Child Programme by contacts in the universal mandated Health Visitor checks across the East Midlands

- Supporting the delivery of evidence based interventions to reduce the incidence of stillbirths in the East Midlands with a focus on intervention to reduce Smoking in Pregnancy

- Supporting a sustained improvement in breastfeeding initiation

- Working to reduce the variation in uptake across childhood immunisations with a focus on the populations where uptake is significantly below 95%.

- Improving the health and wellbeing of preschool school aged children to prepare them for school

- To improve the oral health of children in the East Midlands

It is recommended that further analysis is to be developed across the East Midlands on:

- the Maternal data monthly statistics
- child deaths from external causes
- admission data on childhood injuries

Background

"Giving every child the best start in life is crucial to reducing health inequalities across the life course. The foundations for virtually every aspect of human development – physical, intellectual and emotional – are laid in early childhood. What happened during these early years (starting in the womb) has lifelong effects on many aspects of health and well-being – from obesity, heart disease and mental health, to educational achievement and economic status." [1]

The purpose of this report is to review the available data for the early years of life across the East Midlands for the Public Health England East Midlands Centre and constituent Local Authorities. Giving children the best start in life has been identified through a review of the indicators within the Public Health Outcomes Framework as an area where the health outcomes across the East Midlands have a number of challenges. The report has been tailored to focus on areas where there are identified challenges with the health outcomes for the population in the East Midlands.

Overview of early years in the East Midlands

Child Health Profiles provide an overview of child health in local areas. They are designed to help local authorities and health services improve the health and wellbeing of children and tackle health inequalities. The profiles contain 32 key indicators on child health and are available via https://fingertips.phe.org.uk/profile/child-health-profiles

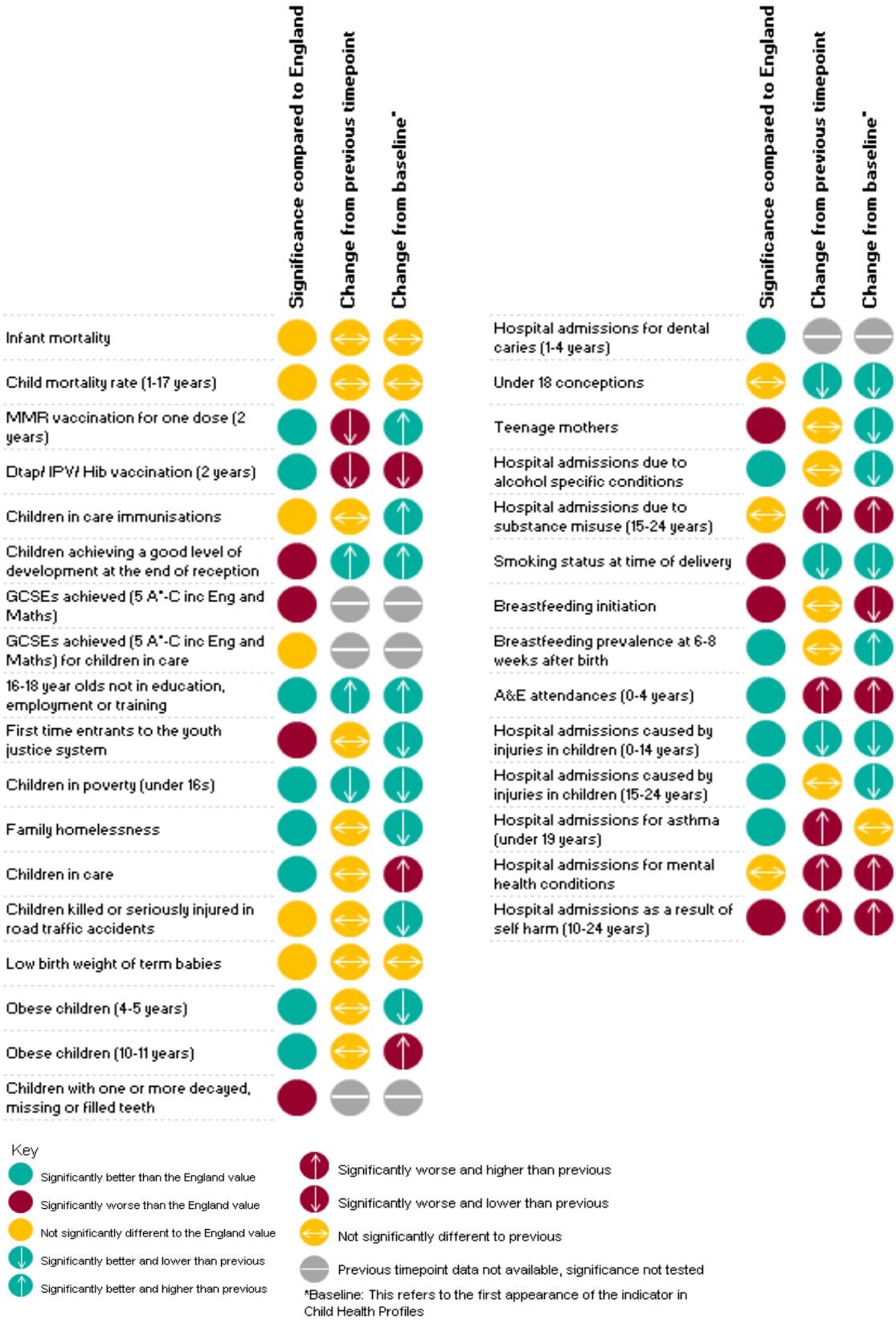
Figure 1 shows the East Midlands performance against all indicators within the Child Health Profiles, it highlights several areas where the region is significantly worse than England and where the trend in the East Midlands is getting worse.

Areas of concern relating to the early years for the East Midlands include;

- Children achieving a good level of development at the end of reception (aged 5)
- Children with one or more decayed missing or filled teeth
- The proportion of teenage mothers
- Smoking at time of delivery
- Breastfeeding initiation

[1] Fair society health lives, The Marmot Review, 2010 – taken from Waldfogel J (2004) Social mobility, life chances, and the early years, CASE Paper 88, London: London Schooll of Economics

Figure 1. Overview of child health profile indicators for the East Midlands, 2016



Data source: Child Health Profiles, 2016

The profiles break down the indicators into five sections:

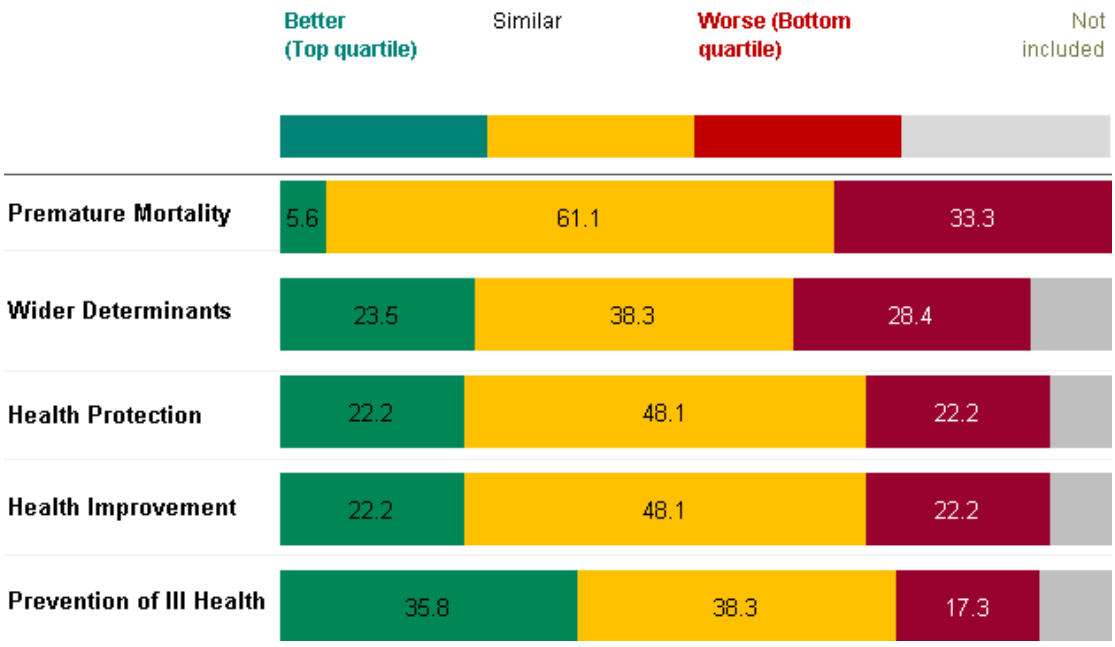
- Premature mortality
- Wider determinants
- Health protection
- Health improvement
- Prevention of ill health

Figure 2 illustrates how outcomes within the East Midlands unitary and upper tier local authorities compare with their Charted Institute of Public Finance and Accountancy (CIPFA) neighbours for each of the five sections. Using the CIPFA nearest neighbours ensures comparison with similar areas rather than the national average and highlights where opportunities may exist for improvement.

Overall the groups of outcomes where there is greatest potential for improvement (the highest proportion of indicators that are in the worst quartile for the 'CIPFA nearest neighbours' groups) are 'premature mortality' and 'wider determinants'. The premature mortality domain contains two indicators, infant mortality (death of a child under the age of one year) and child mortality (death of a child aged between 1 and 17 years).

The theme with the most indicators with outcomes that are in the best quartile range for the 'CIPFA nearest neighbours' group (green indicators) is 'prevention of ill health'. This includes indicators such as smoking at time of delivery, breastfeeding initiation and prevalence, A&E attendances and hospital admissions due to injury, asthma, mental health and self-harm.

Figure 2. Child Health Profiles, proportion of indicators in the child health profiles where East Midlands local authorities are better, similar or worse than CIPFA nearest neighbours



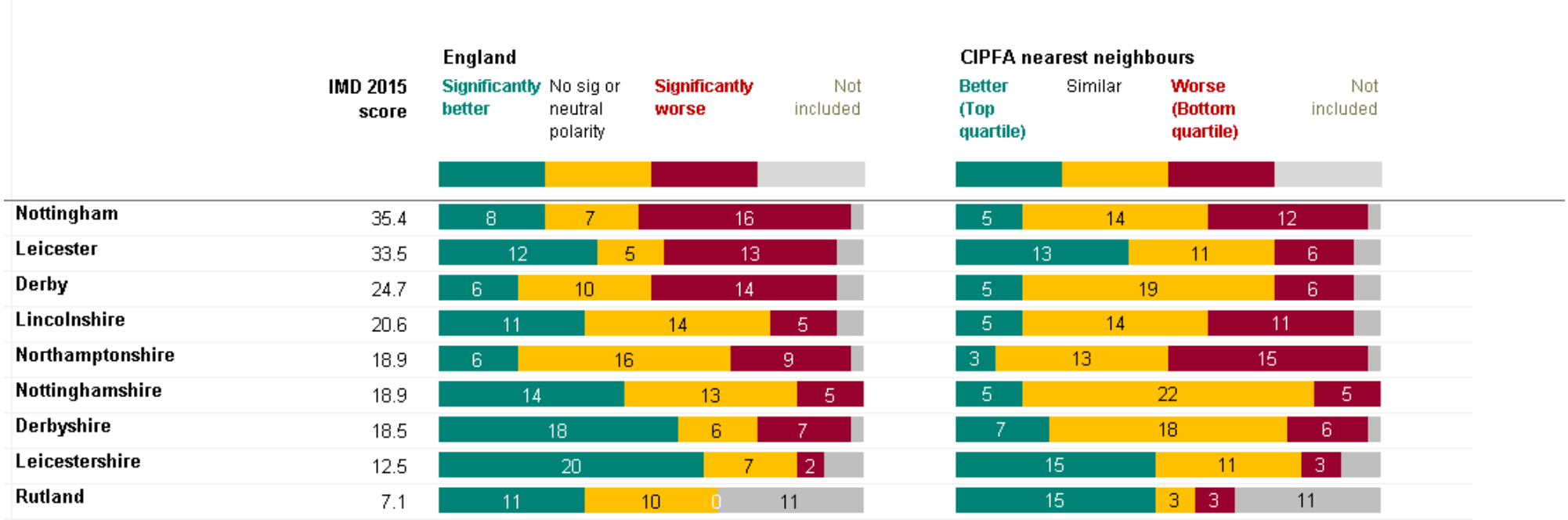
Data source: Child Health Profiles 2016

Figure 3 presents the same selection of indicators for each local authority in the East Midlands. The outcome for each of the indicators is compared to the England average and to the CIPFA nearest neighbours.

The local authorities with the highest number of indicators that are worse than the England average are Nottingham, Leicester and Derby. This variation will be driven by health inequalities, with these three local authorities having the highest levels of deprivation in the East Midlands.

Comparing the areas against their CIPFA neighbours, the areas with the highest number of red indicators are Northamptonshire followed by Nottingham and Lincolnshire.

Figure 3. Child Health Profiles, number of indicators that are better, worse or not significantly different than the average for each benchmark, by unitary and upper tier local authority



Data source: Child Health Profiles 2016

Why the early years are so crucial

What happens in pregnancy and early childhood impacts on physical and emotional health all the way through to adulthood. Supporting good maternal health is important for safe delivery and good birth weight to give babies the best start. The prevention of adverse health factors in pregnancy is vital. Premature and small babies are more likely to have poorer outcomes.

The earliest experiences, starting in the womb, shape a baby's brain development. This is the focus of the 1001 Critical Days Manifesto, a vision for the provision of services in the UK for the early year's period. It presents the moral, scientific and economic case for the importance of the conception to age 2 (the 1001 days). http://www.1001criticaldays.co.uk/manifesto. This period of life is crucial to increase children's life chances, to ensure all babies have the best possible start in life. Too many children and young people do not have the start in life they need, leading to high costs for society, and too many affected lives.

During the first 2 years of life the brain displays a remarkable capacity to absorb information and adapt to its surroundings. Positive early experience is vital to ensure children are ready to learn, ready for school and have good life chances.

It is shaped by a number of factors such as:

- sensitive attuned parenting
- effects of socio-economic status
- the impact of high-quality early education and care

Parents have the biggest influence on their child's early learning. For example, talking and reading to a baby can help stimulate language skills right from birth. Language skills help children to develop a range of cognitive skills that are crucial for their development, including working memory and reading skills. This can help prepare children so that they are ready to learn at 2 and ready for school at 5.

The evidence from the Child Health Profiles shows that the East Midlands has some areas of concern relating to the early years (aged 0-5).

In 2015 there were 278,657 children aged between 0-4 years in the East Midlands. This is 6% of the population. The 0-4 year old population in the East Midlands is due to increase to an estimated 287,000 in 2039 which is a 3% increase over the time period.

Pregnancy and birth

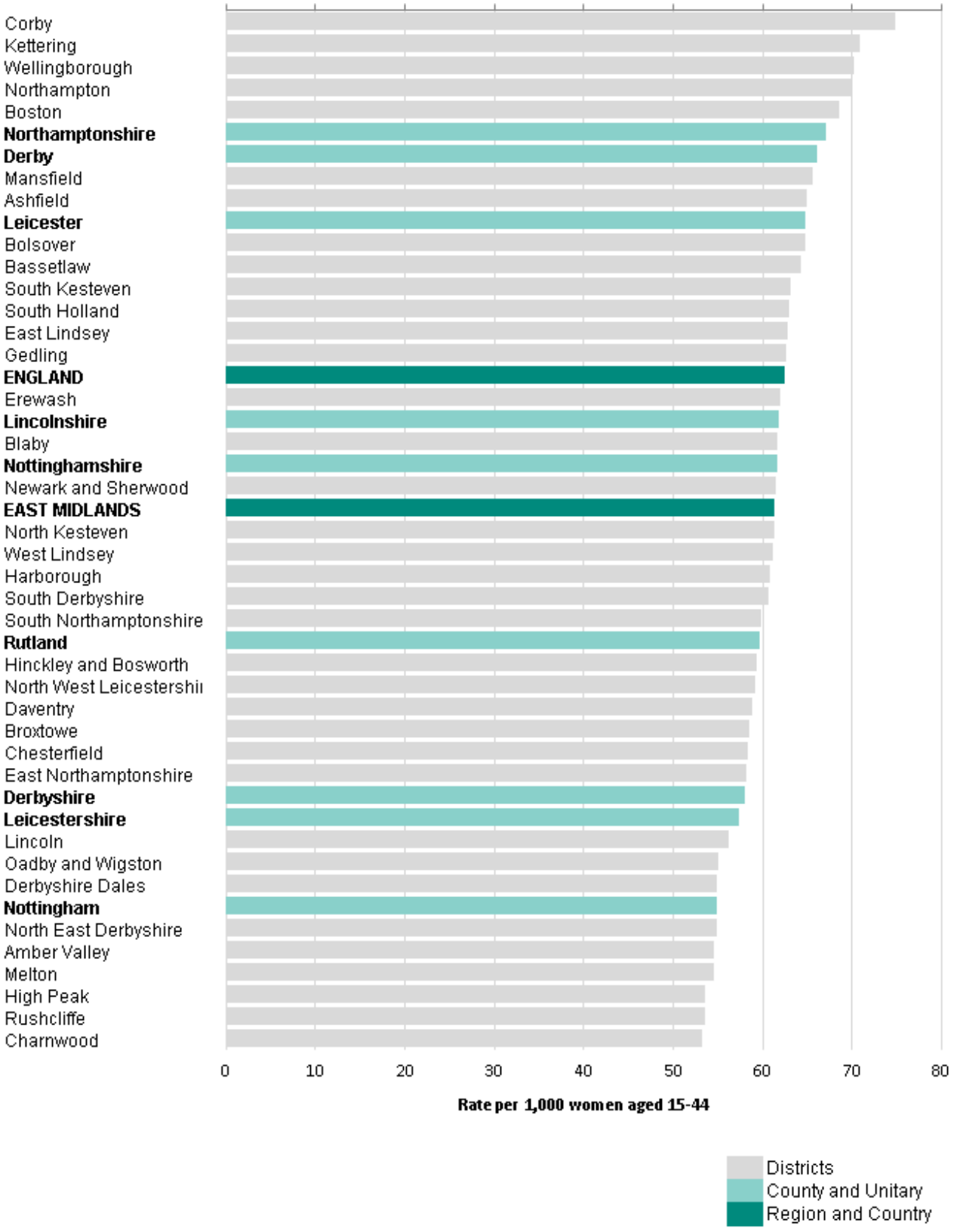
Figures from the Office for National Statistics show that there were 53,641 births in the East Midlands in 2015.

The General Fertility Rate (GFR) describes the number of live births in a locality per 1,000 women aged 15-44. The GFR for the East Midlands is shown by local authority in Figure 4. This indicates:

- the East Midlands had a GFR of 61.3 per 1,000 women. This is lower than the England average of 62.5
- the GFR varies in the region from 74.9 in Corby to 53.2 in Charnwood
- the East Midlands is the PHE Centre with the third lowest GFR, behind the North East (57.9) and the South West (60.0)

Effective and high quality maternity services are essential to ensuring that every child has the best start in life. NHS Digital have released new, experimental statistics, the “Maternity Services Monthly Dataset”. An analysis of this data is included in Appendix 1. This dataset includes information on the age of the mother, statistics on mothers that are overweight or obese and information on social factors that may affect outcomes. This is an important new data collection that will help the local system to further analyse risk factors and outcomes in pregnancy but has not been included within the body of this report due to data quality and missing data.

Figure 4. General Fertility Rate per 1,000 women aged 15-44 in each local authority in the East Midlands, 2015



Data source: Office for National Statistics

Stillbirth

Stillbirth refers to a death in the womb of a baby over 24 week's gestation.

In 2014, there were 236 stillbirths in the East Midlands, this equates to almost 20 per month and a rate of 4.5 per 1,000 total births in (2012-2014 pooled) which is similar to the national rate of 4.7 (Figure 5).

Figure 6 shows that between 2004 and 2014, the annual rate of stillbirths in the East Midlands has fallen by **20%**, although this number fluctuates due to small numbers.

Figure 5. Crude rate of stillbirth per 1,000 total births, 2012-2014 pooled by region

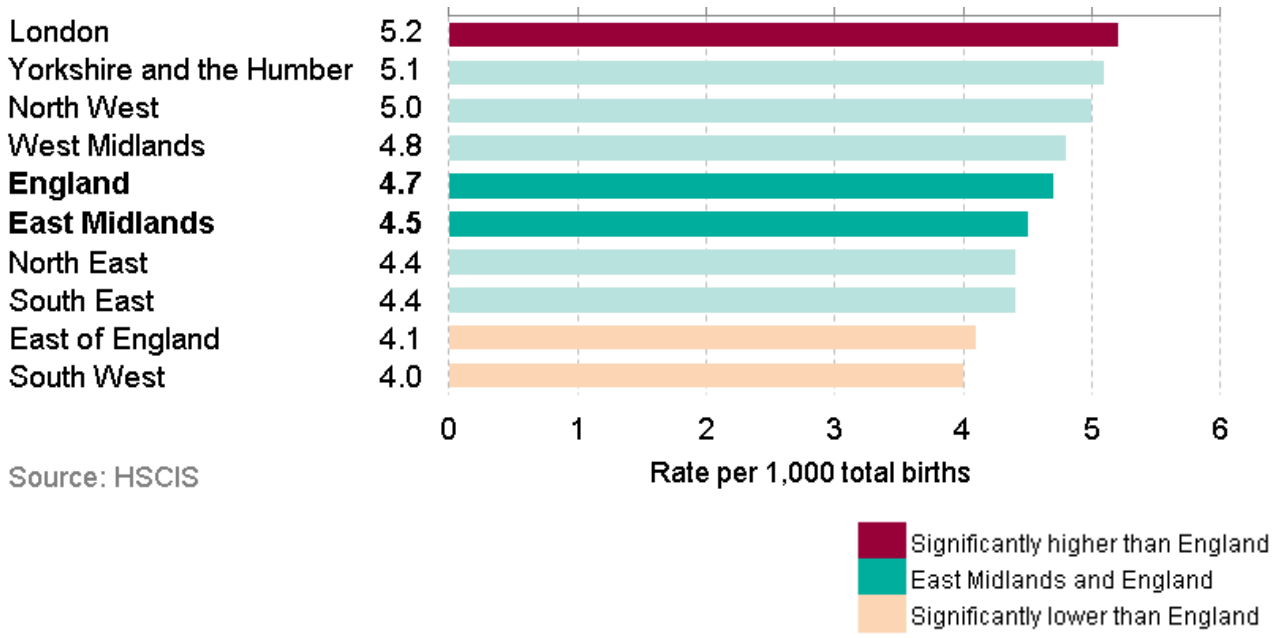
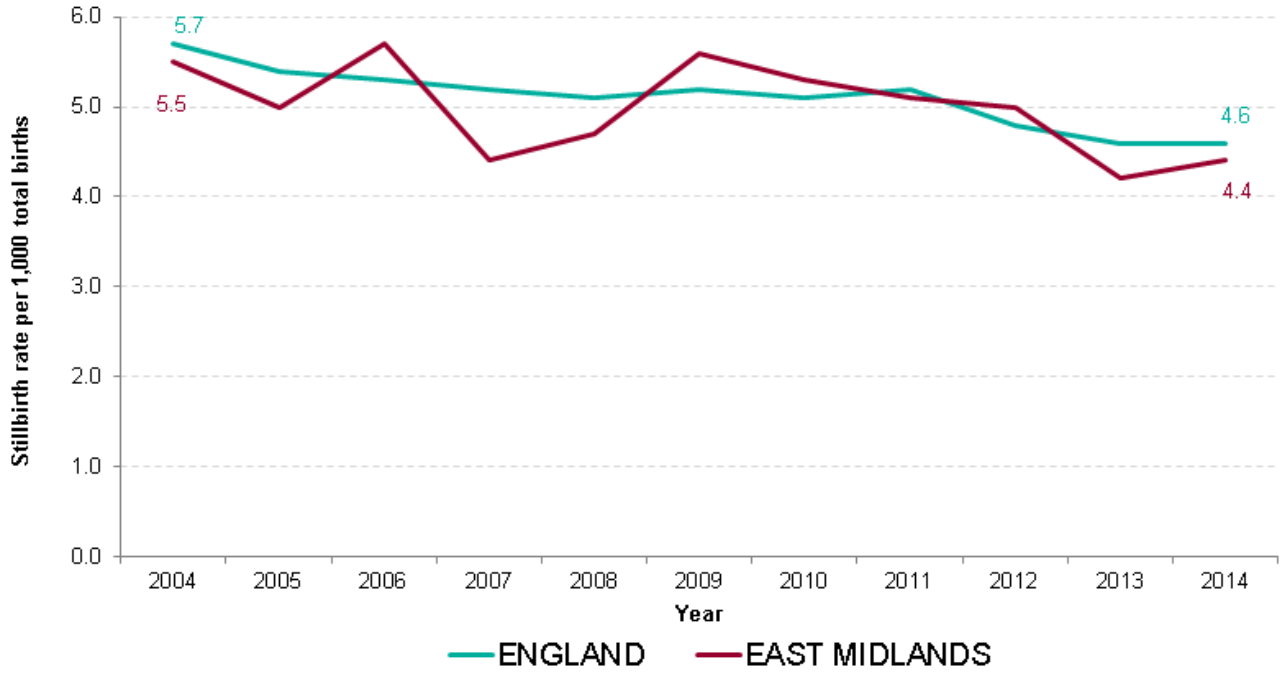


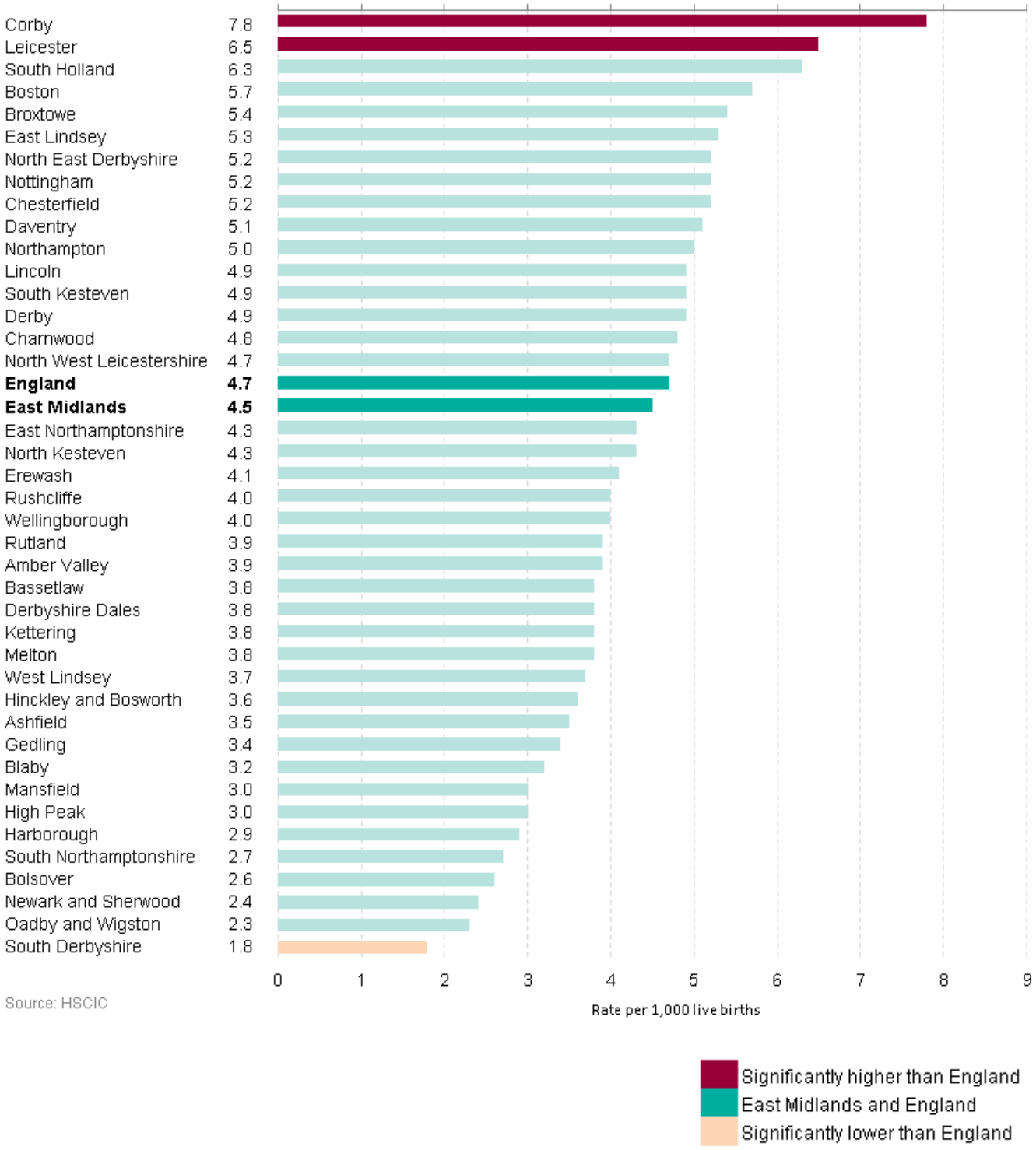
Figure 6. Rate of stillbirth in the East Midlands and England from 2004-2014



Data source: NHS Digital

As numbers per district are small it is useful to pool several years' worth of data in order to better understand the information. When we do this from 2012-2014 the rate of stillbirth for the East Midlands is 4.5 per 1,000 total births over that period. This is similar to the national figure of 4.7. However, across the region this ranges from 7.8 in Corby to 1.8 in South Derbyshire, meaning that Corby has 4 times the rate of stillbirth as South Derbyshire (Figure 7).

Figure 7. Crude rate of stillbirth per 1,000 total births, 2012-2014 pooled by lower tier local authority in the East Midlands



What action is being taken?

In 2016, NHS England (NHSE) produced the results of the national maternity review – Better Births; five year forward view for maternity care.[2] It makes a number of recommendations for further opportunities to improve the safety of care and reduce still births. This includes an increased focus on prevention and public health and a national ambition to reduce the rate of stillbirths by 50% by 2030.

To ensure the implementation of the vision and recommendations of Better Births, NHSE has established a national maternity transformation programme. Nine work streams are in place with PHE leading on prevention and public health. At a regional level there is a board and to address local delivery there will be local maternity systems developed aligned to Sustainability and Transformation Plan (STP) footprints.

PHE is the lead agency for the 'Improving Prevention' work stream of the national maternity transformation programme. Focus will be on smoke free pregnancies, perinatal mental health and breastfeeding. PHE has also recently joined the regional board. The local authority public health teams, with the exception of Northamptonshire are engaged in the local maternity system development.

Working alongside the maternity transformation boards and local maternity systems is the work of the maternity clinical network. The clinical network is working with providers and is focussing on:

- Stillbirth care bundle, with a focus on raising awareness of reduced fetal movements
- Developing a regional approach to understanding and investigating fetal and neonatal loss
- Perinatal mental health

The Clinical Network has also developed an East Midlands Service Specification for maternity services and has agreed to incorporate public health and prevention elements in its appendix.

[2] https://www.england.nhs.uk/wp-content/uploads/2016/02/national-maternity-review-report.pdf

Smoking at time of delivery

Smoking in pregnancy has well known detrimental effects for the growth and development of the baby and health of the mother. Smoking during pregnancy can cause serious pregnancy-related health problems. These include complications during labour and an increased risk of miscarriage, premature birth, stillbirth, low birth-weight and sudden unexpected death in infancy.

Encouraging pregnant women to stop smoking during pregnancy may also help them kick the habit for good, and so provide health benefits for the mother and reduce exposure to second-hand smoke for the infant.

The Tobacco Control Plan contained a national ambition to reduce the rate of smoking throughout pregnancy to 11% or less by the end of 2015 (measured at time of giving birth). Nationally this was met (10.6%), however in the East Midlands 13.7% of women smoke at the time of delivery. This equates to 5,833 women in 2015/16, which is significantly worse than England.

The proportion of women smoking at time of delivery has reduced significantly in the East Midlands since 2010/11, from 15.6% to 13.7%, equating to 2,506 fewer women in 2015/16.

According to the most recent data (Quarter 1, 2016/17) at CCG level there is a 6 fold variation within the region, ranging from 3.6% of women smoking at time of delivery in NHS Rushcliffe to 22.2% in NHS Mansfield and Ashfield (Figure 8).

What action is being taken?

The approach to addressing the variation in Smoking at the Time of Delivery (SATOD) rates in East Midlands has been via the development of a number of resources by PHE Centre East Midlands. These include:

- The East Midlands Smoking in Pregnancy (SiP) Assessment Tool
- Modelling tool to show what a 10% SATOD rate looks like
- Template maternity services specification

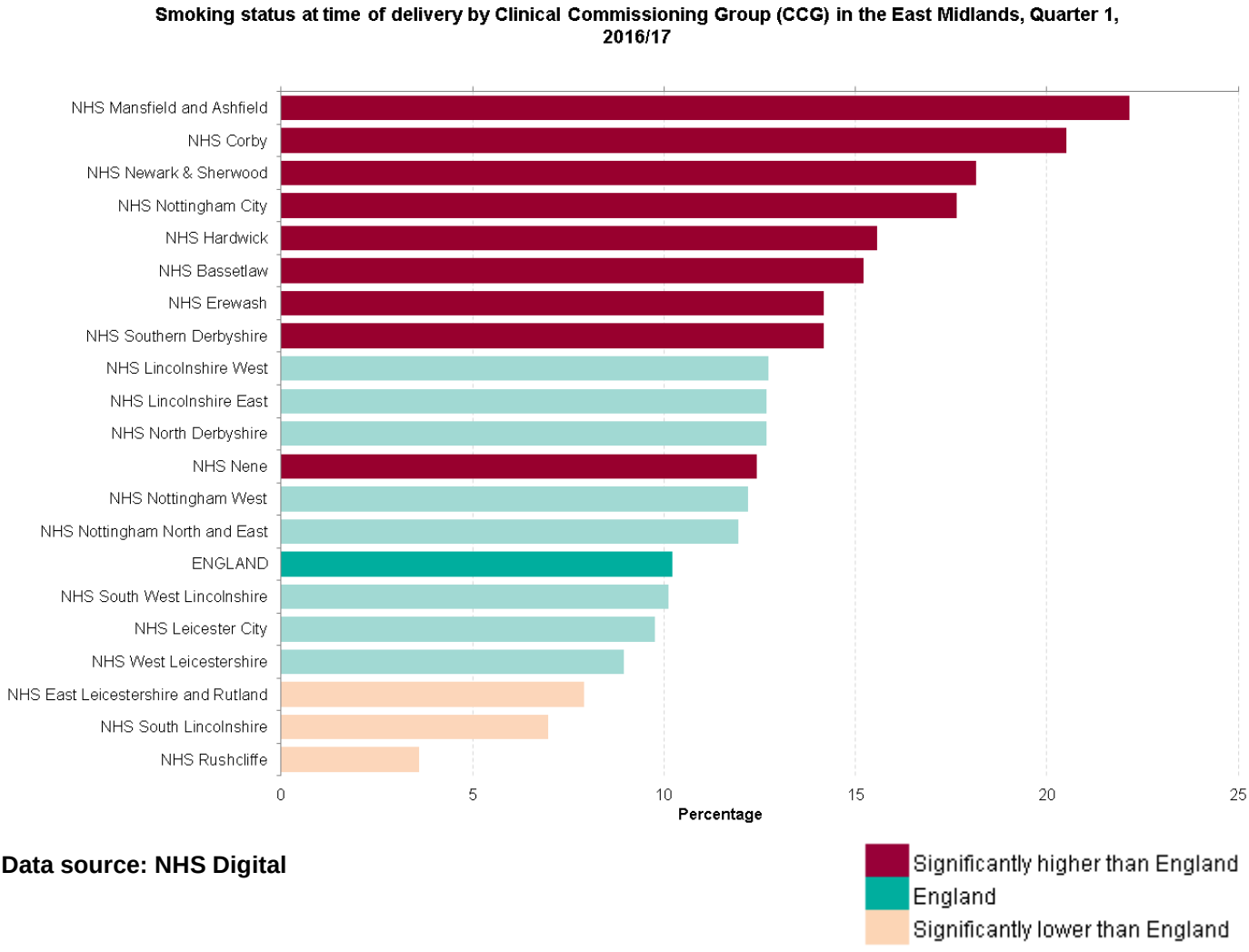
The self-assessment process is a structured pause for reflection by key players involved along the Smoking in Pregnancy Pathway. Use of the SiP assessment Tool has been rolled out across the East Midlands. Following completion of self-assessments local authorities will be offered the option of a facilitated peer visit.

The Directors of Public Health agreed to fund changes to a video developed by the Leicester stop smoking service to personalise for each local area. The videos can then be used in GP waiting rooms, antenatal clinics etc. http://www.stopsmokingleic.co.uk/smoking-in-pregnancy/

Nottingham City, Mansfield and Ashfield and Erewash CCG's have all been allocated £75,000 from NHSE for interventions to improve their SATOD rates. PHE will be working closely with them to ensure interventions are evidence based.

Furthermore, all health visitors are currently mandated to see all women at 28 weeks when health promoting advice such as smoking is reiterated.

Figure 8. Smoking status at time of delivery by Clinical Commissioning Group in the East Midlands, Quarter 1, 2016/17



Data source: NHS Digital

Breastfeeding

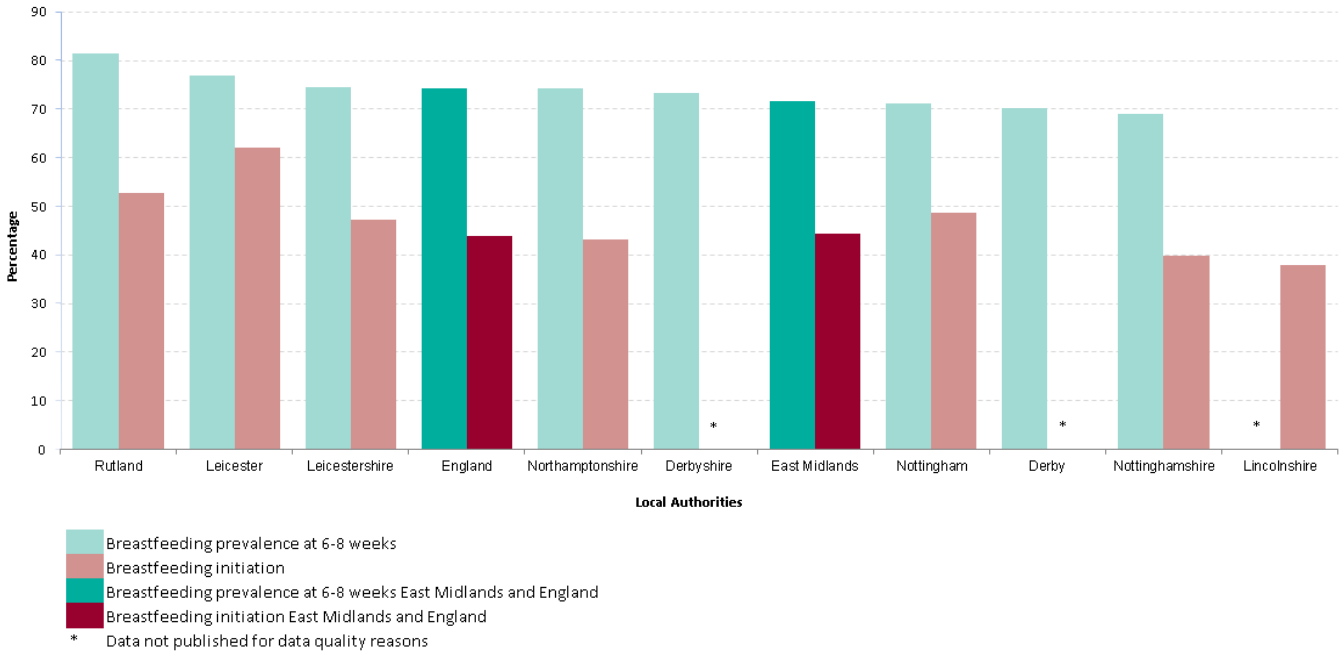
The proportion of women initiating breastfeeding in the East Midlands has reduced significantly from 72.5% in 2010/11 to 71.5% in 2014/15 and is consistently significantly worse than England (74.3%). Within the region the proportion of women initiating breastfeeding ranges from 69% in Nottinghamshire to 81.5% in Rutland.

44.4% of women in the East Midlands are breastfeeding at 6-8 weeks after birth, which is significantly better than England (43.8%) and has been increasing from 42.7% in 2010/11 to 44.4% in 2014/15. Although fewer women initiate breastfeeding in the East Midlands, those that do are able to maintain, which may be linked to better support.

62.1% of women in Leicester City continue to breastfeed at 6-8 weeks (significantly better than England) in contrast to 38.0% in Lincolnshire (significantly worse than England).

The greatest difference in the proportion of women initiating breastfeeding and maintaining breastfeeding at 6-8 weeks is in Northamptonshire which shows a reduction of 31.1%, in contrast the smallest difference occurs in Leicester city with a 14.8% difference between initiation and prevalence at 6-8 weeks.

Figure 9. Breastfeeding initiation and prevalence at 6-8 weeks by local authority in the East Midlands, 2014/15



Data source: Public Health England

What action is being taken?

In July 2016, PHE in partnership with UNICEF developed a range of resources to support local authorities in commissioning infant feeding services. These have been distributed to all the local authorities.
https://www.gov.uk/government/publications/infant-feeding-commissioning-services

All Local Authorities commission breastfeeding support services as part of their Healthy Child Programme offer. PHE East Midlands are working with a group of Masters in Public Health students from the University of Nottingham to develop a breastfeeding Health Needs Assessment template to support local authorities.

PHE East Midlands is developing its approach around healthy weight and physical activity. Breastfeeding is a significant protective factor against obesity in children and will be incorporated as part of the life course approach to developing this plan.

Health visiting

Figure 10 shows the proportion of children who received their mandated health visitor check by age group. The East Midlands is performing well at most checks, particularly the new birth visits within 14 days, the 6-8 week review and the 12 month review by 15 months.

However, there is variation within the region. 80% of new babies in Nottingham received their birth visit within 14 days compared to 94% in Derbyshire. 75% of children in Nottingham received their 6-8 week review by the age of 8 weeks, compared to 97% in Derby.

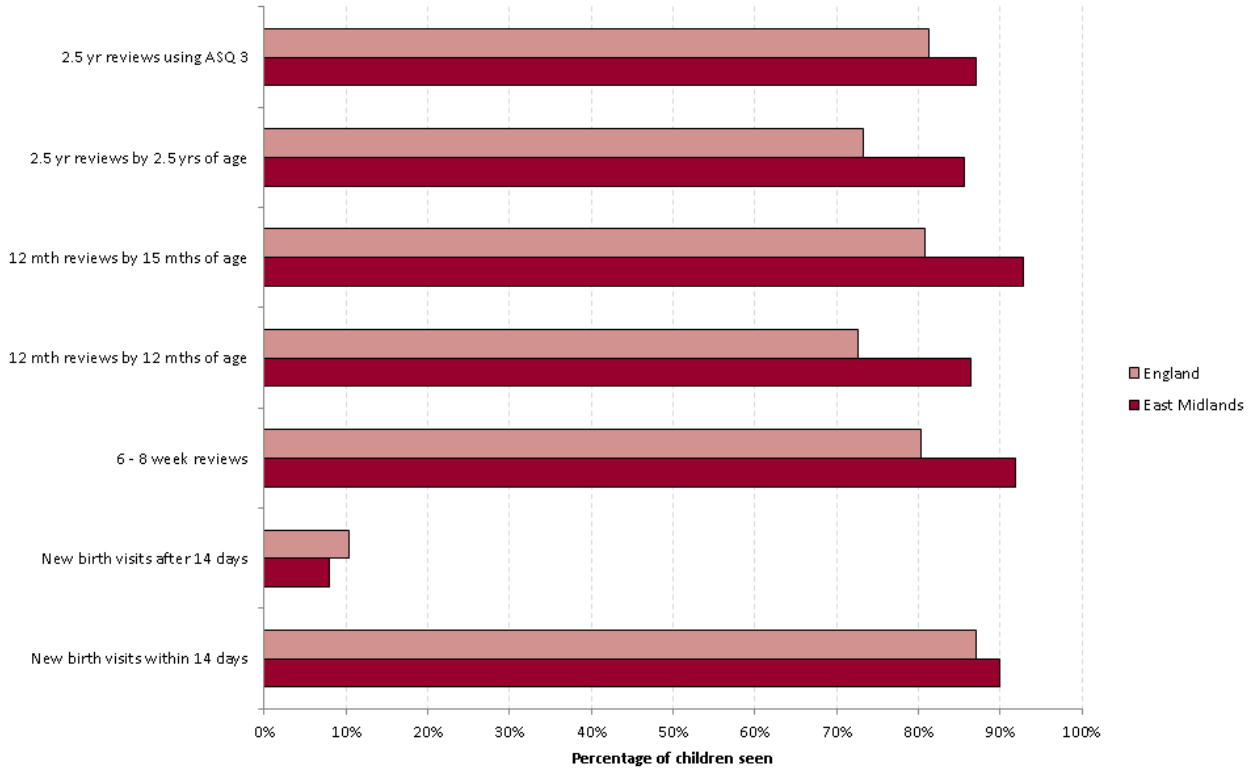
What action is being taken?

The Department of Health (DH) commissioned PHE to undertake a review of the mandated health visitor checks, as the requirement for mandation expires at the end of March 2017. A consultation process was undertaken and the findings reported to DH. The decision around the future of mandation at the time of writing this report has not been decided.

From 1st October 2015 the responsibility for commissioning public health services for children aged 0-5 and Family Nurse Partnership (FNP) services transferred from NHS England to local authorities. This marked the final part of the public health transfer which saw wider responsibilities transfer to local government in 2013.

This transfer has provided the opportunity for local authorities to commission different models of delivery for their 0-19 service provision. The challenge for local authorities is that the new service offers have to be delivered with reduced budgets. Concern has been raised nationally that this is having a detrimental impact on health visitor numbers. Contact with LA commissioners suggests that health visitor numbers are likely to be reduced, and that the service offers are delivery via multi-professional teams.

Figure 10. percentage of children seen by a health visitor at the mandated visits by the appropriate age, East Midlands and England, 2015/16



Data source: NHS Digital

Screening and vaccination

The East Midlands is significantly worse than England in 3 out of 7 national Public Health Outcomes Framework indicators on pregnancy and newborn screening coverage as shown in Table 1.

Historically, HIV coverage has been used as the proxy for all infectious diseases screening in pregnancy. The achievable standard for this Key Performance Indicator (KPI) is 95% and performance has fluctuated between 97.8% and 100%. The quality measures for syphilis and Hepatitis B data are currently unreliable. Since April 2016, action has been taken to cohort match Hepatitis B and Syphilis screening in the same way as HIV. This entails finding out which women have opted out of certain tests and comparing them before then documenting which tests were performed and which were not. This is not, as yet, part of the template for the KPIs and therefore will not be published for a while.

For newborn bloodspot, the “coverage” figure relates to the percentage of eligible children who have a result recorded within 17 days of birth this means that this is not coverage; it is coverage within a defined period of time. Actual coverage across Lincolnshire, Leicester, Leicestershire, Rutland and Northamptonshire is in excess of 99%, which is above the acceptable standard of 95% for this KPI. Across Derbyshire and Nottinghamshire, performance

has ben improving and in quarter 2 2016/17 all CCG figures were above 95% apart from Nottingham and Nottingham North and East CCGs with 94.6% and 94% respectively.

Table 1. Public Health Outcomes Framework indicators on pregnancy and newborn screening by region

Significantly worse than England
No significant difference
Significantly better than England

	England	North West	North East	Yorkshire and the Humber	**East Midlands**	West Midlands	East of England	London	South East	South West
Infectious Diseases in Pregnancy Screening – HIV Coverage 2015/16	99.1	98.5	98.8	98.4	99.3	98.7	98.4	99.8	99.2	99.2
Infectious Diseases in Pregnancy Screening – Syphilis Coverage 2014	97.4	96.7	88.3	98.3	94.8	96.7	98.6	99.0	97.5	99.3
Infectious Diseases in PregnancyScreening - Hepatitis B Coverage 2014	97.4	97.0	88.1	98.3	94.9	96.5	98.2	99.0	97.5	99.3
Sickle Cell and Thalassaemia Screening – Coverage 2015/16	99.1	98.3	98.8	99.5	99.3	99.2	98.3	99.8	98.9	99.4
Newborn Blood Spot Screening – Coverage 2015/16	95.6	93.7	97.9	94.0	93.4	97.6	98.0	96.4	97.1	92.1
Newborn Hearing Screening – Coverage 2015/16	98.7	98.4	99.1	98.6	99.2	99.0	98.8	98.5	98.7	98.7
Newborn and Infant Physical Examination Screening – Coverage 2015/16	94.9	93.1	95.1	93.7	96.4	95.8	96.9	92.5	94.8	97.4

Data Source: Public Health Outcomes Framework

Vaccination

Within the East Midlands there is a great deal of variation in terms of population vaccination coverage in children (Table 2). The lowest levels of coverage are for;

- two doses of MMR by 5 years of age, which ranges from 84.2% in Nottingham to 95.2% in Northamptonshire
- Flu vaccine in 2-4 year olds, which ranges from 33.2% Nottingham and Leicester to 48.2% in Derbyshire.

Hepatitis B is a targeted programme and therefore not a population programme. The variation is largely explained by the ability of the programmes to provide the data at the time. There is a Hepatitis B pathway across the East Midlands to account for the vaccine status of every child born to a Hepatitis B positive mother.

Table 2. Public Health Outcomes Framework indicators on childhood immunisations in the East Midlands

Below 90% of the eligible population
Between 90% and 95% of the eligible population
Over 95% of the eligible population
Not benchmarked

	England	East Midlands	Lincolnshire	Derby	Nottingham	Leicester	Northamptonshire	Nottinghamshire	Derbyshire	Leicestershire
Population vaccination coverage - Hepatitis B (1 year old) 2014/15				100.0	95.5	18.2	70.4	100.0		0.0
Population vaccination coverage - Hepatitis B (2 years old) 2014/15				100.0	83.3	67.6	95.5	90.0		61.9
Population vaccination coverage - Dtap / IPV / Hib (1 year old) 2015/16	93.6	95.6	94.5	93.9	91.1	95.8	97.6	95.6	96.1	97.2
Population vaccination coverage - Dtap / IPV / Hib (2 years old) 2015/16	95.2	97	96.3	95.4	94.6	97.1	98.0	97.4	97.1	98.2
Population vaccination coverage - MenC 2015/16			96.8	96.3	94.1	96.4	97.3		98.1	98.1
Population vaccination coverage - PCV 2015/16	93.5	95.5	94.8	94.4	90.7	95.4	97.0	95.2	96.6	97.1
Population vaccination coverage - Hib / MenC booster (2 years old) 2015/16	91.6	94	91.8	91.2	89.3	94.0	95.8	94.0	96.0	96.4
Population vaccination coverage - Hib / Men C booster (5 years old) 2015/16	92.6	93.4	90.0	93.6	88.8	91.6	94.8	95.2	94.3	95.8
Population vaccination coverage - PCV booster 2015/16	91.5	94	91.5	91.2	89.2	94.1	96.0	96.0	96.0	96.3
Population vaccination coverage - MMR for one dose (2 years old) 2015/16	91.9	94.1	92.5	91.4	89.7	94.5	96.0	93.9	95.7	96.1
Population vaccination coverage - MMR for one dose (5 years old) 2015/16	94.8	96.5	95.0	97.3	95.9	96.5	96.7	96.2	96.7	97.9
Population vaccination coverage - MMR for two doses (5 years old) 2015/16	88.2	90.5	86.9	87.8	84.2	90.3	95.2	89.9	91.0	93.5

Flu vaccination

Population vaccination coverage - Flu (2-4 years old) 2015/16	34.4	40	39.5	36.8	33.2	33.2	33.8	41.6	48.2	47.4

Below 40% of the eligible population Between 40% and 65% of the eligible population Over 65% of the eligible population

Data Source: Public Health Outcomes Framework

There are some indicators where areas within the East Midlands are not meeting 95% vaccination coverage and have a significantly reducing trend, meaning that they aren't meeting the desired level of coverage and getting further from that target. These are;

- **Derby** (Dtap / IPV / Hib (1 year old), Hib / MenC booster (2 years old) and PCV booster)
- **Lincolnshire** (Hib / MenC booster (2 years old) and PCV booster)
- **Leicester** (Hib / MenC booster (2 years old))
- **East Midlands** (Hib / MenC booster (2 years old))

What action is being taken?

Quarterly Immunisation Programme Boards are held for Derbyshire and Nottinghamshire where all stakeholders review the current data and address local issues within the immunisation programmes. Partnership working is key and the SIT works closely with CCG leads and Local Authority colleagues to improve uptake and address local inequalities. Data for Derby and Nottingham is in line with the national downward trend for MMR uptake and partnership working with the local authorities is being developed to look at creating an MMR action plan. This is also a national initiative. Flu uptake for 2-4 year olds has seen an increase for Nottingham in 2016/17. Work with Nottingham City Council enabled a robust communications roll out and links with local Children's Centre's and schools.

Immunisation in Lincolnshire has been the subject of much work over recent years looking at and improving data recording, collection and analysis as well as professional education and

working with others to improve quality within primary care. Published data for the most recent 4 quarters (Q3 15/16 – Q2 16/17) for Lincolnshire for 2 doses of MMR at 5 years are 91.2%, 88.1%, 89.3%, and 87.8%, an improvment from performance reported in Table 2.

All trusts across the Region started to collate cohort matched data for infectious diseases in pregnancy screening from 2015/16 onwards with improving data quality.

School readiness

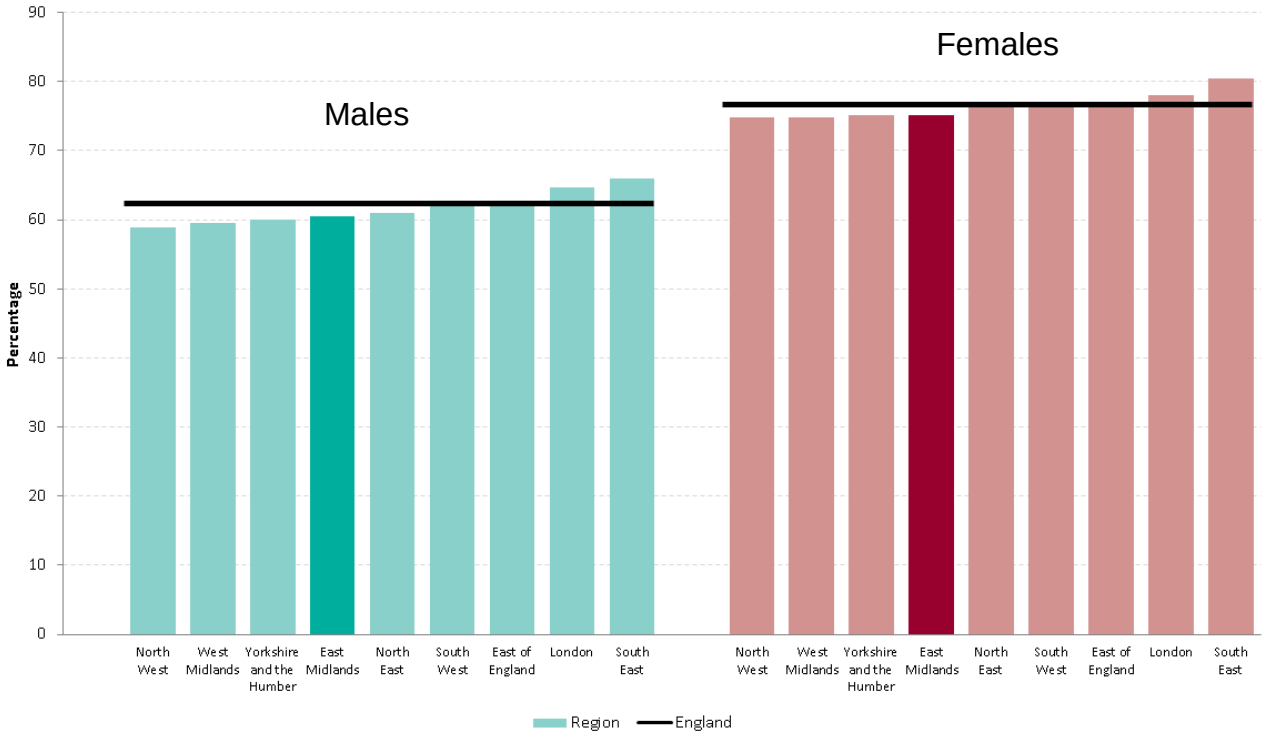
School readiness is a key measure of early years development across a wide range of developmental areas. Children from poorer backgrounds are at increased risk of poor development and the evidence shows that differences by social background emerge early in life.

Children are defined as having reached a good level of development if they achieve at least the expected level in the early learning goals in the prime areas of learning (personal, social and emotional development; physical development; and communication and language) and the early learning goals in the specific areas of mathematics and literacy.

67.6% of children in the East Midlands are achieving a good level of development at the end of reception class (the first year of school). This is significantly worse than England (69.3%).

There are inequalities between the genders in terms of development at this age (Figure 11) with 60.5% of boys achieving a good level compared to 75.1% of girls. However for both measures, the East Midlands remains significantly worse than England (62.1% for boys and 76.8% of girls nationally).

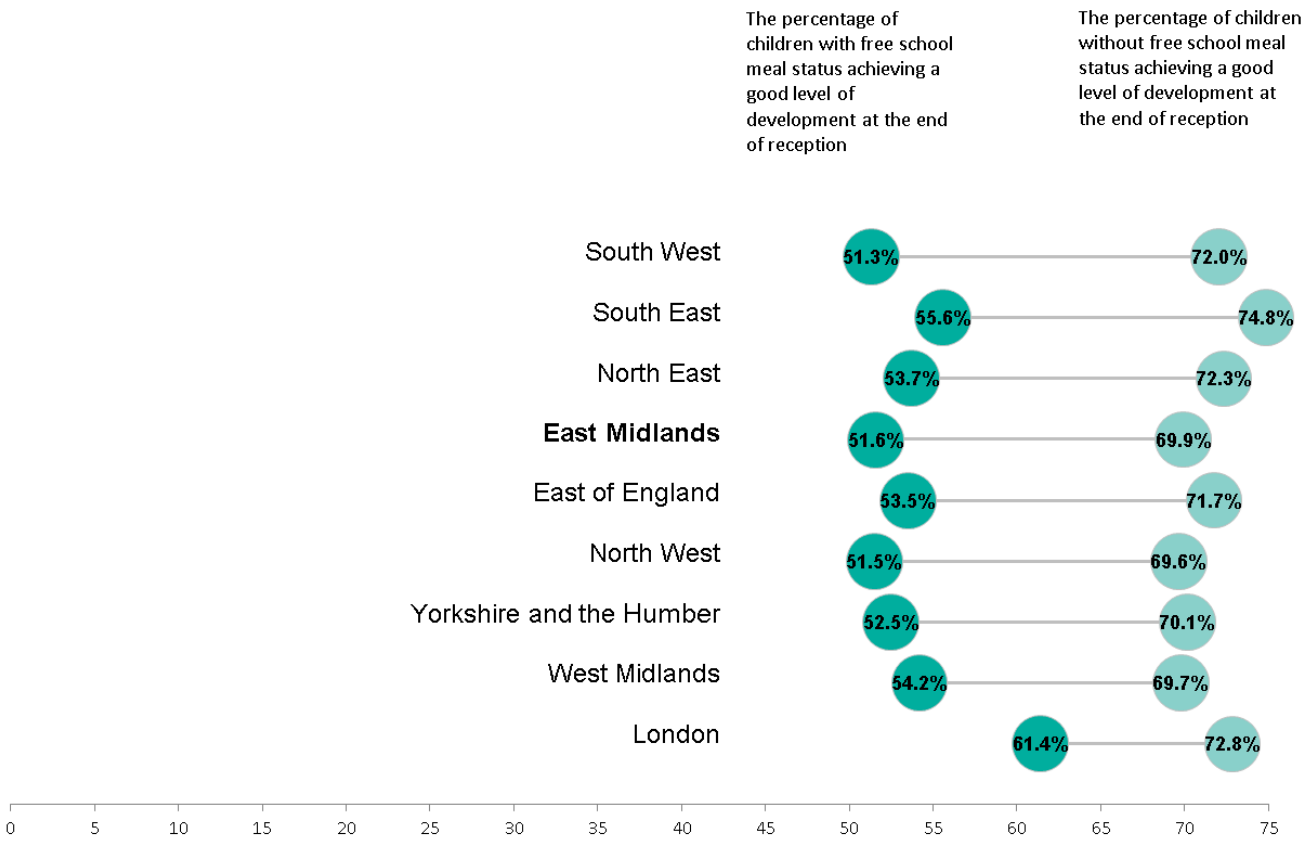
Figure 11. School readiness at the end of reception, 2015/16



Data source: Public Health Outcomes Framework

School readiness is also measured for those children with free school meal status (Figure 12). For this measure only 51.6% of children in the East Midlands achieve a good level of development compared to 54.4% nationally.This is considerably lower than school readiness for the overall population of the East Midlands (67.6%).

Figure 12. Percentage of children at the end of reception achieving a good level of development, for children in receipt of free school meals and those not in receipt of free school meals, 2015/16



Data source: Public Health Outcomes Framework

What action is being taken?

A growing body of research is revealing the long-term impacts that experiences and events during childhood have on individuals' life chances. Adverse Childhood Experiences (ACEs) such as abuse, neglect and dysfunctional home environments have been shown to be associated with the development of a wide range of harmful behaviours including smoking, harmful alcohol use, drug use, risky sexual behaviour, violence and crime. They are also linked to diseases such as diabetes, mental illness, cancer and cardiovascular disease, and ultimately to premature mortality.

Northamptonshire, in partnership with Luton and Hertfordshire participated in a study of ACE's. Building on the findings of the study they are taking forward the Routine Enquiry into Childhood Experience (REACh) training programme. Briefly, the REACh training was designed to increase service providers' awareness of ACEs and encourage practitioners to embed routine enquiry into daily working practices. The multi-agency REACh training seeks to create a sustainable model so that line mangers (rather than trainers) can support frontline staff to undertake routine enquiry and respond appropriately to disclosures.

PHE East Midlands is working closely with the maternity, children and young people's clinical network inputting into the development of the local Future in Mind transformation plans. The

case for working across universal and non-specialist CAMHS (child and adolescent mental health services) workforce to develop skills in supporting their mental wellbeing and resilience is being developed within all the local plans.

Oral health

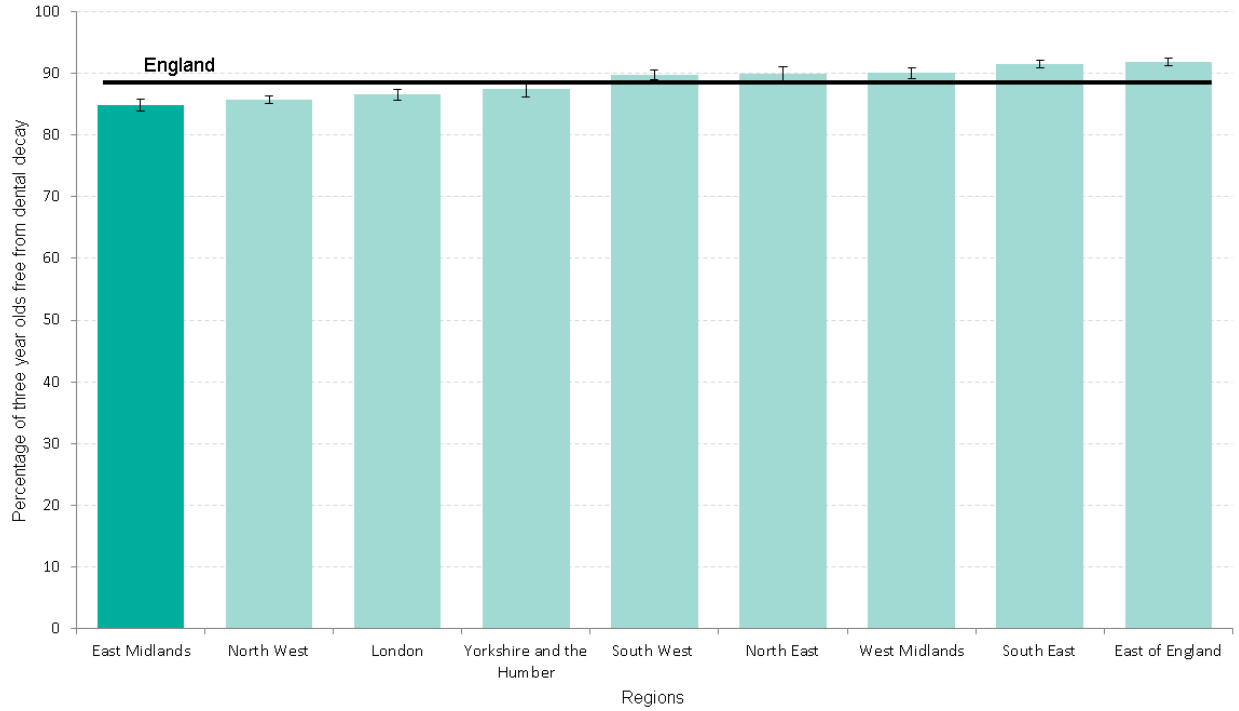
The oral health of children living in the East Midlands is a concern (Figure 13). Levels of oral health for 3 year olds in 2012/13 are the worst in England with only 84.8% of children in the East Midlands being free from dental decay. Leicester City has the lowest rate nationally at 66%, meaning that a third of 3 year olds in Leicester have tooth decay.

Early childhood caries is an aggressive form of decay that affects upper incisors in infants and can be rapid and extensive in attack. It is associated with long term bottle use with sugar-sweetened drinks, especially when these are given overnight or for long periods of the day. High levels of consumption of sugar-containing food and drink is also a contributory factor to other issues of public health concern in children such as childhood obesity. The proportion of 3 year old children in 2012/13 with early childhood caries in the East Midlands is 3.7%, which is similar to England (3.9%). However, within the East Midlands this increases to 11.3% of three years olds in Leicester City.

In 2014/15, only 72.5% of 5 year olds in the East Midlands were free from dental decay (Figure 14) meaning that 27.5% have experience of dental decay. However, in Leicester City the percentage of 5 years olds free from dental decay reduces to 55.0%, which is the forth lowest in England.

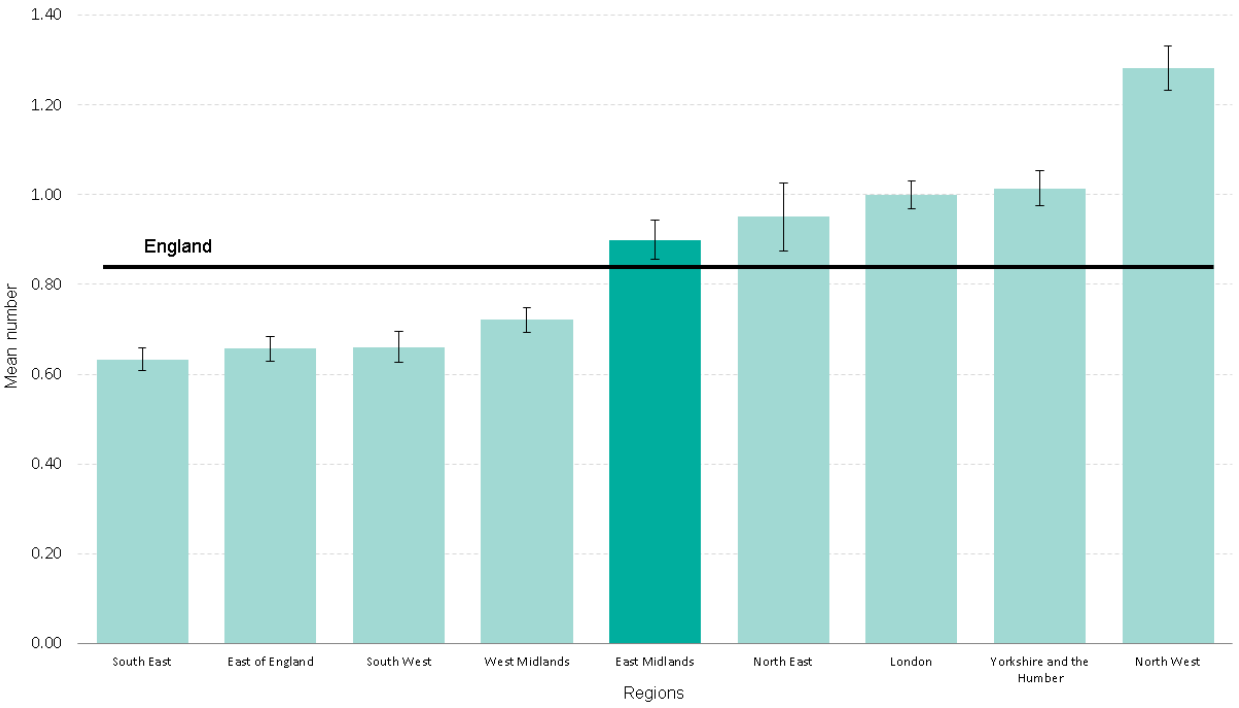
The average number of decayed missing or filled teeth in 5 year olds in the East Midlands is 0.9 teeth, compared with 0.84 in England. This varies from 1.9 teeth in Leicester to 0.6 in Nottinghamshire.

Figure 13. Proportion of three year olds free from dental decay, 2012/13



Data source: Oral Health profiles

Figure 14. Mean number of decayed, missing and filled teeth in five year olds, 2014/15



Data source: Oral Health profiles

What action is being taken?

PHE has established a Children's Oral Health Improvement Board to ensure that every child grows up free from tooth decay as part of having the best start in life. The Board's oral health action plan and 5 high level objectives have been developed and agreed by partners working together following a PHE Best Start in Life oral health roundtable held in July 2015.

The Board has published:

- a rapid review of evidence on the cost-effectiveness of interventions to improve the oral health of children aged 0 to 5 years
- a return on investment (ROI) tool for oral health interventions for 0 to 5 year olds
- an infographic which shows an example of the return on investment of the programmes included in the ROI tool
- a tooth brushing feasibility report which shows the ease of delivery, acceptance and cost of an early years supervised tooth brushing scheme
- a PHE toolkit to support supervised tooth brushing programmes in early years and school settings

An oral health promotion module of the Healthy Child Programme (HCP) has been developed and is available on Health Education England's e-learning for Healthcare website. The interactive resource is aimed at the early years workforce including health visitors, nurses and the child health team.

Leicester, Leicestershire and Rutland have an Oral Health Promotion Partnership Board with key partners to work together in improving oral health focusing on pre-school years. The Board is led by Leicester City Council and has seen a significant decrease in the prevalence of dental decay from 2011 to 2014 in Leicester. There is a local ambition to see a 10% increase in the proportion of 5 year olds in Leicester with no signs of dental disease by 2019.

In Lincolnshire, an Oral Health Alliance Group has been established with key partners, led by Lincolnshire County Council. The key aim of the group is to facilitate oral health promotion in Lincolnshire. There is a particular emphasis on oral health promotion for families of patients who are referred for general anaesthetic for dental extractions.

Northamptonshire County Council is currently revising their Oral Health Promotion service specification.

Derbyshire County Council have re-commissioned their oral health improvement service (commences April 2017) to include community based preventive initiatives including targeted early years health visitor led and supervised tooth brushing programmers; supporting access to consistent evidence based oral health information; and community engagement and campaigns.

Derby City Council are currently undertaking an oral health needs assessment prior to an options appraisal of how oral health promotion services could be delivered in the future.

Nottinghamshire County and Nottingham City Councils each commission community based oral health promotion services with a focus on supervised tooth brushing within early years settings (Brushing Buddies), targeting the most deprived areas.There is also; training of key health,

social care and education professionals to deliver consistent evidence based oral health brief advice; and a health visitor led programme at mandated health checks, including supply of toothbrush and toothpaste packs. A joint Oral Health Strategy Group formed from a range of stakeholders is developing an oral health improvement strategy for Nottingham City and Nottinghamshire County Councils. The current commissioned service and wider partnership working will be underpinned by this strategy.

In Nottingham the ‘Nottingham North Rebalancing Foundation’ initiated a dental project with the aim of increasing engagement of families with young children with local dental practices before children experience dental pain. Through this project, maternity and 2 year old passports have been developed to promote uptake of free dental care by pregnant and nursing mothers and to promote and establish early dental visiting habits as a family to receive preventive care and advice. A pilot project was also commissioned to facilitate appointment making for young families with local practices through the school setting. More recently, the Foundation have invited the charity ‘Teeth Team’ to deliver supervised tooth brushing and fluoride varnish in schools in the Nottingham North constituency.

All areas in the East Midlands continue to participate in the national dental epidemiology programme.

Childhood mortality

Infant mortality can be divided into neonatal deaths, (mortality up to 27 days after live birth) and post-neonatal mortality (deaths from 28 days to under one year).

Between 2012 and 2014 there were 688 infant deaths in the East Midlands. 488 of these were neonatal deaths (Table 3).

In England and the East Midlands, the majority of infant deaths occur in the neonatal period, (71% in the East Midlands, compared to 69% in England). There is variation within the region, with 80% of infant deaths in Rutland occurring in the neonatal period decreasing to 65% in Leicester, Derbyshire, and Lincolnshire.

Table 3. Number and rates of infant and neonatal deaths, 2012-14, in the East Midlands

	Number of Deaths 2012-14		Proportion of neonatal deaths	**Mortality Rates (per 1,000) 2012-14**	
	Infant	Neonatal		Infant	Neonatal
ENGLAND	8,029	5,564	**69%**	4.0	2.8
EAST MIDLANDS	688	488	**71%**	4.3	3.0
Derby	53	41	77%	5.0	3.9
Leicester	84	55	65%	5.4	3.5
Rutland	5	4	80%	4.9	3.9
Nottingham	74	56	76%	5.7	4.3
Derbyshire	72	47	65%	3.0	2.0
Leicestershire	82	62	76%	4.0	3.0
Lincolnshire	96	62	65%	4.1	2.7
Northamptonshire	115	87	76%	4.3	3.2
Nottinghamshire	107	74	69%	4.0	2.8

Data source: NHS Digital

The infant mortality rate in the East Midlands is 4.3 per 1,000 live births. This is the third highest rate nationally. It is similar to the national rate of 4.0 (Figure 15).

Within the East Midlands, Nottingham (5.7) and Leicester (5.4) have significantly higher rates than England (Table 3).

Analysis carried out by the local knowledge and intelligence service in London (Figure 16) shows that within the East Midlands there are more deaths as a result of external causes than for England as a whole and that this is true across all age groups.

Further preliminary analysis shows that from 2013/14 to 2015/16 there were 151 deaths in 0-19 year olds due to external causes of which 22% are among 0-4 year olds

- 62% of deaths from external causes in those aged 0-4 occurred in males
- Among 0-4s, deaths due to falls or other accidental injury (45%), complications of care (21%) and transport accidents (15%) were the most common causes.

Figure 15. Infant mortality rate per 1,000 live births, 2012-14 by region

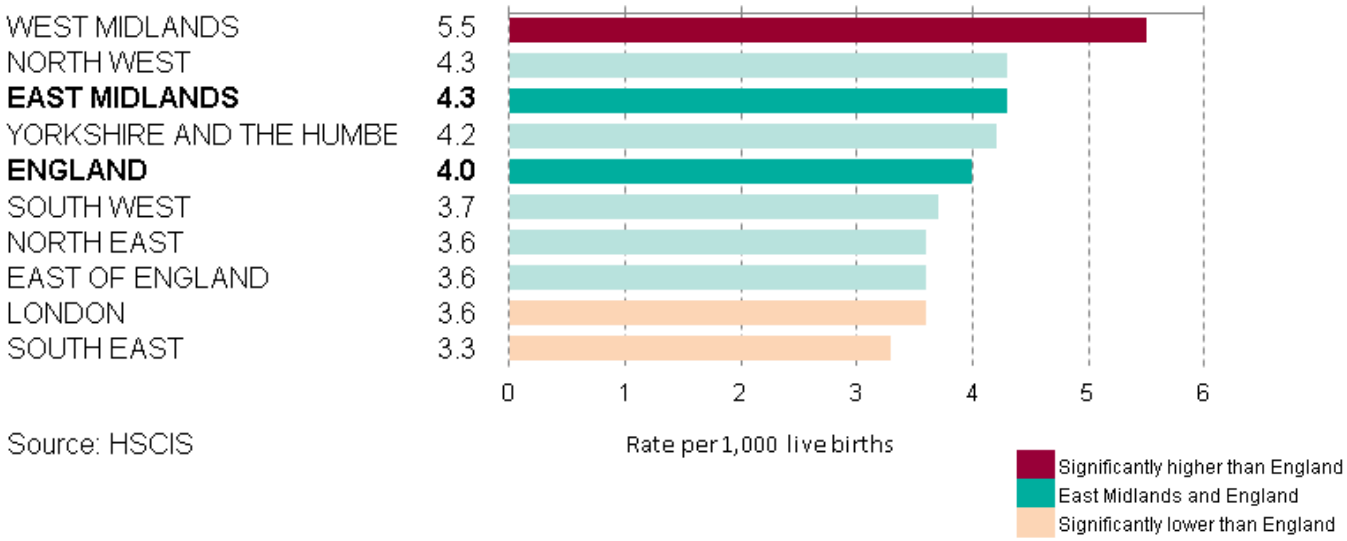
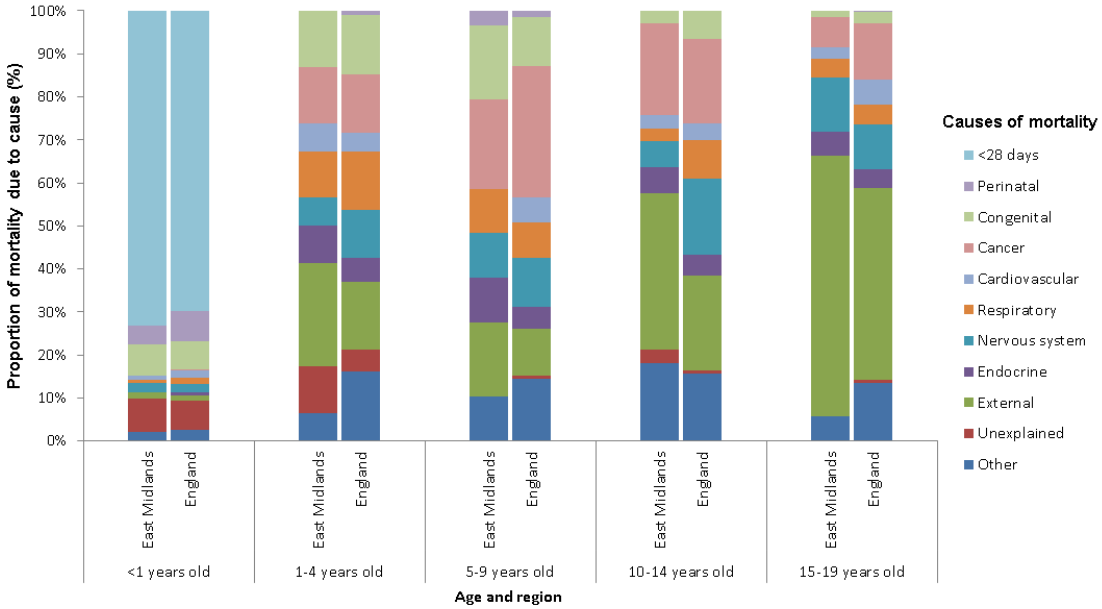


Figure 16. Causes of mortality in children in the East Midlands compared with England, 2014



Number of deaths in age and region	231	2548	46	446	29	272	33	279	71	774

Data source: Public Health Mortality File - analysis by London Local Knowledge and Intelligence Team

What action is being taken?

The review of Child Deaths became mandatory for Local Safeguarding Children Boards (LCSBs) in England on 1st April 2008. The purpose of the process is to try to understand why children die and then put in place interventions to protect other children and prevent future deaths wherever possible. Child Death Overview Panels have been established and operating across the region where cases are reviewed and information collected for analysis with a view to:

- identifying any matters of concern affecting the safety & welfare of children in the area
- identifying any wider public health or safety concerns arising from a particular death or pattern of deaths in the area
- identifying any case that should be considered as a Serious Case Review

PHE has also published guidance on reducing unintentional injuries in and around the home among children under 5 by setting out 3 action areas for local authorities and their partners that will reduce the number of children injured and killed.

Some local authorities have also developed and are implementing their Infant Mortality Strategy.

Appendix 1

Maternity services

The Maternity Services Monthly Statistics (MSMS) are classified as experimental and should be used with caution. Experimental statistics are new official statistics undergoing evaluation, there are data quality issues identified within the statistics and these can be viewed via NHS Digital. As a new national level dataset some issues exist in terms of non-response from providers, in the East Midlands Lincolnshire providers have not responded.

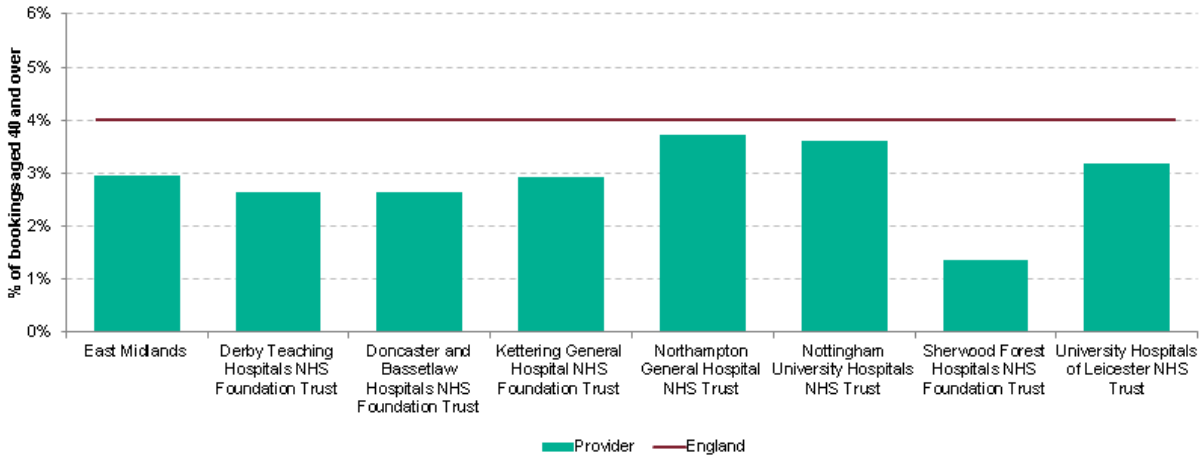
There were 53,641 babies born in the East Midlands in 2015, which is 8.1% of all babies born in England. 16.6% of births in the East Midlands between January and June 2016 were to mothers aged 35 and over, and 2.9% were to mothers aged over 40 years. This is less than the national average, where 19.7% of babies are born to mothers aged 35 and over and 3.7% to women aged over 40.

34% of women in the East Midlands were overweight or obese at time of booking between January and June 2016, compared to 39% nationally, however this does increase to 55% in Doncaster and Bassetlaw.

9% of mothers were identified as having complex social factors at time of booking in the East Midlands compared to 10% nationally. Complex social factors as identified in NICE Guidance CG110 may include substance misuse, recent arrival as a migrant, asylum seeker or refugee status, difficulty speaking or understanding English, age under 20, domestic abuse, poverty or homelessness.

Charts created for the period January to June 2016 taken from the experimental Maternity Services Data Set

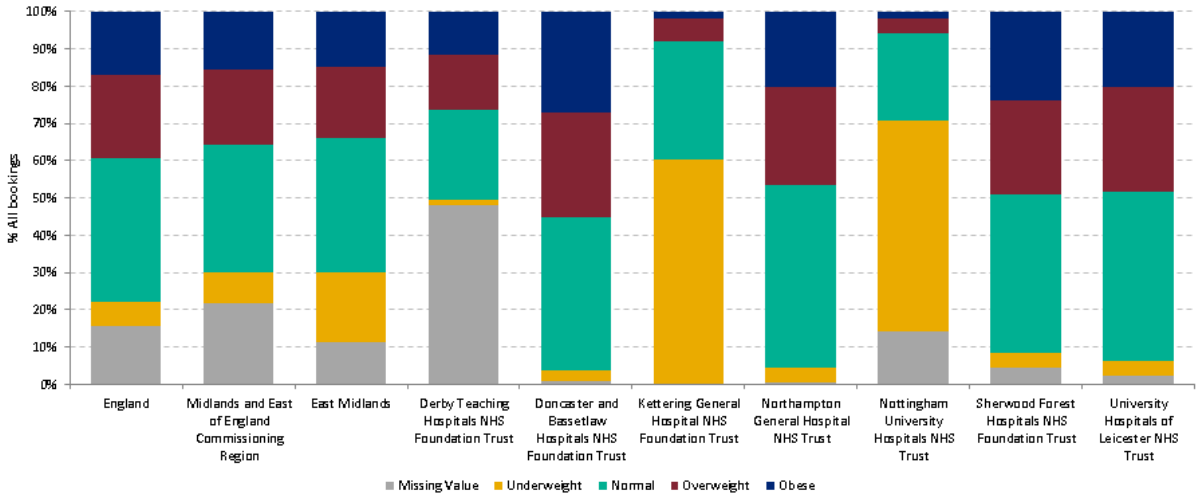
Figure A1, the proportion of mothers aged 40 years and over at the time of booking, January to June 2016



Note - United Lincolnshire Hospitals did not submit bookings data therefore are not included.

Source: Source - Maternity Services Monthly Statistics, NHS Digital

Figure A2, BMI classification of mother at time of booking as a proportion of all bookings, January to June 2016



Note - United Lincolnshire Hospitals did not submit bookings data therefore are not included.

Source: Source - Maternity Services Monthly Statistics, NHS Digital

Table A1, mothers with complex social factors identified at time of booking, January to June 2016

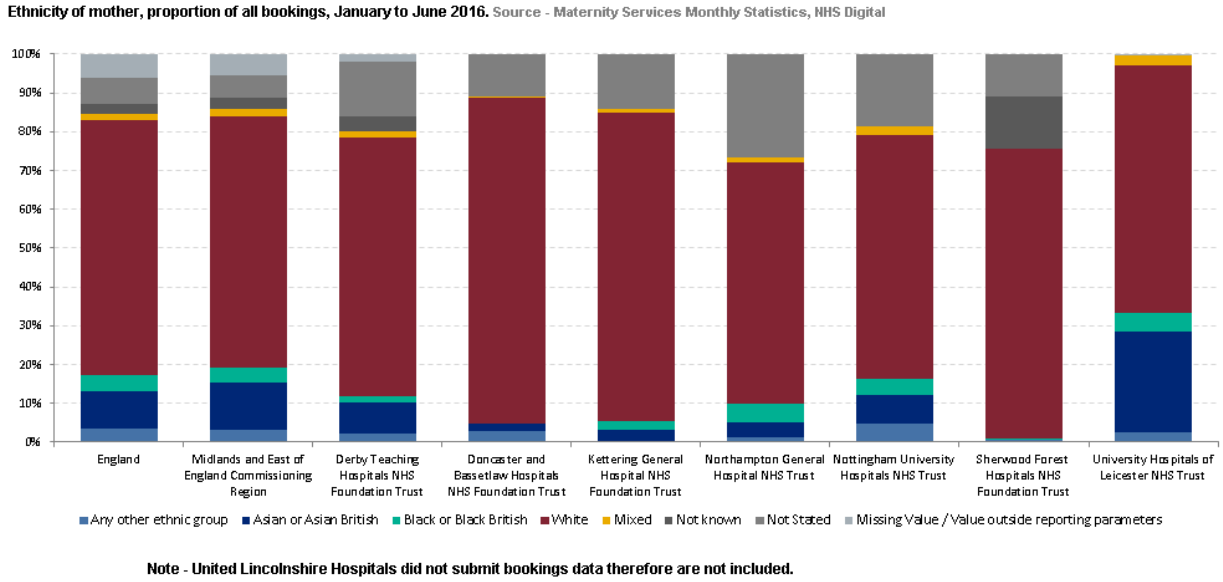
Mothers with complex social factors identified at time of booking, January to June 2016. Source - Maternity Services Monthly Statistics, NHS Digital

	England	Midlands and East of England Commissioning Region	East Midlands	Derby Teaching Hospitals NHS Foundation Trust	Doncaster and Bassetlaw Hospitals NHS Foundation Trust	Kettering General Hospital NHS Foundation Trust	Northampton General Hospital NHS Trust	Nottingham University Hospitals NHS Trust	Sherwood Forest Hospitals NHS Foundation Trust	University Hospitals of Leicester NHS Trust
Complex social factors identified	23,887	7,645	2,050	105	120	315	320	645	305	240
No complex social factors identified	166,896	48,025	10,965	875	845	1,550	1,690	4,090	1,915	0
Value outside reporting Parameters	21	20	0	0	0	0	0	0	0	0
Missing Value	50,159	21,275	9,935	2,430	2,085	0	0	0	0	5,420
Total	240,963	76,965	22,950	3,410	3,050	1,865	2,010	4,735	2,220	5,660
Proportion of bookings with complex social factors	**10%**	**10%**	**9%**	**3%**	**4%**	**17%**	**16%**	**14%**	**14%**	**4%**

Note - United Lincolnshire Hospitals did not submit bookings data therefore are not included.

Source: Source - Maternity Services Monthly Statistics, NHS Digital

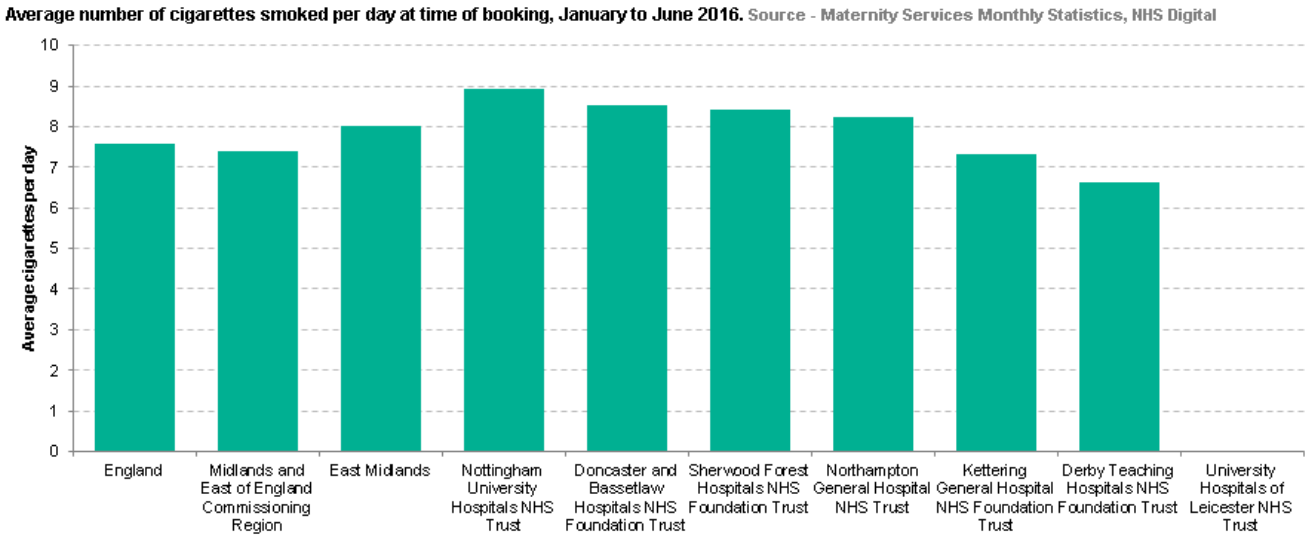
Figure A3, ethnicity of mother, proportion of all bookings, January to June 2016



Note - United Lincolnshire Hospitals did not submit bookings data therefore are not included.

Source: Source - Maternity Services Monthly Statistics, NHS Digital

Figure A4, average number of cigarettes smoked oer day at time of booking, January to June 2016



Note - United Lincolnshire Hospitals did not submit bookings data therefore are not included.

Source: Source - Maternity Services Monthly Statistics, NHS Digital