

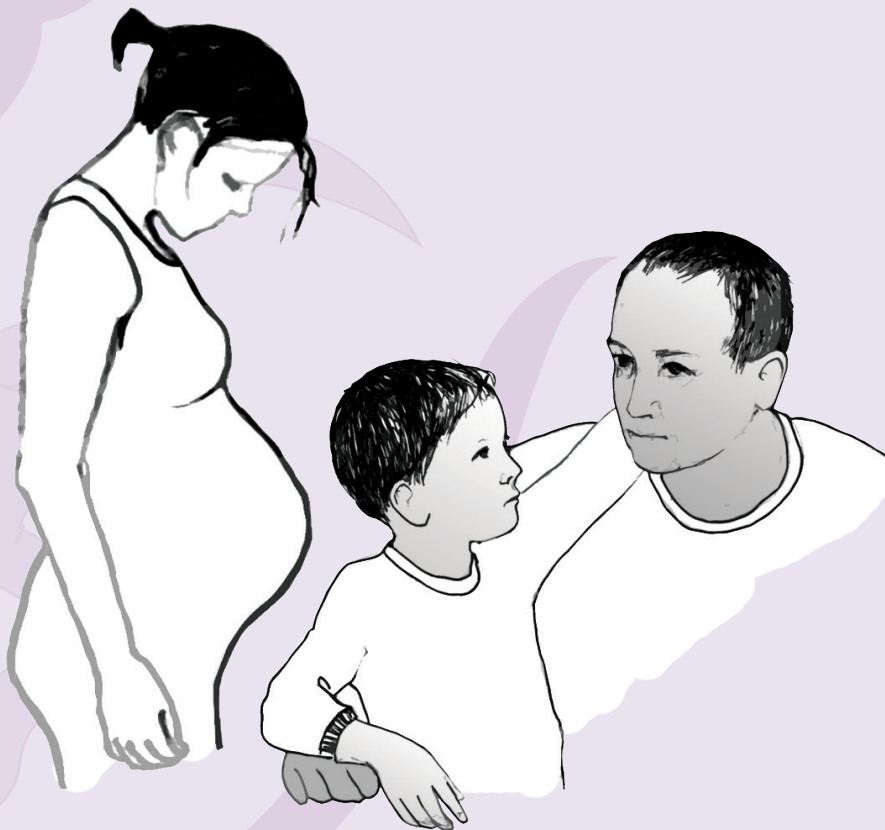
Maternal, Newborn and
Infant Clinical Outcome
Review Programme



MBRRACE-UK Perinatal Mortality Surveillance Report

UK Perinatal Deaths for Births from
January to December 2017

Summary Report



October 2019



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Infant Clinical Outcome
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January to December 2017**

Summary Report

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on behalf of the MBRRACE-UK collaboration

October 2019

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Introduction to Summary Report

This is the summary of the MBRRACE-UK Perinatal Mortality Surveillance Report for births in 2017 within the United Kingdom and the Crown Dependencies. The full report is only available as a downloadable document, which can be found on the MBRRACE-UK website (<https://www.npeu.ox.ac.uk/mbrrace-uk/reports>).

This summary report contains the Executive Summary (including the Key Findings and Recommendations) together with a summary of births and extended perinatal deaths in the UK and Crown Dependencies and the reported mortality rates for Trusts and Health Boards in the UK.

Acknowledgements

It is with grateful thanks that the MBRRACE-UK collaboration would like to acknowledge the contribution of the many healthcare professionals and staff from the health service and other organisations who were involved in the reporting of perinatal deaths in the UK. Without the generous contribution of their time and expertise it would not have been possible to produce this report. It is only through this collaborative effort that it has been possible to conduct this national perinatal mortality surveillance and to continue the UK tradition of national self-audit to improve care for mothers, babies and their families.

Particular thanks go to all MBRRACE-UK Lead Reporters and other staff in NHS Trusts, Health Boards and Health and Social Care Trusts across the UK and those from the Crown Dependencies, whose contribution made it possible to carry out this surveillance.

- Members of the MBRRACE-UK collaboration
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- MBRRACE-UK Royal College and Professional Association Stakeholder Group Representatives



Foreword

In this, the fifth MBRRACE-UK national perinatal mortality surveillance report, we are pleased to announce that the extended perinatal mortality rate for the UK decreased in 2017 compared with 2016. This was largely due to a fall in the stillbirth rate and more particularly in the rate of stillbirths of babies who had reached term. Compared with the first MBRRACE-UK perinatal mortality surveillance report in 2013, this represents ~500 fewer deaths in 2017. So whilst we reflect that the figures in the report represent 4,107 much wanted babies who will never realise the potential anticipated by their parents and other families members, the findings do give us cause for hope that the decreasing trend in the national perinatal mortality rate will continue. The national focus in all four countries of the UK aimed at improving maternity services and reducing perinatal death appears to be having an overall effect, although we can never be certain which, of the many initiatives underway, has had the greatest impact.

It is also heartening to see that the proportion of stillbirths identified as having an intrapartum cause has also reduced substantially. This, together with the increase in the proportion of deaths where the cause of death has been identified, suggests that service improvements are indeed having an effect. Greater attention is also being paid to understanding the causes and circumstances of perinatal deaths, when they do occur, and this is likely to be feeding into a model of continuous service improvement.

There have been several changes to the presentation of the figures in this report including a change to definitions for the colour coding used to represent mortality rates in the maps and tables, and the presentation of rates calculated both including and excluding babies who died from congenital anomalies in the perinatal period.

The calculation of rates excluding babies who died from congenital anomalies show the contribution of these developmental structural abnormalities to the perinatal death rate. This highlights the fact that even with the best care, at present not all perinatal deaths are avoidable. Continuing efforts to understand the causes and to prevent such anomalies will be key to reducing perinatal mortality from this wide group of conditions. These findings also underline the importance of the provision of high quality compassionate and empathic care for the parents of these babies.

We instituted the change in the definition of the colour coding to move away from the message that the previous colour coding seemingly conveyed that having an 'average' perinatal mortality rate, where the average is based on the national rate, is acceptable. We know that our national perinatal mortality rate is in the bottom half of rates compared with our European peers and other similar high income countries. The national ambition in England is to halve the perinatal mortality rate by 2025. To achieve this, and the other country specific goals, will require a greater rate of decline in the national rate than we have seen in recent years. So whilst the continuing downward trend is encouraging, we cannot be complacent. We hope that this new presentation of the colour coding will provide encouragement for the range of local activities which will be needed to achieve the various national ambitions, stretch aims and aspirations.

In addition to continuing national perinatal surveillance and carrying out the current confidential enquiries into deaths in twins, in the past year we have also released the MBRRACE-UK Real-time Data Monitoring Tool (RDMT). The RDMT enables MBRRACE-UK registered staff in Trusts and Health Boards to directly view and monitor the number of perinatal deaths in their organisation and the time between each death. Staff are able to identify, in real-time, if they are experiencing a cluster of similar types of perinatal deaths. Adding this information to the information they derive from their local reviews of deaths carried out using the national Perinatal Mortality Review Tool (PMRT) will help organisations to identify where improvements in the care they deliver is needed. However, the RDMT only works in 'real-time' if Trusts and Health Boards notify MBRRACE-UK of their deaths immediately following the event. It is therefore, disappointing that only just over half of all deaths were notified to us within the benchmark time of 30 days and only 20% of Trusts and Health Boards notified 90% of their deaths within the benchmark. We hope that the availability of the RDMT will encourage these organisations to improve their speed of notification to enable them to benefit from its functionality.

The figures yet again highlight the fact that the perinatal mortality rate remains disproportionately high for some groups in the population compared with others. In particular we see again that the death rate for Black, Black British and Asian babies remains high, although encouragingly for the first time since 2013 the stillbirth rate for these groups of babies has decreased. However, this reduction is not reflected in the neonatal mortality rate. The reasons for these differences cannot be discerned from the surveillance of the mortality rates, but MBRRACE-UK collaborators and other researchers are undertaking research to improve our understanding of why there are these differences and to provide guidance as to the actions required to address these disparities.

We know there is no single solution to reducing the number of babies dying. A complex series of service quality improvements is required to ensure that every potentially avoidable death is indeed prevented. Local reviews, national level investigations, confidential enquiries and research all have their part to play in helping us to understand why deaths occur and where service improvements can make a difference to outcomes. However, in the final analysis it will be the commitment of local teams to continuous service quality improvement that will make the difference and drive down the perinatal mortality rate for the population they serve.



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Definitions used in this report

Late fetal loss	A baby delivered between 22 ⁺⁰ and 23 ⁺⁶ weeks gestational age showing no signs of life, irrespective of when the death occurred.
Stillbirth	A baby delivered at or after 24 ⁺⁰ weeks gestational age showing no signs of life, irrespective of when the death occurred.
<i>Antepartum stillbirth</i>	A baby delivered at or after 24 ⁺⁰ weeks gestational age showing no signs of life and known to have died before the onset of care in labour.
<i>Intrapartum stillbirth</i>	A baby delivered at or after 24 ⁺⁰ weeks gestational age showing no signs of life and known to have been alive at the onset of care in labour.
Neonatal death	A liveborn baby (born at 20 ⁺⁰ weeks gestational age or later, or with a birthweight of 400g or more where an accurate estimate of gestation is not available), who died before 28 completed days after birth.
<i>Early neonatal death</i>	A liveborn baby (born at 20 ⁺⁰ weeks gestational age or later, or with a birthweight of 400g or more where an accurate estimate of gestation is not available), who died before 7 completed days after birth.
<i>Late neonatal death</i>	A liveborn baby (born at 20 ⁺⁰ weeks gestational age or later, or with a birthweight of 400g or more where an accurate estimate of gestation is not available), who died after 7 completed days but before 28 completed days after birth.
Perinatal death	A stillbirth or early neonatal death.
Extended perinatal death	A stillbirth or neonatal death.
Termination of pregnancy	The deliberate ending of a pregnancy, normally carried out before the embryo or fetus is capable of independent life.



Executive Summary

Background

This is the fifth MBRRACE-UK Perinatal Mortality Surveillance Report and provides information on extended perinatal deaths in the UK and Crown Dependencies arising from births during 2017. MBRRACE-UK is commissioned by the Healthcare Quality Improvement Partnership (HQIP) to undertake the Maternal, Newborn and Infant Clinical Outcome Review Programme (MNI-CORP) on behalf of NHS England, the Welsh Government, the Scottish Government Health and Social Care Directorate, the Northern Ireland Department of Health, the States of Guernsey, the States of Jersey, and the Isle of Man Government.

The aims of the MNI-CORP are to collect, analyse and report national surveillance data and conduct national confidential enquiries in order to stimulate and evaluate improvements in health care for mothers and babies.

As in the surveillance reports for 2013 to 2016, the main report summarised here focuses on the surveillance of all late fetal losses (22⁺⁰ to 23⁺⁶ weeks gestational age), stillbirths, and neonatal deaths, with data presented by country, by commissioning organisation (including Sustainability and Transformation Partnerships (STPs) or country of residence), by health care provider (Trusts or Health Boards and Neonatal Networks) and by Local Authority.

The availability of five years of data from across the UK (a cohort of just under four million births) and the improving quality of the data submitted to MBRRACE-UK has permitted, in addition, an exploration of:

- time trends in stillbirth, neonatal, and extended perinatal mortality rates for the UK and each of the constituent countries;
- time trends in stillbirth, neonatal, and extended perinatal mortality rates by gestational age;
- improvements in data quality over time;
- time trends in reported CODAC classification of cause of death;
- time trends in the offer and consent for post-mortems for stillbirths and neonatal deaths.

The report also includes a chapter describing the characteristics and factors involved in deaths in twin pregnancies.

Methods

Deaths to be reported to MBRRACE-UK since 1 January 2013 through the secure online reporting system are:

- late fetal losses: a baby delivered between 22⁺⁰ and 23⁺⁶ weeks gestational age showing no signs of life, irrespective of when the death occurred;
- stillbirths: a baby delivered at or after 24⁺⁰ weeks gestational age showing no signs of life, irrespective of when the death occurred;
- neonatal deaths: a liveborn baby (born at 20⁺⁰ weeks gestational age or later, or with a birthweight of 400g or more where an accurate estimate of gestation is not available), who died before 28 completed days after birth.

Individual level information on all births in the UK is obtained in order to generate mortality rates adjusted for maternal, baby, and socio-demographic risk factors. This information is acquired through the collaboration of the following organisations: Patient Demographic Service (PDS) and Office for National Statistics (ONS) birth registration data (for England, Wales, and the Isle of Man); National Records Scotland (NRS) and Information Services Division (ISD) (for Scotland); Northern Ireland Maternity System (NIMATS) (for Northern Ireland); the Health and Social Services Department (for the Bailiwick of Guernsey); and Health Intelligence Unit (for the

Bailiwick of Jersey). The data is combined to give a single dataset of births for the whole of the UK and the Crown Dependencies. This data is then amalgamated with the information about the deaths to obtain the final data for analysis.

Analysis

The main findings of the report are presented in a combination of maps and tables showing crude, stabilised and stabilised & adjusted mortality rates for stillbirths, neonatal deaths, and extended perinatal deaths (stillbirths and neonatal deaths combined). Stabilisation is designed to take account of some of the random variation inherent in this type of data and adjustment takes account of some of the factors known to affect perinatal mortality rates in particular populations, e.g. the level of socio-economic deprivation.

In order to ensure comparability of mortality rates, the main analyses are shown after excluding births occurring at less than 24⁺⁰ weeks gestational age and terminations of pregnancy. Analysis of data for countries is based on mother's postcode at the time of delivery while analysis of data for Trusts and Health Boards is based on the place of birth. For comparison purposes, the mortality rates for Trusts and Health Boards are presented compared to the average mortality in organisations providing similar levels of service.

Key findings

1. There has been a reduction in the rate of extended perinatal mortality in the UK in 2017: 5.40 per 1,000 total births for babies born at 24⁺⁰ weeks gestational age or later compared with 5.64 in 2016. This represents a 12% reduction in extended perinatal mortality since 2013, equivalent to nearly 500 fewer deaths in 2017.
2. The stillbirth rate for the UK in 2017 has reduced to 3.74 per 1,000 total births from 4.20 in 2013, which represents 350 fewer stillbirths.
3. The rate of neonatal mortality for babies born at 24 weeks gestational age or later in the UK continues to show a steady decline over the period 2013 to 2017 from 1.84 to 1.67 deaths per 1,000 live births. This represents a 10% reduction in neonatal mortality over the last five years.
4. The largest fall in stillbirth and neonatal death rates is seen in term babies (37⁺⁰ to 41⁺⁶ weeks gestational age), accounting for half of the reduction seen in these rates.
5. Just over half of deaths were notified within the MBRRACE-UK benchmark time of 30 days (57% of stillbirths and 51% of neonatal deaths). Only 39% of Trusts and Health Boards had an average notification time of less than 30 days for stillbirths and 29% for neonatal deaths.
6. There has been an increase in the completeness of carbon monoxide monitoring data for both stillbirths and neonatal deaths over the period 2015 to 2017: from 36.4% to 48.3% for stillbirths and 31.4% to 44.5% for neonatal deaths. This improvement is clearly linked to the Saving Babies' Lives Care Bundle [1] as well as enhanced communication between care providers via the MBRRACE-UK web based system.
7. Despite overall improvements in mortality, out of 224 commissioning organisations, stabilised mortality rates were more than 5% higher than the overall UK average in 52 organisations for stillbirth and 57 organisations for neonatal death. There were only two commissioning organisations with a stabilised stillbirth rate more than 15% lower than the UK average and only six with a stabilised neonatal mortality rate more than 15% lower than the UK average.

8. The neonatal mortality rates for Trusts and Health Boards which care for the most complex pregnancies and births show wide variation, with rates of between 1.68 and 3.35 per 1,000 live births in those with Level 3 Neonatal Intensive Care Units (NICUs) and surgical provision. Exclusion of congenital anomalies from stabilised & adjusted neonatal mortality rates reduces this variation to between 0.98 and 1.79 per 1,000 live births.
9. There has been a substantial reduction in stillbirths recorded as having an intrapartum cause in the CODAC classification of cause of death from 189 (5.8%) stillbirths in 2014 to 51 (1.8%) stillbirths in 2017. The proportion of stillbirths reported as having an unknown cause of death using CODAC has reduced from around a half (46.0%) in 2014 to around one third (34.6%) in 2017.
10. Mortality rates remain high for Black or Black British and Asian or Asian British babies. Whilst stillbirth rates for these groups have reduced over the period 2015 to 2017 from 8.17 to 7.46 and from 5.88 to 5.70 per 1,000 total births, respectively, conversely neonatal mortality rates have increased over the same period from 2.45 to 2.77 and from 2.50 to 2.86 per 1,000 live births, respectively.
11. The reduction in both the stillbirth and neonatal death rate ratios associated with twin pregnancies (relative to singletons) over the period 2014 to 2016 has not been sustained, with small increases in risk seen in 2017 for stillbirths from 1.60 (95% CI, 1.36 to 1.88) to 1.93 (95% CI, 1.65 to 2.25) and for neonatal deaths from 3.33 (95% CI, 2.80 to 3.98) to 3.53 (95% CI, 2.97 to 4.21).

Recommendations

1. In order to achieve the various UK Governments' ambitions renewed efforts need to be focused on implementing existing national initiatives to reduce stillbirths and continue the slow but steady decline in neonatal mortality rates observed since 2013. Particular emphasis should be placed on reducing preterm birth.
2. Trusts and Health Boards should aim to notify all deaths via the MBRRACE-UK system within 30 days of the death occurring. Mechanisms for timely notification should be incorporated into local processes, and must have adequate staff, time allocation and resources. Trusts and Health Boards should aim for completion of all surveillance data within 90 days in order to facilitate data sharing with the PMRT and aid discussions with parents at follow-up appointments.
3. Trusts and Health Boards should use the MBRRACE-UK real time data monitoring tool to monitor the completeness of their data. Particular emphasis should be placed on carbon monoxide monitoring and other data items feeding into national initiatives such as the Saving Babies' Lives Care Bundle version 2.
4. Commissioning organisations should review both their crude and stabilised mortality rates alongside their high risk population characteristics (e.g. deprivation and ethnicity) to facilitate the development of public health initiatives and to target focused interventions, such as the continued rollout of continuity of carer as recommended by Better Births, with a particular focus on women in high-risk ethnic groups and those living in areas of high deprivation.
5. Trusts and Health Boards with a stabilised & adjusted stillbirth, neonatal mortality or extended perinatal mortality rate that falls into the red or amber band should carry out an initial investigation of their data quality and possible contributing local factors. Organisations should review their performance against national outcome measures with a view to understanding where improvement may be required.
6. Trust and Health Boards should use Perinatal Mortality Review Tool multidisciplinary meetings to improve the quality of cause of death coding.

7. Trusts and Health Boards should review their policies to ensure that the parents of ALL babies who die are provided with unbiased counselling for post-mortem to enable them to make an informed decision.
8. Trusts and Health Boards should work to implement fully the National Bereavement Care Pathway to ensure that all parents are offered high quality, individualised bereavement care after the loss of their baby.
9. Placental histology should be undertaken for all stillbirths and if possible all anticipated neonatal deaths, preferably by a perinatal pathologist.

Baby deaths in the UK – the national picture for 2017

760,169 births

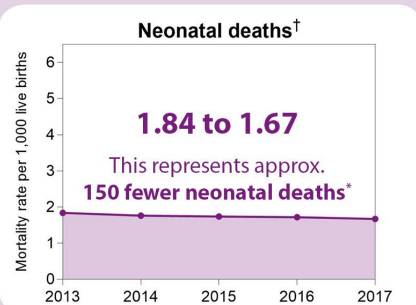
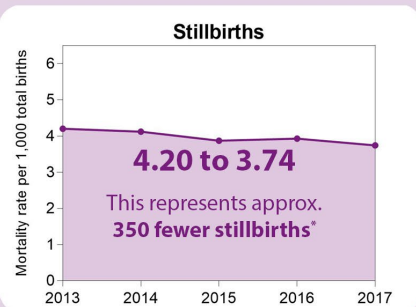
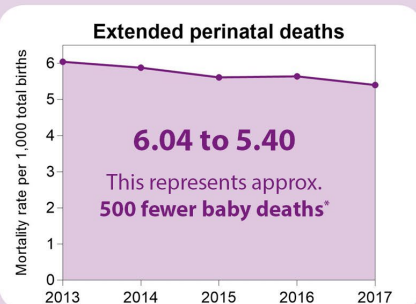
of babies delivered from 24 weeks of pregnancy, excluding terminations of pregnancy

2,840 stillbirths

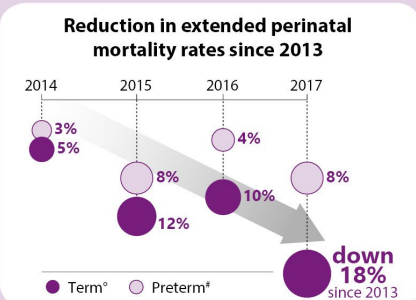


1,267 neonatal deaths

Overall reduced mortality rates between 2013 and 2017



Largest fall in mortality rates in babies delivered at term



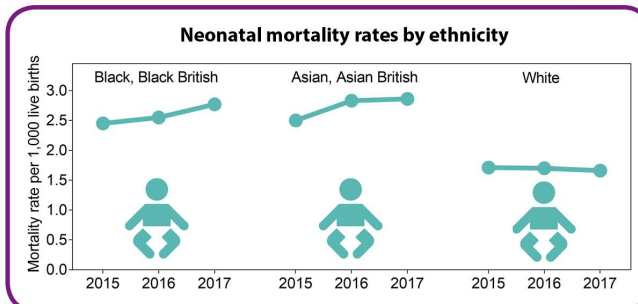
* in 2017 compared with 2013

† a baby born at any time during pregnancy who lives, even briefly, but dies within 4 weeks of birth

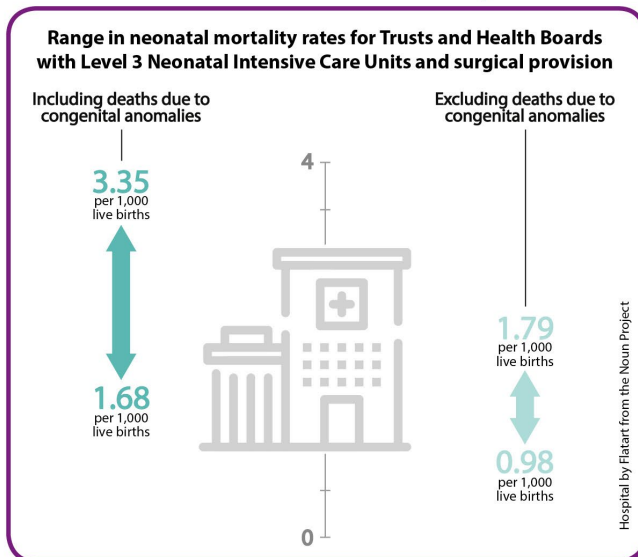
* between 37⁺⁰ and 41⁺⁶ weeks of pregnancy

* between 24⁺⁰ and 36⁺⁶ weeks of pregnancy

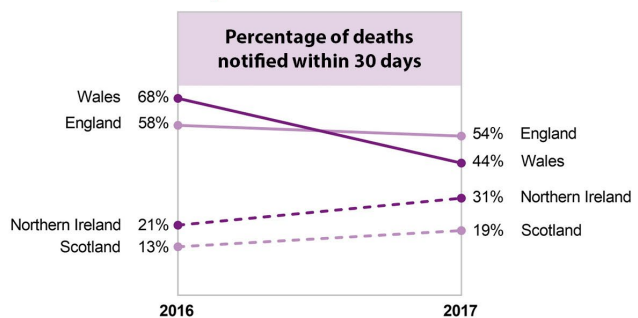
Neonatal mortality rates remain high for babies of Black and Asian ethnicity



Congenital anomalies account for wide variation in neonatal mortality rates



Reduced variation in the time taken to notify deaths to MBRRACE-UK



Only **half of deaths** were notified within the MBRRACE-UK benchmark period of 30 days



Perinatal mortality rates in the UK: 2017

The data in this summary report mainly relates to the information available for the UK about the rates of stillbirth, neonatal death, and extended perinatal death (stillbirth and neonatal deaths combined) for births that occurred in 2017 at 24⁺⁰ weeks gestational age or later (excluding terminations of pregnancy).

Deaths reported to MBRRACE-UK are:

- *late fetal losses*: a baby delivered between 22⁺⁰ and 23⁺⁶ weeks gestational age showing no signs of life, irrespective of when the death occurred;
- *stillbirths*: a baby delivered at or after 24⁺⁰ weeks gestational age showing no signs of life, irrespective of when the death occurred;
- *neonatal deaths*: a liveborn baby (born at 20⁺⁰ weeks gestational age or later) who died before 28 completed days after birth.

These definitions also include any late fetal loss, stillbirth, or neonatal death resulting from a termination of pregnancy.

In an effort to ensure complete data collection and to facilitate international comparisons, the eligibility criteria for MBRRACE-UK are based on gestational age at delivery irrespective of when the death occurred. Therefore, all births delivered from 22⁺⁰ weeks gestational age showing no signs of life must be reported, irrespective of when the death occurred; the date of delivery and date of confirmation of death are both reported for these deaths.

In order to facilitate the comparability of mortality rates between organisations, births less than 24⁺⁰ weeks gestational age and terminations of pregnancy have been excluded from the mortality rates reported in the main maps and tables of the main report and in this summary report. This avoids the influence of the wide disparity in the classification of babies born before 24⁺⁰ weeks gestational age as a neonatal death or a fetal loss as well as the known variation in the rate of termination of pregnancy for congenital anomaly across the UK. The mortality rates reported include all eligible deaths, including deaths due to congenital anomalies.

We have also included national mortality rates for the late fetal losses and neonatal deaths of babies born at 22⁺⁰ to 23⁺⁶ weeks gestational age in the tables where the numbers and rates of stillbirths, neonatal deaths and extended perinatal mortality are presented by gestational age band (Table 3 and Table 4).

Mortality rates for the UK as a whole, the four countries of the UK, and the Crown Dependencies

The data shown in Table 1 and Table 2 below is derived from a number of sources in addition to the information submitted via the MBRRACE-UK reporting system: ONS, PDS, NRS, ISD, NISRA, Health and Social Services Department (Bailiwick of Guernsey), and the Health Intelligence Unit (Bailiwick of Jersey).

The UK total is based on all births for the UK (irrespective of country of residence) whereas the number of births for each individual UK country and the Crown Dependencies is based on those births for which the country of residence of the mother was known.

The total number of births at 24⁺⁰ weeks or greater gestational age (excluding terminations of pregnancy) in 2017 for the UK was 760,169, almost 20,000 less than in 2016 (780,043). There was a decrease in both the total number of stillbirths (2,840 in 2017 compared with 3,065 in 2016) and the total number of neonatal deaths (1,267 in 2017 compared with 1,337 in 2016). These reductions are reflected in a decrease in the reported mortality rates for 2017 across the UK as a whole; the crude extended perinatal mortality rate was 5.40 per

1,000 total births (5.64 in 2016), comprising 3.74 stillbirths per 1,000 total births (3.93 in 2016) and 1.67 neonatal deaths per 1,000 live births (1.72 in 2016).

Table 1 also presents the number of births, stillbirths, neonatal deaths and extended perinatal deaths separately for the four countries of the UK and the Crown Dependencies, based on the mother's country of residence. The associated mortality rates are shown in Table 2. Overall rates of stillbirth and type of stillbirth showed no significant variation between countries, although the rate of stillbirth was highest for Northern Ireland at 4.63 per 1,000 total births compared with the other UK countries. The lowest rate of stillbirth in 2017 was in England at 3.68 per 1,000 total births. The lowest rate of neonatal mortality in 2017 was in Scotland at 1.59 per 1,000 live births, with the highest neonatal mortality rate being in Northern Ireland (2.07 per 1,000 live births). However, it is important to note that stillbirth and neonatal mortality rates in Northern Ireland are affected by differences in the law relating to termination of pregnancy, with more babies affected by major congenital anomalies being carried into the later stages of pregnancy and resulting in early neonatal deaths. This issue is addressed in Chapter 6 where mortality rates are produced for Trusts and Health Boards as well as Neonatal Networks both with and without babies affected by congenital anomalies. As in previous years the number of babies born in the Crown Dependencies is too few to permit reliable comparison with the four countries of the UK.

Table 1: Number of births, stillbirths, neonatal deaths, and extended perinatal deaths by country of residence: United Kingdom and Crown Dependencies, for births in 2017

Number [§]	UK [^]	England	Scotland	Wales	Northern Ireland [°]	Crown Dep.
Total births	760,169	648,982	53,156	32,306	23,319	2,248
Live births	757,329	646,593	52,949	32,177	23,211	2,241
Stillbirths	2,840	2,389	207	129	108	7
Antepartum	2,503	2,102	186	115	95	5
Intrapartum	241	204	17	9	9	2
Unknown timing	96	83	4	5	4	0
Neonatal deaths	1,267	1,069	84	62	48	2
Early neonatal deaths	846	717	47	40	41	1
Late neonatal deaths	421	352	37	22	7	1
Perinatal deaths	3,686	3,106	254	169	149	8
Extended perinatal deaths	4,107	3,458	291	191	156	9

[§] excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[^] including the Crown Dependencies

[°] different laws exist in Northern Ireland for the termination of pregnancy

Data sources: MBRRACE-UK, ONS, PDS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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Table 2: Stillbirth, neonatal, and extended perinatal mortality rates (95% confidence intervals (CIs)) by country of residence: United Kingdom and Crown Dependencies, for births in 2017

Rate per 1,000 births [§]	UK [^]	England	Scotland	Wales	Northern Ireland [°]	Crown Dep.
Stillbirths[†]	3.74	3.68	3.89	3.99	4.63	3.11
	(3.6 to 3.87)	(3.53 to 3.83)	(3.36 to 4.42)	(3.31 to 4.68)	(3.76 to 5.5)	(0.81 to 5.42)
Antepartum [†]	3.29	3.24	3.50	3.56	4.07	2.22
	(3.16 to 3.42)	(3.1 to 3.38)	(3 to 4)	(2.91 to 4.21)	(3.26 to 4.89)	(0.28 to 4.17)
Intrapartum [†]	0.32	0.31	0.32	0.28	0.39	0.89
	(0.28 to 0.36)	(0.27 to 0.36)	(0.17 to 0.47)	(0.1 to 0.46)	(0.13 to 0.64)	(0 to 2.12)
Unknown timing [†]	0.13	0.13	0.08	0.15	0.17	0.00
	(0.1 to 0.15)	(0.1 to 0.16)	(0 to 0.15)	(0.02 to 0.29)	(0 to 0.34)	(0 to 1.33)
Neonatal deaths[‡]	1.67	1.65	1.59	1.93	2.07	0.89
	(1.58 to 1.77)	(1.55 to 1.75)	(1.25 to 1.93)	(1.45 to 2.41)	(1.48 to 2.65)	(0 to 2.13)
Early neonatal deaths [‡]	1.12	1.11	0.89	1.24	1.77	0.45
	(1.04 to 1.19)	(1.03 to 1.19)	(0.63 to 1.14)	(0.86 to 1.63)	(1.23 to 2.31)	(0 to 1.32)
Late neonatal deaths [‡]	0.56	0.54	0.70	0.68	0.30	0.45
	(0.5 to 0.61)	(0.49 to 0.6)	(0.47 to 0.92)	(0.4 to 0.97)	(0.08 to 0.52)	(0 to 1.32)
Perinatal deaths[†]	4.85	4.79	4.78	5.23	6.39	3.56
	(4.69 to 5.01)	(4.62 to 4.95)	(4.19 to 5.36)	(4.44 to 6.02)	(5.37 to 7.41)	(1.1 to 6.02)
Extended perinatal deaths[†]	5.40	5.33	5.47	5.91	6.69	4.00
	(5.24 to 5.57)	(5.15 to 5.51)	(4.85 to 6.1)	(5.08 to 6.75)	(5.64 to 7.74)	(1.39 to 6.61)

[†] per 1,000 total births

[‡] per 1,000 live births

[§] excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[°] different laws exist in Northern Ireland for the termination of pregnancy

[^] including the Crown Dependencies

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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The numbers and rates of stillbirths and neonatal deaths for the UK are presented as a whole and by sub-category in Tables 3 and 4, subdivided by gestational age at birth. These tables include details for late fetal losses and neonatal deaths of babies born at 22 and 23 weeks gestational age. This data shows the marked impact of preterm birth in relation to both stillbirth and neonatal death rates in the UK, with this data for 2017 showing that almost three-quarters of both stillbirths and neonatal deaths were for births before 37 weeks gestational age. As in 2016, of registrable stillbirths in 2017 (≥ 24 weeks gestational age) a quarter occurred in babies who were very preterm (<28 weeks gestational age) and just under half of neonatal deaths were babies born very preterm, once again emphasising the size of this problem in the UK. The new element of the Saving Babies' Lives Care Bundle version 2 [2] has recognised this issue with a focus on the prediction and prevention of preterm birth aiming to reduce the preterm birth rate from 8% to 6% by 2025, thus impacting positively on the reduction of stillbirth and neonatal death rates. There are similar initiatives in the other devolved nations.

Outcomes of babies born before 27⁺⁰ weeks gestational age: 2017

This year MBRRACE-UK released a supplementary section to the 2016 Perinatal Mortality Surveillance Report on the outcomes of babies born before 27⁺⁰ weeks gestational age arising from births between 1 January 2016 and 31 December 2016 in Great Britain [3]. This supplementary report links routine data on post-neonatal deaths to obtain survival estimates up to one year of age and includes babies born to mothers resident in Great Britain (i.e. England, Scotland and Wales) as post neonatal mortality data was not available for Northern Ireland and the Crown Dependencies.

The percentage of babies surviving to one year are presented in terms of four different denominators, to allow interpretation of survival at different stages of the care pathway:

1. Births alive at onset of care in labour;
2. Live births;
3. Live births receiving active respiratory care;
4. Births admitted to neonatal intensive care.

This range of different denominators offer important information for counselling parents throughout the care pathway. In addition, comparisons with survival rates in other countries (where there is variety in their approach to the reporting of births at the threshold of survival as liveborn) are facilitated as well as with other UK cohorts based solely on admissions to neonatal care. The report highlights increased survival for babies born at 22⁺⁰ to 26⁺⁶ weeks gestational age compared to reported rates over the last 10 years, with the biggest improvements being at the lower gestational ages. The findings suggest a change in attitudes over the past decade towards the reporting of babies at 22⁺⁰ to 22⁺⁶ weeks gestational age as liveborn and increased admissions to neonatal intensive care units at 23⁺⁰ weeks gestational age and over.

Gestation specific mortality for births in 2017

Table 3: Number of births, stillbirths, neonatal deaths, and extended perinatal deaths by gestational age at birth: United Kingdom and Crown Dependencies, for births in 2017

Number [§]	Gestational age at birth (weeks)					
	22 ⁺⁰ -23 ⁺⁶	24 ⁺⁰ -27 ⁺⁶	28 ⁺⁰ -31 ⁺⁶	32 ⁺⁰ -36 ⁺⁶	37 ⁺⁰ -41 ⁺⁶ [°]	≥42 ⁺⁰
Total births	1,078	3,227	6,540	50,296	660,980	16,212
Live births	547	2,517	6,058	49,566	660,086	16,190
Stillbirths	531	710	482	730	894	22
Antepartum	279	587	448	670	782	14
Intrapartum	177	97	17	36	84	7
Unknown timing	75	26	17	24	28	1
Neonatal deaths	385	365	187	270	428	11
Early neonatal deaths	339	237	133	191	272	8
Late neonatal deaths	46	128	54	79	156	3
Perinatal deaths	870	947	615	921	1,166	30
Extended perinatal deaths	916	1,075	669	1,000	1,322	33

[§] excluding terminations of pregnancy

[°] births with missing information for gestational ages were excluded (n=22,914)

Data sources: MBRRACE-UK, ONS, PDS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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Table 4: Stillbirth, neonatal, and extended perinatal mortality rates (95% CIs) by gestational age at birth: United Kingdom and Crown Dependencies, for births in 2017

Rate per 1,000 births [§]	Gestational age at birth (weeks)					
	22 ⁺⁰ -23 ⁺⁶	24 ⁺⁰ -27 ⁺⁶	28 ⁺⁰ -31 ⁺⁶	32 ⁺⁰ -36 ⁺⁶	37 ⁺⁰ -41 ⁺⁶ [°]	≥42 ⁺⁰
Stillbirths[†]	491.65	220.02	73.70	14.51	1.35	1.36
	(461.8 to 521.5)	(205.7 to 234.3)	(67.4 to 80.0)	(13.5 to 15.6)	(1.3 to 1.4)	(0.8 to 1.9)
Antepartum [†]	257.88	181.90	68.50	13.32	1.18	0.86
	(231.8 to 284)	(168.6 to 195.2)	(62.4 to 74.6)	(12.3 to 14.3)	(1.1 to 1.3)	(0.4 to 1.3)
Intrapartum [†]	164.19	30.06	2.60	0.72	0.13	0.43
	(142.1 to 186.3)	(24.2 to 36.0)	(1.4 to 3.8)	(0.5 to 1.0)	(0.1 to 0.2)	(0.1 to 0.8)
Unknown timing [†]	69.57	8.06	2.60	0.48	0.04	0.06
	(54.4 to 84.8)	(5.0 to 11.1)	(1.4 to 3.8)	(0.3 to 0.7)	(0.0 to 0.1)	(0.0 to 0.2)
Neonatal deaths[‡]	704.38	145.01	30.87	5.45	0.65	0.68
	(666.2 to 742.6)	(131.2 to 158.8)	(26.5 to 35.2)	(4.8 to 6.1)	(0.6 to 0.7)	(0.3 to 1.1)
Early neonatal deaths [‡]	620.44	94.16	21.95	3.85	0.41	0.49
	(579.8 to 661.1)	(82.8 to 105.6)	(18.3 to 25.6)	(3.3 to 4.4)	(0.4 to 0.5)	(0.2 to 0.8)
Late neonatal deaths [‡]	83.94	50.85	8.91	1.59	0.24	0.19
	(60.7 to 107.2)	(42.3 to 59.4)	(6.6 to 11.3)	(1.2 to 2.0)	(0.2 to 0.3)	(0.0 to 0.4)
Perinatal deaths[†]	807.05	293.46	94.04	18.31	1.76	1.85
	(783.5 to 830.6)	(277.8 to 309.2)	(87.0 to 101.1)	(17.1 to 19.4)	(1.7 to 1.9)	(1.2 to 2.5)
Extended perinatal deaths[†]	849.72	333.13	102.29	19.88	2.00	2.04
	(828.4 to 871.1)	(316.9 to 349.4)	(95.0 to 110.0)	(18.7 to 21.1)	(2.0 to 2.1)	(1.3 to 2.7)

[§] excluding terminations of pregnancy, births

[°] births with missing information for gestational ages were excluded (n=22,914)

[†] per 1,000 total births

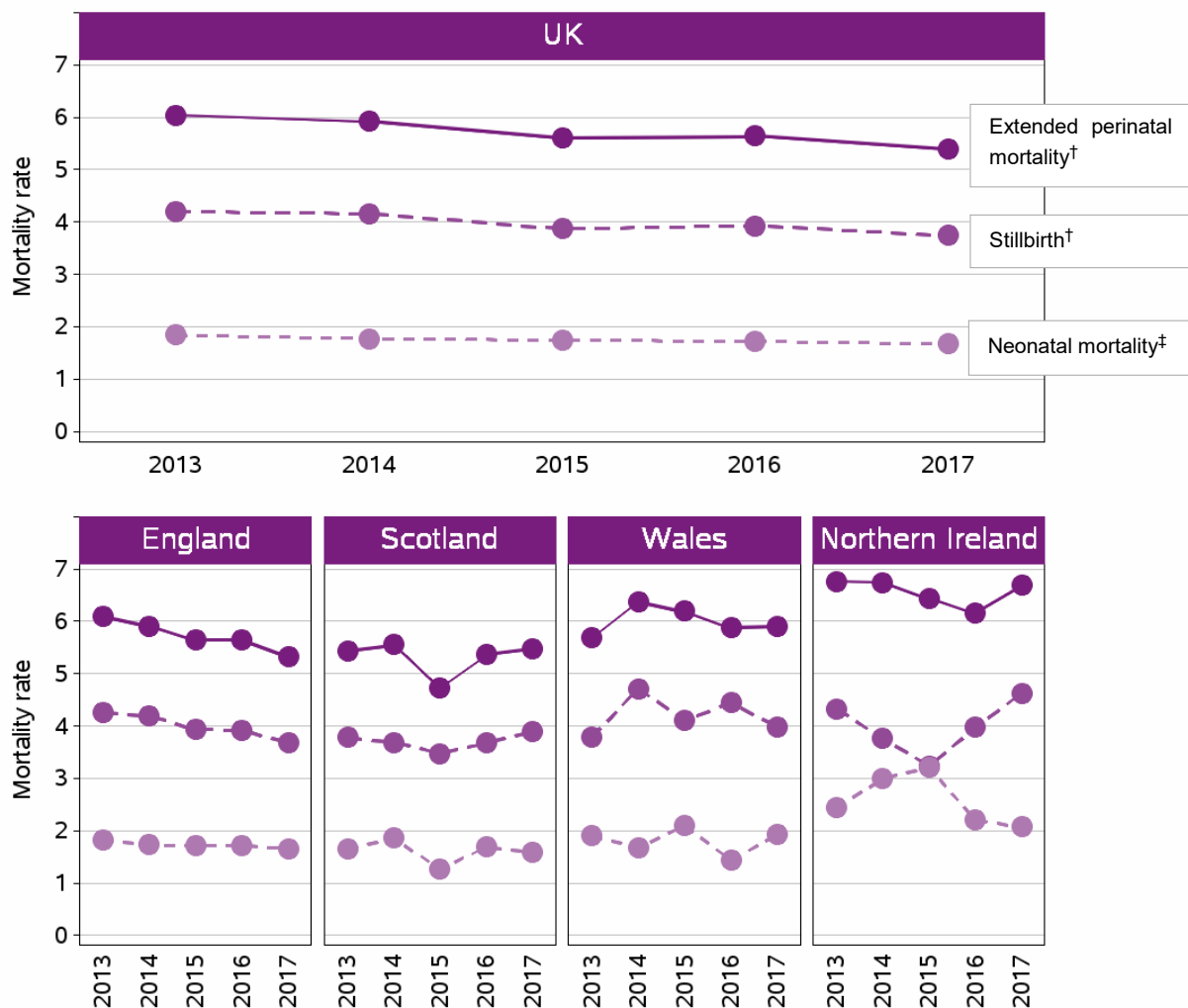
[‡] per 1,000 live births

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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Time trends

Figure 1: Stillbirth, neonatal, and extended perinatal mortality rates for the UK and by country of residence: United Kingdom, for births in 2017



† per 1,000 total births

‡ per 1,000 live births

Excluding terminations of pregnancy and births <24⁺ weeks gestational age

Different laws exist in Northern Ireland for the termination of pregnancy

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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The trends in stillbirth, neonatal mortality and extended perinatal mortality rates for the UK and the devolved nations over the five years of the MBRRACE-UK programme, 2013 to 2017, are shown in Figure 1 and Table 5. The data is equivalent to that included in Table 1, where the UK total is based on all births for the UK (irrespective of country of residence) and the number of births for each individual UK country and the Crown Dependencies is based on those births for which the country of residence of the mother was known. In the UK there has been a reduction in all three mortality rates, with a fall of over 10% across the five years of the MBRRACE-UK programme. This overall pattern reflects a decline over the five year period in England but little evidence of change over time in the remaining devolved nations as their rates are more affected by short term variations due to their smaller population size.

Table 5: Stillbirth, neonatal, and extended perinatal mortality rates for the UK and by country of residence: United Kingdom, for births from 2013 to 2017

Rate per 1,000 births [§]	UK [^]	England	Scotland	Wales	Northern Ireland [°]	Crown Dep.
Stillbirths[†]						
2013	4.20 (4.06 to 4.35)	4.26 (4.10 to 4.42)	3.78 (3.30 to 4.32)	3.78 (3.18 to 4.50)	4.33 (3.58 to 5.24)	3.25 (1.65 to 6.40)
2014	4.12 (3.98 to 4.326)	4.19 (4.04 to 4.35)	3.69 (3.19 to 4.19)	4.71 (3.98 to 5.44)	3.76 (2.99 to 4.52)	1.24 (0.00 to 2.64)
2015	3.87 (3.73 to 4.01)	3.93 (3.78 to 4.08)	3.47 (2.98 to 3.96)	4.10 (3.41 to 4.78)	3.24 (2.53 to 3.95)	1.67 (0.03 to 3.3)
2016	3.93 (3.79 to 4.07)	3.92 (3.77 to 4.07)	3.67 (3.17 to 4.18)	4.44 (3.73 to 5.16)	3.97 (3.18 to 4.76)	3.36 (1.04 to 5.68)
2017	3.74 (3.6 to 3.87)	3.68 (3.53 to 3.83)	3.89 (3.36 to 4.42)	3.99 (3.31 to 4.68)	4.63 (3.76 to 5.5)	3.11 (0.81 to 5.42)
Neonatal deaths[‡]						
2013	1.84 (1.75 to 1.94)	1.83 (1.73 to 1.94)	1.66 (1.36 to 2.04)	1.90 (1.49 to 2.42)	2.44 (1.89 to 3.15)	1.22 (0.42 to 3.59)
2014	1.76 (1.67 to 1.86)	1.73 (1.63 to 1.83)	1.86 (1.51 to 2.22)	1.67 (1.23 to 2.10)	2.99 (2.31 to 3.68)	1.24 (0.00 to 2.65)
2015	1.74 (1.65 to 1.84)	1.71 (1.62 to 1.81)	1.26 (0.96 to 1.55)	2.10 (1.61 to 2.59)	3.21 (2.5 to 3.92)	1.25 (0.00 to 2.67)
2016	1.72 (1.63 to 1.81)	1.72 (1.62 to 1.82)	1.69 (1.34 to 2.03)	1.43 (1.02 to 1.84)	2.2 (1.61 to 2.79)	1.26 (0 to 2.69)
2017	1.67 (1.58 to 1.77)	1.65 (1.55 to 1.75)	1.59 (1.25 to 1.93)	1.93 (1.45 to 2.41)	2.07 (1.48 to 2.65)	0.89 (0 to 2.13)
Extended perinatal deaths[‡]						
2013	6.04 (5.87 to 6.21)	6.09 (5.90 to 6.28)	5.43 (4.86 to 6.08)	5.68 (4.93 to 6.53)	6.76 (5.81 to 7.87)	4.47 (2.50 to 7.98)
2014	5.88 (5.71 to 6.04)	5.91 (5.73 to 6.10)	5.55 (4.93 to 6.16)	6.37 (5.52 to 7.22)	6.74 (5.71 to 7.76)	2.48 (0.50 to 4.46)
2015	5.61 (5.44 to 5.77)	5.64 (5.46 to 5.81)	4.72 (4.15 to 5.29)	6.19 (5.35 to 7.03)	6.44 (5.44 to 7.44)	2.92 (0.76 to 5.08)
2016	5.64 (5.48 to 5.281)	5.64 (5.46 to 5.82)	5.36 (4.74 to 5.97)	5.87 (5.04 to 6.69)	6.16 (5.18 to 67.15)	4.62 (1.90 to 7.34)
2017	5.40 (5.24 to 5.57)	5.33 (5.15 to 5.51)	5.47 (4.85 to 6.1)	5.91 (5.08 to 6.75)	6.69 (5.64 to 7.74)	4.00 (1.39 to 6.61)

[§] excluding terminations of pregnancy and births <24⁺ weeks gestational age

[^] including the Crown Dependencies

[°] different laws exist in Northern Ireland for the termination of pregnancy

[†] per 1,000 total births

[‡] per 1,000 live births

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

Trends in gestation-specific mortality for the UK over the four years from 2014 to 2017 are shown in Tables 6 to 11. There have been reductions in extended perinatal mortality rates across all gestational age groups from 22⁺⁰ to 41⁺⁶ weeks gestational age. This pattern is not seen for babies born at 42⁺⁰ weeks and over but this group are most affected by short term variations because the number of deaths is extremely small. Applying the rates observed in 2014 to the population of births in 2017 indicates that there were 458 fewer deaths in 2017 (than if rates had remained the same). Almost half of this reduction in deaths (48%) is associated with births at 37⁺⁰ to 41⁺⁶ weeks, 28% with those at 32⁺⁰ to 36⁺⁶ weeks, 13% with those at 28⁺⁰ to 31⁺⁶ weeks and 9% with those at 24⁺⁰ to 27⁺⁶ weeks.

The largest reduction in deaths is seen for stillbirths at 37⁺⁰ to 41⁺⁶ weeks, with a 16% fall in mortality rates over the four year period, and this is likely to reflect initiatives in place across the UK focusing on the reduction of term stillbirths. Stillbirths at 32⁺⁰ to 36⁺⁶ weeks and 28⁺⁰ to 31⁺⁶ weeks have also fallen by over 10%. For neonatal deaths the largest reductions were also seen at later gestations with a 13% fall at 32⁺⁰ to 36⁺⁶ weeks and an 8% fall at 37⁺⁰ to 41⁺⁶ weeks.

Table 6: Number and percentage of stillbirths by gestational age at birth: United Kingdom and Crown Dependencies, for births from 2014 to 2017

Gestational age at birth (weeks)		2014	2015	2016	2017
22 ⁺⁰ -23 ⁺⁶	Births [§]	1,010	1,001	1,040	1,078
	Stillbirths N (%)	499 (13.4)	524 (14.7)	529 (14.7)	530 (15.7)
24 ⁺⁰ -27 ⁺⁶	Births [§]	3,192	3,221	3,269	3,227
	Stillbirths N (%)	722 (19.4)	733 (20.6)	717 (19.9)	710 (21.1)
28 ⁺⁰ -31 ⁺⁶	Births [§]	6,469	6,558	6,620	6,540
	Stillbirths N (%)	537 (14.4)	495 (13.9)	512 (14.2)	482 (14.3)
32 ⁺⁰ -36 ⁺⁶	Births [§]	49,385	49,652	50,371	50,296
	Stillbirths N (%)	802 (21.5)	762 (21.4)	786 (21.9)	730 (21.7)
37 ⁺⁰ -41 ⁺⁶	Births [§]	700,709	704,733	678,093	660,980
	Stillbirths N (%)	1143 (30.7)	1025 (28.8)	1031 (28.7)	894 (26.5)
≥42	Births [§]	21,854	18,980	18,277	16,212
	Stillbirths N (%)	21 (0.6)	15 (0.4)	19 (0.5)	22 (0.7)
Total births		782,619	784,145	757,670	738,333

Table 7: Stillbirth rates by gestational age at birth: United Kingdom and Crown Dependencies, for births from 2014 to 2017

Gestational age at birth (weeks)		2014	2015	2016	2017
22 ⁺⁰ -23 ⁺⁶	Births [§]	1,010	1,001	1,040	1,078
	Rates per 1,000 births [†]	494.1	523.5	508.7	491.7
24 ⁺⁰ -27 ⁺⁶	Births [§]	3,192	3,221	3,269	3,227
	Rates per 1,000 births [†]	226.2	227.6	219.3	220.0
28 ⁺⁰ -31 ⁺⁶	Births [§]	6,469	6,558	6,620	6,540
	Rates per 1,000 births [†]	83.0	75.5	77.3	73.7
32 ⁺⁰ -36 ⁺⁶	Births [§]	49,385	49,652	50,371	50,296
	Rates per 1,000 births [†]	16.2	15.3	15.6	14.5
37 ⁺⁰ -41 ⁺⁶	Births [§]	700,709	704,733	678,093	660,980
	Rates per 1,000 births [†]	1.6	1.5	1.5	1.4
≥42	Births [§]	21,854	18,980	18,277	16,212
	Rates per 1,000 births [†]	1.0	0.8	1.0	1.4
Total births		782,619	784,145	757,670	738,333

Table 8: Number and percentage of neonatal deaths by gestational age at birth: United Kingdom and Crown Dependencies, for births from 2014 to 2017

Gestational age at birth (weeks)		2014	2015	2016	2017
22 ⁺⁰ -23 ⁺⁶	Live births [§]	511	477	511	548
	Neonatal deaths N (%)	376 (21.5)	342 (20.1)	360 (21.3)	386 (23.4)
24 ⁺⁰ -27 ⁺⁶	Live births [§]	2,470	2,488	2,552	2,517
	Neonatal deaths N (%)	384 (21.9)	383 (22.5)	404 (23.9)	365 (22.2)
28 ⁺⁰ -31 ⁺⁶	Live births [§]	5,932	6,063	6,108	6,058
	Neonatal deaths N (%)	182 (10.4)	205 (12)	177 (10.5)	187 (11.4)
32 ⁺⁰ -36 ⁺⁶	Live births [§]	48,583	48,890	49,585	49,566
	Neonatal deaths N (%)	305 (17.4)	271 (15.9)	275 (16.2)	270 (16.4)
37 ⁺⁰ -41 ⁺⁶	Live births [§]	699,566	703,708	677,062	660,086
	Neonatal deaths N (%)	493 (28.2)	495 (29.1)	468 (27.6)	428 (26)
≥42	Live births [§]	21,833	18,965	18,258	16,190
	Neonatal deaths N (%)	10 (0.6)	7 (0.4)	9 (0.5)	11 (0.7)
Total live births		778,895	780,591	754,076	734,965

[§] excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[†] per 1,000 total births

[‡] per 1,000 live births

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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Table 9: Neonatal mortality rates by gestational age at birth: United Kingdom and Crown Dependencies, for births from 2014 to 2017

Gestational age at birth (weeks)		2014	2015	2016	2017
22 ⁺⁰ -23 ⁺⁶	Live births [§]	511	477	511	548
	Rates per 1,000 births [‡]	735.8	717.0	704.5	704.4
24 ⁺⁰ -27 ⁺⁶	Live births [§]	2,470	2,488	2,552	2,517
	Rates per 1,000 births [‡]	155.5	153.9	158.3	145.0
28 ⁺⁰ -31 ⁺⁶	Live births [§]	5,932	6,063	6,108	6,058
	Rates per 1,000 births [‡]	30.7	33.8	29.0	30.9
32 ⁺⁰ -36 ⁺⁶	Live births [§]	48,583	48,890	49,585	49,566
	Rates per 1,000 births [‡]	6.3	5.5	5.5	5.4
37 ⁺⁰ -41 ⁺⁶	Live births [§]	699,566	703,708	677,062	660,086
	Rates per 1,000 births [‡]	0.7	0.7	0.7	0.6
≥42	Births [§]	21,833	18,965	18,258	16,190
	Rates per 1,000 births [‡]	0.5	0.4	0.5	0.7
Total live births		778,895	780,591	754,076	734,965

Table 10: Number and percentage of extended perinatal deaths by gestational age at birth: United Kingdom and Crown Dependencies, for births from 2014 to 2017

Gestational age at birth (weeks)		2014	2015	2016	2017
22 ⁺⁰ -23 ⁺⁶	Births [§]	1,010	1,001	1,040	1,078
	Extended perinatal deaths N (%)	875 (16)	866 (16.5)	889 (16.8)	916 (18.3)
24 ⁺⁰ -27 ⁺⁶	Births [§]	3,192	3,221	3,269	3,227
	Extended perinatal deaths N (%)	1106 (20.2)	1116 (21.2)	1121 (21.2)	1075 (21.4)
28 ⁺⁰ -31 ⁺⁶	Births [§]	6,469	6,558	6,620	6,540
	Extended perinatal deaths N (%)	719 (13.1)	700 (13.3)	689 (13)	669 (13.3)
32 ⁺⁰ -36 ⁺⁶	Births [§]	49,385	49,652	50,371	50,296
	Extended perinatal deaths N (%)	1107 (20.2)	1033 (19.6)	1061 (20.1)	1000 (19.9)
37 ⁺⁰ -41 ⁺⁶	Births [§]	700,709	704,733	678,093	660,980
	Extended perinatal deaths N (%)	1636 (29.9)	1520 (28.9)	1499 (28.4)	1322 (26.4)
≥42	Births [§]	21,854	18,980	18,277	16,212
	Extended perinatal deaths N (%)	31 (0.6)	22 (0.4)	28 (0.5)	33 (0.7)
Total births		782,619	784,145	757,670	738,333

Table 11: Extended perinatal mortality rates by gestational age at birth: United Kingdom and Crown Dependencies, for births from 2014 to 2017

Gestational age at birth (weeks)		2014	2015	2016	2017
22 ⁺⁰ -23 ⁺⁶	Births [§]	1,010	1,001	1,040	1,078
	Rates per 1,000 births [†]	866.3	865.1	854.8	849.7
24 ⁺⁰ -27 ⁺⁶	Births [§]	3,192	3,221	3,269	3,227
	Rates per 1,000 births [†]	346.5	346.5	342.9	333.1
28 ⁺⁰ -31 ⁺⁶	Births [§]	6,469	6,558	6,620	6,540
	Rates per 1,000 births [†]	111.1	106.7	104.1	102.3
32 ⁺⁰ -36 ⁺⁶	Births [§]	49,385	49,652	50,371	50,296
	Rates per 1,000 births [†]	22.4	20.8	21.1	19.9
37 ⁺⁰ -41 ⁺⁶	Births [§]	700,709	704,733	678,093	660,980
	Rates per 1,000 births [†]	2.3	2.2	2.2	2.0
≥42	Births [§]	21,854	18,980	18,277	16,212
	Rates per 1,000 births [†]	1.4	1.2	1.5	2.0
Total births		782,619	784,145	757,670	738,333

§ excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

† per 1,000 total births

‡ per 1,000 live births

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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MBRRACE-UK Recommendation 1

In order to achieve the various UK Governments' ambitions renewed efforts need to be focused on implementing existing national initiatives to reduce stillbirths and continue the slow but steady decline in neonatal mortality rates observed since 2013. Particular emphasis should be placed on reducing preterm birth.

Data quality

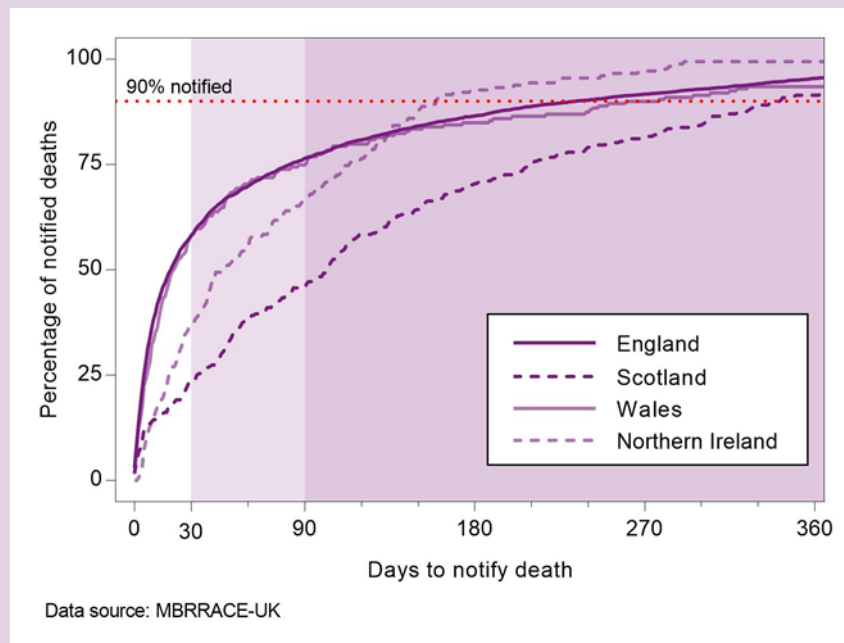
Effective perinatal surveillance is dependent upon timeliness of data collection in order to drive improvement by providing rapid feedback. High quality data is needed to provide a true picture of what is happening and where intervention is required. At the launch meeting of the previous Perinatal Mortality Surveillance Report in June 2018 we proposed two new benchmarks relating to the timeliness of data collection: (i) for the notification of deaths and (ii) for the completion of surveillance data. First, all deaths should be notified to MBRRACE-UK within 30 days of the death occurring. The full data does not have to be complete at this point but, as a minimum, we suggested that all deaths should be notified within this timeframe. Second, Trusts and Health Boards should aim to complete data entry for each death within 90 days of the death occurring. These benchmarks have been developed in part to facilitate data sharing with the Perinatal Mortality Review Tool (PMRT) that was launched in January 2018. The PMRT requires prompt notification and completion of data entry for deaths to ensure Trusts and Health Boards can conduct timely reviews, minimising the risk of duplicate data entry.

Late notification of deaths results in ‘missing’ cases. These are initial death notifications created by MBRRACE-UK when a death identified in routine data sources cannot be matched to a death notified via the MBRRACE-UK system. Missing cases are therefore identified by MBRRACE-UK to ensure all eligible deaths are notified. Missing cases use additional resources and as a result can delay the notification of other deaths. The introduction of a 30-day benchmark for notification was intended not only to reduce the amount of additional workload generated by late-notified deaths, but also to allow for the development of additional real-time reporting methods in order to give Trusts and Health Boards more timely access to their data. New ways for Trusts and Health Boards to interrogate and monitor deaths are examined later in this chapter

Timing of notification by type of death

The variation in the timing of the notification of deaths on the MBRRACE-UK system for 2017 across the four countries of the UK is shown in Figure 2. The number of days taken to notify deaths ranged from zero to more than 600 (UK-wide average 77 days). A small proportion of late notifications were due to deaths which occurred outside a clinical setting where the maternity or neonatal team were not informed of the death and which were identified later by MBRRACE-UK from routine data sources. However, this is unlikely to account for the full 5% of deaths which were notified more than a year after the death occurred. Most deaths notified after more than six months are the result of “missing” cases identified by MBRRACE-UK.

Figure 2: Time to notify late fetal losses, stillbirths and neonatal deaths via the MBRRACE-UK system in days since death: births in 2017

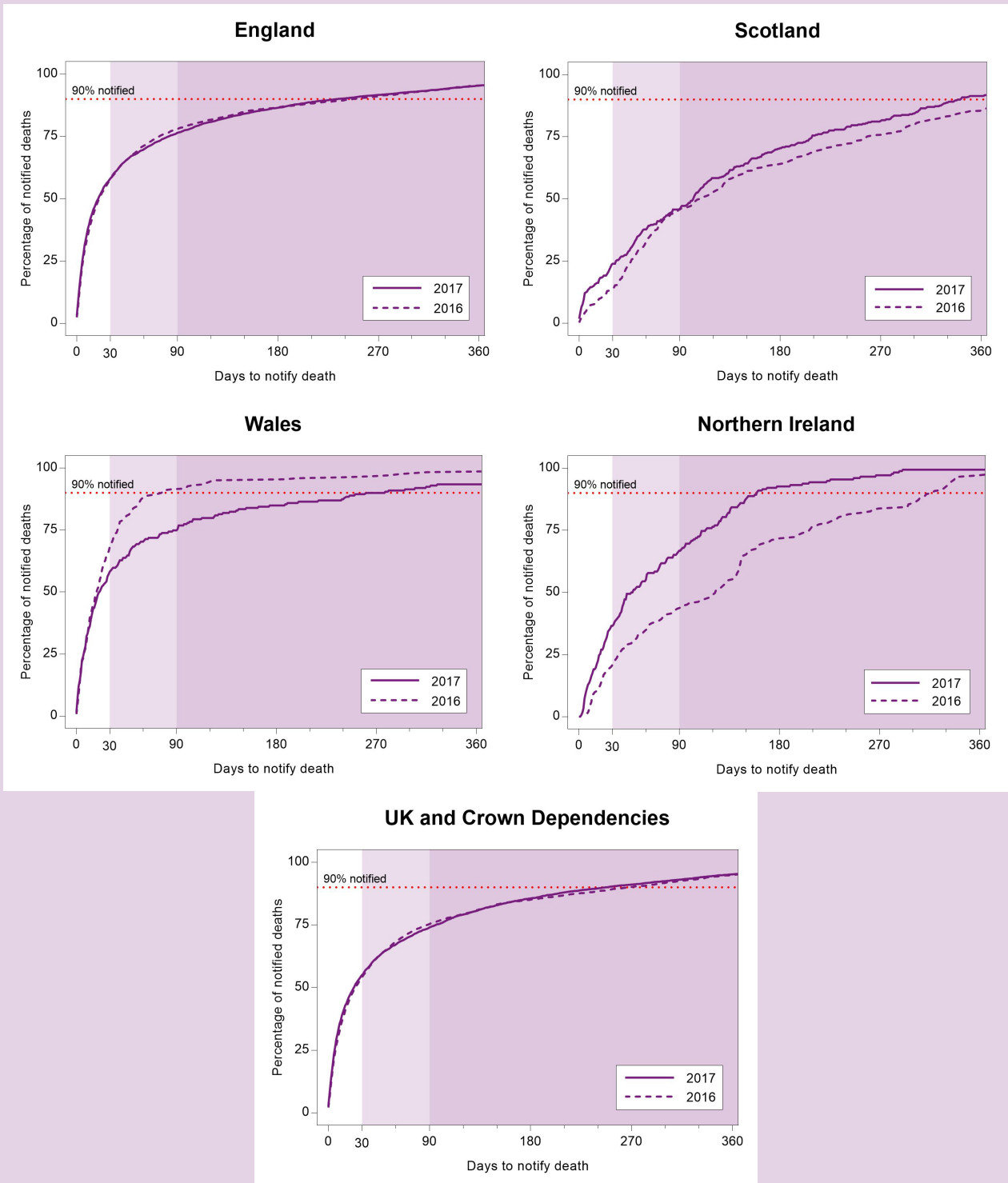


Excluding terminations of pregnancy

Comparison with 2016 (Figure 3) reveals that notification time in England has remained static. Scotland has shown a small improvement, but remains the slowest of the four countries. The most significant changes are in Wales and Northern Ireland.

Overall notification times for the UK as a whole and England remained fairly constant in 2017 compared with the previous year. However, whilst Wales was the most timely notifier of deaths in 2016, with 68% of deaths being notified within 30 days and 90% of deaths being notified by 77 days, in 2017 Welsh notification rates were much slower, with only 58% of deaths being notified within 30 days and the time taken to reach 90% of notified deaths showing a more than threefold increase to 278 days. For Northern Ireland the trend is reversed, with cases notified within 30 days increasing from 21% to 37% between 2016 and 2017. Data entry is carried out centrally in Northern Ireland by the NIMACH office, and despite this contributing to an initial delay in notification of deaths, Northern Ireland was the most timely notifier overall in 2017, with 90% of deaths being notified to MBRRACE-UK within 160 days (down from 318 days in 2016). For the UK as a whole the proportion of stillbirths and neonatal deaths notified within the 30 day benchmark was 57% and 51% respectively.

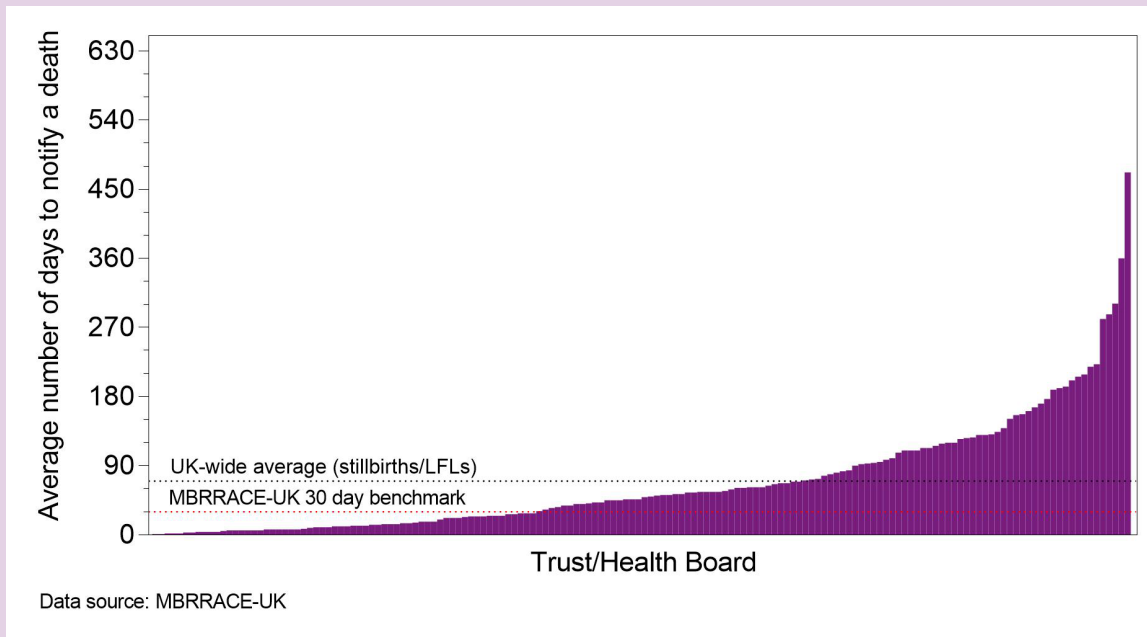
Figure 3: Time to notify deaths via the MBRRACE-UK system by country: births in 2016 and 2017



Excluding terminations of pregnancy
Data source: MBRRACE-UK

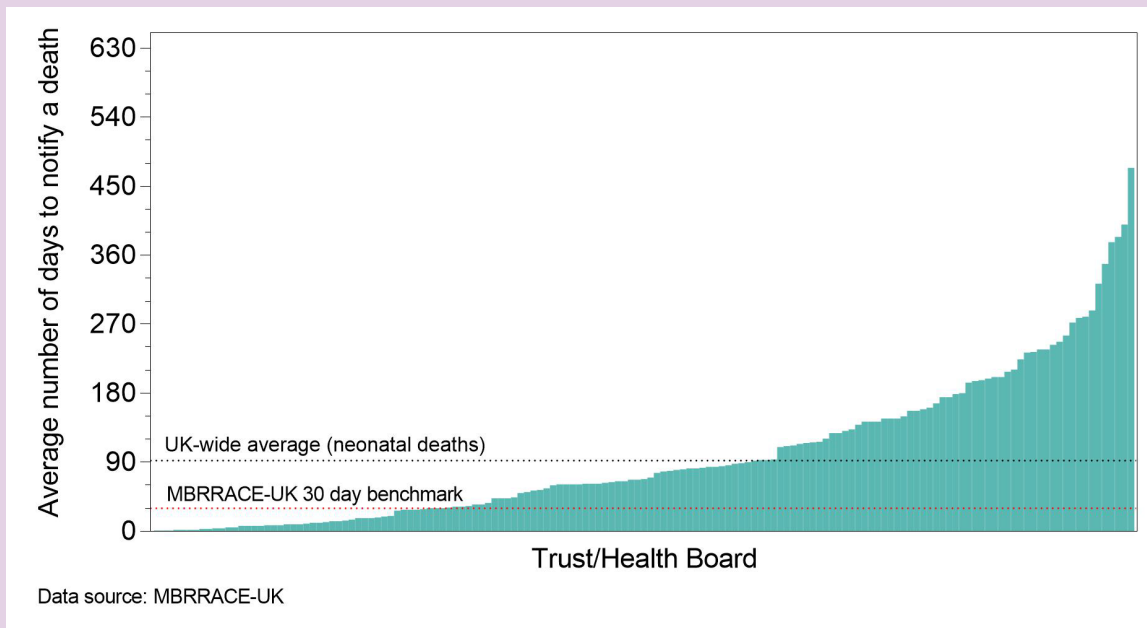
At Trust and Health Board level (Figures 4, 5 and 6), the average number of days to notify a death was above the 30 day benchmark for both stillbirths and neonatal deaths. For stillbirths the average notification time was 70 days, with only 39% of Trusts and Health Boards having an average notification time which met the benchmark. For neonatal deaths the time taken to notify a death was even longer, with an average time of 92 days and only 29% of Trusts and Health Boards having an average notification time which met the benchmark.

Figure 4: Average time to notify a death via the MBRRACE-UK system in days since death: stillbirths and late fetal losses, 2017



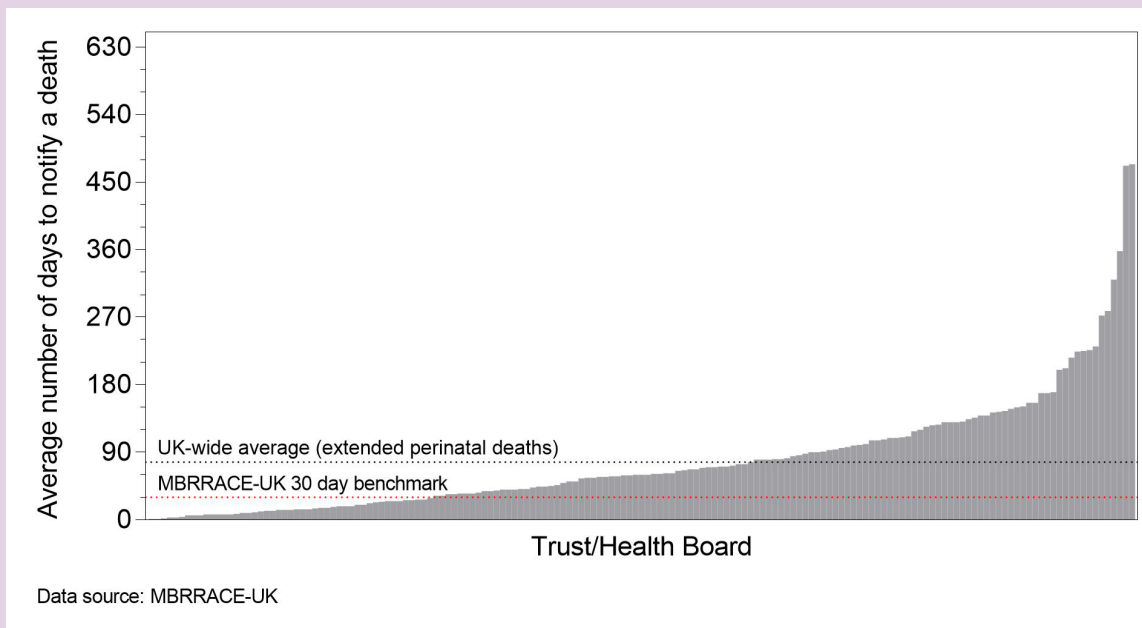
Excluding terminations of pregnancy

Figure 5: Average time to notify a death via the MBRRACE-UK system in days since death: neonatal deaths, 2017



Excluding terminations of pregnancy

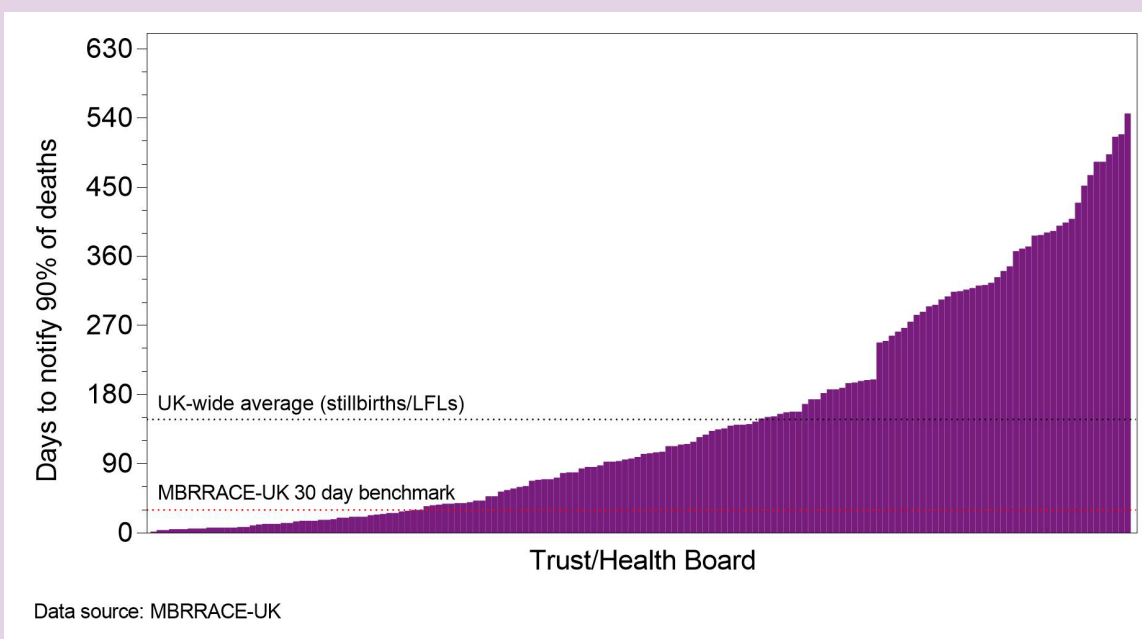
Figure 6: Average time to notify a death via the MBRRACE-UK system in days since death: extended perinatal deaths, 2017



Excluding terminations of pregnancy

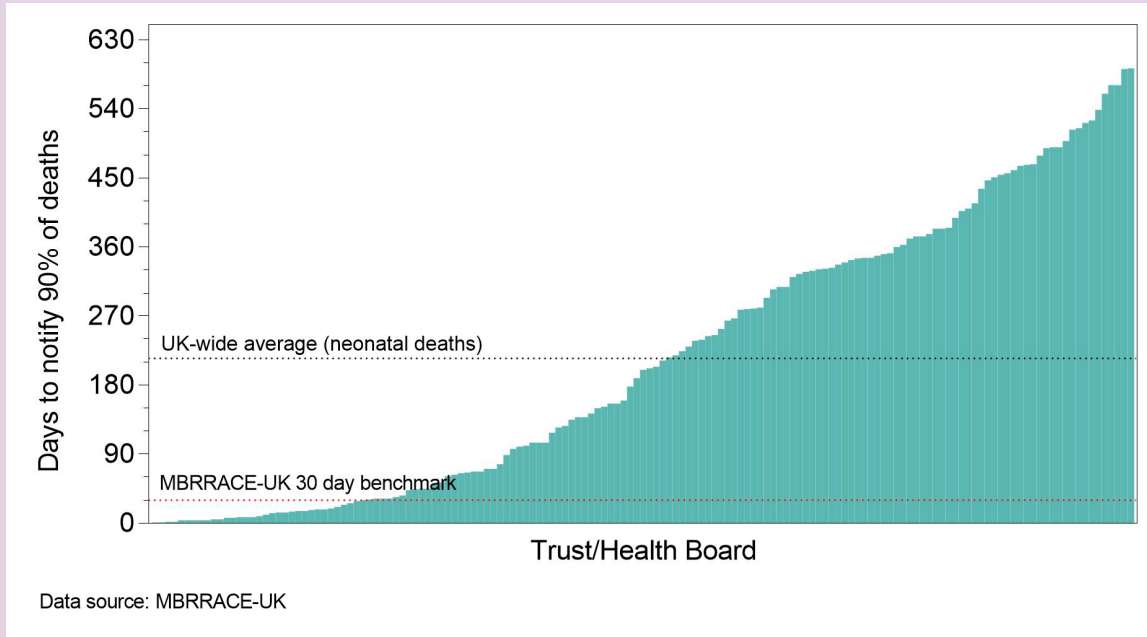
Whilst it may not always be possible to notify 100% of deaths within 30 days (due to specific circumstances e.g. where the death has been referred to the Coroner/Procurator Fiscal in order to determine whether or not the baby was liveborn), 20% of Trusts and Health Boards were able to notify 90% of deaths within the 30 day period (UK average 176 days), demonstrating that the benchmark is certainly attainable (Figures 7, 8 and 9). Notification of 90% of stillbirths and late fetal losses was achieved by 28% of Trusts and Health Boards (UK average 148 days), but again the notification of neonatal deaths was slower, with only 22% of Trusts managing to notify 90% of deaths within 30 days (UK average 215 days).

Figure 7: Number of days to notify 90% of deaths: stillbirths and late fetal losses, 2017



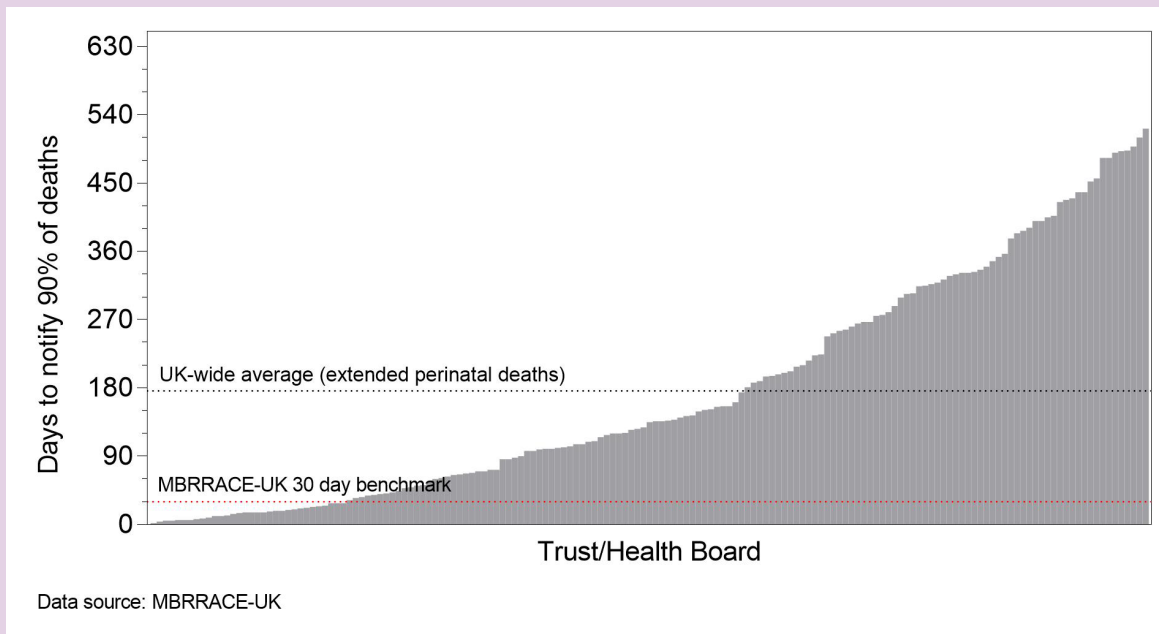
Excluding terminations of pregnancy

Figure 8: Number of days to notify 90% of deaths: neonatal deaths, 2017



Excluding terminations of pregnancy

Figure 9: Number of days to notify 90% of deaths: extended perinatal deaths, 2017



Excluding terminations of pregnancy

MBRRACE-UK Recommendation 2

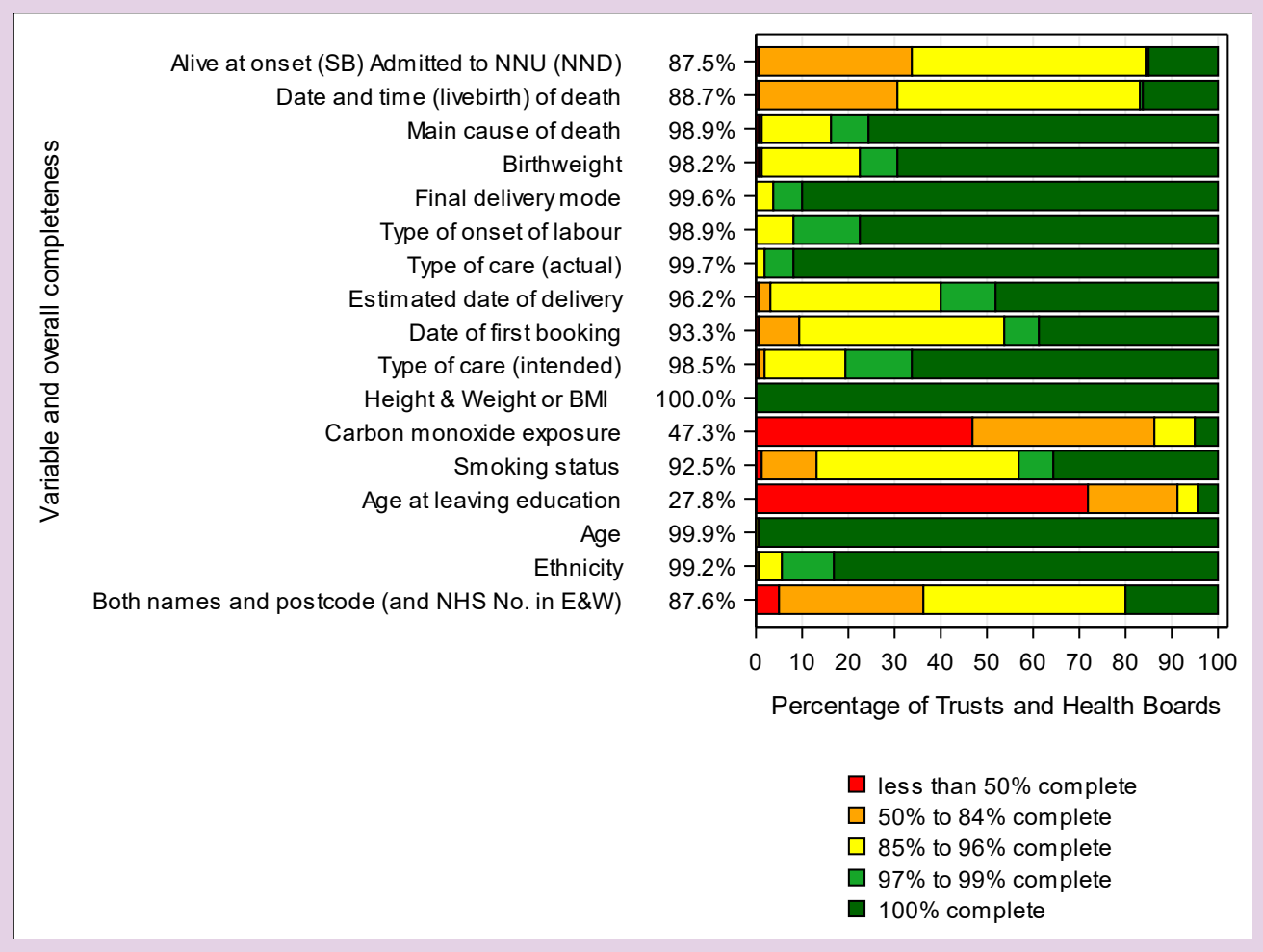
Trusts and Health Boards should aim to notify all deaths via the MBRRACE-UK system within 30 days of the death occurring. Mechanisms for timely notification should be incorporated into local processes, and must have adequate staff, time allocation and resources. Trusts and Health Boards should aim for completion of all surveillance data within 90 days in order to facilitate data sharing with the PMRT and aid discussions with parents at follow-up appointments.

Completeness of key data items 2015 to 2017

As well as the timeliness of reporting, the information we are able to provide in this report is dependent on the quality of the data reported by Trusts and Health Boards. Data quality (in terms of both accuracy and completeness) is of the utmost importance in the production of accurate risk-adjusted mortality rates and for data sharing with the Perinatal Mortality Review Tool. MBRRACE-UK is continuing to monitor the completeness of this data for both stillbirths and neonatal deaths and the proportion of missing data for neonatal deaths due to difficulties accessing the maternal notes is being gradually reduced over time. Reporters to MBRRACE-UK are now familiar with the reporting system and frequently use the facility to temporarily assign cases between the Trusts and Health Boards where care was provided in order to facilitate data collection from the maternal notes.

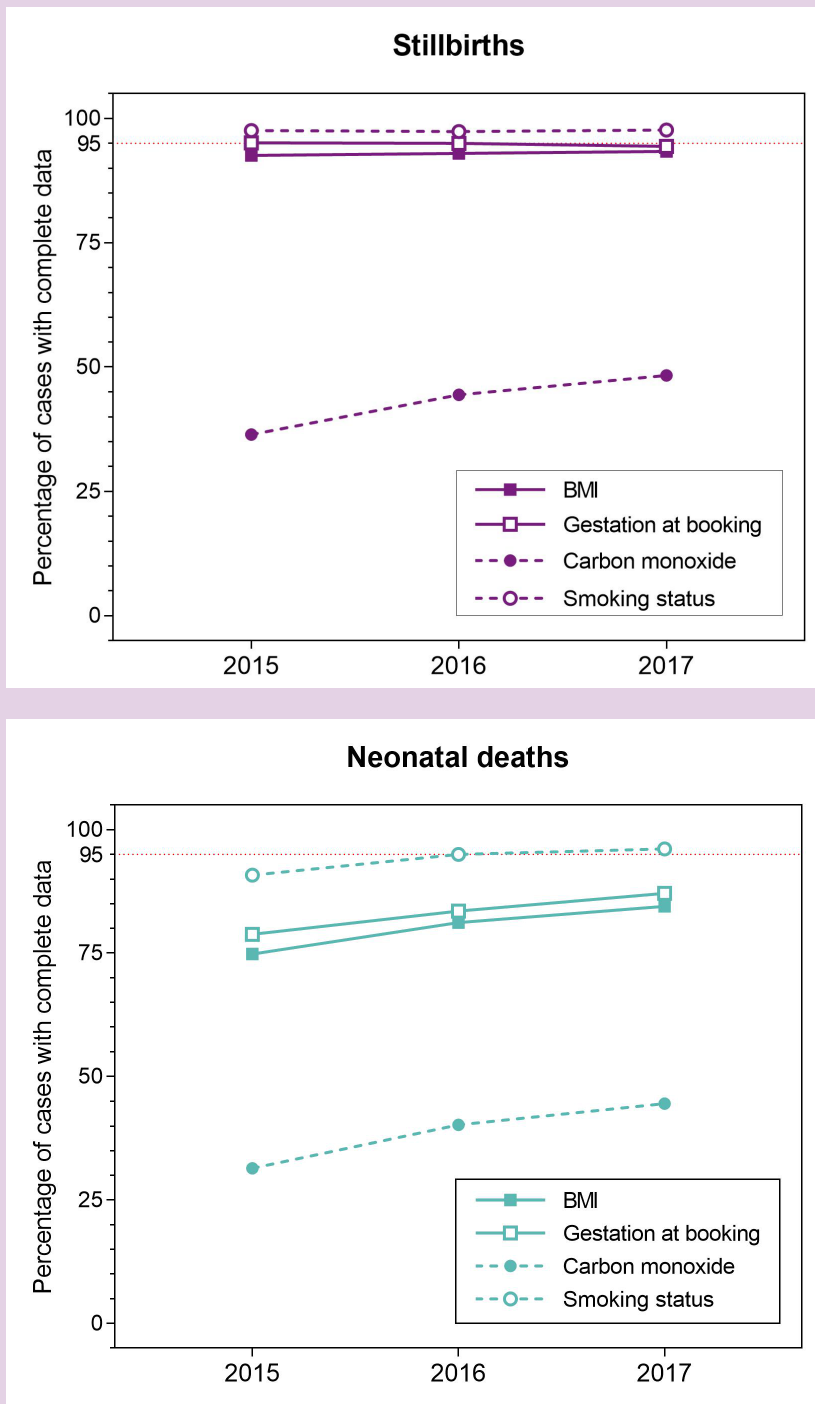
In Figure 10, the overall completeness of selected key variables is shown together with details of the proportion of Trusts and Health Boards achieving different levels of completeness for their data.

Figure 10: Level of completeness of data reported by Trusts and Health Boards: United Kingdom and Crown Dependencies, for births in 2017



In the previous report we noted that whilst data completeness was steadily improving, there continued to be an issue with some of the maternal data items, particularly carbon monoxide exposure monitoring, one of the elements of the NHS England Saving Babies' Lives Care Bundle [1]. The completeness of maternal data continues to be lower for neonatal deaths than for stillbirths. Figure 11 illustrates the completeness of a small number of key data items that identify whether a mother is high or low risk and determine the care provision a mother receives. For neonatal deaths the completeness of these variables has been a particular problem.

Figure 11: Completeness of key data items reported by Trusts and Health Boards: 2015 to 2017

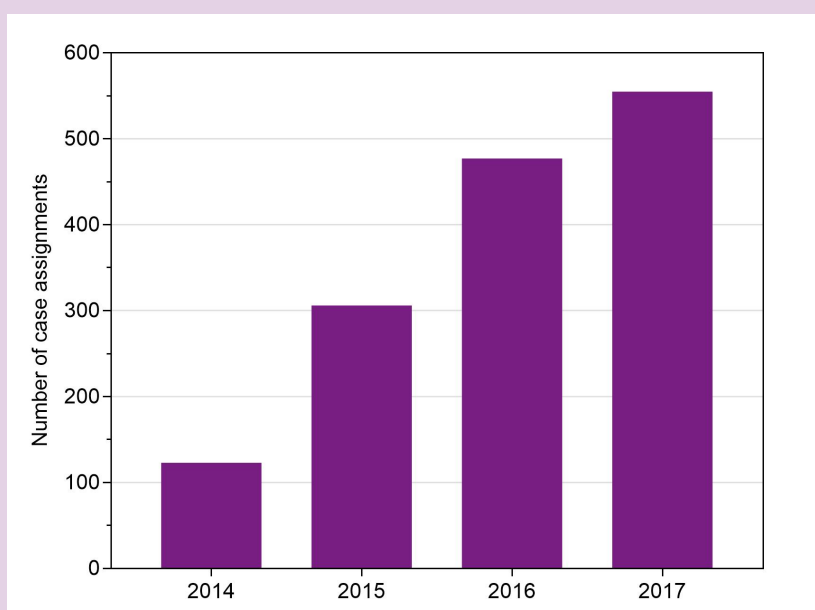


Excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age.
 Data source: MBRRACE-UK

The reporting of BMI has remained static over the three year period for stillbirths and has not yet reached 95% complete (2017: 93.4%). The completeness of gestation at booking and smoking status have also remained static for stillbirths, whilst there has been a clear improvement in the completeness of carbon monoxide monitoring data from 36.4% to 48.3%.

For neonatal deaths there has been a clear increase in the completeness of BMI data over the three years 2015 to 2017 (74.8% to 84.5%). However, the level of completeness is well below 95% so there is still much room for improvement. There has also been an increase in completeness for gestation at booking and smoking status (78.8% to 87.1% and 90.8% to 96.1%, respectively). These steady increases may reflect improved communication between neonatal units and birth hospitals and more consistent use of the case assignment facility in the MBRRACE-UK system, which allows Trusts and Health Boards to request additional data from other units (Figure 12). As for stillbirths there is a clear improvement in the completeness of carbon monoxide monitoring data for neonatal deaths, from 31.4% to 44.5%. However, this information continues to be missing for more than half of reported deaths, despite the Saving Babies' Lives Care Bundle [1] recommendation that all women are offered carbon monoxide testing as part of their antenatal care.

Figure 12: Assignment of cases between Trusts and Health Boards 2014 to 2017



Updates to the MBRRACE-UK system

In February 2019 we introduced a number of changes to the MBRRACE-UK reporting system in order to improve notification speed, reduce duplicate data entry, and further integrate the MBRRACE-UK surveillance system and PMRT. Deaths are now reported via an initial notification containing key information about the mother, baby and care providers. This initial notification is then shared by both the surveillance system and PMRT enabling each to be completed independently whilst still relying on the same core information.

In order to avoid incorrect classification of deaths by individual reporters, the case definition for each death is now determined by the MBRRACE-UK system, using the information provided in the initial notification. For deaths that fall outside of the MBRRACE-UK reporting criteria but are supported for review using the PMRT (e.g. post-neonatal deaths), additional surveillance information will not be required. The MBRRACE-UK system clearly identifies those cases which require surveillance information and those where notification is sufficient. Similarly, the PMRT identifies which deaths are supported for review.

In addition to notifying a death, the revised case management screen allows users to search for cases using a number of key identifiers, as well as viewing different subsets of cases in order to identify those requiring further action. Cases requiring surveillance information or that are ready for review using the PMRT are easily identified. Users can also perform a number of case-specific actions such as assigning the surveillance record to another

Trust or Health Board, reopening a closed case, or requesting a case be cancelled. Users are also able to download reports containing summaries and case lists as well as customized versions of the annual perinatal surveillance reports, containing additional information specific to their Trust or Health Board.

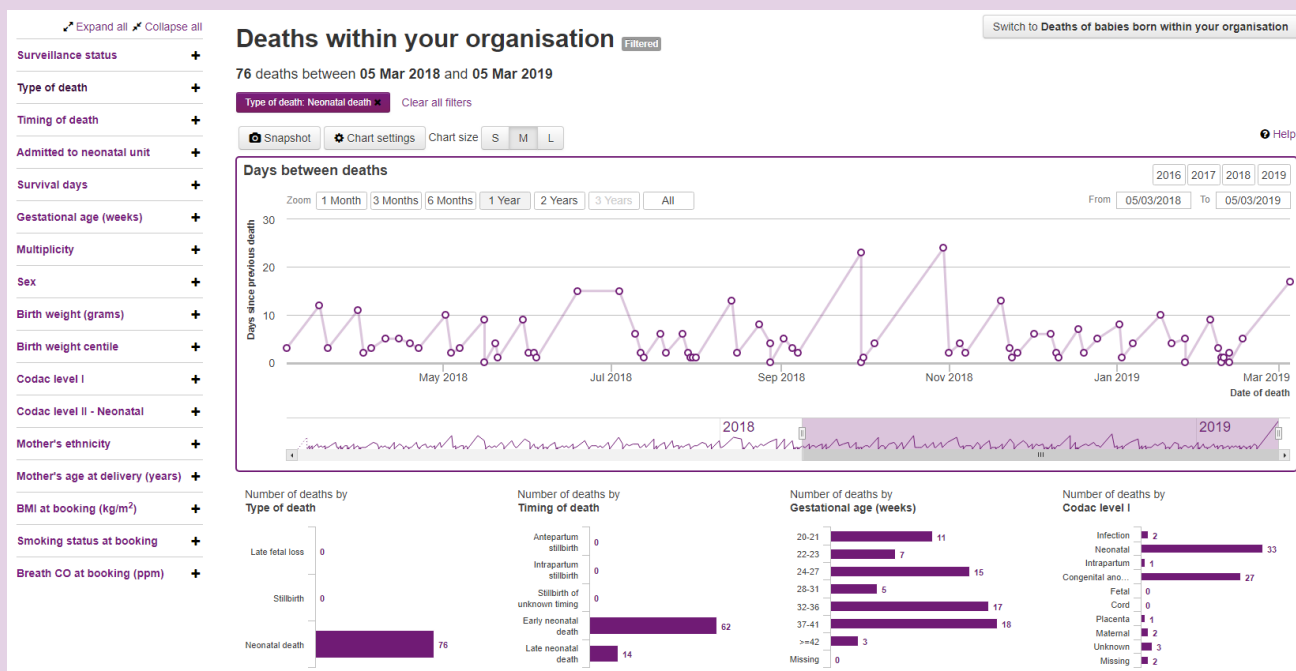
The MBRRACE-UK reporting system is under constant review to increase our efficiency, ensure high quality data capture and provide support for Trust and Health Board staff. We are happy to receive feedback at any time via email: mbrrace-uk@npeu.ox.ac.uk.

Real-time data monitoring

In May 2019, MBRRACE-UK introduced a new real-time data monitoring tool, incorporated into the MBRRACE-UK web-based system (Figure 13). The tool allows registered users of the MBRRACE-UK surveillance system to monitor, filter and summarise the perinatal deaths reported for their organisation, using live surveillance data from the MBRRACE-UK system. To make full use of the tool, it is therefore essential that deaths are notified and surveillance data entered as soon as possible after the death.

The centrepiece of the tool is a chart which plots the number of days between deaths, allowing Trusts and Health Boards to identify unusual patterns and clusters within their organisation. The addition of statistical process control features places each death in a more historical context for that organisation, and highlights clusters of deaths occurring closer together than would be expected based on that historical data. Users can click each point on the chart to see further information about the death it corresponds to, as well as viewing the MBRRACE-UK surveillance data if required.

Figure 13: Real-time data monitoring tool



Accompanying the main chart are a number of bar charts which plot the number of deaths in user-selected categories such as type of death, gestational age and BMI. A snapshot facility also allows users to make comparisons across different time periods. Finally, a filters panel allows maternity and neonatal units the flexibility to view data on the deaths most relevant to them, with live updating of the charts as filters are added or removed.

MBRRACE-UK Recommendation 3

Trusts and Health Boards should use the MBRRACE-UK real time data monitoring tool to monitor the completeness of their data. Particular emphasis should be placed on carbon monoxide monitoring and other data items feeding into national initiatives such as the Saving Babies' Lives Care Bundle version 2.



Mortality rates by healthcare provider

In this section the stillbirth, neonatal death, and extended perinatal mortality rates for individual Trusts and Health Boards are summarised. For the healthcare providers data is presented as both crude mortality rates and 'stabilised & adjusted' rates. The process of stabilisation and adjustment has a major effect in terms of smoothing apparently extreme (very high or very low) crude mortality rates by taking into account the size of the population, and known influences on stillbirth and neonatal mortality, allowing us to make direct comparisons between different organisations providing direct healthcare (e.g. those treating women identified as low risk versus those providing high risk care). There are some Trusts and Health Boards where mortality rates increase as a result of the stabilisation and adjustment. While some of these will be Trusts and Health Boards with low crude mortality rates just by chance, some will be those where rates are relatively low but where the characteristics of their population are such that rates should be even lower (e.g. they serve a comparatively low risk population).

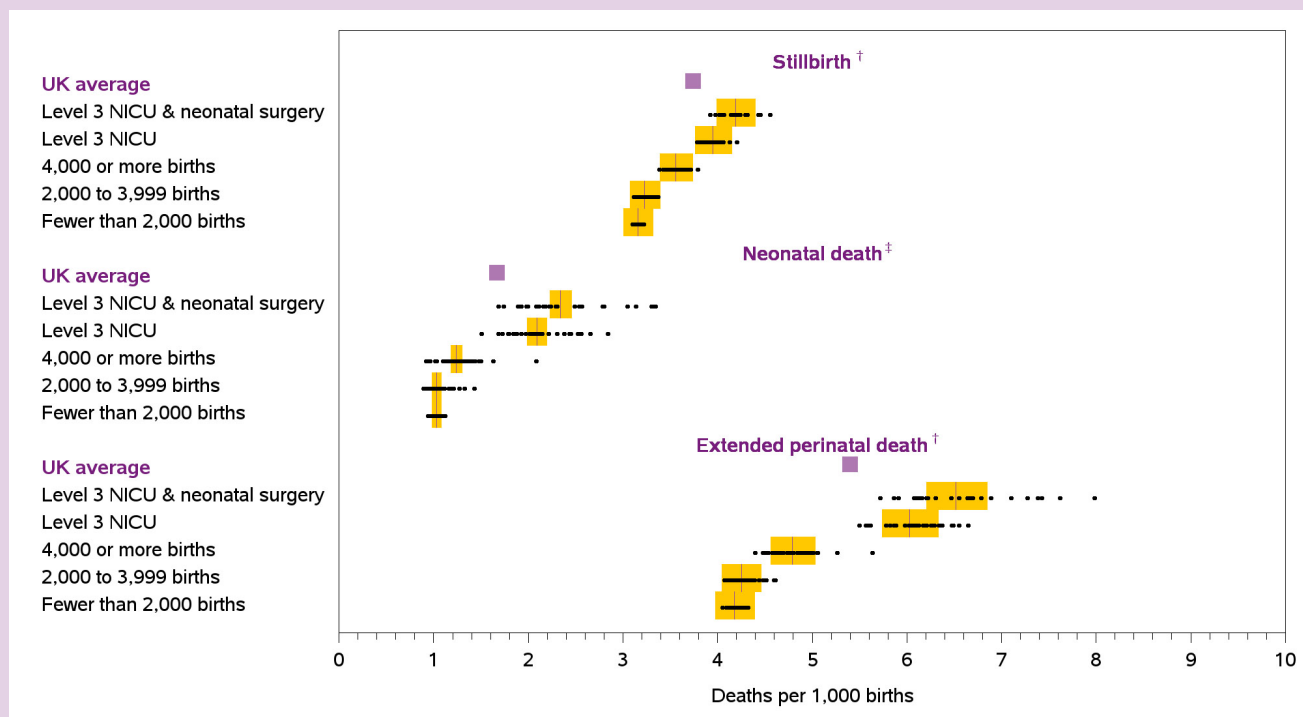
Babies have been allocated based on the Trust or Health Board in which they were born irrespective of where they died. These mortality rates are presented in two different ways: as a 'crude' mortality rate and as a 'stabilised & adjusted' mortality rate (see Section 2.6 of the full report). Mortality rates are presented both with and without deaths due to congenital anomalies to allow for the variation in local factors and policies affecting the number of deaths in this category.

In addition, to account for the wide variation in case-mix, Trusts and Health Boards have been classified hierarchically into five mutually exclusive comparator groups, based on their level of service provision:

1. Level 3 NICU and neonatal surgery;
2. Level 3 NICU;
3. 4,000 or more births per annum at 24 weeks or later;
4. 2,000-3,999 births per annum at 24 weeks or later;
5. Under 2,000 births per annum at 24 weeks or later.

In Figure 14, below, the extent to which this classification reflects the risk profiles of the different types of unit is demonstrated. The average mortality rate for each comparator group is shown as a vertical black line, with a shaded box representing the amber band (i.e. up to 5% higher or up to 5% lower than the average). This shows that the stabilised & adjusted stillbirth rates show little variation, with most Trust and Health Boards falling within 5% of their comparator group average. This is not the case for the stabilised & adjusted rate of neonatal mortality where there is wide variation especially in comparator groups 1 and 2.

Figure 14: Stabilised & adjusted mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017



† per 1,000 total births

‡ per 1,000 live births

§ excluding terminations of pregnancy and births <24+0 weeks gestational age

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

Note: different laws exist in Northern Ireland for the termination of pregnancy

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This categorisation is useful as it allows units to consider their performance in relation to a comparator group of broadly similar units. However, we recognise that there are some limitations in the approach we have taken. This particularly affects units that happen to fall on the boundary between categories and within the group that provides Level 3 neonatal intensive care and have neonatal surgical provision, i.e. those units which provide intensive care to the most high risk cases. The latter includes units that are the focus for delivery of babies known to have a major cardiac anomaly and those units with a particularly high number of births with major congenital anomalies (e.g. Belfast). Such units will inevitably have higher rates of mortality when compared to otherwise similar services who do not provide intensive care for these types of babies.

In order to address this issue the crude and the stabilised & adjusted stillbirth, neonatal mortality and extended perinatal mortality rates for UK Trusts and Health Boards are presented in Figures 16 to 21 and Tables 16 to 20 **including** congenital anomalies and in Figures 22 to 27 and Tables 23 to 27 **excluding** congenital anomalies. Each of the tables contains data for one of the five comparator groups. The average mortality rate used in each of the five tables is that of the relevant comparator group; for example, the reported mortality rates for Trusts and Health Boards with neonatal surgical provision and level 3 NICUs have been compared to the average mortality rate derived from all of the Trusts and Health Boards providing this level of care and neonatal surgical provision.

Overall stabilised & adjusted stillbirth rates for Trusts and Health Boards across the UK ranged from 3.92 to 4.56 per 1,000 total births for those with a level 3 NICU and neonatal surgery (Table 16) and from 3.10 to 3.22 for Trusts and Health Boards with under 2,000 births per annum (Table 20).

Stabilised neonatal mortality rates for Trusts and Health Boards across the UK ranged from 1.68 to 3.35 per 1,000 total births for those with a level 3 NICU and neonatal surgery (Table 16) and from 0.94 to 1.12 for Trusts and Health Boards with under 2,000 births per annum (Table 20).

It should be noted that exclusion of congenital anomalies from crude mortality rates (in particular neonatal mortality rates) reduces the actual number of deaths for many Trusts and Health Boards to less than three meaning that they are suppressed in the figures and tables.

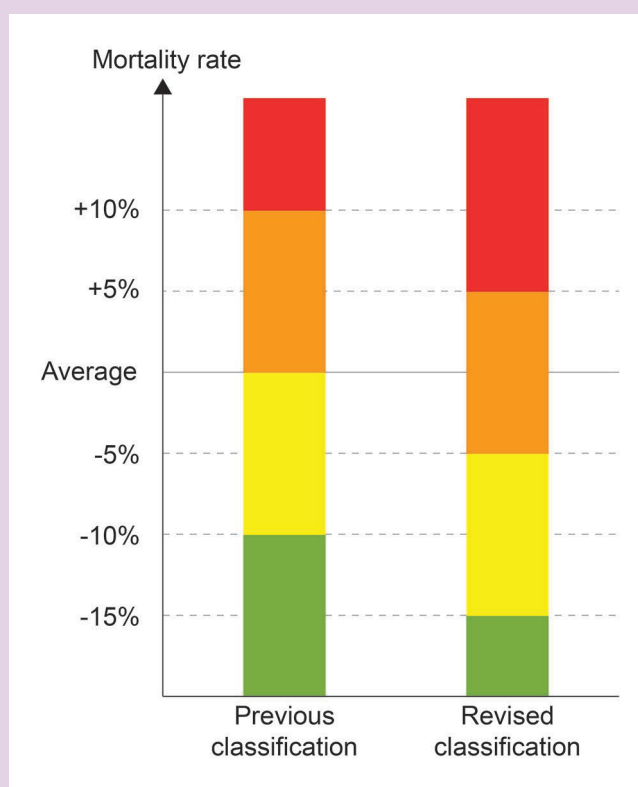
Individual detailed Trust and Health Board reports are produced to facilitate discussions of the findings from this report at Trust and Health Board level. These are uploaded onto the MBRRACE-UK web-based system and lead reporters and quality managers are notified of the availability.

Mortality rates for individual Trusts and Health Boards

Revised colour coding for maps and tables

The colour coding used in the maps and tables has been revised for this report and is presented in Figure 15.

Figure 15: Revised colour coding for maps and tables



The rationale for this change is based on the fact that many comparable high income countries have significantly lower mortality rates than the UK [4].

Revision of the coding system to include mortality rates from 5% lower than average rates in the amber band is designed to stimulate the continuing need for further improvement in mortality rates by organisations to meet national stillbirth and neonatal death initiatives.

- Green: more than 15% lower than the average.
- Yellow: more than 5% and up to 15% lower than the average.
- Amber: up to 5% higher or up to 5% lower than the average.
- Red: more than 5% higher than the average.

The size of the circles on each map represents the number of births in the population covered by the particular organisation, although there is a minimum size in order that the colour can be adequately seen.

The accompanying tables show either both the crude and the stabilised rate for stillbirth, neonatal death, and extended perinatal death or the crude and the stabilised & adjusted rate for stillbirth, neonatal death, and extended perinatal death for each organisation, as appropriate. In order to avoid the effect of any local policy decisions regarding the classification of live and stillbirth at the extremes of viability, particular emphasis is given to the extended perinatal mortality rate and each organisation has been colour coded based on their crude, stabilised or stabilised & adjusted extended perinatal mortality rate in an identical manner to the maps.



Figure 16: Crude stillbirth mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

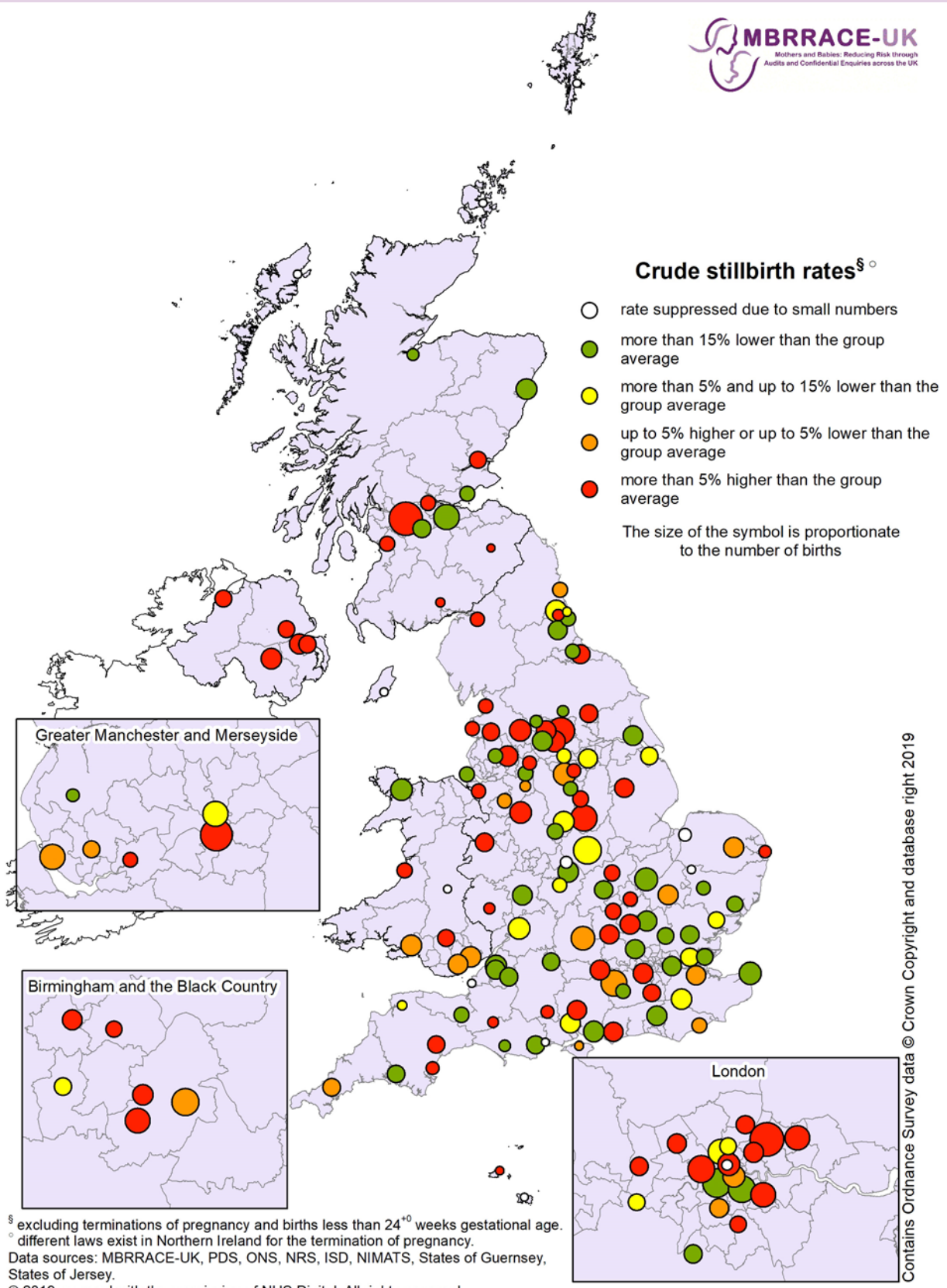


Figure 17: Stabilised & adjusted stillbirth mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

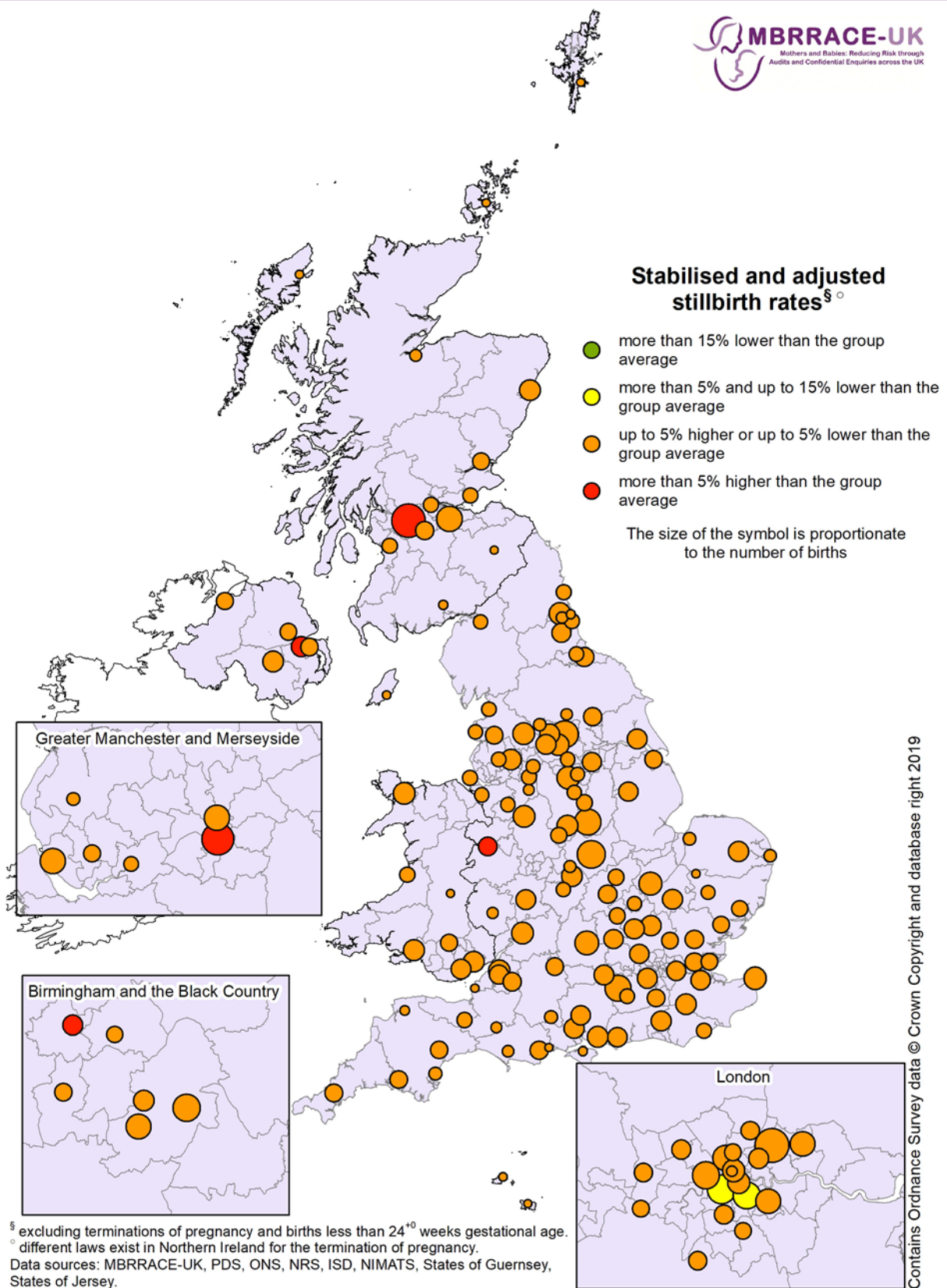


Figure 18: Crude neonatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

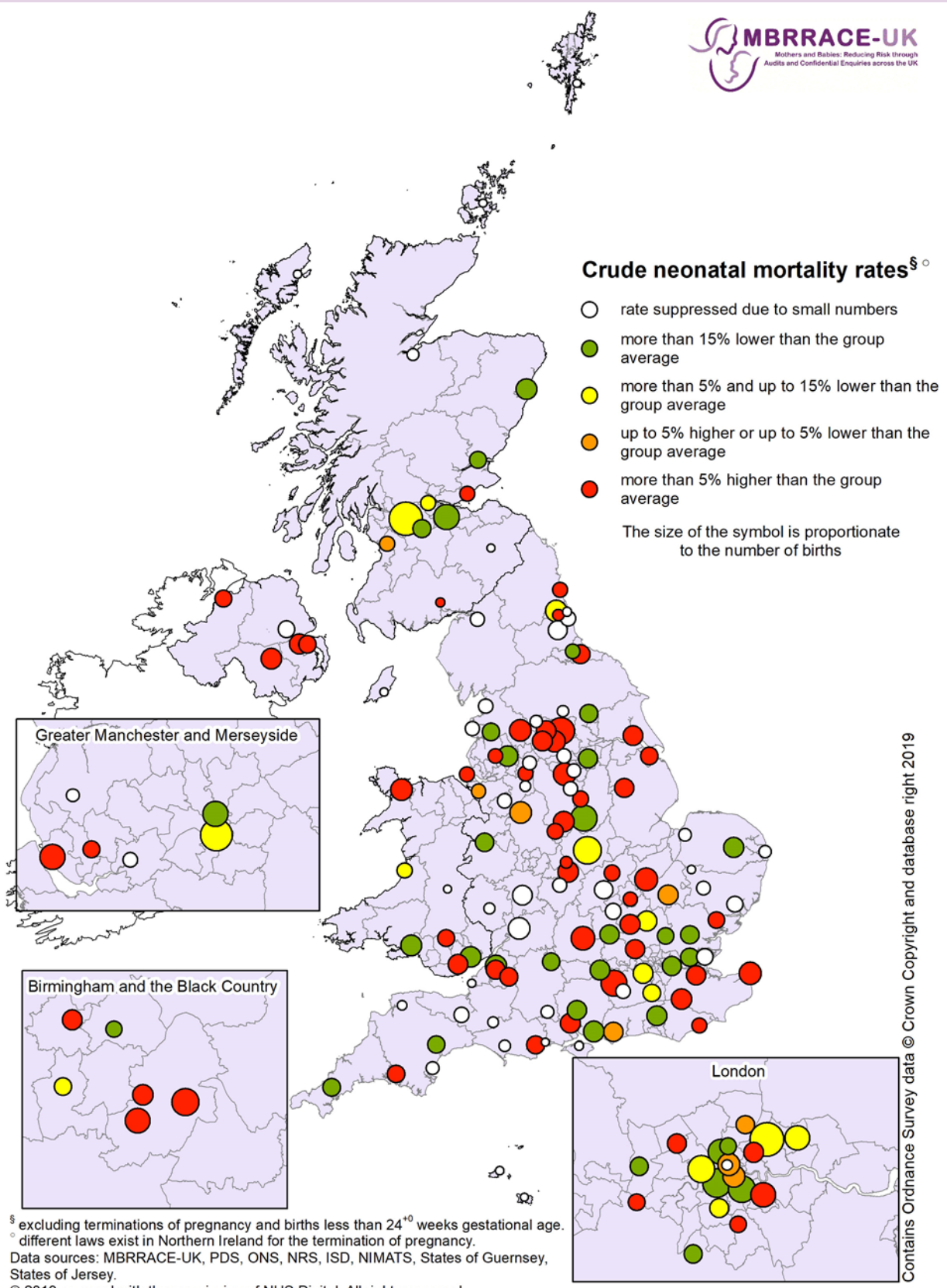


Figure 19: Stabilised & adjusted neonatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

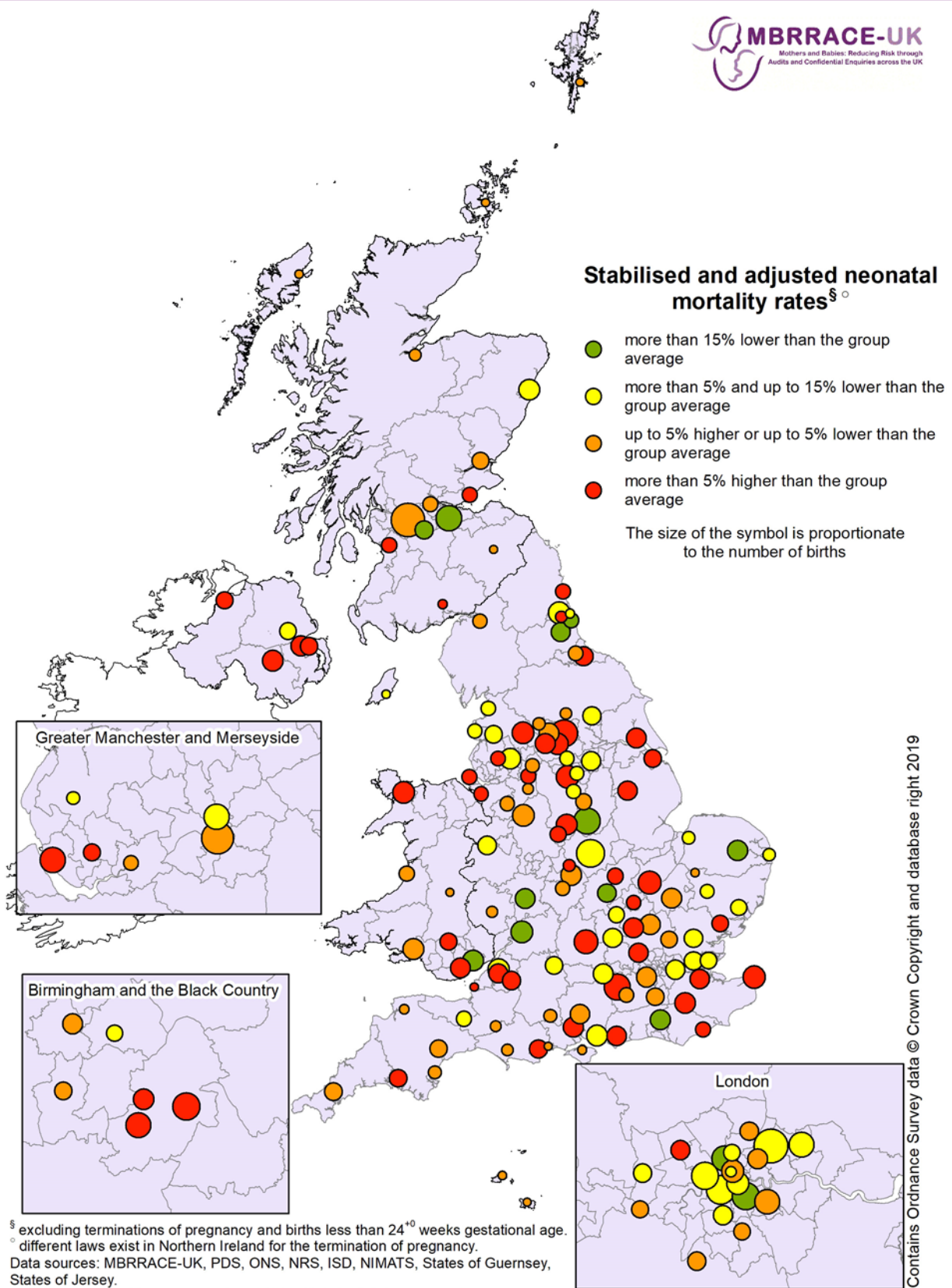


Figure 20: Crude extended perinatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

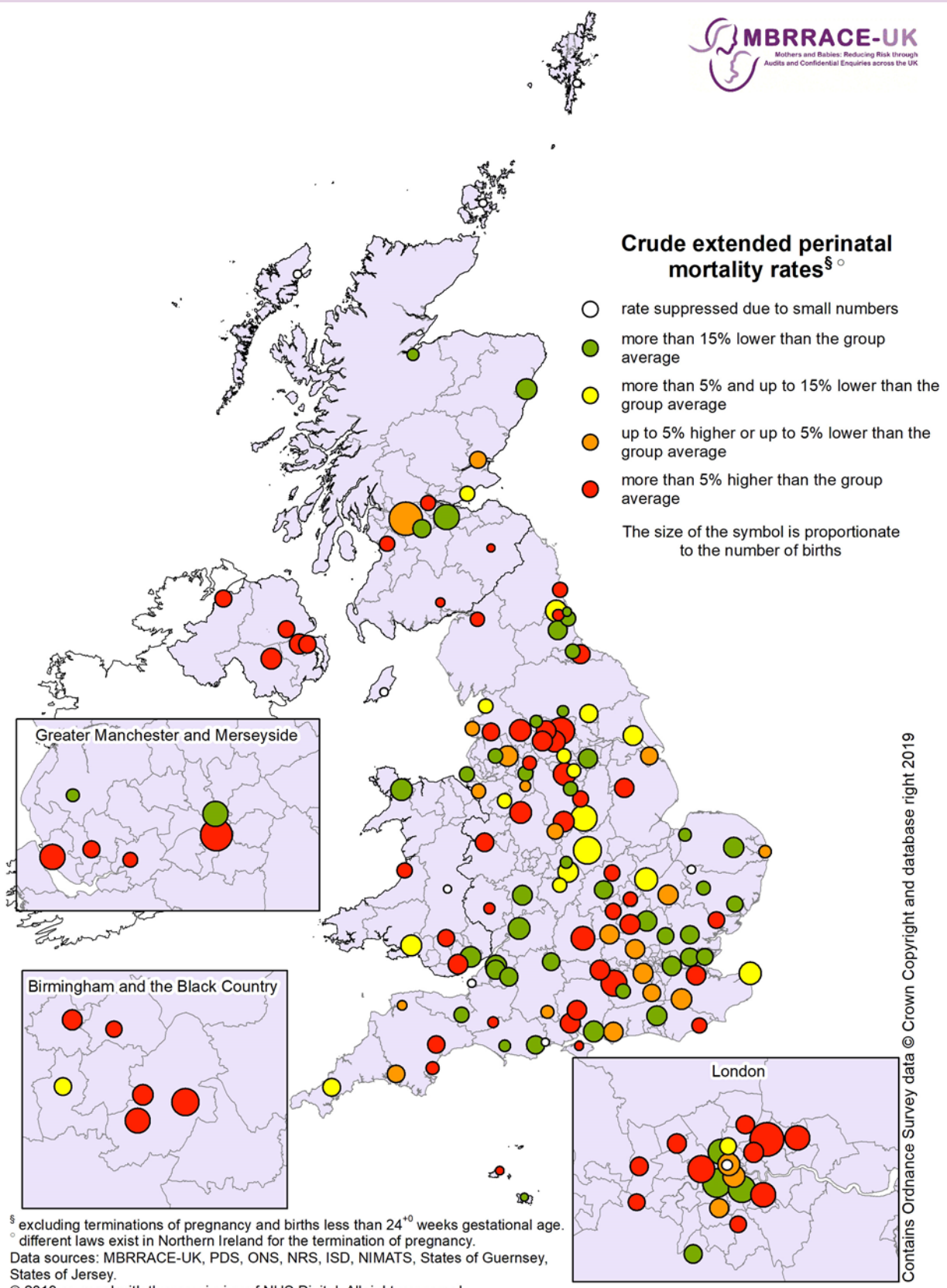
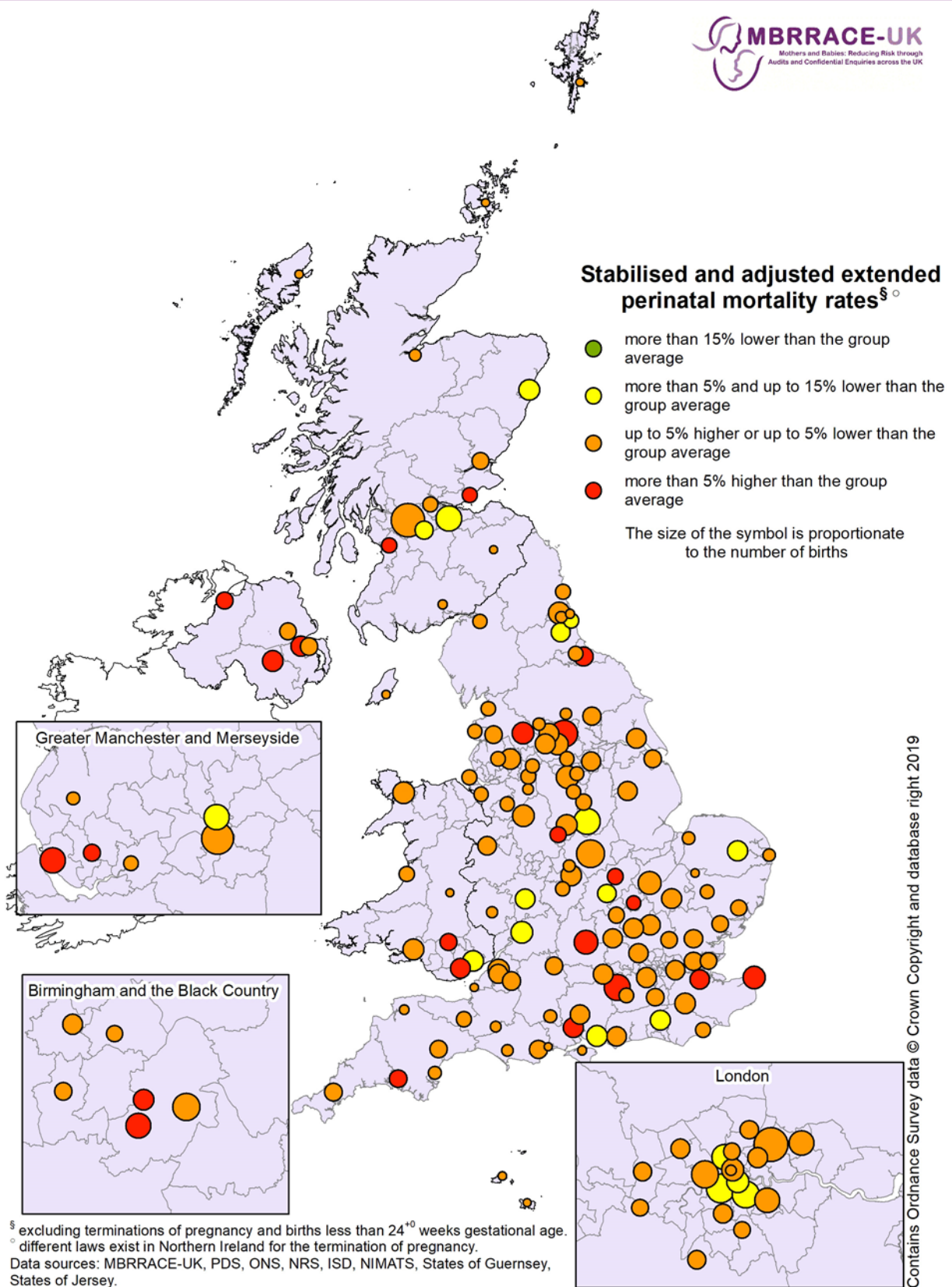


Figure 21: Stabilised & adjusted extended perinatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017



**Table 12: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017
FOR TRUSTS AND HEALTH BOARDS WITH NEONATAL SURGICAL PROVISION AND A LEVEL 3 NICU**

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			4.19		2.34		6.52	
ENGLAND								
Barts Health NHS Trust	16,064	5.17	4.14 (3.54 to 4.96)	2.19	2.16 (1.53 to 3.00)	7.35	6.30 (5.63 to 7.73)	●
Birmingham Women's and Children's NHS Foundation Trust	8,264	5.57	4.30 (3.64 to 5.15)	3.65	2.79 (2.01 to 3.86)	9.20	7.10 (6.19 to 8.73)	●
Brighton and Sussex University Hospitals NHS Trust	5,456	2.38	4.05 (3.28 to 4.78)	0.92	1.74 (1.10 to 2.75)	3.30	5.72 (4.88 to 7.20)	●
Cambridge University Hospitals NHS Foundation Trust	5,348	4.11	4.30 (3.58 to 5.23)	2.25	2.29 (1.56 to 3.37)	6.36	6.55 (5.60 to 8.36)	●
Chelsea and Westminster Hospital NHS Foundation Trust	11,494	3.22	3.97 (3.18 to 4.81)	1.57	2.10 (1.51 to 3.01)	4.79	6.08 (5.22 to 7.47)	●
Guy's and St Thomas' NHS Foundation Trust	6,934	4.04	4.03 (3.28 to 4.79)	2.32	2.11 (1.50 to 3.11)	6.35	6.12 (5.38 to 7.73)	●
Hull and East Yorkshire Hospitals NHS Trust	5,410	2.77	4.07 (3.33 to 4.82)	2.78	2.56 (1.74 to 3.89)	5.55	6.65 (5.65 to 8.51)	●
King's College Hospital NHS Foundation Trust	9,756	3.08	3.92 (3.09 to 4.84)	1.34	1.92 (1.32 to 2.82)	4.41	5.86 (5.03 to 7.41)	●
Liverpool Women's NHS Foundation Trust	8,686	4.14	4.22 (3.53 to 4.97)	4.05	3.05 (2.19 to 4.28)	8.17	7.38 (6.34 to 9.11)	●
Manchester University NHS Foundation Trust	13,519	5.33	4.43 (3.75 to 5.37)	2.08	2.22 (1.57 to 3.08)	7.40	6.64 (5.83 to 8.14)	●
Norfolk and Norwich University Hospitals NHS Foundation Trust	5,586	4.30	4.30 (3.62 to 5.19)	0.54	1.68 (1.10 to 2.61)	4.83	5.91 (5.12 to 7.49)	●
Nottingham University Hospitals NHS Trust	9,639	4.46	4.24 (3.54 to 5.05)	1.46	1.89 (1.27 to 2.77)	5.91	6.11 (5.37 to 7.53)	●
Oxford University Hospitals NHS Trust	7,633	4.19	4.32 (3.59 to 5.22)	3.29	2.54 (1.83 to 3.65)	7.47	6.89 (5.92 to 8.63)	●
Sheffield Teaching Hospitals NHS Foundation Trust	6,971	4.30	4.21 (3.56 to 4.94)	2.88	2.49 (1.76 to 3.67)	7.17	6.70 (5.84 to 8.43)	●
St George's University Hospitals NHS Foundation Trust	4,988	4.21	4.17 (3.45 to 4.98)	2.21	2.08 (1.44 to 3.07)	6.42	6.21 (5.40 to 7.76)	●
The Leeds Teaching Hospitals NHS Trust	9,817	4.48	4.20 (3.55 to 4.93)	3.48	3.30 (2.32 to 4.70)	7.95	7.42 (6.45 to 9.15)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
The Newcastle upon Tyne Hospitals NHS Foundation Trust	6,554	3.66	4.14 (3.46 to 4.87)	1.99	2.11 (1.47 to 3.21)	5.65	6.22 (5.42 to 7.79)	●
University College London Hospitals NHS Foundation Trust	6,735	4.45	4.18 (3.54 to 4.91)	2.24	2.30 (1.57 to 3.28)	6.68	6.47 (5.64 to 8.03)	●
University Hospital Southampton NHS Foundation Trust	5,697	3.86	4.21 (3.51 to 5.00)	4.05	3.35 (2.26 to 5.10)	7.90	7.62 (6.42 to 9.80)	●
University Hospitals Bristol NHS Foundation Trust	5,178	2.51	4.02 (3.25 to 4.81)	2.90	2.80 (1.84 to 4.15)	5.41	6.79 (5.65 to 8.65)	●
University Hospitals of Leicester NHS Trust	10,337	3.58	4.05 (3.32 to 4.81)	2.04	2.18 (1.53 to 3.11)	5.61	6.22 (5.47 to 7.62)	●
SCOTLAND								
NHS Grampian	6,060	3.30	4.18 (3.49 to 4.97)	1.16	1.99 (1.34 to 3.00)	4.46	6.16 (5.37 to 7.68)	●
NHS Greater Glasgow and Clyde	15,009	4.66	4.45 (3.59 to 5.44)	2.01	2.24 (1.64 to 3.04)	6.66	6.66 (5.84 to 8.25)	●
NHS Lothian	9,167	3.49	4.16 (3.51 to 4.91)	1.31	1.98 (1.34 to 2.91)	4.80	6.13 (5.42 to 7.54)	●
WALES								
Cardiff and Vale University Health Board	5,686	4.40	4.22 (3.54 to 5.06)	3.18	3.14 (2.07 to 4.67)	7.56	7.27 (6.26 to 9.08)	●
NORTHERN IRELAND								
Belfast Health and Social Care Trust	5,472	6.76	4.56 (3.59 to 5.98)	4.42	3.33 (2.23 to 4.93)	11.15	7.98 (6.59 to 10.38)	●

§ excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

† per 1,000 total births

‡ per 1,000 live births

colours represent variation from comparator group average extended perinatal mortality rate

° different laws exist in Northern Ireland for the termination of pregnancy

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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**Table 13: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017
FOR TRUSTS AND HEALTH BOARDS WITH A LEVEL 3 NICU**

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			3.95		2.09		6.03	
ENGLAND								
Ashford and St Peter's Hospital NHS Foundation Trust	3,987	3.51	3.96 (3.23 to 4.74)	3.02	2.08 (1.41 to 3.09)	6.52	6.02 (5.08 to 7.75)	●
Bolton NHS Foundation Trust	5,853	4.44	4.01 (3.37 to 4.79)	1.37	1.79 (1.19 to 2.77)	5.81	5.78 (5.03 to 7.22)	●
Bradford Teaching Hospitals NHS Foundation Trust	5,698	5.62	4.02 (3.41 to 4.91)	2.82	2.04 (1.40 to 2.88)	8.42	6.04 (5.30 to 7.55)	●
City Hospitals Sunderland NHS Foundation Trust	3,149	*	3.84 (3.12 to 4.63)	*	1.72 (1.12 to 2.70)	2.86	5.57 (4.67 to 6.89)	●
East Kent Hospitals University NHS Foundation Trust	6,996	2.72	3.82 (3.11 to 4.59)	3.01	2.84 (1.93 to 4.18)	5.72	6.64 (5.67 to 8.41)	●
East Lancashire Hospitals NHS Trust	6,354	4.56	4.01 (3.31 to 4.83)	2.85	2.56 (1.68 to 3.87)	7.40	6.55 (5.63 to 8.29)	●
Heart of England NHS Foundation Trust	9,780	3.99	3.86 (3.22 to 4.54)	2.36	2.45 (1.64 to 3.50)	6.34	6.25 (5.45 to 7.67)	●
Homerton University Hospital NHS Foundation Trust	5,690	5.45	4.04 (3.41 to 4.89)	2.47	2.10 (1.41 to 3.14)	7.91	6.13 (5.40 to 7.62)	●
Imperial College Healthcare NHS Trust	10,185	4.71	4.01 (3.37 to 4.89)	1.97	1.88 (1.34 to 2.71)	6.68	5.86 (5.20 to 7.33)	●
Lancashire Teaching Hospitals NHS Foundation Trust	4,431	5.19	4.13 (3.35 to 5.00)	1.59	1.97 (1.29 to 3.02)	6.77	6.07 (5.18 to 7.70)	●
Luton and Dunstable University Hospital NHS Foundation Trust	5,325	4.51	3.98 (3.26 to 4.77)	2.26	2.22 (1.51 to 3.39)	6.76	6.18 (5.40 to 7.80)	●
Medway NHS Foundation Trust	5,039	3.77	3.95 (3.31 to 4.67)	2.59	2.43 (1.59 to 3.71)	6.35	6.37 (5.53 to 8.06)	●
North Bristol NHS Trust	6,171	3.08	3.91 (3.21 to 4.61)	1.46	1.92 (1.31 to 2.86)	4.54	5.82 (4.97 to 7.30)	●
North Tees and Hartlepool NHS Foundation Trust	2,833	2.47	3.86 (3.17 to 4.69)	1.42	2.03 (1.32 to 3.10)	3.88	5.88 (5.01 to 7.54)	●
Plymouth Hospitals NHS Trust	4,163	2.88	3.90 (3.22 to 4.59)	3.37	2.52 (1.61 to 3.78)	6.25	6.49 (5.39 to 8.29)	●
Portsmouth Hospitals NHS Trust	5,779	2.25	3.81 (2.99 to 4.66)	1.73	1.85 (1.28 to 2.76)	3.98	5.61 (4.76 to 7.19)	●
South Tees Hospitals NHS Foundation Trust	5,272	4.17	4.00 (3.35 to 4.84)	2.48	2.38 (1.64 to 3.43)	6.64	6.37 (5.53 to 7.94)	●
The Pennine Acute Hospitals NHS Trust	9,011	3.55	3.80 (3.06 to 4.58)	1.56	1.80 (1.22 to 2.62)	5.10	5.60 (4.83 to 6.94)	●
The Royal Wolverhampton NHS Trust	5,412	6.47	4.21 (3.41 to 5.55)	2.42	2.10 (1.49 to 3.16)	8.87	6.29 (5.36 to 8.25)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
University Hospitals Coventry and Warwickshire NHS Trust	6,154	3.25	3.86 (3.14 to 4.58)	2.45	2.12 (1.47 to 3.18)	5.69	5.98 (5.15 to 7.49)	●
University Hospitals of North Midlands NHS Trust	6,454	4.34	4.04 (3.32 to 4.97)	2.02	2.14 (1.47 to 3.17)	6.35	6.18 (5.38 to 7.69)	●
Wirral University Teaching Hospital NHS Foundation Trust	3,312	1.21	3.78 (2.96 to 4.64)	3.02	2.38 (1.50 to 3.72)	4.23	6.20 (5.09 to 8.04)	●
SCOTLAND								
NHS Ayrshire & Arran	3,240	4.94	4.06 (3.38 to 5.05)	2.17	2.30 (1.41 to 3.64)	7.10	6.34 (5.45 to 7.95)	●
NHS Fife	3,210	2.49	3.87 (3.18 to 4.56)	3.12	2.66 (1.65 to 4.11)	5.61	6.48 (5.47 to 8.16)	●
NHS Lanarkshire	4,490	3.34	3.94 (3.24 to 4.71)	0.89	1.68 (1.04 to 2.56)	4.23	5.57 (4.73 to 7.09)	●
NHS Tayside	4,034	4.46	4.05 (3.38 to 5.03)	1.49	2.05 (1.34 to 3.25)	5.95	6.10 (5.32 to 7.85)	●
WALES								
Abertawe Bro Morgannwg University Health Board	5,803	4.14	4.03 (3.34 to 4.81)	1.56	2.02 (1.35 to 3.05)	5.69	6.04 (5.25 to 7.42)	●
Aneurin Bevan University Health Board	5,975	4.02	4.01 (3.32 to 4.74)	0.50	1.50 (0.90 to 2.36)	4.52	5.50 (4.76 to 6.97)	●

§ excluding terminations of pregnancy and births <24⁰ weeks gestational age

† per 1,000 total births

‡ per 1,000 live births

colours represent variation from comparator group average extended perinatal mortality rate

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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**Table 14: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017
FOR TRUSTS AND HEALTH BOARDS WITH 4,000 OR MORE BIRTHS ≥24⁺⁰ WEEKS GESTATIONAL AGE PER ANNUM**

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			3.56		1.24		4.79	
ENGLAND								
Barking, Havering and Redbridge University Hospitals NHS Trust	8,304	4.09	3.52 (3.02 to 4.25)	1.09	1.13 (0.76 to 1.72)	5.18	4.65 (4.14 to 5.70)	●
Basildon and Thurrock University Hospitals NHS Foundation Trust	4,568	3.06	3.51 (2.93 to 4.18)	0.88	1.12 (0.72 to 1.79)	3.94	4.62 (4.08 to 5.75)	●
Buckinghamshire Healthcare NHS Trust	5,143	4.08	3.64 (3.05 to 4.36)	0.59	1.11 (0.69 to 1.79)	4.67	4.74 (4.19 to 5.91)	●
Calderdale and Huddersfield NHS Foundation Trust	5,336	3.00	3.47 (2.89 to 4.14)	2.26	1.50 (0.97 to 2.23)	5.25	4.99 (4.26 to 6.06)	●
County Durham and Darlington NHS Foundation Trust	4,891	*	3.50 (2.90 to 4.11)	*	1.02 (0.60 to 1.68)	3.07	4.53 (3.92 to 5.52)	●
Dartford and Gravesham NHS Trust	4,954	2.62	3.46 (2.81 to 4.14)	0.81	1.14 (0.71 to 1.79)	3.43	4.59 (3.91 to 5.68)	●
Derby Teaching Hospitals NHS Foundation Trust	5,820	3.09	3.50 (2.88 to 4.18)	2.24	1.43 (1.00 to 2.26)	5.33	4.99 (4.35 to 6.25)	●
Doncaster and Bassetlaw Hospitals NHS Foundation Trust	4,880	3.07	3.51 (2.91 to 4.13)	0.82	1.10 (0.71 to 1.72)	3.89	4.59 (3.94 to 5.60)	●
East and North Hertfordshire NHS Trust	5,640	2.30	3.45 (2.84 to 4.20)	1.07	1.24 (0.80 to 1.95)	3.37	4.69 (4.04 to 5.80)	●
Epsom and St Helier University Hospitals NHS Trust	4,799	2.50	3.48 (2.87 to 4.12)	1.04	1.22 (0.80 to 1.93)	3.54	4.69 (4.05 to 5.71)	●
Frimley Health NHS Foundation Trust	9,652	3.73	3.60 (3.07 to 4.35)	2.08	1.63 (1.05 to 2.49)	5.80	5.27 (4.55 to 6.57)	●
Gloucestershire Hospitals NHS Foundation Trust	6,276	*	3.56 (3.06 to 4.29)	*	0.96 (0.59 to 1.54)	3.51	4.49 (3.95 to 5.49)	●
Great Western Hospitals NHS Foundation Trust	4,423	2.94	3.53 (2.97 to 4.14)	0.68	1.11 (0.69 to 1.77)	3.62	4.62 (3.98 to 5.77)	●
Hampshire Hospitals NHS Foundation Trust	5,250	4.19	3.69 (3.09 to 4.55)	0.96	1.24 (0.77 to 1.98)	5.14	4.93 (4.24 to 6.19)	●
Kingston Hospital NHS Foundation Trust	5,493	3.82	3.61 (3.08 to 4.38)	1.10	1.28 (0.82 to 2.02)	4.92	4.88 (4.21 to 6.08)	●
Lewisham and Greenwich NHS Trust	8,587	4.31	3.52 (2.99 to 4.16)	1.40	1.28 (0.87 to 1.91)	5.71	4.80 (4.26 to 5.80)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
London North West University Healthcare NHS Trust	5,049	5.74	3.69 (3.09 to 4.58)	1.59	1.32 (0.87 to 2.10)	7.33	5.01 (4.32 to 6.32)	●
Maidstone and Tunbridge Wells NHS Trust	5,883	3.06	3.56 (3.01 to 4.28)	1.53	1.44 (0.92 to 2.22)	4.59	4.99 (4.34 to 6.17)	●
Mid Essex Hospital Services NHS Trust	4,735	1.69	3.43 (2.72 to 4.06)	0.85	1.15 (0.75 to 1.79)	2.53	4.57 (3.84 to 5.64)	●
North Middlesex University Hospital NHS Trust	4,725	6.35	3.72 (3.14 to 4.57)	1.28	1.18 (0.78 to 1.80)	7.62	4.89 (4.29 to 6.16)	●
North West Anglia NHS Foundation Trust	7,301	3.01	3.51 (2.87 to 4.13)	1.51	1.37 (0.91 to 2.14)	4.52	4.88 (4.18 to 5.93)	●
Northampton General Hospital NHS Trust	4,819	*	3.48 (2.88 to 4.13)	*	1.03 (0.62 to 1.65)	3.11	4.51 (3.87 to 5.55)	●
Northern Lincolnshire and Goole Hospitals NHS Foundation Trust	4,261	3.29	3.54 (2.94 to 4.25)	1.65	1.30 (0.83 to 2.11)	4.93	4.84 (4.17 to 6.03)	●
Poole Hospital NHS Foundation Trust	4,584	2.18	3.46 (2.86 to 4.10)	1.75	1.43 (0.89 to 2.34)	3.93	4.90 (4.16 to 6.16)	●
Royal Berkshire NHS Foundation Trust	5,327	4.51	3.67 (3.13 to 4.48)	0.75	1.13 (0.70 to 1.81)	5.26	4.80 (4.22 to 5.99)	●
Royal Cornwall Hospitals NHS Trust	4,118	3.40	3.57 (2.96 to 4.28)	0.97	1.22 (0.77 to 2.02)	4.37	4.79 (4.14 to 5.93)	●
Royal Devon and Exeter NHS Foundation Trust	4,200	4.29	3.66 (3.07 to 4.47)	0.96	1.19 (0.74 to 1.88)	5.24	4.84 (4.22 to 6.13)	●
Royal Free London NHS Foundation Trust	8,773	3.19	3.47 (2.93 to 4.09)	0.34	0.92 (0.58 to 1.48)	3.53	4.40 (3.86 to 5.35)	●
Royal United Hospitals Bath NHS Foundation Trust	4,586	2.18	3.49 (2.86 to 4.08)	1.31	1.30 (0.83 to 1.99)	3.49	4.79 (4.14 to 5.85)	●
Sandwell and West Birmingham Hospitals NHS Trust	5,882	5.61	3.60 (3.09 to 4.26)	3.93	2.09 (1.36 to 3.42)	9.52	5.64 (4.86 to 7.24)	●
St Helens and Knowsley Teaching Hospitals NHS Trust	4,096	3.66	3.58 (3.07 to 4.31)	1.96	1.49 (0.90 to 2.43)	5.62	5.06 (4.34 to 6.35)	●
Surrey and Sussex Healthcare NHS Trust	4,472	3.80	3.61 (3.08 to 4.34)	1.12	1.20 (0.79 to 1.97)	4.92	4.80 (4.25 to 6.03)	●
The Dudley Group NHS Foundation Trust	4,470	3.13	3.49 (2.90 to 4.09)	1.12	1.18 (0.74 to 1.87)	4.25	4.67 (4.09 to 5.75)	●
The Hillingdon Hospitals NHS Foundation Trust	4,823	5.60	3.66 (3.08 to 4.55)	1.04	1.13 (0.71 to 1.74)	6.63	4.78 (4.20 to 5.97)	●
The Mid Yorkshire Hospitals NHS Trust	6,292	3.97	3.58 (3.06 to 4.21)	1.44	1.31 (0.86 to 2.08)	5.40	4.88 (4.29 to 6.00)	●
The Princess Alexandra Hospital NHS Trust	4,080	1.96	3.45 (2.85 to 4.15)	0.98	1.24 (0.77 to 1.98)	2.94	4.68 (4.03 to 5.84)	●
The Shrewsbury and Telford Hospital NHS Trust	4,738	5.70	3.79 (3.11 to 4.97)	0.85	1.18 (0.75 to 1.92)	6.54	4.95 (4.24 to 6.44)	●
United Lincolnshire Hospitals NHS Trust	5,165	4.45	3.68 (3.05 to 4.45)	1.36	1.33 (0.82 to 2.12)	5.81	5.00 (4.23 to 6.25)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
West Hertfordshire Hospitals NHS Trust	4,918	2.85	3.50 (2.90 to 4.10)	1.84	1.48 (0.94 to 2.41)	4.68	4.98 (4.28 to 6.19)	●
Western Sussex Hospitals NHS Foundation Trust	5,051	3.76	3.63 (3.06 to 4.36)	1.19	1.33 (0.84 to 2.14)	4.95	4.95 (4.31 to 6.19)	●
Worcestershire Acute Hospitals NHS Trust	5,448	*	3.52 (2.99 to 4.18)	*	0.96 (0.55 to 1.50)	3.12	4.48 (3.94 to 5.45)	●
York Teaching Hospital NHS Foundation Trust	4,674	3.85	3.63 (3.08 to 4.41)	0.64	1.15 (0.69 to 1.84)	4.49	4.78 (4.17 to 5.96)	●
WALES								
Betsi Cadwaladr University Health Board	6,591	1.97	3.38 (2.67 to 4.14)	1.67	1.33 (0.88 to 2.09)	3.64	4.74 (3.98 to 5.95)	●
NORTHERN IRELAND[°]								
South Eastern Health and Social Care Trust	4,242	3.77	3.61 (3.06 to 4.35)	1.42	1.39 (0.89 to 2.31)	5.19	4.99 (4.34 to 6.33)	●
Southern Health and Social Care Trust	5,859	3.93	3.64 (3.06 to 4.42)	1.54	1.41 (0.87 to 2.23)	5.46	5.05 (4.41 to 6.29)	●

§ excluding terminations of pregnancy and births <24+0 weeks gestational age

† per 1,000 total births

‡ per 1,000 live births

colours represent variation from comparator group average extended perinatal mortality rate

* entry suppressed because of small number of deaths

° different laws exist in Northern Ireland for the termination of pregnancy

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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**Table 15: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017
FOR TRUSTS AND HEALTH BOARDS WITH 2,000 TO 3,999 BIRTHS ≥24⁺ WEEKS GESTATIONAL AGE PER ANNUM**

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			3.23		1.03		4.25	
ENGLAND								
Airedale NHS Foundation Trust	2,118	*	3.17 (2.54 to 3.73)	*	1.00 (0.61 to 1.60)	2.83	4.16 (3.46 to 5.21)	●
Barnsley Hospital NHS Foundation Trust	3,029	*	3.21 (2.62 to 3.83)	*	0.96 (0.56 to 1.57)	3.63	4.16 (3.53 to 5.16)	●
Bedford Hospital NHS Trust	2,879	4.17	3.28 (2.67 to 4.00)	2.44	1.33 (0.80 to 2.19)	6.60	4.61 (3.90 to 5.77)	●
Blackpool Teaching Hospitals NHS Foundation Trust	2,935	*	3.25 (2.73 to 3.94)	*	0.96 (0.59 to 1.59)	4.43	4.20 (3.61 to 5.14)	●
Burton Hospitals NHS Foundation Trust	3,428	1.46	3.12 (2.44 to 3.72)	2.63	1.43 (0.86 to 2.57)	4.08	4.52 (3.73 to 5.79)	●
Chesterfield Royal Hospital NHS Foundation Trust	2,838	*	3.13 (2.46 to 3.77)	*	0.94 (0.55 to 1.55)	1.76	4.08 (3.46 to 5.00)	●
Colchester Hospital University NHS Foundation Trust	3,788	2.90	3.20 (2.63 to 3.86)	1.59	1.18 (0.73 to 1.93)	4.49	4.38 (3.72 to 5.38)	●
Countess of Chester Hospital NHS Foundation Trust	2,936	3.41	3.25 (2.68 to 3.96)	1.03	1.08 (0.65 to 1.80)	4.43	4.33 (3.70 to 5.37)	●
Croydon Health Services NHS Trust	3,780	3.97	3.20 (2.61 to 3.82)	1.33	1.05 (0.67 to 1.69)	5.29	4.25 (3.65 to 5.29)	●
East Sussex Healthcare NHS Trust	3,281	3.35	3.23 (2.63 to 3.88)	1.83	1.21 (0.70 to 2.10)	5.18	4.44 (3.72 to 5.57)	●
George Eliot Hospital NHS Trust	2,147	*	3.14 (2.44 to 3.74)	*	1.10 (0.66 to 1.88)	2.33	4.22 (3.45 to 5.14)	●
James Paget University Hospitals NHS Foundation Trust	2,134	*	3.24 (2.68 to 3.85)	*	0.97 (0.55 to 1.53)	4.22	4.21 (3.55 to 5.21)	●
Kettering General Hospital NHS Foundation Trust	3,449	3.77	3.26 (2.66 to 3.95)	2.62	1.27 (0.81 to 2.05)	6.38	4.60 (3.84 to 5.83)	●
Mid Cheshire Hospitals NHS Foundation Trust	3,055	*	3.25 (2.71 to 3.88)	*	0.99 (0.59 to 1.59)	3.93	4.24 (3.65 to 5.17)	●
Milton Keynes University Hospital NHS Foundation Trust	3,695	*	3.26 (2.69 to 3.99)	*	0.92 (0.55 to 1.45)	4.60	4.17 (3.60 to 5.16)	●
North Cumbria University Hospitals NHS Trust	2,924	*	3.33 (2.77 to 4.19)	*	1.00 (0.59 to 1.61)	5.47	4.33 (3.72 to 5.46)	●
Northumbria Healthcare NHS Foundation Trust	3,248	3.39	3.24 (2.73 to 3.90)	1.24	1.11 (0.68 to 1.85)	4.62	4.35 (3.76 to 5.44)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Royal Surrey County Hospital NHS Foundation Trust	2,869	*	3.19 (2.61 to 3.80)	*	1.01 (0.60 to 1.68)	2.79	4.20 (3.51 to 5.17)	●
Salisbury NHS Foundation Trust	2,248	*	3.26 (2.67 to 3.93)	*	1.03 (0.63 to 1.71)	4.45	4.29 (3.63 to 5.28)	●
Sherwood Forest Hospitals NHS Foundation Trust	3,483	5.46	3.37 (2.78 to 4.28)	1.15	1.03 (0.64 to 1.66)	6.60	4.39 (3.73 to 5.54)	●
South Devon Healthcare NHS Foundation Trust	2,311	*	3.36 (2.77 to 4.32)	*	1.02 (0.62 to 1.64)	6.92	4.37 (3.73 to 5.67)	●
South Warwickshire NHS Foundation Trust	2,954	*	3.24 (2.68 to 3.94)	*	1.03 (0.61 to 1.72)	3.72	4.27 (3.64 to 5.27)	●
Southend University Hospital NHS Foundation Trust	3,814	*	3.18 (2.53 to 3.81)	*	0.95 (0.58 to 1.56)	3.15	4.13 (3.47 to 5.13)	●
Southport & Ormskirk Hospital NHS Trust	2,453	*	3.18 (2.59 to 3.78)	*	0.96 (0.57 to 1.59)	2.45	4.14 (3.53 to 5.08)	●
Stockport NHS Foundation Trust	3,275	1.22	3.11 (2.46 to 3.74)	1.53	1.16 (0.70 to 1.92)	2.75	4.26 (3.56 to 5.26)	●
Tameside Hospital NHS Foundation Trust	2,469	*	3.25 (2.67 to 3.99)	*	0.99 (0.61 to 1.66)	4.86	4.24 (3.63 to 5.28)	●
Taunton and Somerset NHS Foundation Trust	3,216	*	3.16 (2.51 to 3.76)	*	0.94 (0.54 to 1.52)	2.49	4.09 (3.42 to 5.09)	●
The Ipswich Hospital NHS Trust	3,601	*	3.18 (2.55 to 3.83)	*	0.93 (0.57 to 1.48)	3.05	4.11 (3.46 to 5.00)	●
The Queen Elizabeth Hospital King's Lynn NHS Foundation Trust	2,268	*	3.13 (2.42 to 3.76)	*	0.95 (0.57 to 1.60)	1.32	4.08 (3.40 to 5.05)	●
The Rotherham NHS Foundation Trust	2,648	*	3.22 (2.66 to 3.82)	*	0.89 (0.54 to 1.42)	3.78	4.09 (3.50 to 5.02)	●
University Hospitals of Morecambe Bay NHS Foundation Trust	2,994	*	3.28 (2.72 to 3.94)	*	0.92 (0.56 to 1.52)	4.01	4.17 (3.60 to 5.23)	●
Walsall Healthcare NHS Trust	3,660	3.83	3.21 (2.63 to 3.89)	0.82	0.91 (0.56 to 1.46)	4.64	4.11 (3.51 to 5.08)	●
Warrington and Halton Hospitals NHS Foundation Trust	2,793	*	3.28 (2.75 to 3.96)	*	0.98 (0.57 to 1.59)	4.65	4.24 (3.66 to 5.27)	●
West Suffolk NHS Foundation Trust	2,514	*	3.20 (2.56 to 3.78)	*	0.90 (0.52 to 1.49)	2.39	4.10 (3.50 to 5.01)	●
Whittington Health	3,793	2.90	3.15 (2.55 to 3.77)	0.79	0.97 (0.60 to 1.53)	3.69	4.11 (3.48 to 5.06)	●
Wrightington, Wigan and Leigh NHS Foundation Trust	2,806	1.43	3.14 (2.45 to 3.71)	2.14	1.19 (0.73 to 1.95)	3.56	4.35 (3.64 to 5.46)	●
SCOTLAND								
NHS Forth Valley	3,092	3.56	3.25 (2.71 to 3.92)	0.97	1.00 (0.61 to 1.65)	4.53	4.25 (3.53 to 5.38)	●
NHS Highland	2,159	*	3.20 (2.61 to 3.83)	*	0.99 (0.58 to 1.69)	2.78	4.19 (3.57 to 5.18)	●
WALES								
Cwm Taf University Health Board	3,803	4.73	3.32 (2.75 to 4.13)	1.59	1.16 (0.69 to 1.90)	6.31	4.48 (3.81 to 5.64)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Hywel Dda University Health Board	3,275	4.27	3.30 (2.75 to 4.05)	0.92	1.03 (0.65 to 1.65)	5.19	4.32 (3.72 to 5.39)	●
NORTHERN IRELAND[°]								
Northern Health and Social Care Trust	3,914	*	3.31 (2.76 to 4.16)	*	0.93 (0.58 to 1.51)	4.60	4.22 (3.60 to 5.40)	●
Western Health and Social Care Trust	3,952	4.05	3.28 (2.71 to 3.96)	1.78	1.21 (0.75 to 1.89)	5.82	4.49 (3.80 to 5.59)	●

[§] excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[†] per 1,000 total births

[‡] per 1,000 live births

[#] colours represent variation from comparator group average extended perinatal mortality rate

* entry suppressed because of small number of deaths

[°] different laws exist in Northern Ireland for the termination of pregnancy

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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**Table 16: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017
FOR TRUSTS AND HEALTH BOARDS WITH FEWER THAN 2,000 BIRTHS ≥24+0 WEEKS GESTATIONAL AGE PER ANNUM**

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			3.16		1.03		4.18	
ENGLAND								
Dorset County Hospital NHS Foundation Trust	1,858	*	3.13 (2.33 to 3.86)	*	1.00 (0.54 to 1.80)	3.23	4.12 (3.08 to 5.38)	●
East Cheshire NHS Trust	1,635	*	3.17 (2.42 to 4.04)	*	1.06 (0.56 to 2.07)	4.28	4.22 (3.31 to 5.60)	●
Gateshead Health NHS Foundation Trust	1,855	3.77	3.17 (2.52 to 4.14)	1.62	1.12 (0.63 to 2.11)	5.39	4.29 (3.47 to 5.73)	●
Harrogate and District NHS Foundation Trust	1,882	*	3.16 (2.45 to 3.95)	*	0.99 (0.52 to 1.80)	3.19	4.15 (3.28 to 5.41)	●
Isle of Wight NHS Trust	1,213	*	3.16 (2.41 to 4.04)	*	1.07 (0.58 to 2.00)	4.95	4.22 (3.32 to 5.59)	●
Northern Devon Healthcare NHS Trust	1,433	*	3.15 (2.45 to 3.93)	*	1.07 (0.57 to 1.99)	4.19	4.22 (3.23 to 5.38)	●
RAF Lakenheath (48th Medical Group)	330	*	3.14 (2.42 to 3.89)	*	1.01 (0.55 to 1.81)	*	4.15 (3.22 to 5.37)	●
South Tyneside NHS Foundation Trust	1,057	*	3.15 (2.41 to 4.05)	*	0.96 (0.47 to 1.73)	2.84	4.10 (3.12 to 5.46)	●
The Portland Hospital for Women and Children	1,542	*	3.10 (2.29 to 3.92)	*	0.94 (0.47 to 1.60)	*	4.05 (3.07 to 5.11)	●
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	249	*	3.15 (2.40 to 4.02)	*	1.02 (0.54 to 1.82)	*	4.16 (3.27 to 5.38)	●
Weston Area Health NHS Trust	112	*	3.17 (2.54 to 4.12)	*	1.10 (0.61 to 2.08)	*	4.25 (3.50 to 5.58)	●
Wye Valley NHS Trust	1,736	*	3.22 (2.65 to 4.26)	*	1.02 (0.53 to 1.87)	5.76	4.23 (3.50 to 5.78)	●
Yeovil District Hospital NHS Foundation Trust	1,491	*	3.19 (2.54 to 4.07)	*	1.06 (0.56 to 1.98)	5.37	4.25 (3.43 to 5.80)	●
SCOTLAND								
NHS Borders	1,003	*	3.20 (2.52 to 4.32)	*	1.03 (0.57 to 1.88)	5.98	4.23 (3.40 to 5.83)	●
NHS Dumfries & Galloway	1,244	4.02	3.18 (2.51 to 4.08)	2.42	1.12 (0.65 to 2.11)	6.43	4.32 (3.49 to 5.89)	●
NHS Orkney	122	*	3.16 (2.43 to 3.95)	*	1.02 (0.52 to 1.86)	*	4.17 (3.28 to 5.49)	●
NHS Shetland	121	*	3.16 (2.43 to 4.10)	*	1.02 (0.52 to 1.84)	*	4.17 (3.26 to 5.50)	●
NHS Western Isles	161	*	3.19 (2.50 to 4.14)	*	1.02 (0.54 to 1.90)	*	4.21 (3.37 to 5.58)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
WALES								
Powys Teaching Health Board	221	*	3.15 (2.36 to 4.00)	*	1.02 (0.52 to 1.89)	*	4.17 (3.19 to 5.48)	●
ISLE OF MAN								
Department of Health	734	*	3.14 (2.36 to 3.89)	*	0.97 (0.50 to 1.74)	*	4.10 (3.18 to 5.28)	●
STATES OF GUERNSEY								
Health & Social Services	556	*	3.18 (2.55 to 4.06)	*	1.00 (0.53 to 1.85)	7.19	4.20 (3.38 to 5.50)	●
STATES OF JERSEY								
Health & Social Services	951	*	3.15 (2.40 to 4.01)	*	1.03 (0.55 to 1.88)	3.15	4.18 (3.26 to 5.46)	●

[§] excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[†] per 1,000 total births

[‡] per 1,000 live births

[#] colours represent variation from comparator group average extended perinatal mortality rate

* entry suppressed because of small number of deaths

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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Mortality rates for individual Trusts and Health Boards excluding congenital anomalies

In this section of the report Figures 22 to 27 and Tables 19 to 23 present mortality rates for Trust and Health Boards benchmarked against the average of their comparator group **excluding** congenital anomalies. Summary tables showing the impact of the exclusion of congenital anomalies on the colour coding for Trusts and Health Boards on stillbirth and neonatal mortality rates are presented below (Table 21 and Table 22). As anticipated the exclusion of congenital anomalies has little effect on stillbirth rates and the colour coding for Trusts and Health Boards, with only two changes overall: one from amber (up to 5% higher or up to 5% lower than the comparator average) to red (more than 5% higher than the comparator average) and one from red to amber. However, given that the cause of death for over a third of neonatal deaths is due to a congenital anomaly (see chapter 8 of the full report) and that there is a wide variation in the proportion of babies with major congenital anomalies within Trusts and Health Boards, the colour coding of over a third (n=59, 36.2%) of Trusts and Health Boards changes following their exclusion (Table 22). The most significant negative changes are for two Trust and Health Boards where the colour coding for neonatal mortality is changed by two categories: i.e. one from green (more than 15% lower than the comparator average) to amber, and one from yellow (more than 5% and up to 15% lower than the comparator average) to red. Conversely, there are six Trusts and Health Boards where there is a positive change by two or three categories: five representing a change of two categories (three of which are from Northern Ireland) and one where exclusion of congenital anomalies changes the colour coding for neonatal mortality from red to green (also from Northern Ireland).

Table 17: Colour coding for Trusts and Health Boards, stillbirths including and excluding congenital anomalies

		Excluding deaths due to congenital anomalies				Total
		Green	Yellow	Orange	Red	
Including deaths due to congenital anomalies	Green	0	0	0	0	0
	Yellow	0	2	0	0	2
	Orange	0	0	155	1	156
	Red	0	0	1	4	5
Total		0	2	156	5	163

Table 18: Colour coding for Trusts and Health Boards, neonatal deaths including and excluding congenital anomalies

		Excluding deaths due to congenital anomalies				Total
		Green	Yellow	Orange	Red	
Including deaths due to congenital anomalies	Green	7	5	1	0	13
	Yellow	5	22	15	1	43
	Orange	1	12	33	8	54
	Red	1	4	6	42	53
Total		14	43	55	51	163

Key:

- more than 15% lower than the group average
- more than 5% and up to 15% lower than the group average
- up to 5% higher or up to 5% lower than the group average
- more than 5% higher than the group average



Figure 22: Crude stillbirth mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

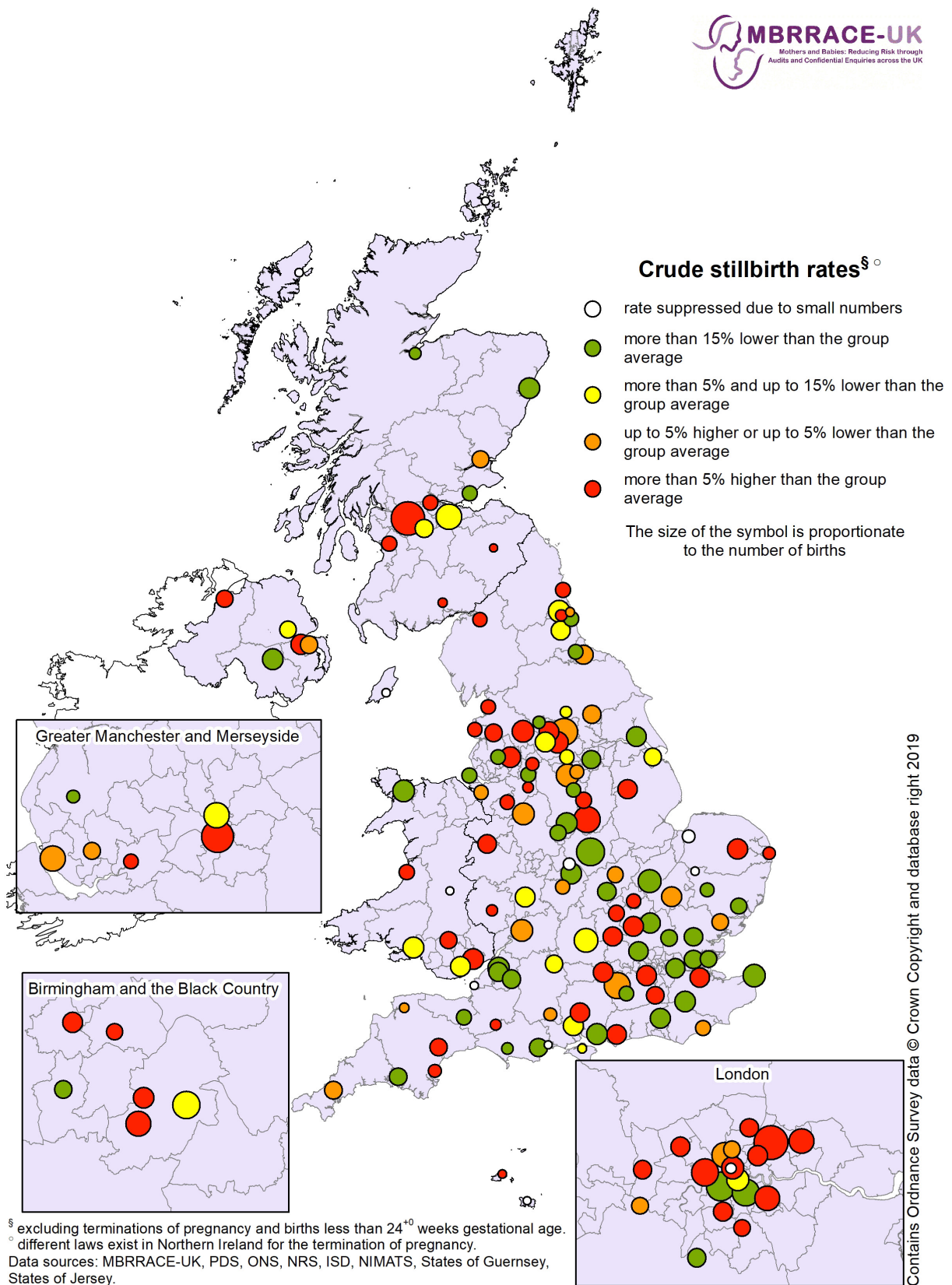


Figure 23: Stabilised & adjusted stillbirth mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

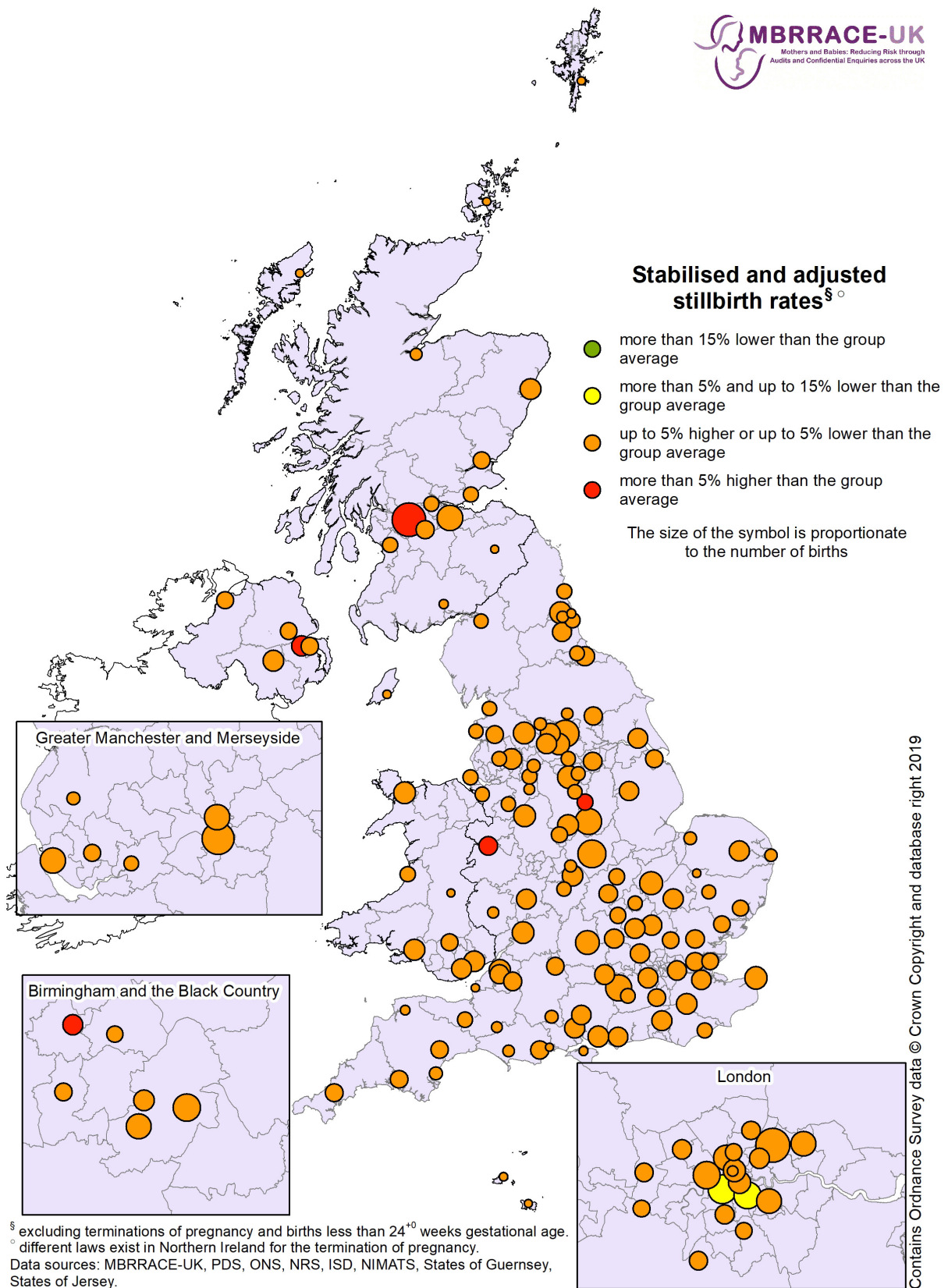


Figure 24: Crude neonatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

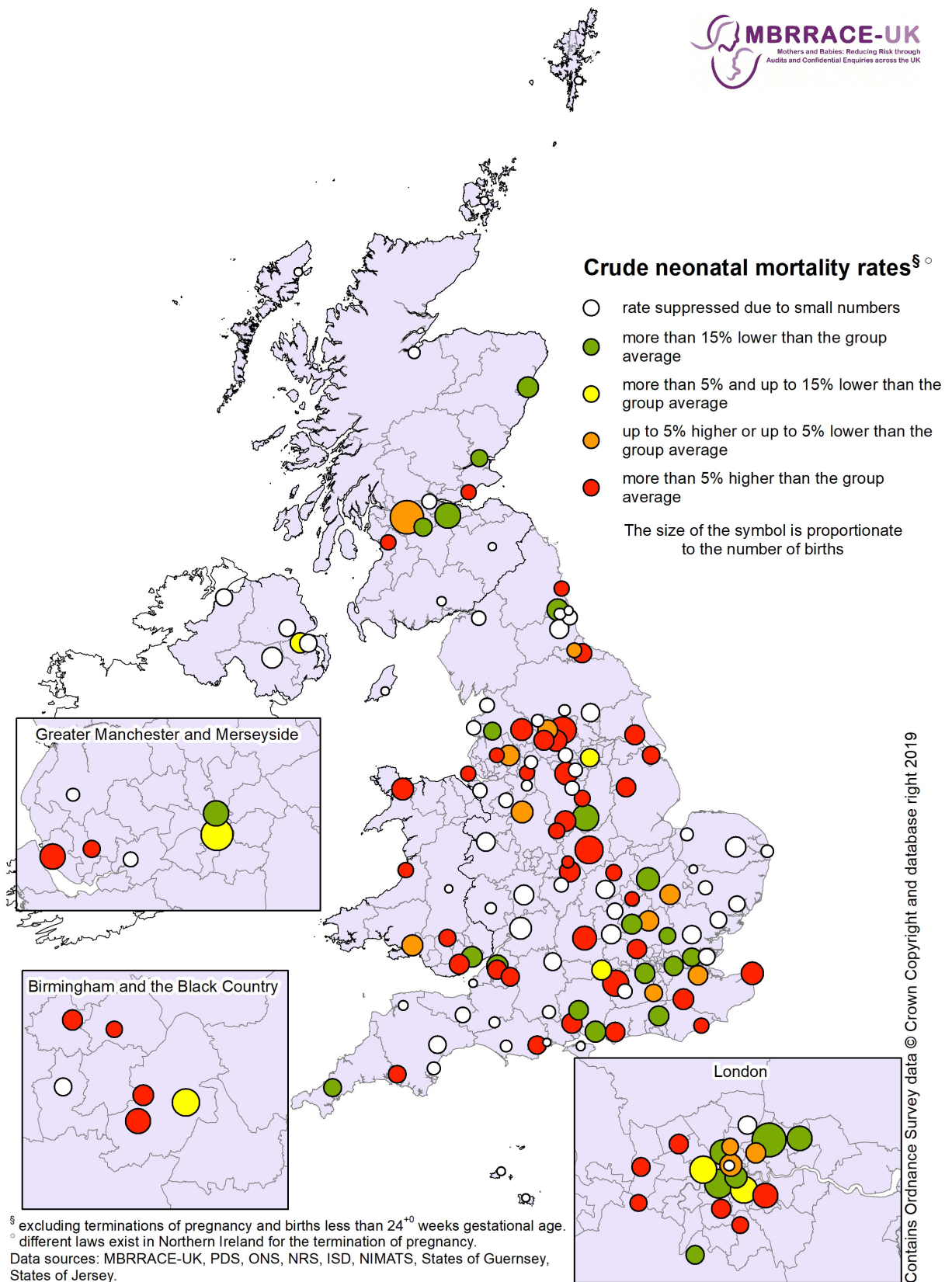


Figure 25: Stabilised & adjusted neonatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

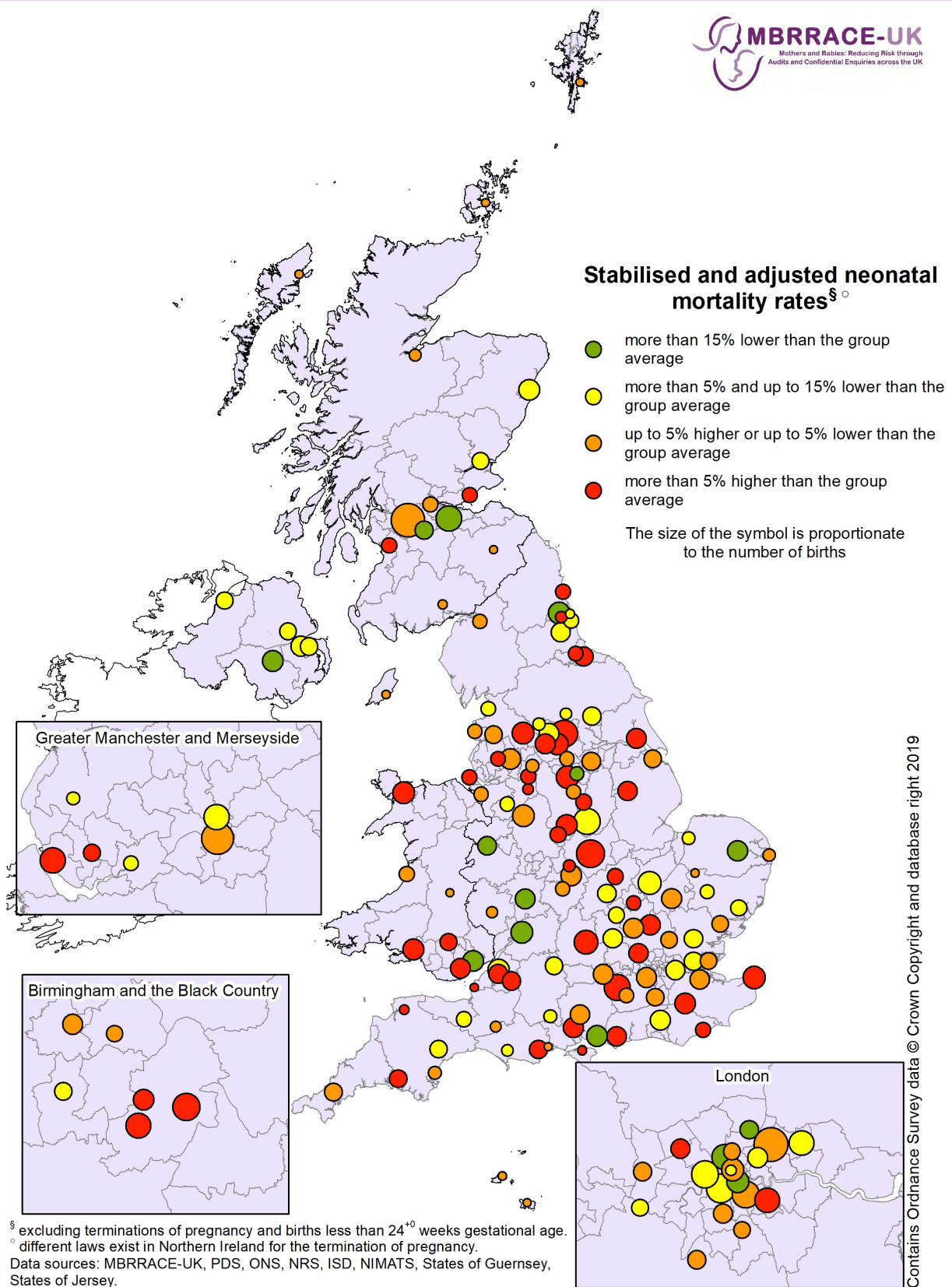


Figure 26: Crude extended perinatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017

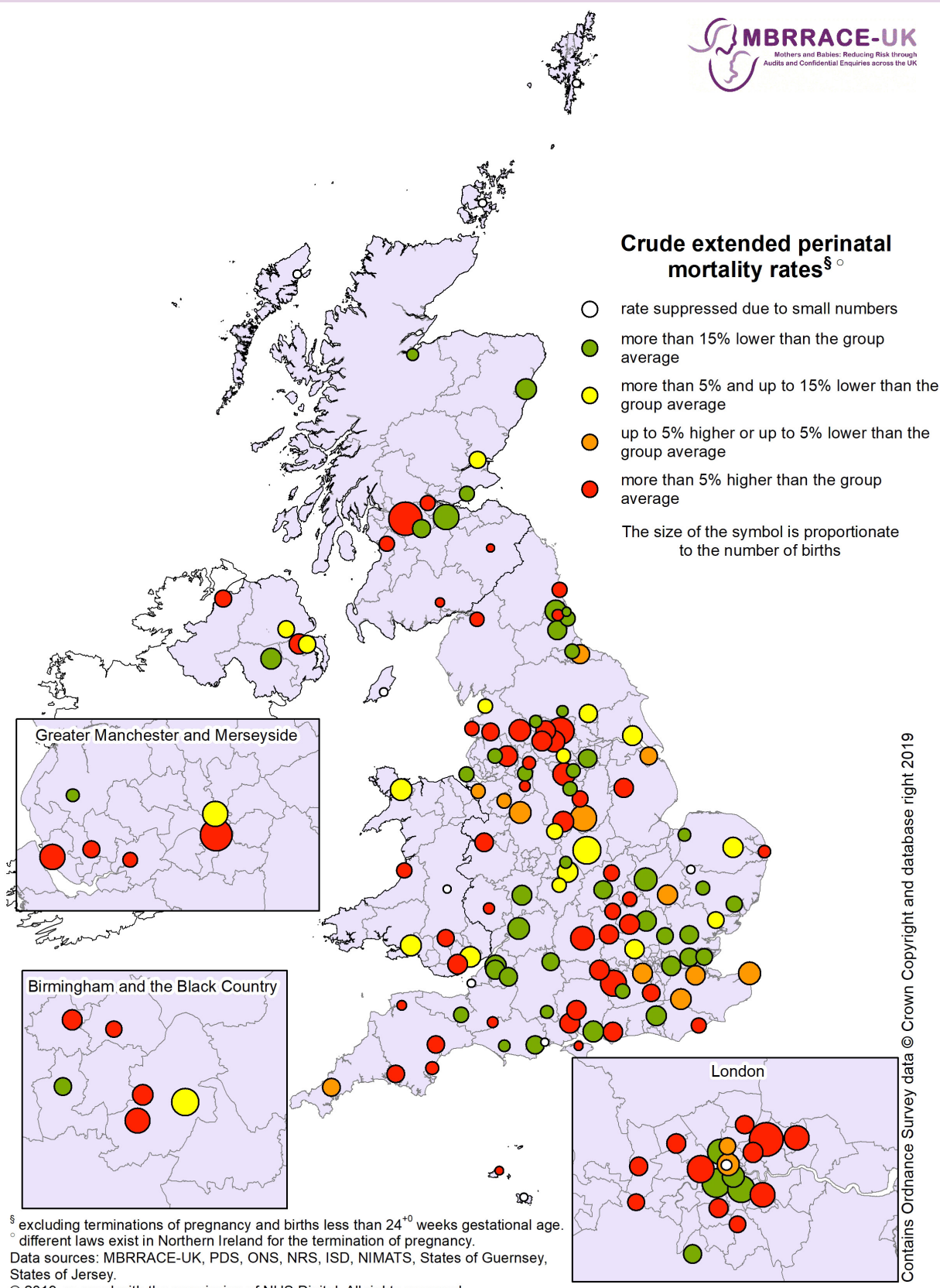
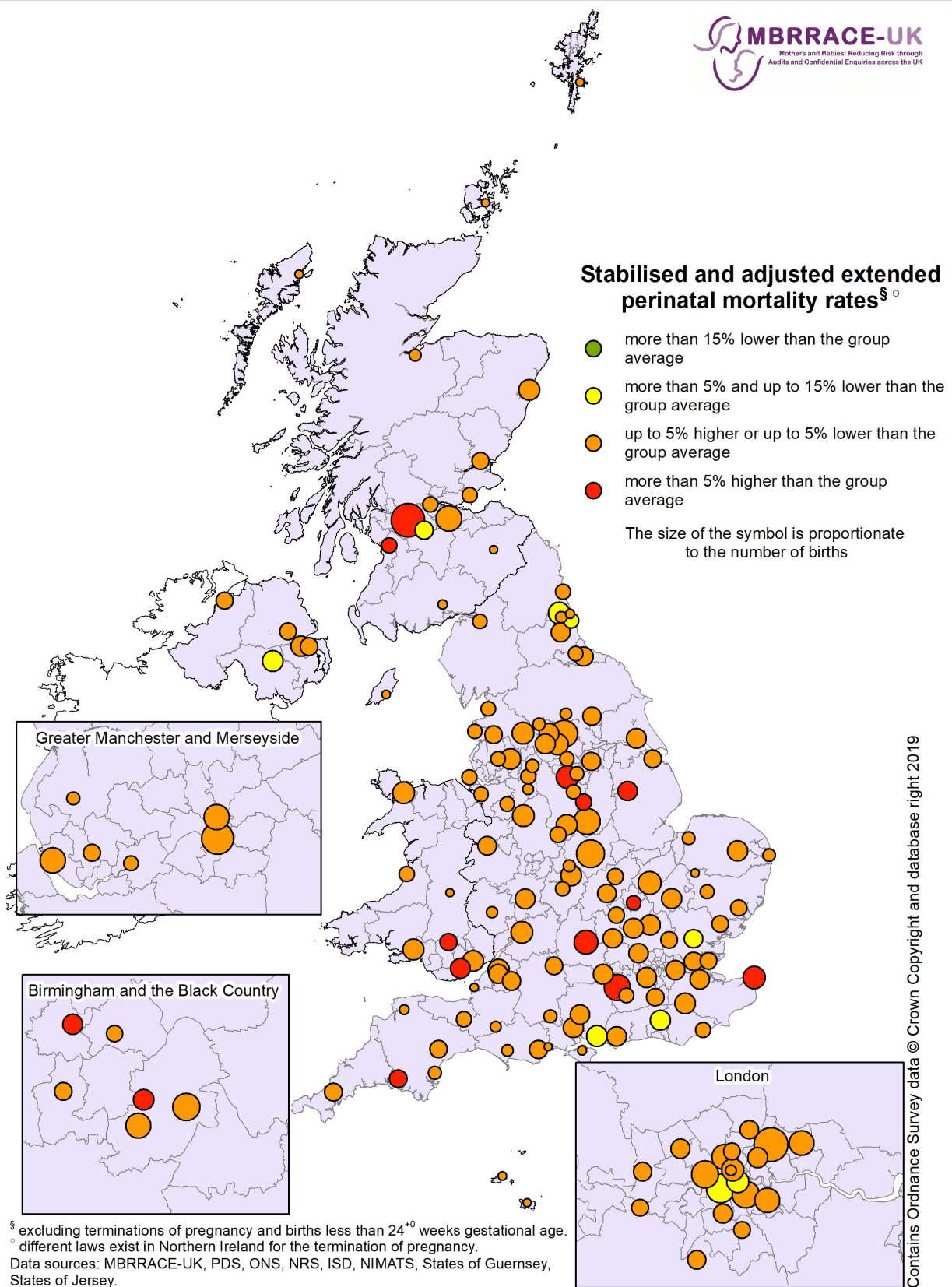


Figure 27: Stabilised & adjusted extended perinatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017



**Table 19: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017
FOR TRUSTS AND HEALTH BOARDS WITH NEONATAL SURGICAL PROVISION AND A LEVEL 3 NICU**

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			3.76		1.26		5.01	
ENGLAND								
Barts Health NHS Trust	16,038	4.74	3.77 (3.24 to 4.58)	1.00	1.22 (0.79 to 1.77)	5.74	4.99 (4.46 to 6.02)	●
Birmingham Women's and Children's NHS Foundation Trust	8,240	4.85	3.84 (3.23 to 4.57)	1.59	1.32 (0.89 to 2.06)	6.43	5.16 (4.57 to 6.35)	●
Brighton and Sussex University Hospitals NHS Trust	5,456	2.38	3.66 (2.89 to 4.47)	0.92	1.12 (0.71 to 1.79)	3.30	4.75 (3.98 to 6.03)	●
Cambridge University Hospitals NHS Foundation Trust	5,342	3.93	3.88 (3.19 to 4.86)	1.32	1.21 (0.77 to 1.84)	5.24	5.05 (4.30 to 6.41)	●
Chelsea and Westminster Hospital NHS Foundation Trust	11,475	2.53	3.49 (2.74 to 4.40)	0.70	1.14 (0.70 to 1.74)	3.22	4.63 (3.84 to 5.86)	●
Guy's and St Thomas' NHS Foundation Trust	6,919	3.47	3.59 (2.95 to 4.45)	0.73	0.98 (0.60 to 1.55)	4.19	4.55 (3.92 to 5.69)	●
Hull and East Yorkshire Hospitals NHS Trust	5,405	2.59	3.66 (2.98 to 4.40)	2.04	1.51 (0.94 to 2.40)	4.63	5.20 (4.42 to 6.58)	●
King's College Hospital NHS Foundation Trust	9,753	2.97	3.56 (2.89 to 4.40)	1.13	1.31 (0.85 to 1.99)	4.10	4.85 (4.10 to 6.02)	●
Liverpool Women's NHS Foundation Trust	8,666	3.92	3.82 (3.22 to 4.58)	1.97	1.39 (0.95 to 2.07)	5.89	5.23 (4.53 to 6.40)	●
Manchester University NHS Foundation Trust	13,492	4.30	3.84 (3.29 to 4.61)	1.12	1.24 (0.81 to 1.93)	5.41	5.08 (4.45 to 6.17)	●
Norfolk and Norwich University Hospitals NHS Foundation Trust	5,584	*	3.89 (3.23 to 4.74)	*	1.01 (0.61 to 1.69)	4.48	4.85 (4.20 to 6.16)	●
Nottingham University Hospitals NHS Trust	9,632	4.36	3.87 (3.26 to 4.76)	0.83	1.08 (0.71 to 1.65)	5.19	4.93 (4.33 to 6.12)	●
Oxford University Hospitals NHS Trust	7,623	3.54	3.83 (3.19 to 4.67)	2.63	1.62 (1.06 to 2.53)	6.17	5.62 (4.72 to 7.18)	●
Sheffield Teaching Hospitals NHS Foundation Trust	6,962	3.73	3.75 (3.08 to 4.46)	2.16	1.57 (0.99 to 2.39)	5.89	5.36 (4.63 to 6.62)	●
St George's University Hospitals NHS Foundation Trust	4,984	4.01	3.77 (3.18 to 4.55)	1.61	1.26 (0.79 to 1.96)	5.62	5.02 (4.39 to 6.31)	●
The Leeds Teaching Hospitals NHS Trust	9,792	3.88	3.74 (3.19 to 4.39)	1.54	1.49 (0.99 to 2.37)	5.41	5.21 (4.64 to 6.34)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
The Newcastle upon Tyne Hospitals NHS Foundation Trust	6,542	3.21	3.70 (3.13 to 4.36)	0.61	0.99 (0.59 to 1.63)	3.82	4.65 (4.11 to 5.79)	●
University College London Hospitals NHS Foundation Trust	6,725	4.01	3.75 (3.14 to 4.47)	1.19	1.25 (0.79 to 1.87)	5.20	4.99 (4.43 to 6.05)	●
University Hospital Southampton NHS Foundation Trust	5,682	3.52	3.78 (3.16 to 4.56)	1.77	1.44 (0.89 to 2.33)	5.28	5.25 (4.46 to 6.53)	●
University Hospitals Bristol NHS Foundation Trust	5,168	2.13	3.59 (2.87 to 4.36)	1.36	1.34 (0.83 to 2.20)	3.48	4.93 (4.11 to 6.22)	●
University Hospitals of Leicester NHS Trust	10,325	3.10	3.61 (2.93 to 4.42)	1.36	1.35 (0.91 to 2.12)	4.46	4.96 (4.25 to 6.19)	●
SCOTLAND								
NHS Grampian	6,055	3.14	3.77 (3.14 to 4.46)	0.50	1.08 (0.68 to 1.79)	3.63	4.85 (4.19 to 5.97)	●
NHS Greater Glasgow and Clyde	14,995	4.47	4.06 (3.29 to 5.07)	1.27	1.31 (0.86 to 2.00)	5.74	5.36 (4.55 to 6.81)	●
NHS Lothian	9,159	3.38	3.77 (3.16 to 4.52)	0.55	1.07 (0.64 to 1.72)	3.93	4.84 (4.27 to 5.92)	●
WALES								
Cardiff and Vale University Health Board	5,674	3.35	3.71 (3.07 to 4.42)	2.12	1.79 (1.04 to 3.04)	5.46	5.42 (4.69 to 6.92)	●
NORTHERN IRELAND[°]								
Belfast Health and Social Care Trust	5,449	5.87	4.05 (3.28 to 5.31)	1.11	1.17 (0.73 to 1.82)	6.97	5.17 (4.43 to 6.81)	●

§ excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[†] per 1,000 total births

[‡] per 1,000 live births

[#] colours represent variation from comparator group average extended perinatal mortality rate

[°] different laws exist in Northern Ireland for the termination of pregnancy

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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**Table 20: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017
FOR TRUSTS AND HEALTH BOARDS WITH A LEVEL 3 NICU**

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			3.55		1.42		4.96	
ENGLAND								
Ashford and St Peter's Hospital NHS Foundation Trust	3,982	3.52	3.59 (2.96 to 4.41)	1.76	1.25 (0.82 to 1.93)	5.27	4.71 (3.97 to 6.05)	●
Bolton NHS Foundation Trust	5,852	4.27	3.63 (2.98 to 4.39)	1.37	1.43 (0.90 to 2.18)	5.64	5.05 (4.30 to 6.27)	●
Bradford Teaching Hospitals NHS Foundation Trust	5,689	5.45	3.67 (3.10 to 4.46)	1.41	1.27 (0.81 to 2.00)	6.86	4.92 (4.36 to 6.27)	●
City Hospitals Sunderland NHS Foundation Trust	3,149	*	3.46 (2.76 to 4.13)	*	1.24 (0.76 to 2.03)	2.86	4.70 (4.03 to 5.89)	●
East Kent Hospitals University NHS Foundation Trust	6,990	2.43	3.43 (2.75 to 4.12)	2.44	2.03 (1.24 to 3.26)	4.86	5.47 (4.56 to 6.96)	●
East Lancashire Hospitals NHS Trust	6,343	4.10	3.60 (2.98 to 4.38)	1.58	1.60 (1.04 to 2.55)	5.68	5.19 (4.55 to 6.51)	●
Heart of England NHS Foundation Trust	9,762	3.28	3.42 (2.76 to 4.11)	1.23	1.53 (0.97 to 2.34)	4.51	4.91 (4.20 to 6.04)	●
Homerton University Hospital NHS Foundation Trust	5,681	4.93	3.63 (3.05 to 4.49)	1.42	1.32 (0.85 to 2.00)	6.34	4.94 (4.32 to 6.28)	●
Imperial College Healthcare NHS Trust	10,173	4.23	3.61 (2.99 to 4.32)	1.28	1.29 (0.86 to 2.00)	5.50	4.88 (4.28 to 6.01)	●
Lancashire Teaching Hospitals NHS Foundation Trust	4,425	4.29	3.66 (3.04 to 4.56)	1.13	1.35 (0.88 to 2.13)	5.42	4.99 (4.32 to 6.36)	●
Luton and Dunstable University Hospital NHS Foundation Trust	5,317	4.14	3.58 (2.99 to 4.26)	1.13	1.36 (0.87 to 2.07)	5.27	4.94 (4.32 to 6.06)	●
Medway NHS Foundation Trust	5,033	3.78	3.59 (2.95 to 4.38)	1.40	1.49 (0.92 to 2.29)	5.17	5.07 (4.41 to 6.40)	●
North Bristol NHS Trust	6,166	2.59	3.49 (2.84 to 4.17)	1.14	1.34 (0.89 to 2.13)	3.73	4.82 (4.22 to 5.97)	●
North Tees and Hartlepool NHS Foundation Trust	2,832	2.12	3.46 (2.80 to 4.17)	1.42	1.50 (0.90 to 2.34)	3.53	4.94 (4.21 to 6.27)	●
Plymouth Hospitals NHS Trust	4,159	2.89	3.52 (2.87 to 4.18)	2.41	1.63 (1.06 to 2.61)	5.29	5.21 (4.43 to 6.66)	●
Portsmouth Hospitals NHS Trust	5,775	2.25	3.44 (2.73 to 4.13)	1.04	1.18 (0.72 to 1.86)	3.29	4.56 (3.82 to 5.75)	●
South Tees Hospitals NHS Foundation Trust	5,264	3.42	3.55 (2.86 to 4.30)	1.72	1.59 (0.98 to 2.38)	5.13	5.14 (4.42 to 6.46)	●
The Pennine Acute Hospitals NHS Trust	9,004	3.22	3.43 (2.76 to 4.18)	1.11	1.34 (0.87 to 2.04)	4.33	4.76 (4.07 to 5.91)	●
The Royal Wolverhampton NHS Trust	5,407	6.10	3.81 (2.99 to 5.07)	1.86	1.47 (0.97 to 2.24)	7.95	5.26 (4.44 to 6.81)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
University Hospitals Coventry and Warwickshire NHS Trust	6,145	2.44	3.41 (2.73 to 4.17)	1.79	1.48 (1.00 to 2.26)	4.23	4.90 (4.19 to 6.16)	●
University Hospitals of North Midlands NHS Trust	6,446	3.72	3.60 (2.97 to 4.22)	1.40	1.48 (0.96 to 2.29)	5.12	5.07 (4.45 to 6.26)	●
Wirral University Teaching Hospital NHS Foundation Trust	3,310	1.21	3.40 (2.66 to 4.13)	2.42	1.64 (1.03 to 2.58)	3.63	5.10 (4.24 to 6.60)	●
SCOTLAND								
NHS Ayrshire & Arran	3,239	4.94	3.67 (3.02 to 4.72)	1.86	1.65 (1.02 to 2.64)	6.79	5.31 (4.52 to 6.93)	●
NHS Fife	3,205	1.87	3.45 (2.81 to 4.10)	2.19	1.77 (1.12 to 3.06)	4.06	5.17 (4.38 to 6.65)	●
NHS Lanarkshire	4,488	3.12	3.54 (2.91 to 4.29)	0.67	1.17 (0.70 to 1.87)	3.79	4.66 (4.06 to 5.88)	●
NHS Tayside	4,027	3.48	3.58 (2.95 to 4.32)	0.75	1.32 (0.76 to 2.16)	4.22	4.91 (4.24 to 6.22)	●
WALES								
Abertawe Bro Morgannwg University Health Board	5,797	3.28	3.55 (2.94 to 4.28)	1.38	1.49 (0.95 to 2.36)	4.66	5.04 (4.39 to 6.42)	●
Aneurin Bevan University Health Board	5,974	3.85	3.62 (2.98 to 4.37)	0.50	1.14 (0.69 to 1.85)	4.35	4.75 (4.09 to 5.94)	●

§ excluding terminations of pregnancy and births <24⁺ weeks gestational age

† per 1,000 total births

‡ per 1,000 live births

colours represent variation from comparator group average extended perinatal mortality rate

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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Table 21: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017 FOR TRUSTS AND HEALTH BOARDS WITH 4,000 OR MORE BIRTHS $\geq 24^{+0}$ WEEKS GESTATIONAL AGE PER ANNUM

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			3.28		0.88		4.16	
ENGLAND								
Barking, Havering and Redbridge University Hospitals NHS Trust	8,300	3.98	3.28 (2.79 to 3.90)	0.73	0.81 (0.53 to 1.35)	4.70	4.09 (3.61 to 5.08)	●
Basildon and Thurrock University Hospitals NHS Foundation Trust	4,565	2.63	3.21 (2.63 to 3.82)	0.66	0.81 (0.50 to 1.31)	3.29	4.01 (3.47 to 5.00)	●
Buckinghamshire Healthcare NHS Trust	5,142	*	3.39 (2.83 to 4.15)	*	0.81 (0.47 to 1.40)	4.47	4.19 (3.69 to 5.25)	●
Calderdale and Huddersfield NHS Foundation Trust	5,332	3.00	3.22 (2.69 to 3.88)	1.50	1.02 (0.63 to 1.67)	4.50	4.26 (3.66 to 5.33)	●
County Durham and Darlington NHS Foundation Trust	4,891	*	3.24 (2.64 to 3.87)	*	0.77 (0.46 to 1.28)	3.07	4.03 (3.42 to 5.00)	●
Dartford and Gravesham NHS Trust	4,952	2.42	3.19 (2.60 to 3.79)	0.61	0.83 (0.50 to 1.42)	3.03	4.02 (3.42 to 4.98)	●
Derby Teaching Hospitals NHS Foundation Trust	5,815	2.58	3.20 (2.63 to 3.80)	1.90	1.06 (0.66 to 1.73)	4.47	4.32 (3.68 to 5.47)	●
Doncaster and Bassetlaw Hospitals NHS Foundation Trust	4,877	2.46	3.20 (2.60 to 3.84)	0.82	0.84 (0.55 to 1.42)	3.28	4.04 (3.49 to 4.96)	●
East and North Hertfordshire NHS Trust	5,639	2.31	3.20 (2.64 to 3.79)	0.89	0.93 (0.59 to 1.59)	3.19	4.13 (3.53 to 5.23)	●
Epsom and St Helier University Hospitals NHS Trust	4,796	2.29	3.21 (2.62 to 3.89)	0.63	0.85 (0.52 to 1.44)	2.92	4.05 (3.44 to 5.02)	●
Frimley Health NHS Foundation Trust	9,645	3.32	3.30 (2.76 to 3.97)	1.77	1.26 (0.75 to 2.14)	5.08	4.61 (3.98 to 5.88)	●
Gloucestershire Hospitals NHS Foundation Trust	6,275	*	3.31 (2.83 to 4.05)	*	0.68 (0.41 to 1.18)	3.35	3.95 (3.49 to 4.99)	●
Great Western Hospitals NHS Foundation Trust	4,422	*	3.28 (2.67 to 3.87)	*	0.78 (0.49 to 1.30)	3.39	4.04 (3.50 to 5.04)	●
Hampshire Hospitals NHS Foundation Trust	5,247	4.00	3.42 (2.84 to 4.24)	0.57	0.86 (0.52 to 1.47)	4.57	4.27 (3.69 to 5.49)	●
Kingston Hospital NHS Foundation Trust	5,489	3.46	3.33 (2.85 to 4.05)	0.73	0.91 (0.56 to 1.54)	4.19	4.23 (3.73 to 5.25)	●
Lewisham and Greenwich NHS Trust	8,582	3.96	3.25 (2.70 to 3.83)	1.17	0.99 (0.66 to 1.62)	5.13	4.23 (3.72 to 5.28)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
London North West University Healthcare NHS Trust	5,043	4.96	3.38 (2.84 to 4.12)	1.20	0.98 (0.62 to 1.62)	6.15	4.35 (3.81 to 5.43)	●
Maidstone and Tunbridge Wells NHS Trust	5,880	2.72	3.27 (2.72 to 3.88)	1.36	1.06 (0.64 to 1.81)	4.08	4.35 (3.72 to 5.41)	●
Mid Essex Hospital Services NHS Trust	4,733	*	3.17 (2.55 to 3.82)	*	0.77 (0.48 to 1.34)	2.11	3.93 (3.35 to 4.89)	●
North Middlesex University Hospital NHS Trust	4,716	*	3.40 (2.81 to 4.18)	*	0.71 (0.43 to 1.23)	5.73	4.12 (3.54 to 5.19)	●
North West Anglia NHS Foundation Trust	7,292	2.61	3.21 (2.70 to 3.83)	0.69	0.83 (0.53 to 1.38)	3.29	4.03 (3.53 to 5.03)	●
Northampton General Hospital NHS Trust	4,817	*	3.19 (2.64 to 3.82)	*	0.79 (0.47 to 1.26)	2.70	3.98 (3.44 to 4.92)	●
Northern Lincolnshire and Goole Hospitals NHS Foundation Trust	4,258	3.05	3.26 (2.70 to 3.86)	1.18	0.92 (0.58 to 1.52)	4.23	4.18 (3.66 to 5.20)	●
Poole Hospital NHS Foundation Trust	4,578	1.31	3.13 (2.43 to 3.80)	1.31	1.03 (0.62 to 1.71)	2.62	4.16 (3.44 to 5.28)	●
Royal Berkshire NHS Foundation Trust	5,323	3.76	3.34 (2.82 to 4.01)	0.75	0.88 (0.54 to 1.50)	4.51	4.22 (3.68 to 5.25)	●
Royal Cornwall Hospitals NHS Trust	4,117	3.40	3.32 (2.78 to 4.04)	0.73	0.87 (0.52 to 1.46)	4.13	4.18 (3.68 to 5.22)	●
Royal Devon and Exeter NHS Foundation Trust	4,197	*	3.39 (2.84 to 4.19)	*	0.81 (0.49 to 1.43)	4.53	4.18 (3.62 to 5.33)	●
Royal Free London NHS Foundation Trust	8,773	3.19	3.24 (2.68 to 3.91)	0.34	0.73 (0.44 to 1.23)	3.53	3.98 (3.47 to 4.92)	●
Royal United Hospitals Bath NHS Foundation Trust	4,585	2.18	3.23 (2.61 to 3.81)	1.09	0.95 (0.59 to 1.60)	3.27	4.19 (3.54 to 5.23)	●
Sandwell and West Birmingham Hospitals NHS Trust	5,878	5.44	3.36 (2.86 to 4.02)	3.42	1.76 (1.03 to 3.48)	8.85	5.01 (4.31 to 6.65)	●
St Helens and Knowsley Teaching Hospitals NHS Trust	4,092	3.42	3.30 (2.70 to 3.98)	1.23	1.01 (0.58 to 1.79)	4.64	4.29 (3.70 to 5.47)	●
Surrey and Sussex Healthcare NHS Trust	4,471	3.80	3.36 (2.83 to 4.14)	0.90	0.88 (0.57 to 1.54)	4.70	4.23 (3.63 to 5.32)	●
The Dudley Group NHS Foundation Trust	4,465	*	3.20 (2.63 to 3.80)	*	0.77 (0.46 to 1.29)	3.14	3.96 (3.45 to 4.95)	●
The Hillingdon Hospitals NHS Foundation Trust	4,822	5.39	3.40 (2.87 to 4.27)	1.04	0.93 (0.58 to 1.59)	6.43	4.32 (3.80 to 5.58)	●
The Mid Yorkshire Hospitals NHS Trust	6,290	3.82	3.32 (2.78 to 4.00)	1.28	1.03 (0.62 to 1.68)	5.09	4.35 (3.78 to 5.45)	●
The Princess Alexandra Hospital NHS Trust	4,079	1.96	3.20 (2.64 to 3.85)	0.74	0.90 (0.55 to 1.53)	2.70	4.09 (3.56 to 5.09)	●
The Shrewsbury and Telford Hospital NHS Trust	4,734	*	3.54 (2.79 to 4.77)	*	0.70 (0.41 to 1.18)	5.70	4.21 (3.55 to 5.75)	●
United Lincolnshire Hospitals NHS Trust	5,163	4.26	3.41 (2.82 to 4.24)	1.17	0.98 (0.62 to 1.69)	5.42	4.39 (3.76 to 5.53)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
West Hertfordshire Hospitals NHS Trust	4,914	2.65	3.23 (2.69 to 3.85)	1.22	1.01 (0.62 to 1.73)	3.87	4.24 (3.63 to 5.34)	●
Western Sussex Hospitals NHS Foundation Trust	5,049	3.57	3.35 (2.85 to 4.09)	0.99	0.99 (0.59 to 1.70)	4.56	4.34 (3.76 to 5.45)	●
Worcestershire Acute Hospitals NHS Trust	5,448	*	3.27 (2.72 to 3.91)	*	0.73 (0.42 to 1.27)	3.12	3.99 (3.48 to 4.97)	●
York Teaching Hospital NHS Foundation Trust	4,670	*	3.33 (2.81 to 4.07)	*	0.78 (0.46 to 1.32)	3.64	4.10 (3.63 to 5.16)	●
WALES								
Betsi Cadwaladr University Health Board	6,590	1.97	3.13 (2.53 to 3.80)	1.67	1.07 (0.68 to 1.81)	3.64	4.26 (3.60 to 5.38)	●
NORTHERN IRELAND[°]								
South Eastern Health and Social Care Trust	4,235	*	3.31 (2.76 to 4.03)	*	0.79 (0.47 to 1.38)	3.54	4.11 (3.53 to 5.07)	●
Southern Health and Social Care Trust	5,842	*	3.21 (2.69 to 3.83)	*	0.72 (0.42 to 1.21)	2.57	3.93 (3.42 to 4.88)	●

[§] excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[†] per 1,000 total births

[‡] per 1,000 live births

[#] colours represent variation from comparator group average extended perinatal mortality rate

* entry suppressed because of small number of deaths

[°] different laws exist in Northern Ireland for the termination of pregnancy

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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Table 22: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017 FOR TRUSTS AND HEALTH BOARDS WITH 2,000 TO 3,999 BIRTHS ≥24⁺⁰ WEEKS GESTATIONAL AGE PER ANNUM

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			2.98		0.78		3.75	
ENGLAND								
Airedale NHS Foundation Trust	2,117	*	2.93 (2.36 to 3.49)	*	0.73 (0.43 to 1.26)	2.36	3.66 (3.15 to 4.56)	●
Barnsley Hospital NHS Foundation Trust	3,028	*	2.96 (2.41 to 3.60)	*	0.75 (0.44 to 1.28)	3.30	3.70 (3.11 to 4.63)	●
Bedford Hospital NHS Trust	2,879	4.17	3.04 (2.52 to 3.80)	2.44	1.08 (0.61 to 2.03)	6.60	4.16 (3.47 to 5.48)	●
Blackpool Teaching Hospitals NHS Foundation Trust	2,934	*	3.00 (2.42 to 3.66)	*	0.74 (0.43 to 1.24)	4.09	3.73 (3.17 to 4.67)	●
Burton Hospitals NHS Foundation Trust	3,425	1.17	2.87 (2.30 to 3.45)	2.05	1.07 (0.58 to 2.03)	3.21	3.90 (3.20 to 5.04)	●
Chesterfield Royal Hospital NHS Foundation Trust	2,837	*	2.88 (2.21 to 3.52)	*	0.74 (0.42 to 1.29)	1.41	3.62 (2.98 to 4.52)	●
Colchester Hospital University NHS Foundation Trust	3,784	*	2.97 (2.44 to 3.58)	*	0.74 (0.44 to 1.27)	3.44	3.71 (3.12 to 4.59)	●
Countess of Chester Hospital NHS Foundation Trust	2,934	*	3.00 (2.47 to 3.68)	*	0.81 (0.48 to 1.40)	3.75	3.80 (3.26 to 4.75)	●
Croydon Health Services NHS Trust	3,779	3.97	2.98 (2.44 to 3.61)	1.06	0.80 (0.49 to 1.33)	5.03	3.78 (3.27 to 4.69)	●
East Sussex Healthcare NHS Trust	3,278	3.05	2.98 (2.42 to 3.68)	1.22	0.87 (0.53 to 1.53)	4.27	3.84 (3.25 to 4.84)	●
George Eliot Hospital NHS Trust	2,147	*	2.90 (2.29 to 3.51)	*	0.88 (0.52 to 1.65)	2.33	3.75 (3.12 to 4.79)	●
James Paget University Hospitals NHS Foundation Trust	2,134	*	3.00 (2.48 to 3.65)	*	0.76 (0.43 to 1.30)	4.22	3.77 (3.25 to 4.77)	●
Kettering General Hospital NHS Foundation Trust	3,443	2.90	2.97 (2.43 to 3.63)	1.75	0.89 (0.54 to 1.48)	4.65	3.90 (3.25 to 4.87)	●
Mid Cheshire Hospitals NHS Foundation Trust	3,054	*	3.01 (2.50 to 3.76)	*	0.73 (0.41 to 1.29)	3.60	3.74 (3.21 to 4.69)	●
Milton Keynes University Hospital NHS Foundation Trust	3,693	*	3.00 (2.50 to 3.71)	*	0.72 (0.41 to 1.20)	4.06	3.71 (3.22 to 4.66)	●
North Cumbria University Hospitals NHS Trust	2,924	*	3.10 (2.53 to 3.95)	*	0.79 (0.46 to 1.35)	5.47	3.88 (3.30 to 4.98)	●
Northumbria Healthcare NHS Foundation Trust	3,248	3.39	3.01 (2.49 to 3.70)	1.24	0.90 (0.54 to 1.56)	4.62	3.90 (3.30 to 5.00)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Royal Surrey County Hospital NHS Foundation Trust	2,869	*	2.95 (2.39 to 3.52)	*	0.80 (0.45 to 1.44)	2.79	3.75 (3.12 to 4.74)	●
Salisbury NHS Foundation Trust	2,245	*	3.00 (2.43 to 3.69)	*	0.70 (0.38 to 1.25)	3.12	3.70 (3.10 to 4.66)	●
Sherwood Forest Hospitals NHS Foundation Trust	3,483	5.46	3.14 (2.59 to 4.23)	1.15	0.82 (0.49 to 1.38)	6.60	3.95 (3.32 to 5.18)	●
South Warwickshire NHS Foundation Trust	2,953	*	3.10 (2.54 to 4.04)	*	0.80 (0.44 to 1.33)	6.49	3.89 (3.29 to 5.05)	●
Southend University Hospital NHS Foundation Trust	3,811	*	3.01 (2.47 to 3.71)	*	0.76 (0.41 to 1.34)	3.39	3.77 (3.22 to 4.73)	●
Southport & Ormskirk Hospital NHS Trust	2,452	*	2.90 (2.31 to 3.54)	*	0.75 (0.43 to 1.33)	2.36	3.65 (3.05 to 4.60)	●
Stockport NHS Foundation Trust	3,275	1.22	2.94 (2.44 to 3.55)	*	0.69 (0.37 to 1.23)	2.04	3.64 (3.10 to 4.62)	●
Tameside Hospital NHS Foundation Trust	2,468	*	2.88 (2.24 to 3.47)	1.53	0.94 (0.57 to 1.63)	2.75	3.81 (3.11 to 4.75)	●
Taunton and Somerset NHS Foundation Trust	3,215	*	3.00 (2.50 to 3.69)	*	0.78 (0.46 to 1.28)	4.46	3.78 (3.23 to 4.77)	●
The Ipswich Hospital NHS Trust	3,599	*	2.93 (2.28 to 3.55)	*	0.69 (0.38 to 1.15)	2.18	3.59 (3.01 to 4.47)	●
The Queen Elizabeth Hospital King's Lynn NHS Foundation Trust	2,268	*	2.93 (2.36 to 3.50)	*	0.68 (0.39 to 1.11)	2.50	3.61 (3.08 to 4.41)	●
The Rotherham NHS Foundation Trust	2,646	*	2.89 (2.28 to 3.50)	*	0.73 (0.43 to 1.21)	1.32	3.62 (3.00 to 4.50)	●
Torbay and South Devon NHS Foundation Trust	2,310	*	2.97 (2.43 to 3.65)	*	0.64 (0.36 to 1.04)	3.02	3.58 (3.11 to 4.49)	●
University Hospitals of Morecambe Bay NHS Foundation Trust	2,992	*	3.02 (2.45 to 3.69)	*	0.67 (0.36 to 1.13)	3.34	3.66 (3.09 to 4.57)	●
Walsall Healthcare NHS Trust	3,659	3.55	2.96 (2.42 to 3.60)	0.82	0.74 (0.45 to 1.24)	4.37	3.70 (3.15 to 4.67)	●
Warrington and Halton Hospitals NHS Foundation Trust	2,792	*	3.04 (2.52 to 3.83)	*	0.72 (0.40 to 1.22)	4.30	3.74 (3.18 to 4.83)	●
West Suffolk NHS Foundation Trust	2,512	*	2.92 (2.33 to 3.51)	*	0.70 (0.37 to 1.18)	1.59	3.63 (3.03 to 4.50)	●
Whittington Health	3,793	2.90	2.92 (2.36 to 3.49)	0.79	0.79 (0.45 to 1.40)	3.69	3.71 (3.15 to 4.59)	●
Wrightington, Wigan and Leigh NHS Foundation Trust	2,804	1.43	2.90 (2.26 to 3.56)	1.43	0.84 (0.51 to 1.40)	2.85	3.76 (3.11 to 4.80)	●
SCOTLAND								
NHS Forth Valley	3,091	*	3.02 (2.47 to 3.77)	*	0.74 (0.43 to 1.28)	4.21	3.75 (3.20 to 4.82)	●
NHS Highland	2,159	*	2.96 (2.39 to 3.56)	*	0.77 (0.44 to 1.42)	2.78	3.73 (3.16 to 4.65)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
WALES								
Cwm Taf University Health Board	3,802	4.47	3.07 (2.54 to 3.92)	1.59	0.96 (0.57 to 1.65)	6.05	4.02 (3.43 to 5.24)	●
Hywel Dda University Health Board	3,274	3.97	3.05 (2.50 to 3.78)	0.92	0.81 (0.46 to 1.38)	4.89	3.86 (3.28 to 4.94)	●
NORTHERN IRELAND[°]								
Northern Health and Social Care Trust	3,909	*	2.98 (2.46 to 3.67)	*	0.72 (0.40 to 1.26)	3.33	3.69 (3.14 to 4.62)	●
Western Health and Social Care Trust	3,945	*	3.02 (2.52 to 3.72)	*	0.73 (0.42 to 1.27)	4.06	3.75 (3.25 to 4.71)	●

[§] excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[†] per 1,000 total births

[‡] per 1,000 live births

[#] colours represent variation from comparator group average extended perinatal mortality rate

* entry suppressed because of small number of deaths

[°] different laws exist in Northern Ireland for the termination of pregnancy

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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**Table 23: Crude and stabilised & adjusted stillbirth, neonatal, and extended perinatal mortality rates excluding congenital anomalies by NHS Trust (England), Health Board (Scotland and Wales), Health and Social Care Trust (Northern Ireland), and Crown Dependency based on place of birth: United Kingdom and Crown Dependencies, for births in 2017
FOR TRUSTS AND HEALTH BOARDS WITH FEWER THAN 2,000 BIRTHS ≥24+0 WEEKS GESTATIONAL AGE PER ANNUM**

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [†]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
Average for comparator group			2.88		0.70		3.58	
ENGLAND								
Dorset County Hospital NHS Foundation Trust	1,857	*	2.86 (2.11 to 3.63)	*	0.65 (0.28 to 1.20)	2.69	3.49 (2.61 to 4.64)	●
East Cheshire NHS Trust	1,635	*	2.90 (2.22 to 3.75)	*	0.76 (0.40 to 1.57)	4.28	3.65 (2.82 to 4.91)	●
Gateshead Health NHS Foundation Trust	1,854	*	2.91 (2.27 to 3.78)	*	0.75 (0.34 to 1.49)	4.85	3.66 (2.96 to 4.93)	●
Harrogate and District NHS Foundation Trust	1,881	*	2.89 (2.19 to 3.68)	*	0.64 (0.28 to 1.17)	2.66	3.53 (2.71 to 4.73)	●
Isle of Wight NHS Trust	1,212	*	2.87 (2.15 to 3.70)	*	0.76 (0.38 to 1.49)	4.13	3.63 (2.78 to 4.88)	●
Northern Devon Healthcare NHS Trust	1,433	*	2.88 (2.21 to 3.78)	*	0.77 (0.35 to 1.46)	4.19	3.65 (2.83 to 4.89)	●
RAF Lakenheath (48th Medical Group)	330	*	2.87 (2.13 to 3.60)	*	0.69 (0.29 to 1.35)	*	3.56 (2.66 to 4.65)	●
South Tyneside NHS Foundation Trust	1,057	*	2.87 (2.16 to 3.68)	*	0.66 (0.29 to 1.25)	2.84	3.54 (2.68 to 4.75)	●
The Portland Hospital for Women and Children	1,542	*	2.84 (2.09 to 3.56)	*	0.66 (0.27 to 1.20)	*	3.50 (2.56 to 4.53)	●
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	249	*	2.87 (2.14 to 3.65)	*	0.69 (0.31 to 1.33)	*	3.56 (2.68 to 4.64)	●
Weston Area Health NHS Trust	112	*	2.90 (2.19 to 3.68)	*	0.76 (0.36 to 1.48)	*	3.63 (2.83 to 4.78)	●
Wye Valley NHS Trust	1,735	*	2.93 (2.34 to 3.81)	*	0.72 (0.36 to 1.46)	5.19	3.66 (2.90 to 5.08)	●
Yeovil District Hospital NHS Foundation Trust	1,489	*	2.90 (2.22 to 3.81)	*	0.70 (0.31 to 1.30)	4.03	3.59 (2.76 to 4.96)	●
SCOTLAND								
NHS Borders	1,003	*	2.93 (2.29 to 3.91)	*	0.72 (0.35 to 1.46)	5.98	3.65 (2.91 to 5.17)	●
NHS Dumfries & Galloway	1,241	*	2.89 (2.20 to 3.81)	*	0.71 (0.32 to 1.32)	4.03	3.60 (2.76 to 4.87)	●
NHS Orkney	122	*	2.88 (2.17 to 3.73)	*	0.70 (0.32 to 1.36)	*	3.57 (2.68 to 4.79)	●
NHS Shetland	121	*	2.88 (2.15 to 3.64)	*	0.70 (0.31 to 1.35)	*	3.57 (2.75 to 4.66)	●
NHS Western Isles	161	*	2.92 (2.27 to 3.81)	*	0.70 (0.32 to 1.40)	*	3.61 (2.87 to 4.95)	●

Organisation	Total births [§]	Rate per 1,000 births [§]						
		Stillbirth [†]		Neonatal [‡]		Extended perinatal [†]		
		Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI)	Crude	Stabilised & adjusted (95% CI) [#]	
WALES								
Powys Teaching Health Board	221	*	2.87 (2.14 to 3.66)	*	0.70 (0.31 to 1.28)	*	3.57 (2.67 to 4.70)	●
ISLE OF MAN								
Department of Health	734	*	2.86 (2.14 to 3.66)	*	0.67 (0.28 to 1.25)	*	3.52 (2.63 to 4.68)	●
STATES OF GUERNSEY								
Health & Social Services	555	*	2.89 (2.23 to 3.78)	*	0.69 (0.33 to 1.39)	5.41	3.58 (2.74 to 4.81)	●
STATES OF JERSEY								
Health & Social Services	949	*	2.86 (2.08 to 3.55)	*	0.67 (0.28 to 1.19)	*	3.52 (2.58 to 4.58)	●

[§] excluding terminations of pregnancy and births <24⁺⁰ weeks gestational age

[†] per 1,000 total births

[‡] per 1,000 live births

[#] colours represent variation from comparator group average extended perinatal mortality rate

* entry suppressed because of small number of deaths

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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