



Sharing surveillance data – UK

Lucy Smith

MBRRACE-UK:

Perinatal mortality surveillance

Combine mortality data from all hospitals in England, Scotland, Wales and Northern Ireland with birth and death registrations

Mortality rates

- **Population-based care commissioning** (by residence)
- **Service delivery** (by place of birth)
- **Local government area** (by residence)

Mortality rates for organisations

- **Crude mortality rate**
 - Observed number of deaths per 1,000 births
- **Stabilised (& adjusted) mortality rate**
 - ‘Stabilised’ to allow for variation due to small numbers
 - Care provider rates are adjusted for differences in:
 - Socioeconomic status, ethnicity, mother’s age, baby’s sex, multiple birth, & gestational age at birth (for neonatal death)

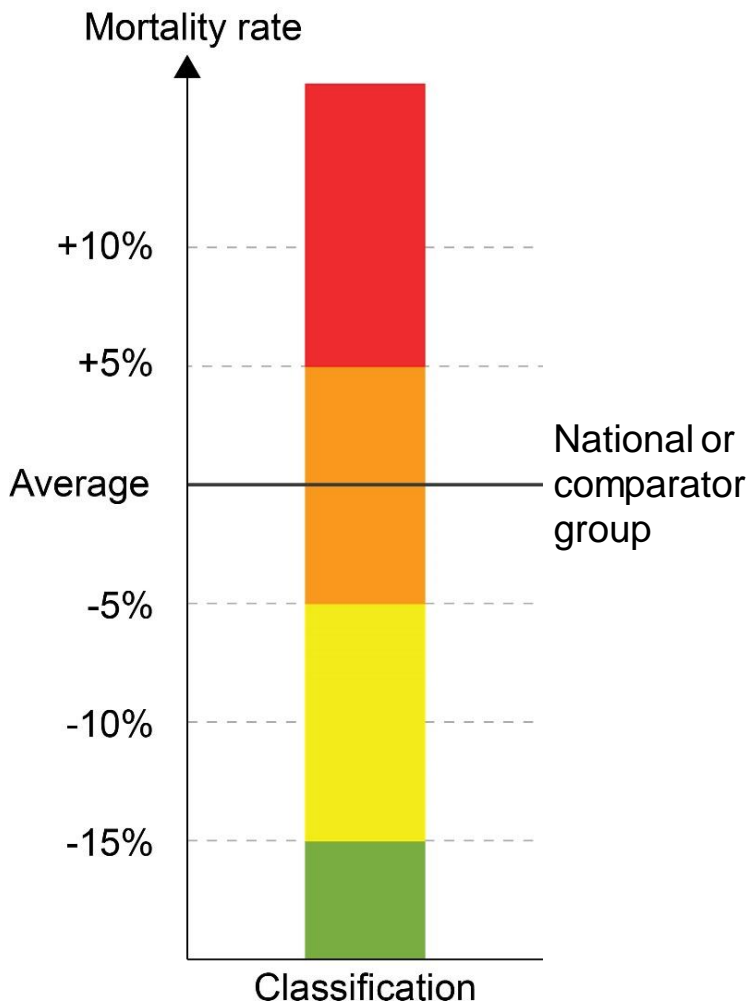
Colour coding for maps and tables

What do they mean?

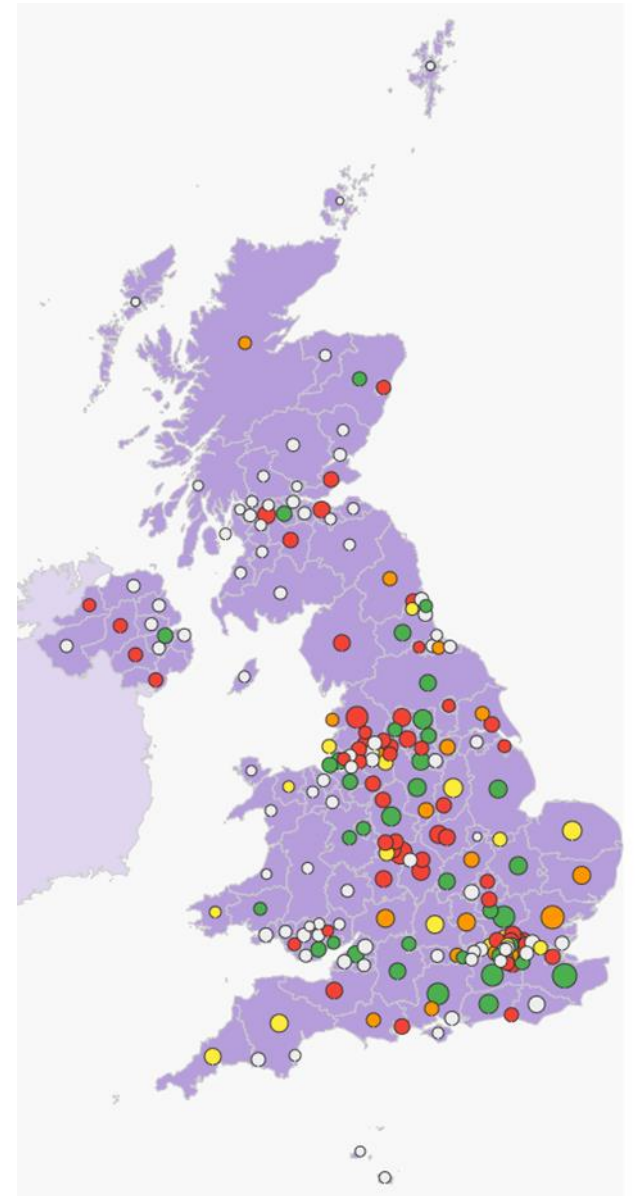
- They are not definitive measures of quality of care
- They are robust estimates of rates of mortality given available data
- Inform national and local decisions

Rationale:

- Amber band from 5% lower than average rates is designed to stimulate the continuing need for further improvement in mortality rates by organisations to meet national stillbirth and neonatal death initiatives



- More than 5% higher than UK average
- Within 5% of UK average
- 5% to 15% lower than UK average
- More than 15% lower than UK average
- Suppressed due to small numbers



Select an option to customise the data

Year

- ☒ 2020
☐ 2019
☐ 2018
☐ 2017

Organisation type

- ☐ Commissioning group
☐ Higher-level commissioning group
☐ Trust/health board
☐ Trust/health board excluding congenital anomalies
☐ Neonatal network
☒ Local authority
☐ Region

Filters

Country +

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DEMO 2022-08-02

Perinatal mortality rates by local authority

▼ United Kingdom and Crown dependencies 2020

Crude and stabilised stillbirth, neonatal, and extended perinatal mortality rates by local authority based on postcode of mother's residence at time of delivery

218 local authorities

Map

Data

About

Help

Stillbirth

Neonatal

Extended perinatal

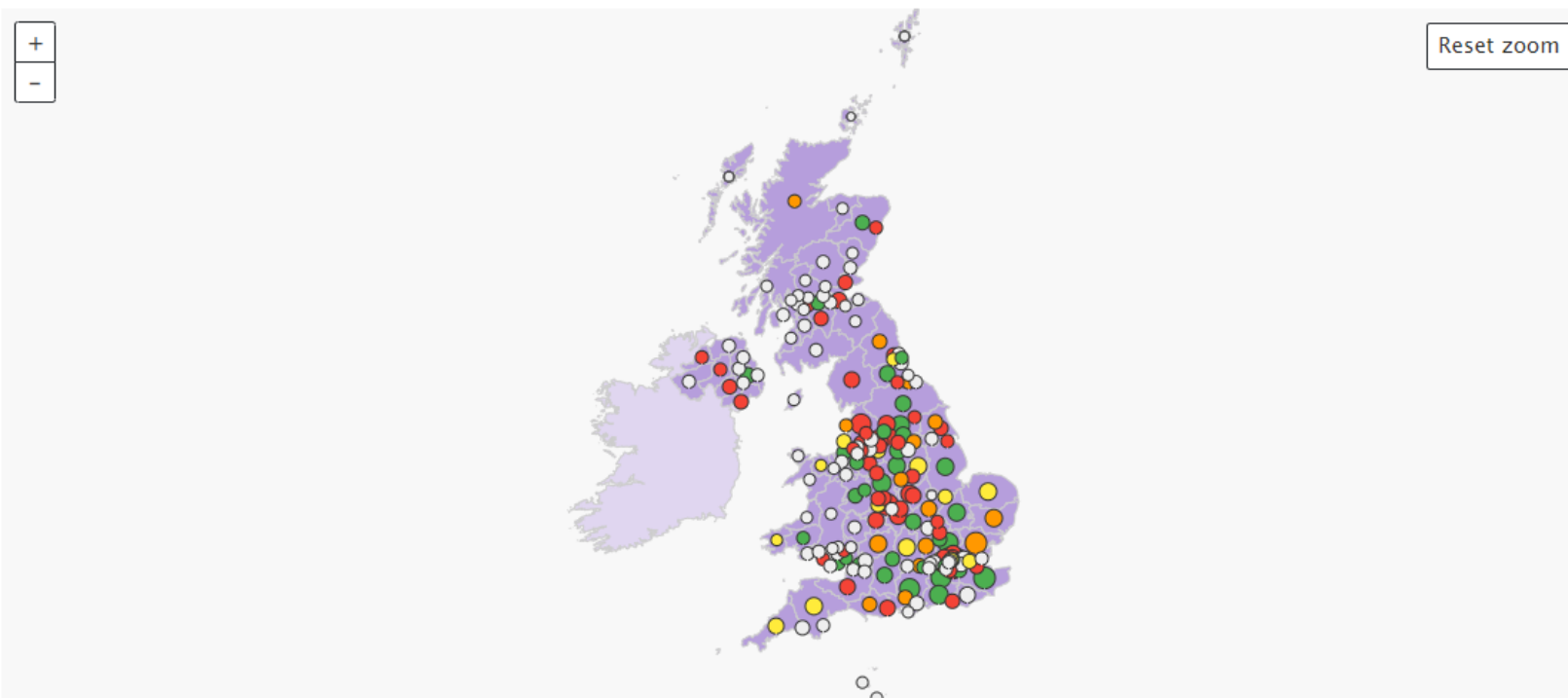
Crude

Stabilised

☐ Show labels

☐ Fit to points

Download



Crude stillbirth rate

- More than 5% higher than the UK average
● More than 15% lower than the UK average

- Within 5% of the UK average
● Rate suppressed due to small numbers

- Between 5 and 15% lower than the UK average

Map navigation

- [My location](#)
- [East of England](#)
- [London](#)
- [Midlands](#)
- [North East and Yorkshire](#)
- [North West England](#)
- [South East England](#)
- [South West England](#)
- [Wales](#)
- [Scotland](#)
- [Northern Ireland](#)

Select an option to customise the data

Year

- ☐ 2019
☒ 2018
☐ 2017

Organisation type

- ☐ Commissioning group
☐ Higher-level commissioning group
☒ Trust/health board
☐ Trust/health board excluding congenital anomalies
☐ Neonatal network
☐ Local authority

Filters

Country +Region ×

- ☐ East of England (17)
☐ London (19)
☒ Midlands (21)
☐ North East and Yorkshire (21)
☐ North West (18)
☐ South East (18)
☐ South West (17)
☐ N/A (29)

Comparator group +Neonatal network +

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Version: 2021-10-04

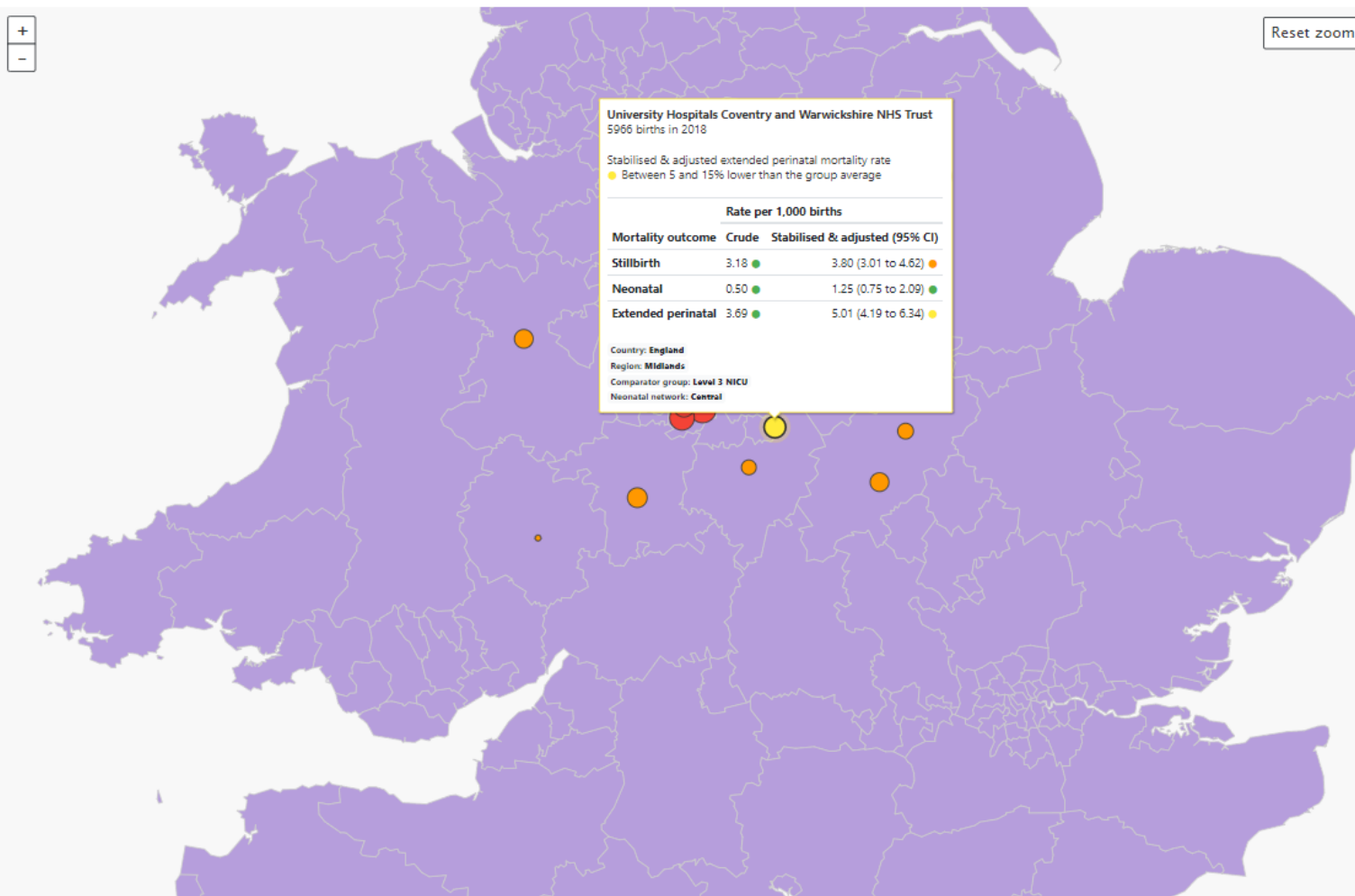
Perinatal mortality rates by trust/health board

▼ United Kingdom and Crown dependencies 2018

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

21 organisations Filtered Region: Midlands ×Map Data About HelpStillbirth Neonatal Extended perinatal Crude Stabilised & adjusted Show labels Fit to points Download+
-

Reset zoom

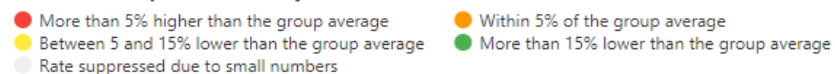


Map navigation

[My location](#)[East of England](#)[London](#)[Midlands](#)[North East and Yorkshire](#)[North West England](#)[South East England](#)[South West England](#)[Wales](#)[Scotland](#)[Northern Ireland](#)

Stabilised & adjusted extended perinatal mortality rate

● More than 5% higher than the group average ● Within 5% of the group average ● Between 5 and 15% lower than the group average ● More than 15% lower than the group average ● Rate suppressed due to small numbers



Select an option to customise the data

Year

- ☒ 2020
☐ 2019
☐ 2018
☐ 2017

Organisation type

- ☐ Commissioning group
☐ Higher-level commissioning group
☒ Trust/health board
☐ Trust/health board excluding congenital anomalies
☐ Neonatal network
☐ Local authority
☐ Region

Filters

Country +

Region +

Comparator group +

Neonatal network +

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 Oxford

Version: 2022-10-13

Perinatal mortality rates by trust/health board



▼ United Kingdom and Crown dependencies 2020

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

154 organisations

Map

Data

About

Help



1–10 of 154

Rows per page 10

Organisation	Total births	Rate per 1,000 births								
		Stillbirth			Neonatal			Extended perinatal		
		Crude	Stabilised & adjusted		Crude	Stabilised & adjusted		Crude	Stabilised & adjusted	
			Rate	(95% CI)		Rate	(95% CI)		Rate	(95% CI)
Airedale NHS Foundation Trust	1872	-	3.23	(2.51 to 4.11)	-	0.85	(0.51 to 1.38)	3.74	4.08	(3.37 to 5.17)
Aneurin Bevan University Health Board	5292	2.46	3.50	(2.78 to 4.47)	1.14	1.54	(0.95 to 2.48)	3.59	5.04	(4.18 to 6.55)
Ashford and St Peter's Hospital NHS Foundation Trust	3449	2.61	3.60	(2.84 to 4.60)	2.62	1.80	(1.21 to 2.70)	5.22	5.45	(4.54 to 7.11)
Barking, Havering and Redbridge University Hospitals NHS Trust	7263	3.44	3.02	(2.40 to 3.83)	0.69	0.96	(0.60 to 1.50)	4.13	3.98	(3.37 to 5.03)
Barnsley Hospital NHS Foundation	2822	1.77	3.07	(2.37 to 3.87)	1.06	0.89	(0.56 to 1.48)	2.83	3.97	(3.19 to 5.07)

Year

2021

Organisation type

☒ Trust/health board (26)☐ Trust/health board
excluding congenital
anomalies (26)

Country

Region

- ☐
- East of England (2)
-
- ☐
- London (6)
-
- ☐
- Midlands (3)
-
- ☐
- North East and Yorkshire (4)
-
- ☐
- North West (2)
-
- ☐
- Northern Ireland (1)
-
- ☐
- Scotland (3)
-
- ☐
- South East (3)
-
- ☐
- South West (1)
-
- ☐
- Wales (1)

Regions are defined for England
only

Comparator group

- ☐
- Show all
-
- ☒
- Level 3 NICU and neonatal
-
- surgery (26)
-
- ☐
- Level 3 NICU (27)
-
- ☐
- 4,000 or more births per
-
- annum at 24 weeks or later
-
- (37)
-
- ☐
- 2,000-3,999 births per
-
- annum at 24 weeks or later
-
- (42)
-
- ☐
- Under 2,000 births per
-
- annum at 24 weeks or later
-
- (20)

Neonatal network

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ALPHA 2023-03-24

Perinatal mortality rates by trust/health board



▼ United Kingdom and Crown dependencies 2021

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

26 organisations **Filtered**

Comparator group: Level 3 NICU and neonatal surgery ✕

Map

Data

Settings

About

Help

Crude

Stabilised & adjusted

Stillbirth

Neonatal

Extended perinatal

Clear ✕

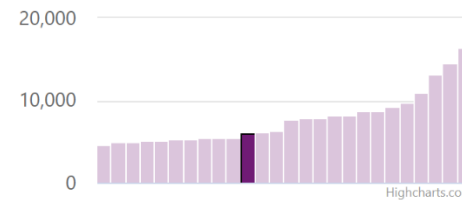
**Stabilised & adjusted extended perinatal mortality rate
by trust/health board compared with the group
average, 2021**

- > 5% higher
- 5 to 15% lower
- Suppressed
- Within 5%
- > 15% lower

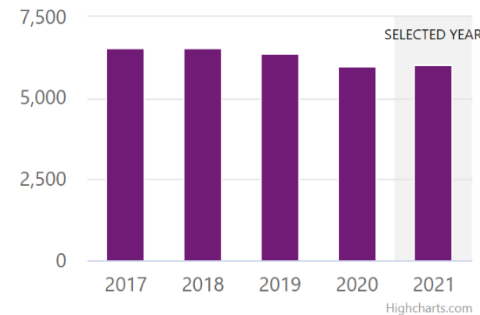
☒ Total births ☐ Live births ☐ Deaths

Total number of births

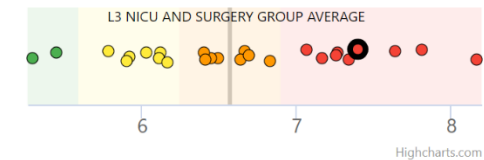
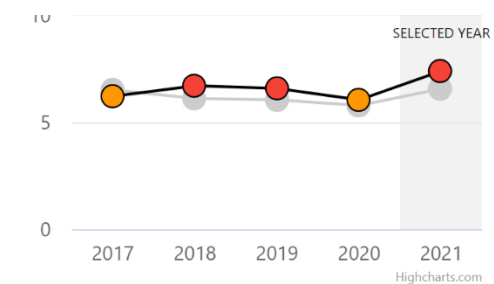
Trusts/health boards, 2021



Total number of births

Stabilised & adjusted extended
perinatal mortality rate

Trusts/health boards, 2021

Stabilised & adjusted extended
perinatal mortality rate

Select an option to customise the data

Year

2020

Organisation type

- ☒ **Commissioning organisation (135)**
- ☐ Higher-level commissioning organisation (45)
- ☐ Trust/health board (154)
- ☐ Trust/health board excluding congenital anomalies (154)
- ☐ Neonatal network (21)
- ☐ Local authority (218)
- ☐ Region (place of birth) (10)

Country

- ☐ Crown Dependencies (3)
- ☐ England (106)
- ☐ Northern Ireland (5)
- ☐ Scotland (14)
- ☐ Wales (7)

Sustainability and transformation partnership

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ALPHA 2023-03-24

⚠ WORK IN PROGRESS! This resource is currently in development, and may contain errors or inaccuracies. **The data must not be used to assess or compare health care organisations.**

Dismiss

Perinatal mortality rates by commissioning organisation

► United Kingdom and Crown dependencies 2020

135 organisations

Map Data Settings About Help

Crude Stabilised Stillbirth Neonatal Extended perinatal

Clear X

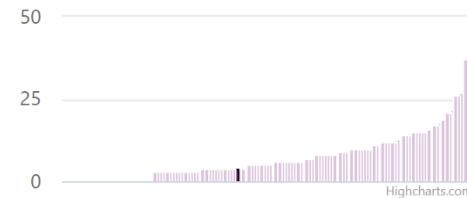
Crude neonatal mortality rate by commissioning organisation compared with the UK average, 2020

- ☒ > 5% higher ☒ Within 5% ☒ 5 to 15% lower ☒ > 15% lower

☐ Total births ☐ Live births ☒ Deaths

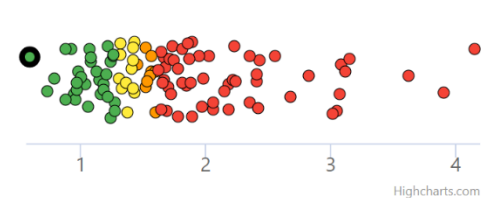
Number of neonatal deaths

Commissioning organisations, 2020

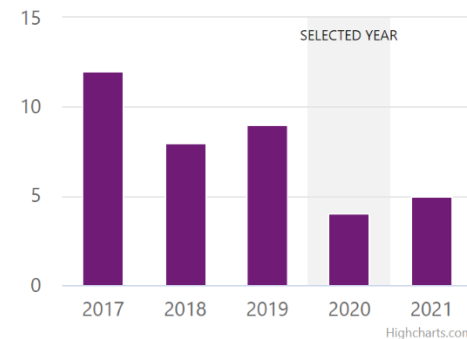


Crude neonatal mortality rate

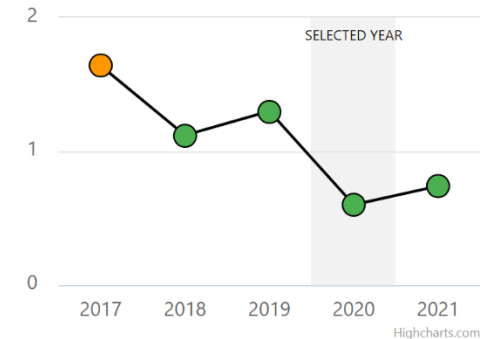
Commissioning organisations, 2020



Number of neonatal deaths

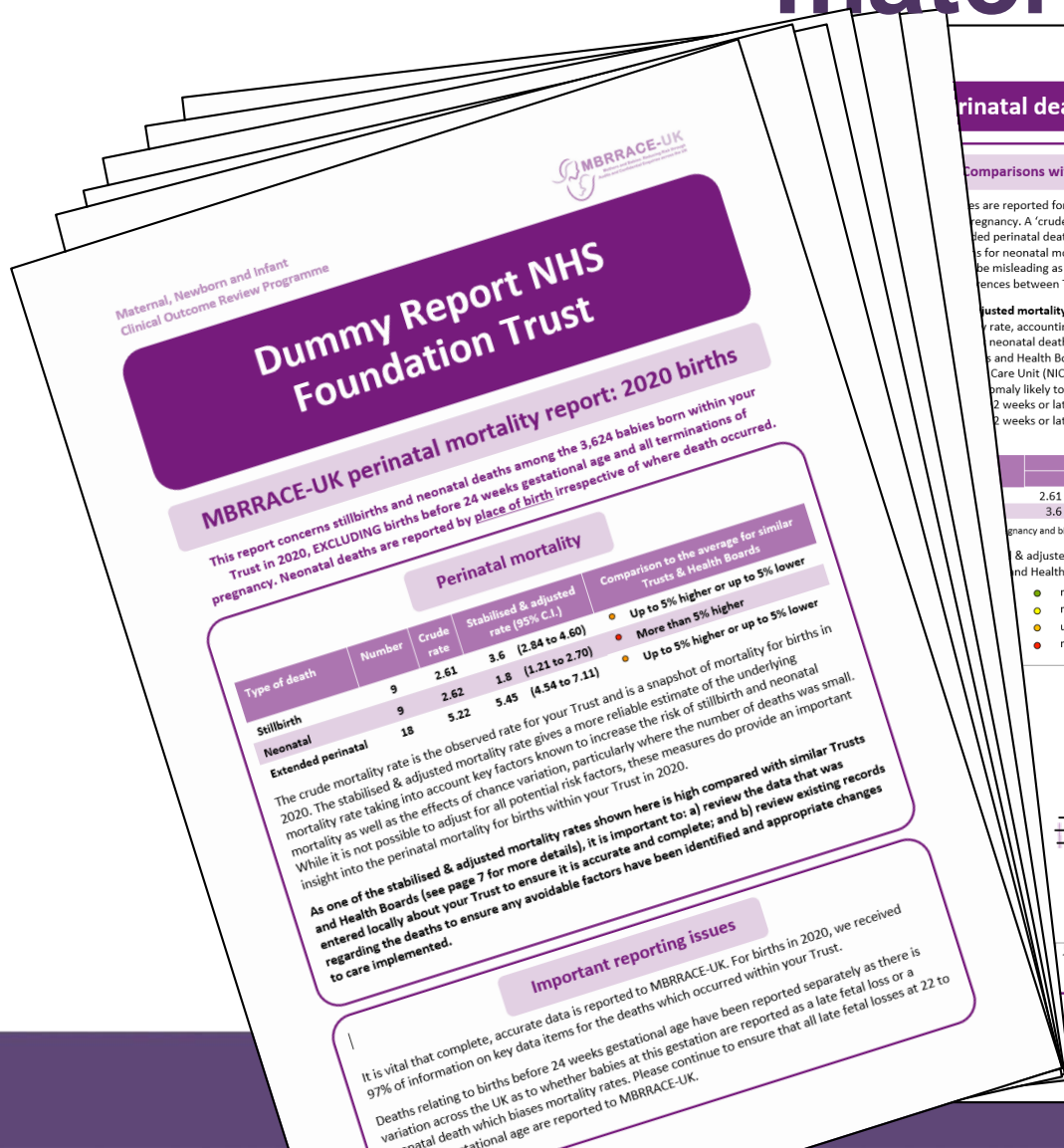


Crude neonatal mortality rate



East of England London Midlands
North East and Yorkshire North West England

Reports to organisations delivering maternal or neonatal care



Perinatal deaths continued

Comparisons with similar Trusts, Health Boards and the UK average

Deaths are reported for babies born within your Trust at 24 weeks gestational age or later, excluding pregnancy loss. A 'crude' rate and a 'stabilised & adjusted' rate are presented for stillbirths, neonatal deaths and extended perinatal deaths. The **crude mortality rate** is the number of deaths for every 1,000 births in 2020. It is a snapshot of mortality for your organisation for births in 2020. It is not misleading as a measure of the underlying (or long-term) mortality rate due to chance differences between Trusts and Health Boards in the proportion of high risk pregnancies.

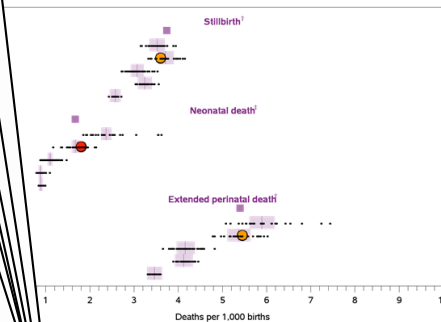
The **stabilised mortality rate** is also reported which provides a more reliable estimate of the underlying mortality rate, accounting for mother's age, socio-economic deprivation, baby's sex and ethnicity, neonatal deaths only) gestational age at birth. In addition, to account for the wide variation in mortality rates across Trusts and Health Boards have been classified hierarchically into five comparator groups: (i) Level 1 (NICU) and surgical provision (units routinely accepting for birth babies with a primary likely to require surgery in the neonatal period); (ii) Level 2 NICU; (iii) 4,000 or more live births per annum at 22 weeks or later; (iv) 2,000-3,999 births per annum at 22 weeks or later; (v) under 2,000 live births per annum at 22 weeks or later. **Your Trust has been included in the comparator group with a Level 3**

Mortality rate per 1,000 births ¹ (95% confidence interval)		
Stillbirth ²	Neonatal ³	Extended perinatal ⁴
2.61	2.62	5.22
3.6 (2.84 to 4.60)	1.8 (1.21 to 2.70)	5.45 (4.54 to 7.11)

¹ per 1,000 total births; ² per 1,000 live births.

The stabilised & adjusted mortality rate for each type of death has been compared with the average for Trusts and Health Boards in the same comparator group and is shown below as a circle:

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



Dummy Report NHS Foundation Trust
MBRRACE-UK Perinatal Mortality Report, October 2022 (MBXXXX) v1.0
Page 7 of 11

Mortality rates over time

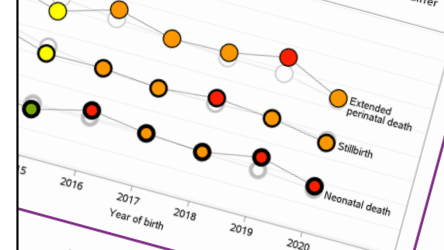
Crude mortality by year of birth

Crude mortality rates for each type of death compared to the average mortality rate for Trusts and Health Boards in the same comparator group (shown in grey) by year of birth. As the data is updated to the data, these results might differ slightly from those in previous reports.



Stabilised & adjusted mortality by year of birth

Stabilised & adjusted mortality rates for each type of death compared to the average mortality rate for Trusts and Health Boards in the same comparator group (shown in grey) by year of birth. As the data is updated to the data, these results might differ slightly from those in previous reports.



Dummy Report NHS Foundation Trust
MBRRACE-UK Perinatal Mortality Report, October 2022 (MBXXXX) v1.0

Real-time data monitoring tool

Expand all Collapse all

- Surveillance status +
- Type of death +
- Timing of death +
- Admitted to neonatal unit +
- Survival days +
- Gestational age (weeks) +
- Multiplicity +
- Sex +
- Birth weight (grams) +
- Birth weight centile +
- Codac level I +
- Codac level II - Neonatal +
- Mother's ethnicity +
- Mother's age at delivery (years) +
- BMI at booking (kg/m²) +
- Smoking status at booking +
- Breath CO at booking (ppm) +

Deaths within your organisation

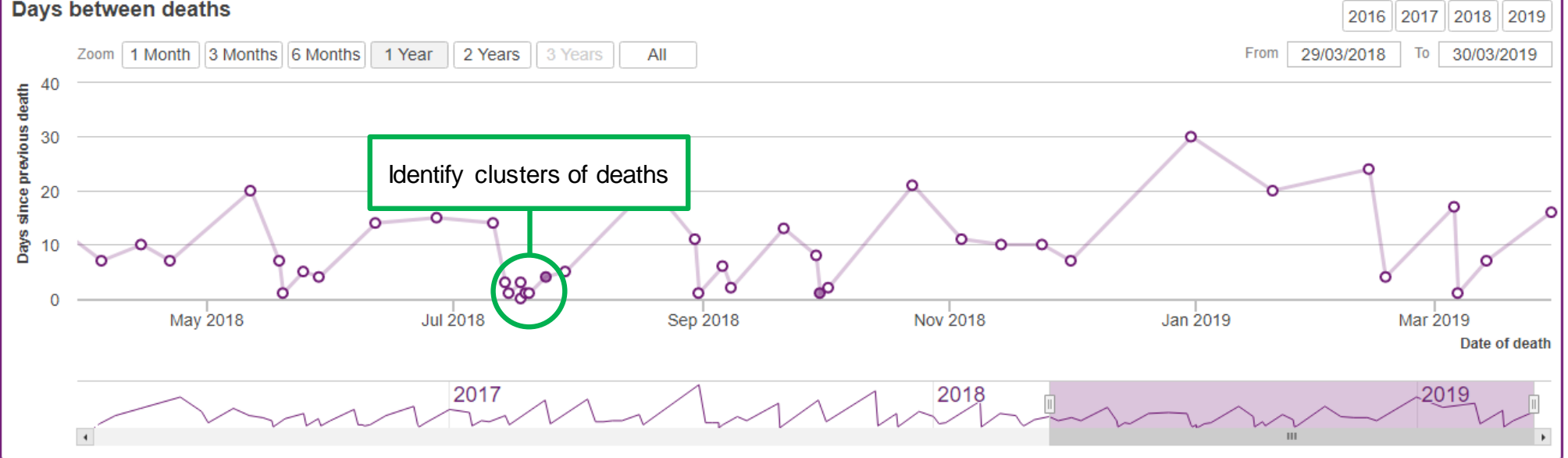
41 deaths between 30 Mar 2018 and 30 Mar 2019

Snapshot Chart settings Chart size S M L

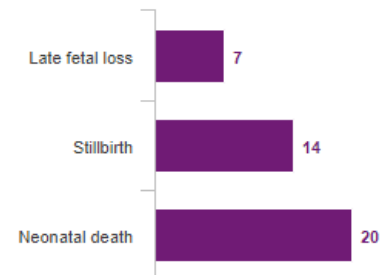
Switch to Deaths of babies born within your organisation

Help

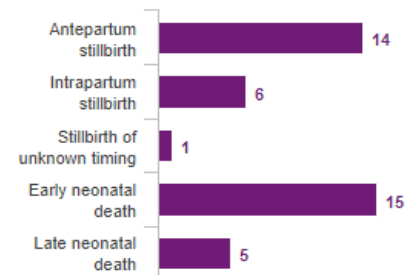
Days between deaths



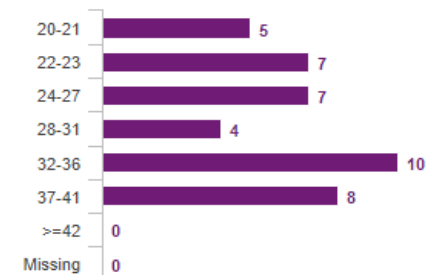
Number of deaths by Type of death



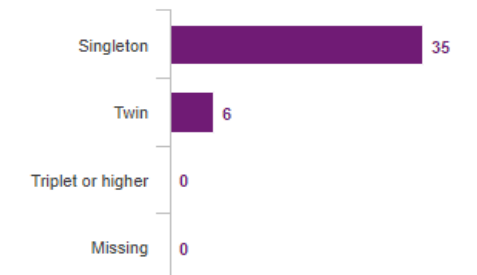
Number of deaths by Timing of death



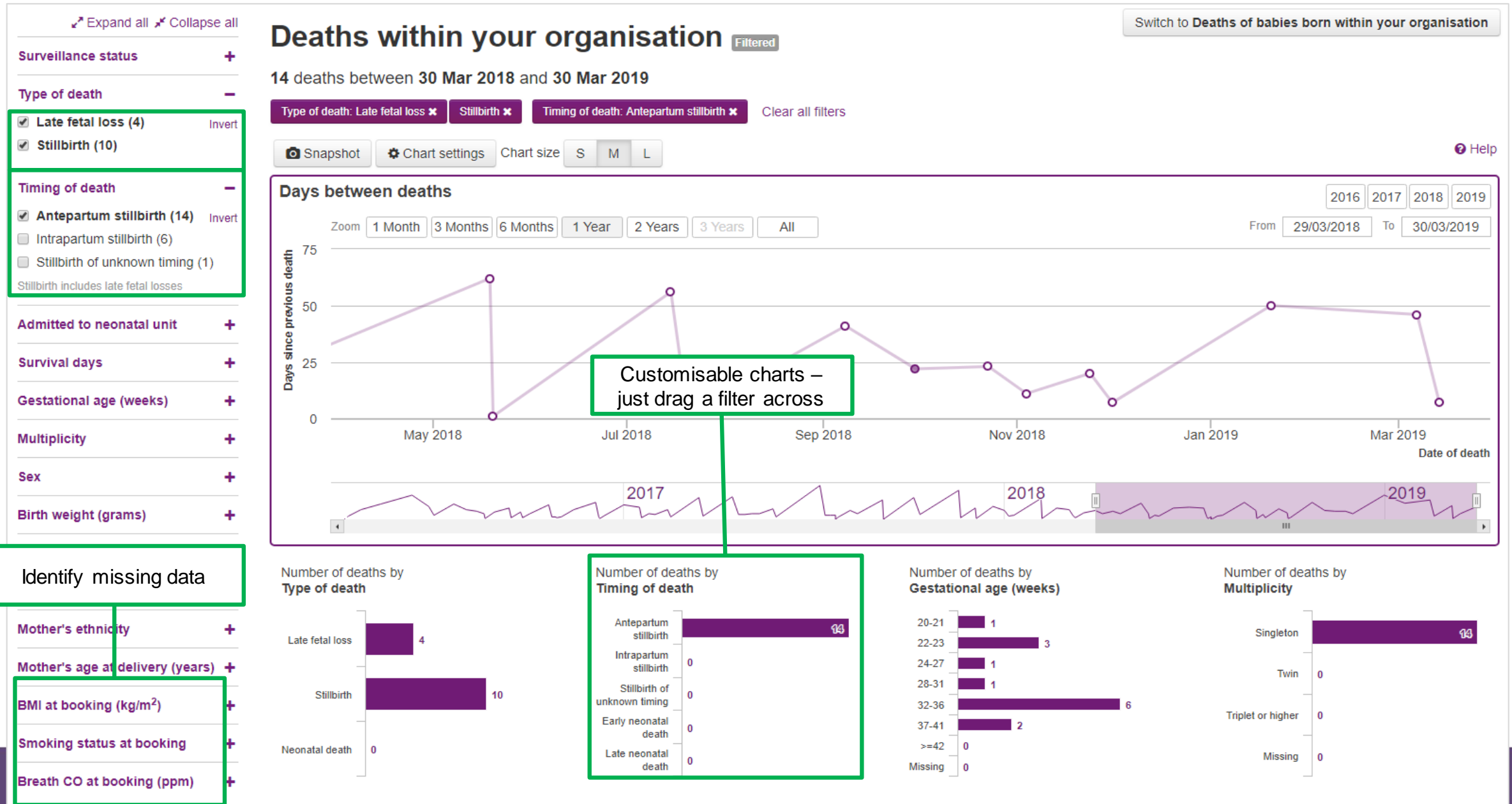
Number of deaths by Gestational age (weeks)



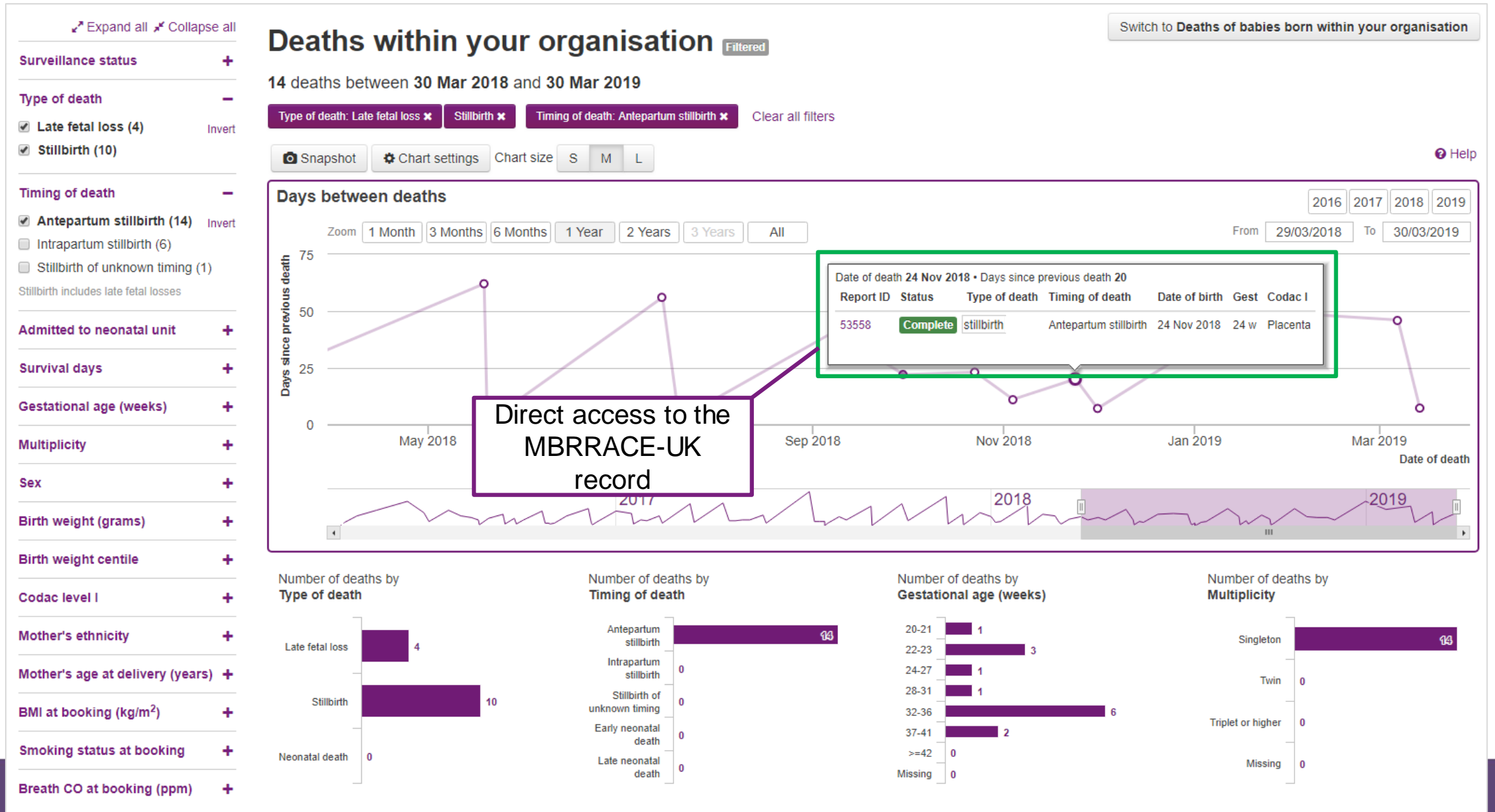
Number of deaths by Multiplicity



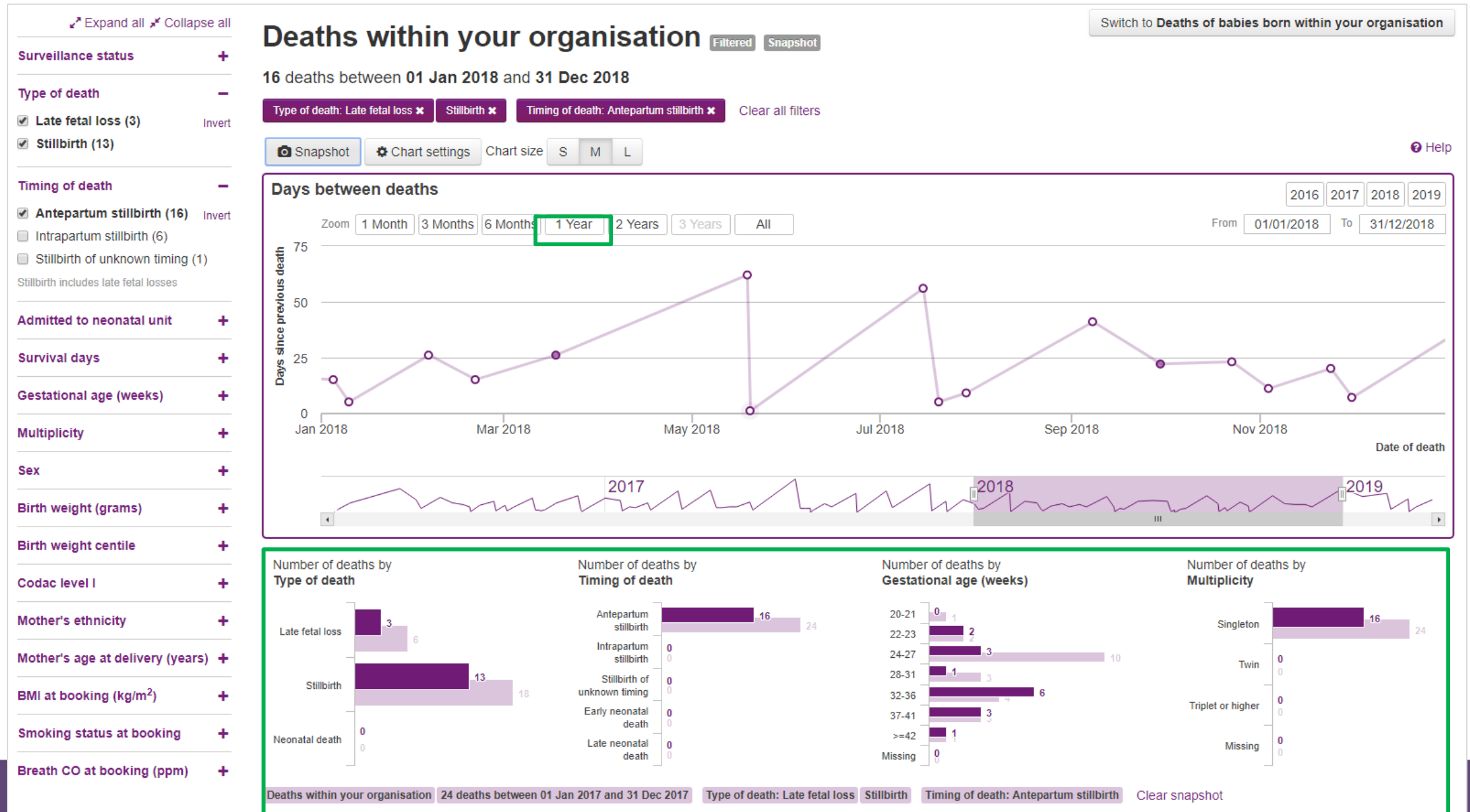
Filters allows focus on specific types of death e.g. antepartum stillbirth



Detailed information available for each death



Ability to make comparisons, e.g. between time periods



Date range

All3y2y1y6m3m

20192020202120222023

2020-2022 (3y)2018-2022 (5y)

Filters

Expand allCollapse all

Surveillance status

Type of death

Timing of death

Admitted to neonatal unit

Survival days

Gestational age

Multiplicity

Sex

Birth weight

Birth weight centile

Codac level I

Codac level II - Neonatal

Mother's ethnicity

Mother's age at delivery

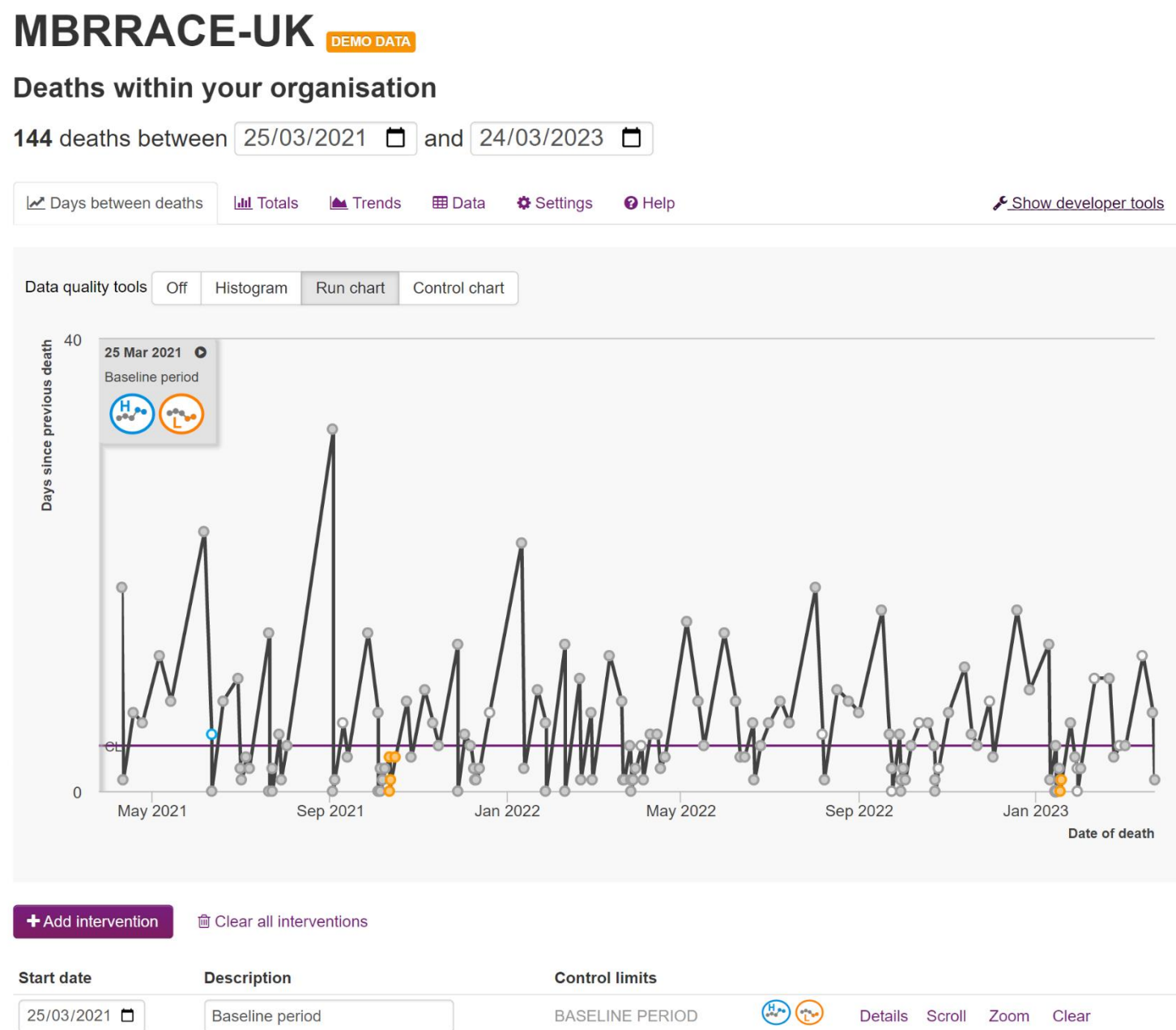
BMI at booking

Smoking status at booking

Breath CO at booking

Switch to Deaths of babies born at, and who died within, your organisation

Version: 2023-01-18WORK IN PROGRESS



Date range

All3y2y1y6m3m

20192020202120222023

2020-2022 (3y)

Filters

- Surveillance sta
- Type of death
- Timing of death
- Admitted to nec
- Survival days
- Gestational age
- Multiplicity
- Sex
- Birth weight
- Birth weight centile
- Codac level I
- Codac level II - Neonatal
- Mother's ethnicity
- Mother's age at delivery
- BMI at booking
- Smoking status at booking
- Breath CO at booking

Switch to Deaths of babies born at, and who died within, your organisation

Version: 2023-01-18 WORK IN PROGRESS

MBRRACE-UK

DEMO DATA

Deaths within your organisation

Run chart intervention starting 25 Mar 2021

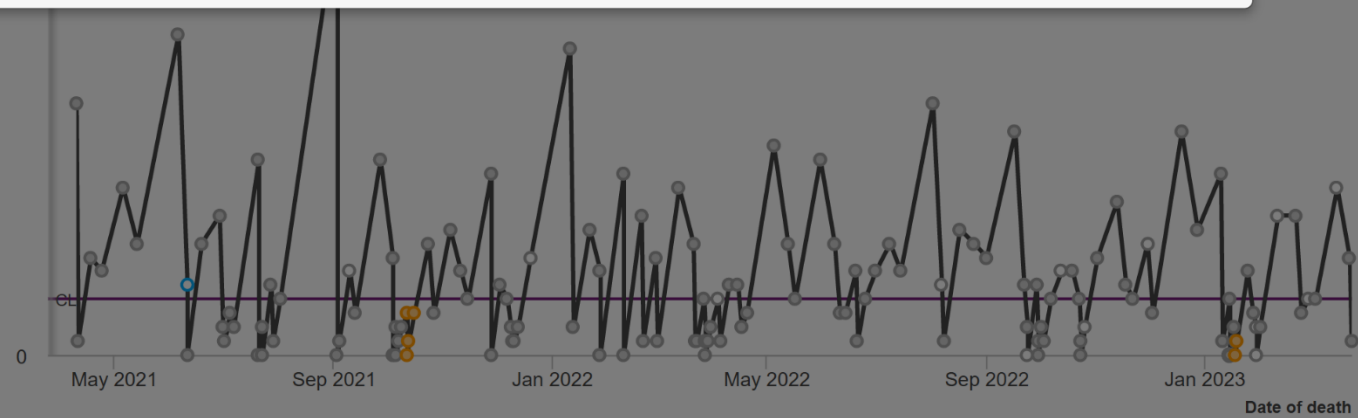
Baseline period

Intervention period comprises 144 deaths between 10 Apr 2021 and 24 Mar 2023. Baseline control limits derived from 25 observations between 10 Apr 2021 and 04 Sep 2021.

Days since previous death (X)

Control limit	Value	Rule	Deaths
Centre line	4.00	Shift – six or more consecutive points above or below the centre line	1 + 6
		Trend – 5 consecutively increasing or decreasing points	0 + 0

Close



+ Add intervention

Clear all interventions

Start date	Description	Control limits	
25/03/2021	Baseline period	BASELINE PERIOD	Details Scroll Zoom Clear

Date range

All 3y 2y 1y 6m 3m

2019 2020 2021 2022 2023

2020-2022 (3y) 2018-2022 (5y)

Filters

Expand all Collapse all

Surveillance status

Type of death

Timing of death

Admitted to neonatal unit

Survival days

Gestational age

Multiplicity

Sex

Birth weight

Birth weight centile

Codac level I

Codac level II - Neonatal

Mother's ethnicity

Mother's age at delivery

BMI at booking

Smoking status at booking

Breath CO at booking

Switch to Deaths of babies born at, and who died within, your organisation

Version: 2023-01-18 WORK IN PROGRESS

MBRRACE-UK DEMO DATA

Deaths within your organisation

144 deaths between 25/03/2021 and 24/03/2023

Days between deaths

Totals

Trends

Data

Settings

Help

Show developer tools

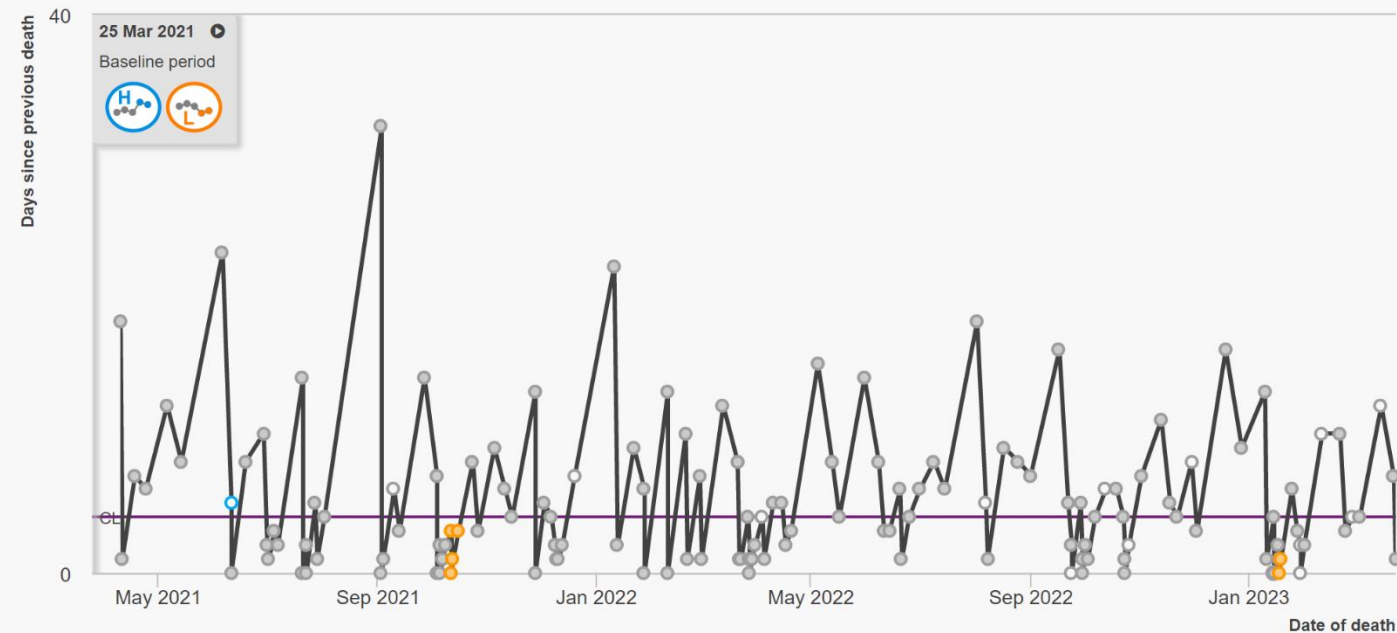
Data quality tools

Off

Histogram

Run chart

Control chart



+ Add intervention

Clear all interventions

Start date

Description

Control limits

25/03/2021

Baseline period

BASELINE PERIOD



Details

Scroll

Zoom

Clear

Date range

All3y2y1y6m3m

20192020202120222023

2020-2022 (3y)2018-2022 (5y)

Filters

Expand allCollapse all

Surveillance status

Type of death

Timing of death

Admitted to neonatal unit

Survival days

Gestational age

Multiplicity

Sex

Birth weight

Birth weight centile

Codac level I

Codac level II - Neonatal

Mother's ethnicity

Mother's age at delivery

BMI at booking

Smoking status at booking

Breath CO at booking

Switch to Deaths of babies born at, and who died within, your organisation

Version: 2023-01-18WORK IN PROGRESS

MBRRACE-UK

DEMO DATA

Deaths within your organisation

144 deaths between 25/03/2021 and 24/03/2023

Days between deaths

Totals

Trends

Data

Settings

Help

Show developer tools

Data quality tools

Off

Histogram

Run chart

Control chart

Days since previous death

40

25 Mar 2021

Baseline period

HL

UL

Date of death 11 Jun 2021 • Days since previous death 5

Report ID

Status

Type of death

Timing of death

Gest

Date of birth

Codac I

56568

Open

Stillbirth

Antepartum stillbirth

39w

16 Jun 2021

Unknown

Shift – six or more consecutive points above or below the centre line

0

May 2021

Sep 2021

Jan 2022

May 2022

Sep 2022

Jan 2023

Date of death

Download

+ Add intervention

Clear all interventions

Start date

25/03/2021

Description

Baseline period

Control limits

BASELINE PERIOD

HL

UL

Details

Scroll

Zoom

Clear

Date range

All 3y 2y 1y 6m 3m

2019 2020 2021 2022 2023

2020-2022 (3y) 2018-2022 (5y)

Filters

Expand all Collapse all

Surveillance status

Type of death

Timing of death

Admitted to neonatal unit

Survival days

Gestational age

Multiplicity

Sex

Birth weight

Birth weight centile

Codac level I

Codac level II - Neonatal

Mother's ethnicity

Mother's age at delivery

BMI at booking

Smoking status at booking

Breath CO at booking

Switch to Deaths of babies born at, and who died within, your organisation

Version: 2023-01-18 WORK IN PROGRESS

MBRRACE-UK

DEMO DATA

Deaths within your organisation

448 deaths between 01/01/2018 and 31/12/2022

Days between deaths

Totals

Trends

Data

Settings

Help

Show developer tools

Number of deaths by

Type of death

Time units

Auto

Year

Half-year

Quarter

Month

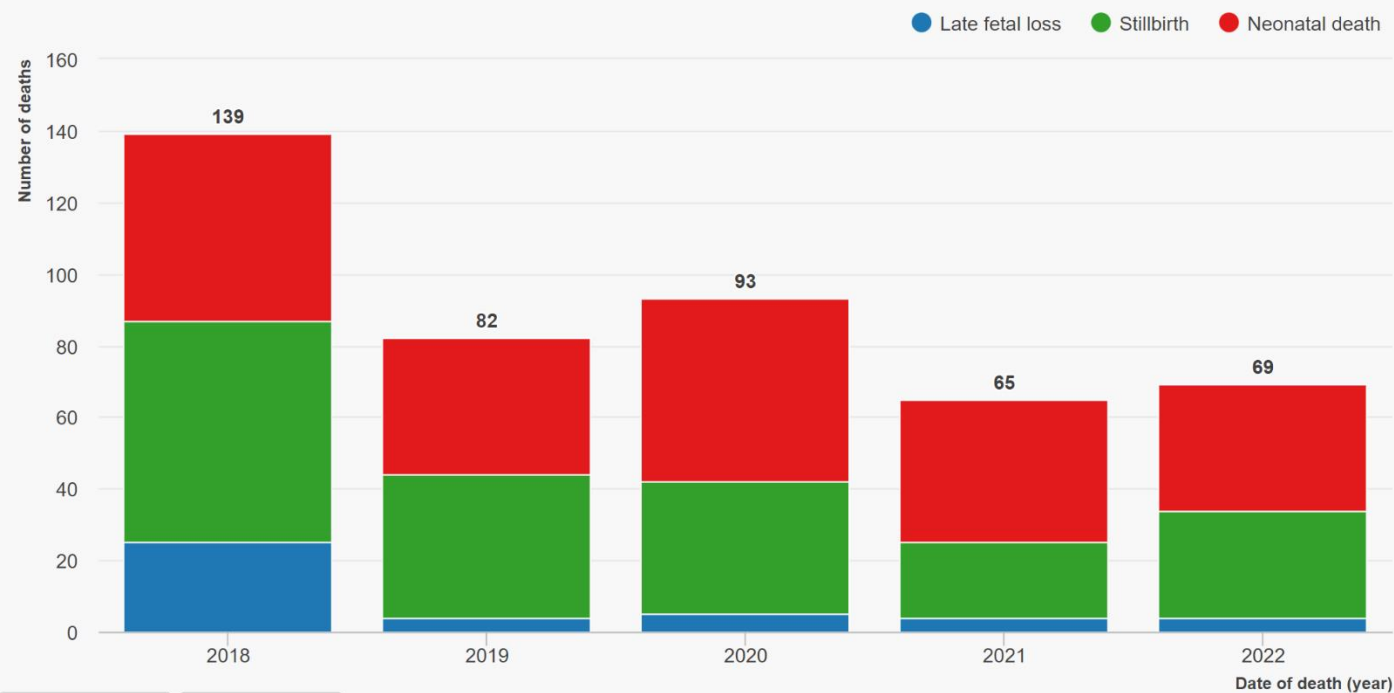


Chart type

Download

Add snapshot

Date range

All 3y 2y 1y 6m 3m

2019 2020 2021 2022 2023

2020-2022 (3y) 2018-2022 (5y)

Filters

Expand all Collapse all

Surveillance status

Type of death

Timing of death

Admitted to neonatal unit

Survival days

Gestational age

Multiplicity

Sex

Birth weight

Birth weight centile

Codac level I

Codac level II - Neonatal

Mother's ethnicity

Mother's age at delivery

BMI at booking

Smoking status at booking

Breath CO at booking

Switch to Deaths of babies born at, and who died within, your organisation

Version: 2023-01-18 WORK IN PROGRESS

MBRRACE-UK DEMO DATA

Deaths within your organisation

448 deaths between 01/01/2018 and 31/12/2022

Days between deaths

Totals

Trends

Data

Settings

Help

Show developer tools

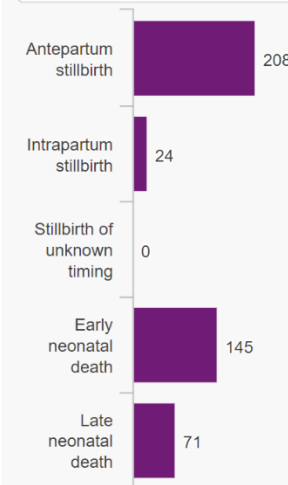
Number of deaths by

Type of death



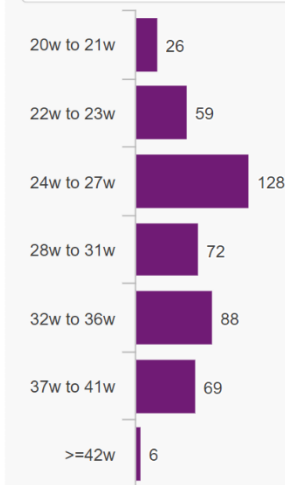
Number of deaths by

Timing of death



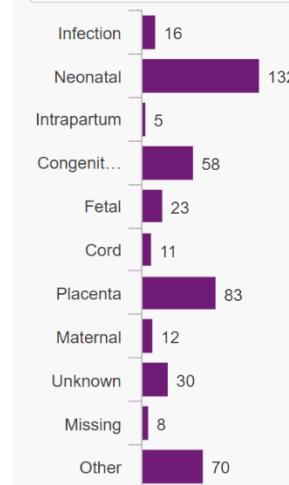
Number of deaths by

Gestational age



Number of deaths by

Codac level I



Add snapshot

Date range

All

3y

2y

1y

6m

3m

2019

2020

2021

2022

2023

2020-2022 (3y)

2018-2022 (5y)

Filters

Expand all Collapse all

- Surveillance status
- Type of death

Late fetal loss (42)

Invert

☒ Stillbirth (190)

Clear

Neonatal death (216)
- Timing of death
- Admitted to neonatal unit
- Survival days
- Gestational age
- Multiplicity
- Sex
- Birth weight
- Birth weight centile
- Codac level I
- Codac level II - Neonatal
- Mother's ethnicity
- Mother's age at delivery
- BMI at booking
- Smoking status at booking
- Breath CO at booking

Switch to Deaths of babies born at, and who died within, your organisation

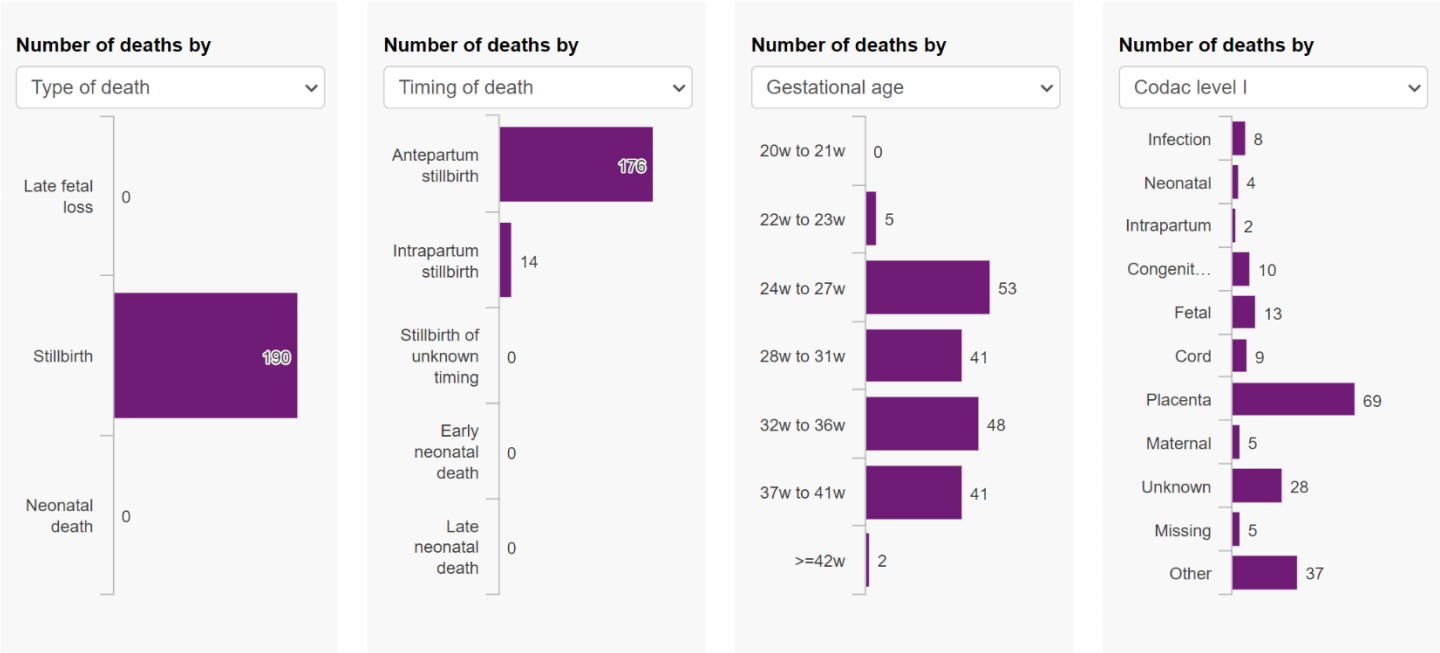
Version: 2023-01-18 WORK IN PROGRESS

MBRRACE-UK DEMO DATA

Deaths within your organisation

190 deaths between 01/01/2018 and 31/12/2022 filtered on Type of death: Stillbirth Clear all filters

Days between deaths Totals Trends Data Settings Help Show developer tools



Add snapshot



Thank you

