

# Perinatal Statistics Report

# 2018

Healthcare Pricing Office  
June 2021



Building a  
Better Health  
Service

Seirbhís Sláinte  
Níos Fearr  
á Forbairt

HEALTHCARE  
PRICING  
OFFICE

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# METADATA

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## CREATOR

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## SUMMARY DESCRIPTION

This is a report on national data on Perinatal events in 2018. Information on every birth in the Republic of Ireland is submitted to the National Perinatal Reporting System (NPRS). All births are notified and registered on a standard four part birth notification form (BNF01) which is completed where the birth takes place. Part 3 of this form is sent to the HPO for data entry and validation. The information collected includes data on pregnancy outcomes (with particular reference to perinatal mortality and important aspects of perinatal care), as well as descriptive social and biological characteristics of mothers giving birth. The time frame to which the information relates is from pregnancy, delivery and ends at seven completed days after birth.

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Please note that there is the potential for minor revisions to the data set analysed in this report.

Please check online at [www.hpo.ie](http://www.hpo.ie) for information on updates.



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The Healthcare Pricing Office (HPO) oversees a wide range of tasks related to the management of this system, including personnel training, data quality and audit, data management and analysis, and information dissemination. We acknowledge gratefully the dedication, skill and expertise that all the members of this team bring to their work on this system. Collection and preparation of the data are undertaken by Anna Lewandowska, Avril McManus, Brian Heanue, Emma Keegan, Macia Pinkwas and Malgorzata Urbanska. The IT Department of the HPO supports the development of the NPRS software system for data entry and validation and this is gratefully acknowledged.

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Inevitably, a number of individuals have to carry most of the responsibility for producing a report of this type. In this case Karen Kearns, Laura Metcalfe, Sinead O'Hara, Rory O'Reilly and Izabela Sikora were to the fore in the preparation of the report. We wish to express our sincere thanks to these colleagues for all of their hard work on the report. Their commitment, enthusiasm and professionalism are gratefully acknowledged and sincerely appreciated.



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## KEY FINDINGS

The Perinatal Statistics Report 2018 presents national statistics on perinatal events in Ireland. This report is based on data collected from Part 3 of the Birth Notification Form (BNF01) for the National Perinatal Reporting System (NPRS) and provides information on mothers giving birth and babies born in 2018.

### SUMMARY STATISTICS, 2018

Live Births, Stillbirths, Early Neonatal Deaths, Perinatal Deaths, and Adjusted Perinatal Deaths

	Total Births	Live Births	Stillbirths		Early Neonatal Deaths		Perinatal Deaths		Adjusted Perinatal Deaths <sup>b</sup>	
	Number	Number	Number	Rate <sup>a</sup>	Number	Rate <sup>a</sup>	Number	Rate <sup>a</sup>	Number	Rate <sup>a</sup>
Singleton	58,996	58,813	183	3.1	83	1.4	266	4.5	177	3.0
Multiple	2,262	2,248	14	6.2	21	9.3	35	15.5	27	12.0
<b>Total</b>	<b>61,258</b>	<b>61,061</b>	<b>197</b>	<b>3.2</b>	<b>104</b>	<b>1.7</b>	<b>301</b>	<b>4.9</b>	<b>204</b>	<b>3.3</b>

Notes: a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. See Appendix A for further details on calculation of rates.

b In this and subsequent tables, 'Adjusted Perinatal Rate' excludes all deaths due to congenital anomalies.

### BABIES, 2018

- 61,258 births were reported to NPRS in 2018, representing a 1.3 per cent decrease between 2017 and 2018
- 7% of total births were preterm (less than 37 weeks gestation)
- 6% of live births were low birthweight (less than 2,500 grams)
- 2% of live births were high birthweight (4,500 grams or more)
- 60% of babies recorded any breastfeeding in 2018 compared to 53% in 2009
- 47% of babies were exclusively breastfed in 2018 compared to 45% in 2009
- 34% of total live births were delivered by Caesarean section, with 33% of singleton and 70% of multiple live births delivered by this method. In 2009, 27% of total live births were delivered by Caesarean section
- 95% of singleton births and 63% of multiple births were discharged from hospital within 5 days of birth
- Average total infant's length of stay was 3.4 days in 2018, compared to 3.3 days in 2009
- The perinatal mortality rate was 4.9 per 1,000 live births and stillbirths (4.5 per 1,000 singleton births and 15.5 per 1,000 multiple births). This rate has fallen by 42.9% since 2009, when it was 6.9 per 1,000 live births and stillbirths.

### Mothers, 2018

- 60,119 maternities were reported to NPRS in 2018, representing a 1.3 per cent decrease between 2017 and 2018
- The average age of mothers has increased from 30.8 years in 2009 to 32.4 years in 2018
- 39% of mothers were aged 35 years or older, up from 27% in 2009
- 26% of first births were to women aged 35 years or older, compared to 15% in 2009
- 4% of total mothers giving birth were aged under 20 years, compared to 3% in 2009
- 39% of mothers gave birth for the first time, with an average age for first time mothers of 30.7 years
- 2% of mothers had a multiple pregnancy
- 60% of mothers recorded any breastfeeding compared to 53% in 2009
- 47% of mothers exclusively breastfed compared to 45% in 2009
- 53% of women having a singleton live birth delivered spontaneously, while deliveries by Caesarean section accounted for 33%, 3% were delivered using forceps and 11% via vacuum extractions
- 21% of women having a multiple live birth delivered spontaneously, while deliveries by Caesarean section accounted for 71%, 1% were delivered using forceps and 5% via vacuum extractions
- For women having a singleton live birth 52% had a postnatal length of stay of 2 days or less and 45% had a postnatal length of stay of 3-5 days
- For women having a multiple live birth 11% had a postnatal length of stay of 2 days or less and 73% had a postnatal length of stay of 3-5 days
- 24% of births in 2018 were to mothers born outside Ireland.



# **SECTION ONE**

## **INTRODUCTION**

## INTRODUCTION

The National Perinatal Reporting System (NPRS) is the principal source of national data on perinatal events. Since the 1<sup>st</sup> January 2014, the Healthcare Pricing Office (HPO) has overseen the administration and management of this system. The HPO is responsible for overseeing all functions associated with the operation of the NPRS database, including the development and support of the data collection, processing, management, reporting, and responding to requests for information on all births nationally.<sup>1</sup> This reporting system is a valuable resource for informing policy and service planning. The analysis presented in this report is based on data collected from Part 3 of the Birth Notification Form (BNF01) which is used to notify local registrars of all live births and stillbirths occurring in Ireland (see Appendix B).

## PURPOSE OF THIS REPORT

The principal aim of this report is to present national statistics on perinatal events for the year 2018.<sup>2</sup> In so doing, the report aims to

- describe the fundamental social and biological characteristics of mothers and their babies
- report on pregnancy outcomes with particular reference to perinatal mortality
- highlight important aspects of perinatal care
- stimulate a wider interest in research in the area of perinatal epidemiology
- promote a general recognition of the importance of having an accurate and complete perinatal reporting system at a national level.

## STRUCTURE OF THIS REPORT

**SECTION ONE** provides background information relating to the NPRS system, explains conventions used in the report, and provides details relating to the data elements collected in the system.

**SECTION TWO** contains summary data on selected variables over the past decade and trends in international comparisons, where available.

**SECTION THREE** contains tables relating to the following variables: maternal age, civil status, socio-economic group of mother and father (derived from collection of data on occupation), nationality of mother and father, maternal parity, distribution of previous stillbirths, interval since last birth, birthweight, gestational age, and month of birth.

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<sup>1</sup> The NPRS was established in the 1980's and was managed in the Department of Health. From 1999 to 2013 the Economic and Social Research Institute (ESRI) oversaw the administration and management of the NPRS on behalf of the Department of Health (DoH) and the Health Service Executive (HSE).

<sup>2</sup> Previous reports in this series can be downloaded from [www.hpo.ie](http://www.hpo.ie).

SECTION FOUR presents tables relating to variables which fall more naturally into the category of the use of health care facilities and deals in particular with the following: type of antenatal care received, timing of first antenatal visit, length of mother's antenatal and postnatal stay, whether hospital admission was booked or not, mother's immunity to rubella, method of delivery, classification of outcome according to size of maternity unit, transfer of infants between hospitals, length of infant's hospital stay, and type of feeding.

SECTION FIVE deals with perinatal outcomes in detail, examining perinatal deaths by birthweight and gestational age, with particular focus on cause of death. In this section, tables are presented on the following variables: numbers of antepartum and intrapartum stillbirths and early neonatal deaths by birthweight groups and gestational age, numbers and rates for cause of death, age at death for early neonatal deaths, and percentages of stillbirths and early neonatal deaths undergoing post-mortem examinations.

APPENDICES include definitions, source data tables for figures, and other relevant information for use when reading the report. Appendix H deals with domiciliary births, including trends from 2009 to 2018. Appendix I includes data on method of delivery for primiparous and multiparous women for 2009 to 2018.

## CONVENTIONS USED IN THIS REPORT

- In accordance with the World Health Organization (WHO) guidelines, only births weighing 500 grams or more are included in any analysis of NPRS data.<sup>3,4</sup>
- Reporting of small numbers: The HPO does not report cells where the number of births (or maternities) reported to NPRS is five or fewer. The tables contained in this report have been suppressed in this manner by replacing such cells with ~. Where further suppression is necessary to ensure that cells with five or fewer births (or maternities) are not disclosed, the cell with the next lowest number of births (or maternities) has been replaced with \*. Where cells have been suppressed, the associated percentage figures have been suppressed using ^.
- The majority of tables report total, singleton and multiple births alongside the number of maternities, where applicable. Other tables report total maternities by primiparous and multiparous women for selected variables (see Appendix A for definitions).
- Unless otherwise stated, discussion on total births in this report includes live births and stillbirths for singleton and multiple births.
- Caution should be exercised when interpreting rates based on small numbers. *Rates based on 20 observations or fewer are distinguished by italic type as a warning to the user that their reliability as a measure may be affected by the small number of observations.* For further information on calculation of rates see Appendix A.

<sup>3</sup> See [www.who.int/classifications/icd/ICD-10\\_2nd\\_ed\\_volume2.pdf](http://www.who.int/classifications/icd/ICD-10_2nd_ed_volume2.pdf) ; pg 96, 5.7.2. Reporting Criteria

<sup>4</sup> The National Perinatal Epidemiology Centre (NPEC) also publish a report on perinatal mortality in Ireland. Data published in this report are collected as a national audit on perinatal mortality based on data collected from 19 maternity units using a standardised perinatal death notification form. The NPEC report on perinatal deaths based on the criteria of at least 500g birthweight and/or at least 24 weeks gestation as well as WHO guidelines of  $\geq 500$ g birthweight, irrespective of gestation. See <https://www.ucc.ie/en/npec/> for further details.

- In contrast to reports from 2012-2017, the category of 'Not Stated' (values reported by hospitals when information is not available) is only presented in data tables when there are more than five cases reported in this category. This is to avoid unnecessary suppression in the tables. 'Not Stated' values are excluded in the compilation of the figures.
- Deliveries under hospital schemes (such as domino, early transfer home, planned community midwives, and midwifery-led units) are treated as hospital births as the current birth notification form does not differentiate between different hospital schemes.
- Father's details are only required for registration purposes where mother's civil status is recorded as 'married'. As a result, there is a proportion of records for which information is incomplete, these are assigned to the category 'not applicable'. This category is combined with 'not stated' for the purposes of presenting data on father's socio-economic group<sup>5</sup> and father's nationality in this report.

## BIRTH NOTIFICATION AND REGISTRATION

Births are notified and registered on a standard four-part Birth Notification Form (BNF01)/electronic record which are used to notify local registrars of all live births and stillbirths occurring in Ireland. The third part of this form has all identifying information removed and is sent to the HPO (see Appendix B). Figure 1.1 provides a diagrammatic representation of the information system around the registration of births and data collection by the NPRS. All the tables and rates in this report are based on data contained in the third part of the standard form submitted to NPRS at the HPO.

The link between the Birth Notification Form and the birth registration process for the General Register Office (GRO) ensures complete coverage of all births for the NPRS. The number of total births included in the NPRS are based on the data collected by the NPRS via part 3 of the Birth Notification Form (BNF01).

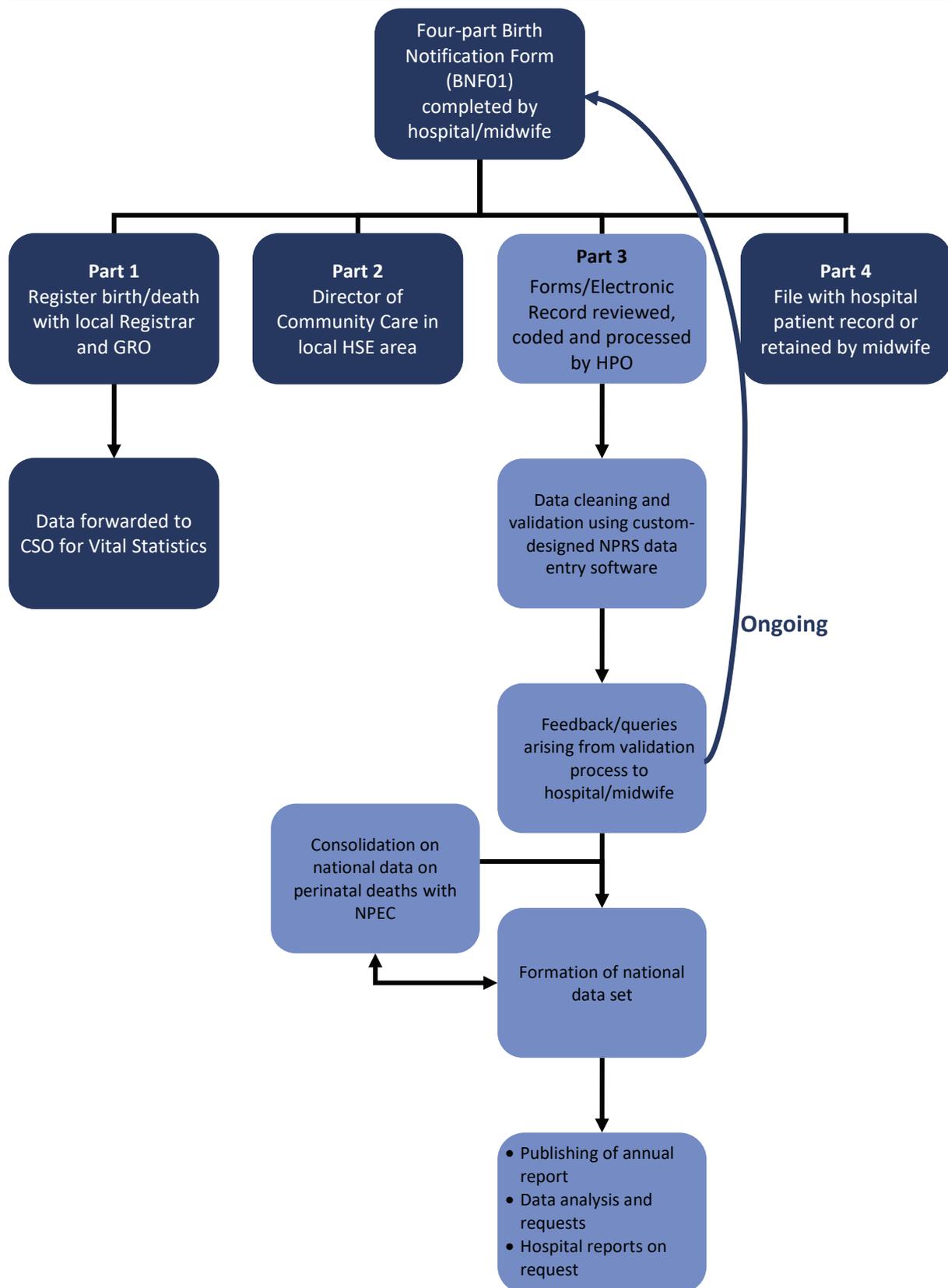
It should be noted that notification of birth differs to registration of birth. While the *Civil Registrations Act 2004* outlines the duty of persons attending each birth to notify the local registrar of a stillbirth or live birth, it is not a legal requirement of the parents/guardians to register stillbirths. Therefore, the GRO, and subsequently the Central Statistics Office, publish data on registered births and perinatal deaths only. This may result in differences in the number of births and perinatal deaths reported here compared to official CSO publications.<sup>6</sup>

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<sup>5</sup> In NPRS reports prior to 2012 data on mother's and father's socio-economic group were reported as occupation, however, in this report these data are reported as socio-economic group. The classification for grouping occupations into socio-economic groups used in this and previous reports has not changed. For further details see Appendix C Classification of socio-economic group.

<sup>6</sup> During 2014, a Birth Notification System Advisory Group was established, this group consists of all involved with BNF01, including the GRO, CSO, Department of Public Health, HSE, Department of Health and HPO. The terms of reference for this group include development of the BNF01, communication, collaboration and support between data collectors on variables and collection of data via the birth notification process.

**FIGURE 1.1**  
National Perinatal Reporting System, Data Collection



Notes: CSO denotes Central Statistics Office. GRO denotes General Register Office. HSE denotes Health Service Executive.

## NATIONAL MINIMUM DATA SET

The NPRS data set provides a national minimum data set, which is intended to serve as a basis for the analysis of key indicators over time. The data collected by the NPRS can be grouped logically into demographic, clinical, and administrative data as follows:

### DEMOGRAPHIC DATA

- Date of infant's birth, sex of infant
- Date of father's birth, father's county and country of residence, father's occupation, father's nationality (since 2004)
- Date of mother's birth, mother's county and country of residence, mother's occupation, mother's nationality (since 2004)
- Civil status of mother and date of present marriage/civil partnership, if applicable

### CLINICAL DATA

- Infant's birthweight, period of gestation, mother's obstetric history (including parity)
- Multiple birth indicator
- Autopsy indicator
- Whether stillbirth occurred before or during labour
- Main cause of death and one secondary cause of death for infant
- Maternal immunity to rubella, method of delivery
- Infant's BCG vaccination
- Main maternal disease or condition and one secondary maternal disease or condition affecting the infant or foetus
- Main disease or congenital malformation and one secondary disease or congenital malformation affecting the infant or foetus

### ADMINISTRATIVE DATA

- Hospital number, case number (unique to hospital of birth)
- Type of birth indicator, place of birth
- Date of last birth (live birth or stillbirth)
- Type of death indicator, place of death
- Type of antenatal care received, dates of first visits to doctor and hospital during pregnancy
- Type of feeding, pre-booked admission indicator, dates of mother's admission and discharge, date of infant's discharge
- Infant transfer indicator for medical reasons, identification code for hospital to which infant was transferred.

## DATA COLLECTION AND QUALITY

The NPRS team at the HPO carry out extensive validation directly with each maternity unit and self employed community midwives (SECMs) to confirm the total number of births, including perinatal deaths, occurring in each maternity unit/SECM each year.

With the objective of preserving confidentiality, each birth is recorded using case reference numbers unique to each hospital/maternity unit. Missing records can be identified using this unique case reference number system. Where a record is found to be missing, a request is made to the hospital/maternity unit to provide the birth notification form for any missing records. Similarly, self employed community midwives (SECMs) are requested to submit an annual summary of all births attended for a specified year, which is cross-checked against the birth notification forms received. The Maternal and Newborn Clinical Management System (MN-CMS) (see below) has been introduced into four sites and uses a national numbering system. The HPO crosscheck these numbers with the sites to ensure accuracy and completeness.

The IT Department at the HPO has developed a custom-designed data entry and validation software system for NPRS data for use within the HPO. Data are received, either in electronic or paper format, from the hospitals/SECMs and processed using the NPRS data system. Quality checks include the application of a comprehensive series of edits, which are built into this software system to check for completeness, validity, logic, and coding errors. If problems are identified, clarification can be sought from the hospital or midwife and corrections can be made at the point of data entry. This data validation process is continually reviewed and new checks are incorporated based on data quality activities and research. The completeness of each record is dependent on the commitment of those persons responsible for notification and registration of the births in each hospital/maternity unit throughout the country and on each SECM.

Recommendations from the Chief Medical Officer's Report into perinatal deaths in Midland Regional Hospital Portlaoise<sup>7</sup> include the consolidation of national data reported on perinatal events. The National Perinatal Epidemiology Centre (NPEC) conducts clinical audit on perinatal deaths, collecting data on perinatal deaths only. The NPRS is a national data collection system and collects data on total births (including live births, stillbirths and early neonatal deaths).

In collaboration with the NPEC in University College Cork, the HPO undertook extensive reconciliation of the data reported for 2017 to both reporting systems. As a result of this data reconciliation exercise, the data reported on perinatal deaths for 2017 (NPRS), based on the World Health Organization (WHO) guidelines, is reconciled to the data reported by NPEC (see also Conventions Used in this Report on page 3 and <https://www.ucc.ie/en/npec/><sup>8</sup> for further details). See Table 1.1.

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<sup>7</sup> Holohan, T. (2014) HSE Midland Regional Hospital, Portlaoise Perinatal Deaths (2006-date). Dublin: Department of Health. Available at: <http://www.lenus.ie/hse/bitstream/10147/313524/1/portlaoiseperinataldeaths.pdf>

<sup>8</sup> The NPEC report on perinatal deaths based on the criteria of at least 500g birthweight and/or at least 24 weeks gestation as well as WHO guidelines of ≥500g birthweight, irrespective of gestation.

**TABLE 1.1**Total births, Stillbirths, Early Neonatal Deaths and Perinatal Deaths ( $\geq 500$  grams only), NPRS and NPEC, 2018

	NPRS		NPEC	
	Number	Rate <sup>a</sup>	Number	Rate
Total births	61,258	-	-	-
Stillbirths	197	3.2	197	3.2
Early neonatal deaths <sup>b</sup>	104	1.7	105	1.7
Perinatal deaths	301	4.9	302	4.9
Adjusted perinatal deaths <sup>c</sup>	204	3.3	179	2.9

Notes: a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. See Appendix A for further details on calculation of rates.

b This difference is due to the fact that this record was not reported to NPRS due to an operational difference in data collection between the two systems.

c 'Adjusted perinatal deaths' excludes deaths due to congenital anomalies. The NPRS is a notification system recording the numbers of perinatal deaths. Where a death occurs, the NPRS dataset collects 'cause of death' in a single field. The NPEC is a clinical audit of perinatal deaths and collects a wide range of data on each perinatal death, allowing for a much greater level of evidence as to 'cause of death'. For this reason, the NPRS dataset identified 97 deaths due to congenital anomalies while the NPEC clinical audit classified a greater number of deaths due to congenital anomalies.

## CURRENT DEVELOPMENTS

### NPRS GOVERNANCE GROUP

In April 2021 the first NPRS Governance Group meeting was held. The NPRS Governance group will provide strategic guidance and support to the HPO, HSE, Hospitals and midwives, the Department of Health and other key stakeholders in the operation and development of the NPRS and BNF. This will ensure the provision of high quality, timely, relevant BNF data to Ireland's health information system.

This is also in line with *HIQA's Information management standards for national health and social care data collections* (HIQA 2017) which states in Standard 2:

*"The managing organisation of the national health and social care data collection has effective governance, leadership and management arrangements in place, with clear lines of accountability to ensure that its objectives are met."*

### THE MATERNAL AND NEWBORN CLINICAL MANAGEMENT SYSTEM (MN-CMS)

The MN-CMS is a national initiative to design and implement an electronic health record for all women and babies in maternity services in Ireland. One of the key objectives of this system will be to develop informed business intelligence to facilitate local and national reports to be run and exported from the system.

It is planned that all parts of the BNF01 form will be generated from the MN-CMS system which will mark a significant change for the collection of data for the NPRS. The MN-CMS project team and the NPRS team at the HPO continue to test export files which will ultimately replace the need to complete the hard copy BNF01 form.

Four maternity units have gone live with the system (as of April 2021) with one of these units submitting data since the start of December 2017. The NPRS are working closely with the MN-CMS to ensure more timely and accurate data transfers from the four current sites to the NPRS national system.<sup>9</sup> Further phases of the project, which will include all 19 maternity units, are planned over the next number of years.

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<sup>9</sup> There have been some difficulties in capturing all of the data previously returned on the BNF01 form which has led to an increase in 'not stated' values for particular variables. This is being monitored by the HPO.



# **SECTION TWO**

## **TIME TRENDS AND INTERNATIONAL COMPARISONS**

## INTRODUCTION

This section presents selected statistics, together with data on the following three key indicators:

- 1) perinatal mortality
- 2) birth rate
- 3) fertility.

At a national level, data presented here show how these parameters have changed over time.<sup>9</sup> International comparisons allow the most recent statistics for Ireland to be compared with those for other European countries.<sup>10</sup> The indicators for Ireland were calculated using data from the NPRS for the period 2009 to 2018.<sup>11</sup>

## TRENDS IN SELECTED STATISTICS

Table 2.1 presents trends in selected statistics and shows the following:

- Since 2009 the trend in total births has been downward, decreasing from 76,023 in 2009 to 61,258 in 2018, a decline of 19.4 per cent over the decade.
- Mothers giving birth in Ireland in 2018, with an average age of 32.4 years, were on average 1.6 years older than those who gave birth in 2009 (30.8 years) and just slightly older than those giving birth in 2017 (average age 32.3 years).
- Over the decade 2009 to 2018, the proportion of mothers giving birth for the first time generally fell for those aged less than 30 years and increased for those aged 30 years or more.
- Births to primiparous women aged less than 20 years reduced from 6.5 per cent of births in 2009 to 3.6 per cent in 2018. Births to primiparous women aged 40 years and older increased from 2.2 per cent of births in 2009 to 5.0 per cent in 2018.
- Births to multiparous women aged less than 20 years accounted for 0.5 per cent of births in 2009 compared with 0.3 per cent in 2018. Births to multiparous women aged 40 years and older increased from 6.3 per cent of births in 2009 to 9.1 per cent in 2018.
- The percentage of women recording any breastfeeding was 52.8 per cent in 2009, increasing to 60.4 per cent in 2018.
- The percentage of women exclusively breastfeeding has increased from 45.5 per cent in 2009 to 47.3 per cent in 2018. This represents a rate of increase of 4.0 per cent in exclusive breastfeeding over the decade.
- The proportion of Irish mothers exclusively breastfeeding has increased by 10.3 per cent over the decade. The proportion of mothers from the UK, EU, Asia and Africa all showed a decrease in exclusive breastfeeding at discharge over the decade.

<sup>9</sup> For reports from 2012 onwards, 'Not Stated' values are included in the calculation of percentages used in discussion or in compilation of figures. As a result, caution should be exercised when comparing data used in discussion in this report with data used in discussion in Perinatal Statistics Reports prior to 2012.

<sup>10</sup> As the EU expanded over this period caution should be exercised when interpreting these data. See Appendix F for a description of the classification system for nationality.

<sup>11</sup> Previous reports in this series can be downloaded from [www.hpo.ie](http://www.hpo.ie).

- Mothers' average length of stay in hospital has remained stable over the decade and is recorded at 3.5 days in 2018.

Data on parents' nationality show the following:<sup>12</sup>

- Births to mothers born in Ireland have declined slightly from 76.1 per cent of births in 2009 to 75.5 per cent of births in 2018, a decrease of 0.8 per cent over the time period.

Method of delivery is reported by total live births and by total maternities.

- For total live births the percentage of spontaneous deliveries fell from 56.4 per cent in 2009 to 51.3 per cent in 2018. The upward trend in delivery by Caesarean section continues with a rate of 26.9 per cent reported in 2009 compared with 34.3 per cent for 2018.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 32.0 per cent in 2017 to 33.6 per cent in 2018 and has increased from 26.2 per cent to 33.6 per cent over the decade, an increase of 28.2 per cent in the proportion of women delivering by Caesarean section.

Regarding infant characteristics trends have been largely consistent over the decade 2009 to 2018.

- The average birthweight for total live births was 3,435.6 grams in 2018, which is broadly consistent with the preceding decade.
- The average birthweight for both singleton (3,473.8 grams) and multiple (2,434.1 grams) births has remained largely consistent over the decade.
- The percentage of total live births recording low birthweight (<2,500 grams) was 5.0 per cent in 2009 compared with 5.7 per cent in 2018.
- The percentage of total live births classified as high birthweight (4,500 grams or more) has decreased from 2.7 per cent in 2009 to 2.0 per cent in 2018.
- For total births, infant's average length of stay in hospital has remained consistent across the decade, increasing from 3.3 days in 2009 to 3.4 days in 2018.
- In 2018, infant's average length of stay in hospital was recorded as 3.1 days for singleton births and 9.3 days for multiple births.

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<sup>12</sup> Based on EU27 for 2007-2013 and EU28 for 2014-2018. As the EU expanded over this period caution should be exercised when interpreting these data. See Appendix F for a description of the classification system for nationality.

**TABLE 2.1**  
Trends in Selected Statistics, 2009–2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% Change			
											2009–2018	2017–2018		
<b>Total Births</b>	N	76,023	75,600	74,377	71,986	69,267	67,610	65,869	64,097	62,070	61,258	-19.4	-1.3	
<b>Total Maternities</b>	N	74,810	74,318	73,008	70,709	67,952	66,338	64,624	62,871	60,910	60,119	-19.6	-1.3	
<b>Birth Rate<sup>1</sup></b>		16.7	16.5	16.2	15.6	15.0	14.6	14.2	13.5	12.9	12.6	-24.6	-2.3	
<b>Maternal Characteristics</b>														
Age of mother (years) <sup>2,3</sup>	Avg	30.8	31.0	31.2	31.4	31.6	31.8	31.9	32.2	32.3	32.4	5.2	0.3	
Age of single mother (years) <sup>2,3</sup>	Avg	27.0	27.5	27.8	28.3	28.5	28.9	29.1	29.5	29.6	29.8	10.4	0.7	
Mother's Civil Status	Married	%	66.0	65.6	65.2	64.0	63.8	62.2	62.2	61.3	60.8	-7.9	-0.8	
	Single	%	32.2	32.8	33.2	34.3	34.7	35.8	36.4	37.3	37.8	17.4	1.3	
	All other	%	1.8	1.6	1.6	1.7	1.5	1.5	1.4	1.5	1.4	-22.2	-6.7	
Maternal parity <sup>2</sup>	Avg	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	0.0	-9.1	
Births to Primiparous Women by Maternal Age <sup>2</sup>	Under 20 Years	%	6.5	5.9	5.2	5.1	4.7	4.3	4.1	4.0	3.6	-44.6	-10.0	
	20–24 Years	%	18.4	16.8	15.5	15.3	14.8	14.1	13.5	13.6	13.2	-28.3	-2.9	
	25–29 Years	%	29.5	29.2	27.5	26.1	24.5	23.5	22.6	21.8	20.9	-29.2	0.0	
	30–34 Years	%	31.1	32.6	34.7	35.6	36.3	36.9	37.3	36.3	36.4	17.0	0.3	
	35–39 Years	%	12.4	12.9	14.1	14.8	16.2	17.4	18.1	19.1	20.6	21.0	69.4	1.9
40 Years and Older	%	2.2	2.6	3.0	3.2	3.5	3.8	4.0	4.3	4.7	5.0	127.3	6.4	
Births to Multiparous Women by Maternal Age <sup>2</sup>	Under 20 Years	%	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	-40.0	0.0	
	20–24 Years	%	7.1	6.7	6.4	6.1	6.0	5.6	5.5	5.0	5.1	5.2	-26.8	2.0
	25–29 Years	%	20.3	19.9	19.4	18.5	17.7	17.3	16.7	15.6	15.3	14.9	-26.6	-2.6
	30–34 Years	%	35.4	36.2	37.0	36.8	37.0	36.5	35.7	35.3	34.3	32.9	-7.1	-4.1
	35–39 Years	%	30.4	30.4	30.2	31.1	31.8	32.7	34.1	35.5	36.7	37.5	23.4	2.2
40 Years and Older	%	6.3	6.3	6.5	7.0	7.2	7.6	7.7	8.3	8.2	9.1	44.4	11.0	
Number of previous stillbirths per 1,000 maternities <sup>2</sup>	Avg	11.7	11.5	11.9	9.7	10.9	10.8	9.5	10.2	9.5	10.0	-14.5	5.3	
Gestational age at delivery (weeks) <sup>2</sup>	Avg	39.4	39.4	39.3	39.3	39.3	39.2	39.2	39.2	39.1	39.0	-1.0	-0.3	
Interval since last birth (years) <sup>3,4</sup>	Avg	3.3	3.4	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.5	6.1	0.0	
Immunity to rubella <sup>2,14</sup>	%	90.5	92.3	94.3	94.3	94.2	93.4	92.9	91.5	90.9	89.7	-0.9	-1.3	
Any breastfeeding <sup>1,2,5,6</sup>	%	52.8	54.1	55.3	55.4	55.9	57.0	58.0	59.9	59.8	60.4	14.4	1.0	
Exclusive breastfeeding <sup>1,2,5</sup>	%	45.5	46.2	47.0	46.9	46.6	46.6	48.0	49.8	48.6	47.3	4.0	-2.7	
Exclusive breastfeeding by Mother's Nationality <sup>1,2,5</sup>	Irish	%	38.9	39.1	40.1	40.0	40.5	41.1	42.6	43.6	42.9	10.3	-1.6	
	UK	%	52.4	54.4	51.2	51.0	54.2	50.9	51.7	50.8	48.7	-7.1	-4.1	
	EU <sup>7</sup>	%	75.6	76.2	76.9	77.5	75.3	74.4	73.7	74.2	72.6	68.5	-9.4	-5.6
	Africa	%	48.4	51.2	51.3	51.6	47.4	45.3	45.8	50.6	50.0	44.5	-8.1	-11.0
Asia	%	59.7	57.9	60.2	58.5	54.5	53.3	55.7	58.9	54.5	48.8	-18.3	-10.5	
Mother's length of stay (days) <sup>1,1,2,8</sup>	Avg	3.5	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.5	3.5	0.0	0.0	

TABLE 2.1 Trends in Selected Statistics, 2009–2018 (contd.)

		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% Change		
													2009–2018	2017–2018
<b>Parents Nationality</b>														
Mother's Nationality	Irish	%	76.1	75.4	76.1	76.0	77.1	77.8	77.5	76.3	76.9	75.5	-0.8	-1.8
	UK	%	2.6	2.7	2.3	2.4	2.3	2.2	2.4	2.3	2.2	2.3	-11.5	4.5
	EU <sup>7</sup>	%	11.7	12.9	13.0	12.9	12.7	12.4	12.5	12.7	12.2	11.9	1.7	-2.5
	Africa	%	3.4	3.0	2.6	2.7	2.4	2.3	2.1	2.3	2.3	2.4	-29.4	4.3
	Asia	%	4.0	3.8	4.0	4.0	3.4	3.2	3.2	3.7	3.4	4.1	2.5	20.6
Father's Nationality <sup>9</sup>	Irish	%	58.0	59.1	59.4	57.5	57.1	56.0	58.2	58.8	59.1	56.0	-3.4	-5.2
	UK	%	2.3	2.4	2.2	2.0	2.0	1.9	1.9	1.6	1.6	1.5	-34.8	-6.3
	EU <sup>7</sup>	%	7.8	8.6	8.8	8.4	8.1	7.9	7.9	7.9	7.7	7.2	-7.7	-6.5
	Africa	%	2.7	2.4	2.1	1.9	1.6	1.5	1.4	1.5	1.5	1.4	-48.1	-6.7
	Asia	%	3.3	3.1	3.3	3.1	2.4	2.2	2.4	2.8	2.6	3.0	-9.1	15.4
<b>Perinatal Care</b>														
Hospital & G.P. combined antenatal care <sup>2,10</sup>														
Booked hospital admissions <sup>2,8,14</sup>														
Method of delivery <sup>11</sup>	Spontaneous	%	80.7	80.9	77.3	77.5	79.5	80.9	81.9	81.9	81.3	82.6	2.4	1.6
	Caesarean section	%	99.0	99.3	99.3	99.3	99.2	96.9	99.1	99.0	97.2	98.7	-0.3	1.5
	Forceps <sup>13</sup>	%	56.4	56.5	55.8	55.6	55.1	54.2	53.5	52.2	52.5	51.3	-9.0	-2.3
Method of delivery <sup>11</sup>	Spontaneous	%	26.9	27.1	28.1	28.9	29.7	30.4	31.4	32.7	32.8	34.3	27.5	4.6
	Caesarean section	%	4.1	4.0	4.1	3.9	3.8	3.8	3.5	3.6	3.5	3.0	-26.8	-14.3
	Forceps <sup>13</sup>	%	57.0	57.2	56.6	56.3	55.9	55.0	54.2	52.9	53.2	52.0	-8.8	-2.3
Total maternities	Spontaneous	%	26.2	26.3	27.3	28.1	28.9	29.5	30.6	31.9	32.0	33.6	28.2	5.0
	Caesarean section	%	4.1	4.0	4.1	3.9	3.9	3.8	3.5	3.6	3.6	3.1	-24.4	-13.9
	Forceps <sup>13</sup>	%	57.0	57.2	56.6	56.3	55.9	55.0	54.2	52.9	53.2	52.0	-8.8	-2.3
<b>Infant Characteristics</b>														
Birthweight (grams) <sup>1</sup>	Total births	Avg	3,466.1	3,468.4	3,467.0	3,464.0	3,452.4	3,448.8	3,446.9	3,444.5	3,442.6	3,435.6	-0.9	-0.2
	Singleton births	Avg	3,498.9	3,504.0	3,505.0	3,502.0	3,493.2	3,488.5	3,487.2	3,485.2	3,482.4	3,473.8	-0.7	-0.2
	Multiple births	Avg	2,465.2	2,447.2	2,464.6	2,420.2	2,411.7	2,428.3	2,412.2	2,415.3	2,412.4	2,434.1	-1.3	0.9
Low birthweight (<2500 grams) <sup>1</sup>	Total births	%	5.0	5.1	5.2	5.4	5.5	5.6	5.7	5.7	5.7	5.7	14.0	0.0
	Singleton births	%	3.7	3.6	3.6	3.8	3.8	3.9	3.9	3.9	4.0	4.1	10.8	2.5
	Multiple births	%	45.4	47.6	46.0	49.9	49.0	49.4	49.9	49.6	48.6	48.1	5.9	-0.8
High birthweight (≥4500 grams) <sup>1</sup>	Total births	%	2.7	2.7	2.6	2.5	2.3	2.3	2.2	2.2	2.1	2.0	-25.9	-4.8
	Singleton births	Avg	3.3	3.2	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.4	3.0	3.0
	Multiple births	Avg	3.1	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	0.0	0.0
Infant's length of stay (days) <sup>1,5,8</sup>	Singleton births	Avg	9.0	9.5	8.6	9.4	9.7	9.3	9.5	9.5	9.3	9.3	3.3	0.0
	Multiple births	Avg	33.5	32.9	24.8	27.3	35.2	31.6	37.8	31.5	36.1	35.6	6.3	-1.4
	Post-mortems for early neonatal deaths	%	33.5	32.9	24.8	27.3	35.2	31.6	37.8	31.5	36.1	35.6	6.3	-1.4

Notes: Percentages are subject to rounding. <sup>1</sup> Based on live births. <sup>2</sup> Based on maternities. <sup>3</sup> For reports from 2014 onwards the calculation of average number of years has been revised, therefore caution should be exercised when comparing this with data reported in previous publications. <sup>4</sup> Based on multiparous maternities. <sup>5</sup> Excludes early neonatal deaths. <sup>6</sup> Any breastfeeding includes type of feeding recorded as either breast or combined. <sup>7</sup> Based on EU27 for 2007–2013 and EU28 for 2014–2018. As the EU expanded over this period caution should be exercised when interpreting these data. See also Appendix F. <sup>8</sup> Excludes domiciliary births. <sup>9</sup> Father's details are only required for registration purposes where mother's civil status is recorded as 'married'. As a result, there is a proportion of records for which information is incomplete, these are assigned to the category 'not applicable'. The data presented here, reports father's nationality where recorded, regardless of mother's civil status. <sup>10</sup> Deliveries under hospital schemes (such as domino, early transfer home, planned community midwives, and midwifery-led units) and domiciliary births were included in hospital and G.P. combined care. <sup>11</sup> See also Appendix I 'Method of Delivery for Primiparous and Multiparous Women'. <sup>12</sup> These figures were based on total live births, as each infant in a multiple pregnancy can have a different method of delivery. <sup>13</sup> Excludes breech deliveries. <sup>14</sup> In this table, these percentages exclude two major hospitals in 2018 in which there were known technical issues with the data relating to these variables. As it was not possible to accurately identify the status of these variables in these hospitals, they have been excluded from the 2018 figures.

## SINGLETON AND MULTIPLE BIRTHS

Table 2.2 shows the numbers of singleton and multiple births each year for the period 2009 to 2018.

- Of the 61,258 births presented in this report for 2018, 58,996 were singleton births, 2,174 were twin births and 88 were higher-order multiple births.<sup>13</sup>
- The twinning rate was 18.1 per 1,000 maternities in 2018; this represents an increase of 13.8 per cent over the decade and a decrease of 3.2 per cent between 2017 and 2018.

**TABLE 2.2**

Singleton and Multiple Births, 2009–2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% Change	
											2009-2018	2017-2018
Singleton births	73,603	73,046	71,651	69,452	66,650	65,070	63,384	61,655	59,749	58,996	-19.8	-1.3
Twin births	2,373	2,480	2,638	2,435	2,526	2,461	2,390	2,363	2,273	2,174	-8.4	-4.4
Higher-order multiple births	43	74	88	99	91	79	95	79	48	88	104.7	83.3
Twinning rate (per 1,000 maternities)	15.9	16.7	18.1	17.2	18.6	18.5	18.5	18.8	18.7	18.1	13.8	-3.2

Notes: Percentage columns are subject to rounding.  
See Appendix A for details on calculation of twinning rate.  
This table includes live births and stillbirths.

The numbers and rates of stillbirths, early neonatal deaths and perinatal deaths for singleton and multiple births between 2009 and 2018 are presented in Table 2.3.<sup>14</sup>

- Higher mortality rates were observed for multiple births when compared to singleton births.
- The total perinatal mortality rate for singleton births was recorded at 4.5 in 2018, compared to 6.8 per 1,000 live births and stillbirths in 2009.
- The total perinatal mortality rate for multiple births was recorded at 15.5 in 2018.
- For 2018 the stillbirth mortality rate was recorded at 3.2 per 1,000 live births and stillbirths.
- The early neonatal mortality rate for 2018 was recorded at 1.7 per 1,000 live births.

<sup>13</sup> In accordance with the World Health Organization (WHO) guidelines, only births weighing 500 grams or more are included in any analysis of NPRS data. In 2018, there were 59,056 singleton births, 2,202 twin births and 90 triplets reported to the NPRS; of these, 90 births weighed less than 500 grams (including 60 singleton births and 30 multiple births) and so were excluded from the analysis.

<sup>14</sup> The number of Perinatal deaths (stillbirths and early neonatal deaths) presented here are based on the data collected by the NPRS via part 3 of the Birth Notification Form (BNF01). It should be noted that notification of birth differs to registration of birth. While the *Civil Registrations Act 2004* outlines the duty of persons attending each birth to notify the local registrar of a stillbirth or live birth, it is not a legal requirement of the parents/guardians to register stillbirths. The NPRS carry out extensive validation directly with each maternity unit and self employed community midwives (SECMs) to confirm the total number of births, including Perinatal deaths, occurring in each maternity unit/SECM each year. Therefore, the GRO, and subsequently the CSO, publish data on registered births and Perinatal deaths only. This may result in differences in the number of Perinatal deaths reported here compared to official CSO publications. Caution should be exercised when analysing data on Perinatal deaths reported or collected from other data systems as these may not be comparable with data reported here.

The National Perinatal Epidemiology Centre (NPEC) also publish a report on perinatal mortality in Ireland. Data published in this report are collected as a national audit on perinatal mortality based on data collected from 19 maternity units using a standardised perinatal death notification form. The NPEC report on perinatal deaths based on the criteria of at least 500g birthweight and/or at least 24 weeks gestation. See <https://www.ucc.ie/en/npec/> for further details.

TABLE 2.3

Live Births, Stillbirths, Early Neonatal Deaths and Perinatal Deaths, Numbers and Rates, Singleton and Multiple Births, 2009–2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% Change	
	Number of Births and Perinatal Deaths										2009-2018	2017-2018
<b>Total Births</b>	<b>76,023</b>	<b>75,600</b>	<b>74,377</b>	<b>71,986</b>	<b>69,267</b>	<b>67,610</b>	<b>65,869</b>	<b>64,097</b>	<b>62,070</b>	<b>61,258</b>	<b>-19.4</b>	<b>-1.3</b>
Singleton	73,603	73,046	71,651	69,452	66,650	65,070	63,384	61,655	59,749	58,996	-19.8	-1.3
Multiple	2,420	2,554	2,726	2,534	2,617	2,540	2,485	2,442	2,321	2,262	-6.5	-2.5
<b>Live Births</b>	<b>75,651</b>	<b>75,245</b>	<b>74,080</b>	<b>71,705</b>	<b>68,990</b>	<b>67,324</b>	<b>65,607</b>	<b>63,870</b>	<b>61,854</b>	<b>61,061</b>	<b>-19.3</b>	<b>-1.3</b>
Singleton	73,247	72,709	71,375	69,188	66,386	64,803	63,151	61,440	59,549	58,813	-19.7	-1.2
Multiple	2,404	2,536	2,705	2,517	2,604	2,521	2,456	2,430	2,305	2,248	-6.5	-2.5
<b>Stillbirths</b>	<b>372</b>	<b>355</b>	<b>297</b>	<b>281</b>	<b>277</b>	<b>286</b>	<b>262</b>	<b>227</b>	<b>216</b>	<b>197</b>	<b>-47.0</b>	<b>-8.8</b>
Singleton	356	337	276	264	264	267	233	215	200	183	-48.6	-8.5
Multiple	16	18	21	17	13	19	29	12	16	14	-12.5	-12.5
<b>Early Neonatal Deaths</b>	<b>155</b>	<b>161</b>	<b>153</b>	<b>143</b>	<b>159</b>	<b>136</b>	<b>164</b>	<b>124</b>	<b>108</b>	<b>104</b>	<b>-32.9</b>	<b>-3.7</b>
Singleton	142	135	126	122	133	117	137	108	87	83	-41.5	-4.6
Multiple	13	26	27	21	26	19	27	16	21	21	61.5	0.0
<b>Perinatal Deaths</b>	<b>527</b>	<b>516</b>	<b>450</b>	<b>424</b>	<b>436</b>	<b>422</b>	<b>426</b>	<b>351</b>	<b>324</b>	<b>301</b>	<b>-42.9</b>	<b>-7.1</b>
Singleton	498	472	402	386	397	384	370	323	287	266	-46.6	-7.3
Multiple	29	44	48	38	39	38	56	28	37	35	20.7	-5.4
	Rates <sup>a</sup>											
<b>Stillbirths</b>	<b>4.9</b>	<b>4.7</b>	<b>4.0</b>	<b>3.9</b>	<b>4.0</b>	<b>4.2</b>	<b>4.0</b>	<b>3.5</b>	<b>3.5</b>	<b>3.2</b>	<b>-34.7</b>	<b>-8.6</b>
Singleton	4.8	4.6	3.9	3.8	4.0	4.1	3.7	3.5	3.3	3.1	-35.4	-6.1
Multiple	6.6	7.0	7.7	6.7	5.0	7.5	11.7	4.9	6.9	6.2	-6.1	-10.1
<b>Early Neonatal Deaths</b>	<b>2.0</b>	<b>2.1</b>	<b>2.1</b>	<b>2.0</b>	<b>2.3</b>	<b>2.0</b>	<b>2.5</b>	<b>1.9</b>	<b>1.7</b>	<b>1.7</b>	<b>-15.0</b>	<b>0.0</b>
Singleton	1.9	1.9	1.8	1.8	2.0	1.8	2.2	1.8	1.5	1.4	-26.3	-6.7
Multiple	5.4	10.3	10.0	8.3	10.0	7.5	11.0	6.6	9.1	9.3	72.2	2.2
<b>Perinatal Deaths</b>	<b>6.9</b>	<b>6.8</b>	<b>6.1</b>	<b>5.9</b>	<b>6.3</b>	<b>6.2</b>	<b>6.5</b>	<b>5.5</b>	<b>5.2</b>	<b>4.9</b>	<b>-29.0</b>	<b>-5.8</b>
Singleton	6.8	6.5	5.6	5.6	6.0	5.9	5.8	5.2	4.8	4.5	-33.8	-6.3
Multiple	12.0	17.2	17.6	15.0	14.9	15.0	22.5	11.5	15.9	15.5	29.2	-2.5

Notes: Percentage columns are subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

## PERINATAL MORTALITY

Despite improvements in reducing perinatal mortality in recent decades, the perinatal period continues to be a time of relatively high risk.<sup>15</sup> Stillbirths accounted for 65.4 per cent of perinatal deaths in 2018.<sup>16,17</sup> Table 2.4 presents the numbers and rates for total births and perinatal deaths for Ireland from 2009 to 2018.

- In 2018 approximately 1 in every 311 births was stillborn and 1 in every 587 live births died in the first week of life.
- Over the decade, the perinatal mortality rate has fallen from 6.9 per 1,000 live births and stillbirths in 2009 to 4.9 per 1,000 live births and stillbirths in 2018. This represents a 29.0 per cent decrease over the decade.
- The stillbirth rate has declined over the period from 4.9 per 1,000 live births and stillbirths in 2009 to 3.2 per 1,000 live births and stillbirths in 2018, a decline of 34.7 per cent over the decade.
- The early neonatal mortality rate has also declined from 2.0 per 1,000 live births in 2009 to 1.7 per 1,000 live births in 2018, a decline of 15.0 per cent over the decade (see Figure 2.1).

**TABLE 2.4**

Live Births, Stillbirths, Early Neonatal Deaths, and Perinatal Deaths, 2009–2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% Change	
	Number of Births and Perinatal Deaths										2009–2018	2017–2018
<b>Total Births</b>	<b>76,023</b>	<b>75,600</b>	<b>74,377</b>	<b>71,986</b>	<b>69,267</b>	<b>67,610</b>	<b>65,869</b>	<b>64,097</b>	<b>62,070</b>	<b>61,258</b>	<b>-19.4</b>	<b>-1.3</b>
Live Births	75,651	75,245	74,080	71,705	68,990	67,324	65,607	63,870	61,854	61,061	-19.3	-1.3
Stillbirths	372	355	297	281	277	286	262	227	216	197	-47.0	-8.8
Early Neonatal Deaths	155	161	153	143	159	136	164	124	108	104	-32.9	-3.7
Perinatal Deaths	527	516	450	424	436	422	426	351	324	301	-42.9	-7.1
Adjusted Perinatal Deaths	381	368	308	309	297	304	287	234	217	204	-46.5	-6.0
<b>Stillbirth</b>	<b>4.9</b>	<b>4.7</b>	<b>4.0</b>	<b>3.9</b>	<b>4.0</b>	<b>4.2</b>	<b>4.0</b>	<b>3.5</b>	<b>3.5</b>	<b>3.2</b>	<b>-34.7</b>	<b>-8.6</b>
Early Neonatal Deaths	2.0	2.1	2.1	2.0	2.3	2.0	2.5	1.9	1.7	1.7	-15.0	0.0
Perinatal Mortality	6.9	6.8	6.1	5.9	6.3	6.2	6.5	5.5	5.2	4.9	-29.0	-5.8
Adjusted Perinatal Mortality	5.0	4.9	4.1	4.3	4.3	4.5	4.4	3.7	3.5	3.3	-34.0	-5.7

Notes: Percentage columns are subject to rounding.

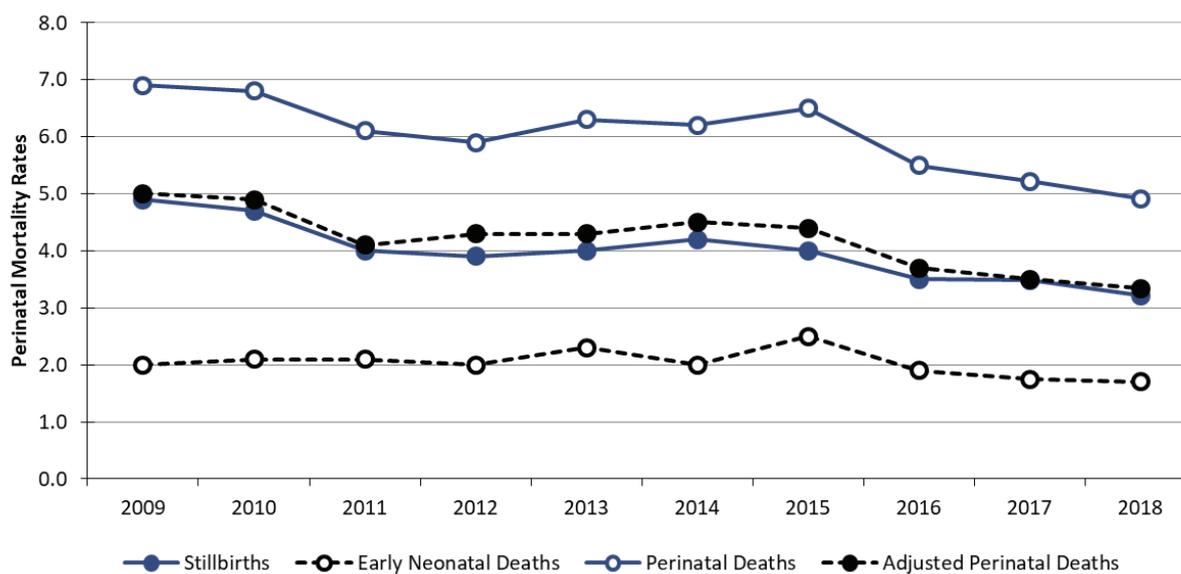
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. For numbers and rates by singleton and multiple births see Section Two 'Singleton and Multiple Births'.

<sup>15</sup> EURO-PERISTAT Project with SCPE and EUROCAT. *European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010*. May 2013. Available at [www.europeristat.com](http://www.europeristat.com)

<sup>16</sup> Details on rate calculations are in Appendix A.

<sup>17</sup> Section 5 of this report focuses on perinatal outcomes in more detail, examining perinatal deaths by birthweight and gestational age, with particular focus on cause of death.

**FIGURE 2.1**  
Stillbirth, Early Neonatal and Perinatal Mortality Rates, Ireland, 2009–2018



Note: See Table 2.4 for data.

Using available data, a European comparison<sup>18</sup> of perinatal mortality rates in Figure 2.2 shows that for the countries included:

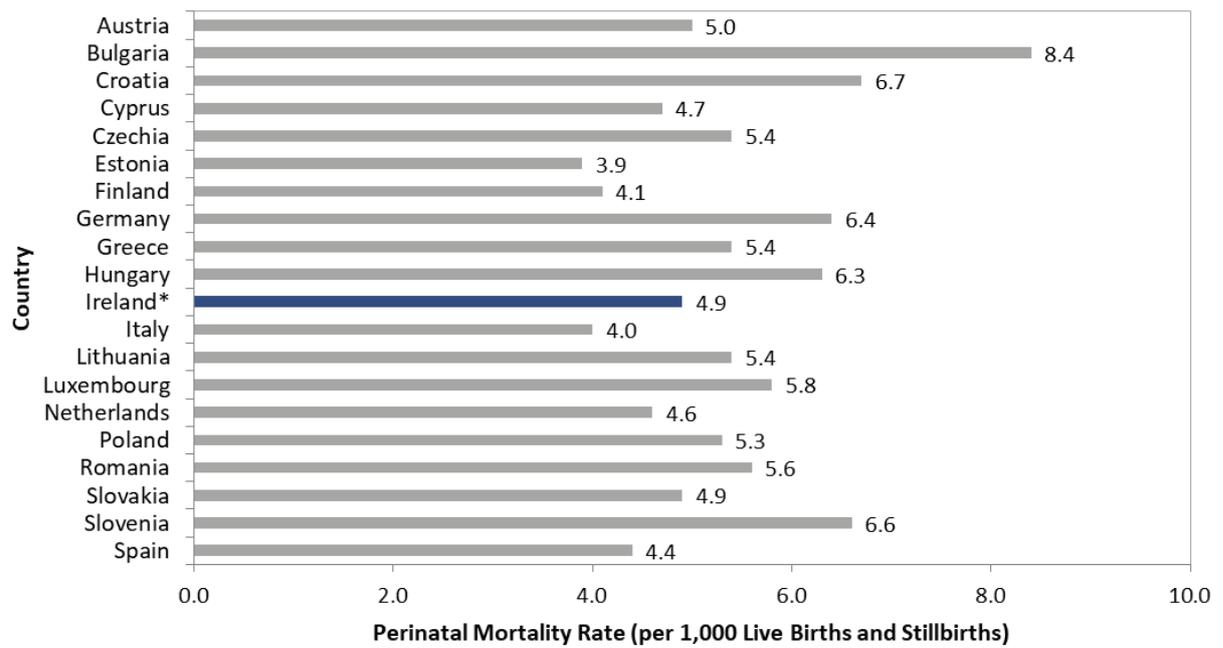
- Bulgaria recorded the highest perinatal mortality rate for 2018, at 8.4 per 1,000 live births and stillbirths.
- Estonia had the lowest perinatal mortality rate recording 3.9 per 1,000 live births and stillbirths.
- In 2018, the perinatal mortality rate for Ireland was recorded at 4.9 per 1,000 live births and stillbirths.

<sup>18</sup> 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted February 2021. <https://ec.europa.eu/eurostat/web/main/data/database>

When countries are compared, it should be remembered that rates are affected by many factors, such as national policies on abortion, screening for congenital anomalies, availability of services related to fertility treatment, differences in the comprehensiveness and accuracy of registration and notification systems, and variations in definitions employed (in particular, for stillbirth).

**FIGURE 2.2**

Perinatal Mortality Rates for Selected EU Countries, 2018



Sources: 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted February 2021.

<https://ec.europa.eu/eurostat/web/main/data/database>

\* National figure compiled by NPRS. See Table 2.4 for data.

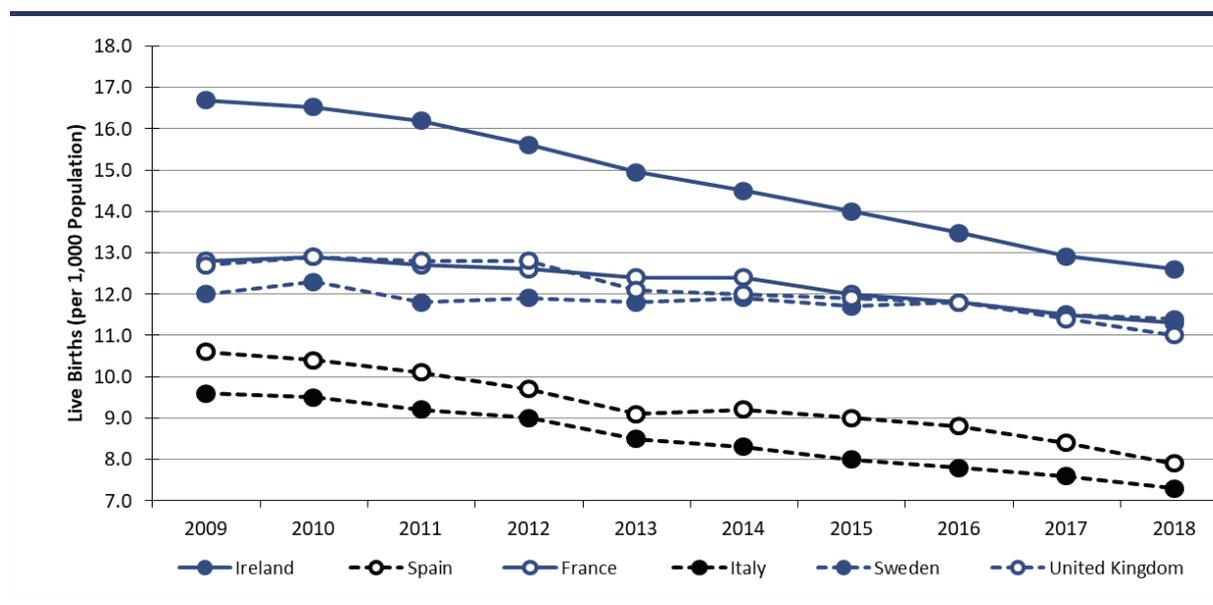
## BIRTH RATES<sup>19</sup>

The birth rate is based on the total number of live births per 1,000 population.<sup>20</sup> Figure 2.3 presents trends in birth rates for selected EU countries over the decade 2009 to 2018. Figure 2.4 presents birth rates in the 28 EU countries for 2018.

- The birth rate for Ireland has declined from a high of 16.7 per 1,000 population in 2009 to 12.6 per 1,000 population in 2018 (see Figure 2.3).
- Of the countries reviewed, Ireland has consistently had the highest birth rate over the period, and is recorded at 12.6 per 1,000 population in 2018 (see Figure 2.4).<sup>21</sup>
- After Ireland, the countries with the next highest birth rates in 2018 are Sweden (11.4) and France (11.3) followed by the United Kingdom (11.0). In 2018, Italy had the lowest birth rate (7.3), followed by Spain (7.9). (see Figure 2.4).

**FIGURE 2.3**

Trends in Birth Rates for Selected EU Countries, 2009–2018



Sources: 'Population and social conditions', Eurostat, Data Navigation Tree, date consulted February 2021.

<http://ec.europa.eu/eurostat/data/database>

Data for Ireland are based on NPRS data on live births from 2009 onwards. The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted February 2021.

[www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0](http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0)

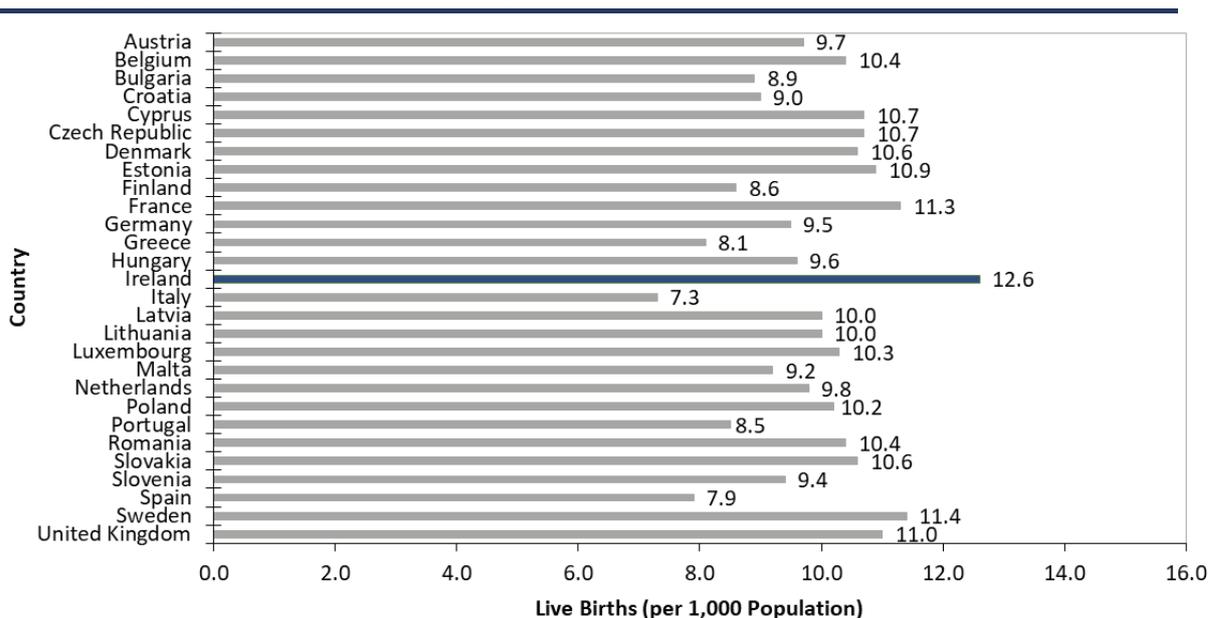
<sup>19</sup> It should be noted that the crude birth rate could rise or fall depending on the numbers of women in the age cohorts from 15 to 49 years old. Changes in the crude birth rate often mask underlying trends in fertility.

<sup>20</sup> The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted February 2021.

[www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0](http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0)

<sup>21</sup> The CSO also estimates the Irish birth rate at 12.6 per 1,000 population for 2018. See Vital Statistics, Yearly Summary 2018, May 2019. CSO 2018 data are provisional and are based on the number of births registered within the year as opposed to births occurring in the year.

**FIGURE 2.4**  
Birth Rates per 1,000 Population for EU Countries, 2018



Sources: 'Population and social conditions', Eurostat, Data Navigation Tree, date consulted February 2021.

<http://ec.europa.eu/eurostat/data/database>

Data for Ireland are based on NPRS data on live births. The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted February 2021.

[www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0](http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0)

## FERTILITY

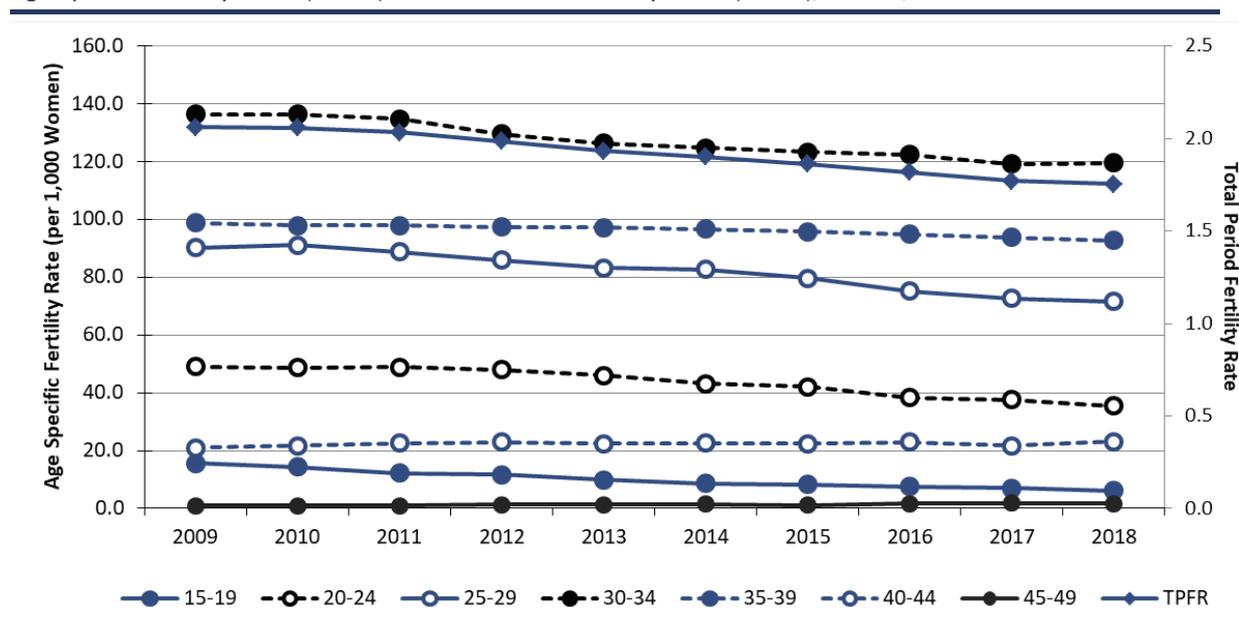
The Total Period Fertility Rate (TPFR) for a given year indicates the number of children a woman could expect to have if the Age-Specific Fertility Rates (ASFR) for that year applied throughout her fertile years.<sup>22</sup> The ASFR refers to the number of live births to women in a particular age group per 1,000 women. Figure 2.5 displays the trend in the ASFR and TPFR in Ireland from 2009–2018.

- The Irish TPFR was recorded at a high of 2.1 in 2009 and 2010 and is estimated at 1.8 in 2018, remaining at the same level as 2016 and 2017.<sup>23</sup>
- Over the decade 2009–2018, the ASFRs for age groups under 40 years have mostly declined, while the 40 years and over age groups mainly recorded higher ASFR rates over the decade.
- In all years the 30–34 year age group recorded the highest ASFR when compared to other age groups. The ASFR has been declining in this age group from 2009–2017 and increased slightly in 2018.

<sup>22</sup> See Appendix A, definitions for calculation of TPFR and ASFR.

<sup>23</sup> The CSO estimates the TPFR at 1.8 for 2018. See Vital Statistics, Yearly Summary 2018, May 2019. CSO 2018 data are provisional and are based on the number of births registered within the year as opposed to births occurring in the year.

**FIGURE 2.5**  
Age-Specific Fertility Rates (ASFRs) and Total Period Fertility Rates (TPFRs), Ireland, 2009–2018



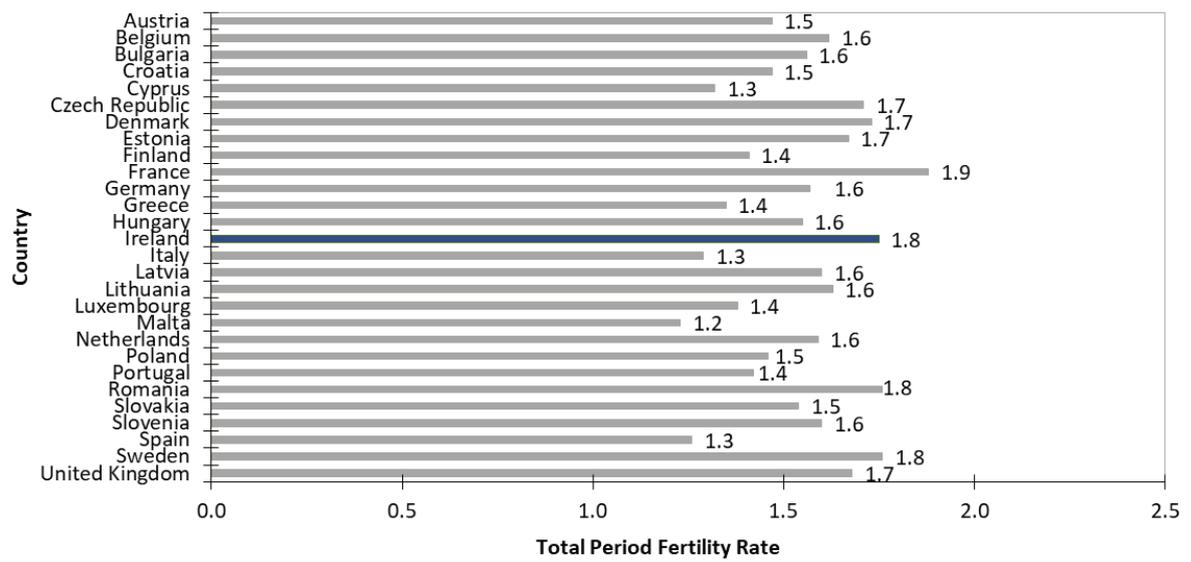
Sources: Total period fertility rates (TPFRs) and age-specific fertility rates (ASFRs) are calculated using NPRS data from 2009 onwards. Female population estimates from 2009 onwards were obtained from the CSO Statistical Databases, date consulted February 2021. <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0>

The TPFR for Ireland is based on population data for 2018, and at 1.8 is below the level required for the long-term replacement of the population in the absence of any net inward migration (2.1).<sup>24</sup> Figure 2.6 presents data on TPFRs for 2018 using data from Eurostat and the NPRS.

- At 1.9, France recorded the highest TPFRs in the 28 EU countries, followed by Ireland, Romania and Sweden, all reporting a TPFR of 1.8.

<sup>24</sup> See Vital Statistics, Yearly Summary 2018, May 2019.

**FIGURE 2.6**  
Total Period Fertility Rates for EU Countries, 2018



Sources: 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted February 2021.  
<http://ec.europa.eu/eurostat/data/database>  
 \*Data for Ireland are based on NPRS data on live births. Female population estimates for 2018 were obtained from the CSO Statistical Databases, date consulted February 2021.  
[www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0](http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0)

# **SECTION THREE**

## **GENERAL CHARACTERISTICS**

## INTRODUCTION

This section presents more detailed analyses of data reported to the NPRS for 2018.

Data for a selection of variables are presented including:

- mother's age, civil status, county of residence, socio-economic group, nationality, parity, number of previous stillbirths, and interval since last birth
- father's socio-economic group and nationality
- infant's birthweight, gestational age, and month of birth.

For selected variables, the tables outline data for total births, live births, stillbirths, early neonatal deaths and perinatal mortality rates, as well as presenting the number of maternities.

## MATERNAL AGE

Table 3.1 presents data on maternal age.

- In 2018, the highest percentage of total births were to women aged 30 to 34 years (34.2 per cent).
- Over 37 per cent of multiple births were to mothers aged 35 to 39 years.

**TABLE 3.1**

Age of Mother: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Under 20 Years	965	1.6	960	5.2	5.2	10.4	5.2	958
20-24 Years	5,059	8.3	5,046	2.6	2.0	4.5	3.4	5,009
25-29 Years	10,488	17.1	10,457	3.0	1.3	4.3	3.4	10,359
30-34 Years	20,975	34.2	20,915	2.9	1.6	4.4	3.1	20,620
35-39 Years	19,097	31.2	19,032	3.4	1.6	5.0	3.0	18,669
40-44 Years	4,355	7.1	4,334	4.8	1.6	6.4	4.4	4,212
45 Years and Over	315	0.5	314	3.2	12.7	15.9	6.4	288
<b>Total</b>	<b>61,254</b>	<b>100</b>	<b>61,058</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,115</b>
<b>Singleton Births</b>								
Under 20 Years	951	1.6	947	4.2	3.2	7.4	4.2	951
20-24 Years	4,959	8.4	4,946	2.6	1.8	4.4	3.4	4,959
25-29 Years	10,233	17.3	10,203	2.9	1.0	3.9	3.0	10,233
30-34 Years	20,272	34.4	20,217	2.7	1.1	3.8	2.6	20,272
35-39 Years	18,248	30.9	18,187	3.3	1.5	4.9	2.9	18,248
40-44 Years	4,067	6.9	4,049	4.4	1.5	5.9	3.7	4,067
45 Years and Over	262	0.4	261	3.8	11.5	15.3	7.7	262
<b>Total</b>	<b>58,992</b>	<b>100</b>	<b>58,810</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,992</b>
<b>Multiple Births</b>								
Under 20 Years	14	0.6	13	71.4	153.8	214.3	83.3	7
20-24 Years	100	4.4	100	-	10.0	10.0	-	50
25-29 Years	255	11.3	254	3.9	15.7	19.6	19.6	126
30-34 Years	703	31.1	698	7.1	14.3	21.3	17.1	348
35-39 Years	849	37.5	845	4.7	2.4	7.1	5.9	421
40-44 Years	288	12.7	285	10.4	3.5	13.9	13.9	145
45 Years and Over	53	2.3	53	-	18.9	18.9	-	26
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

Notes: Percentage column is subject to rounding.

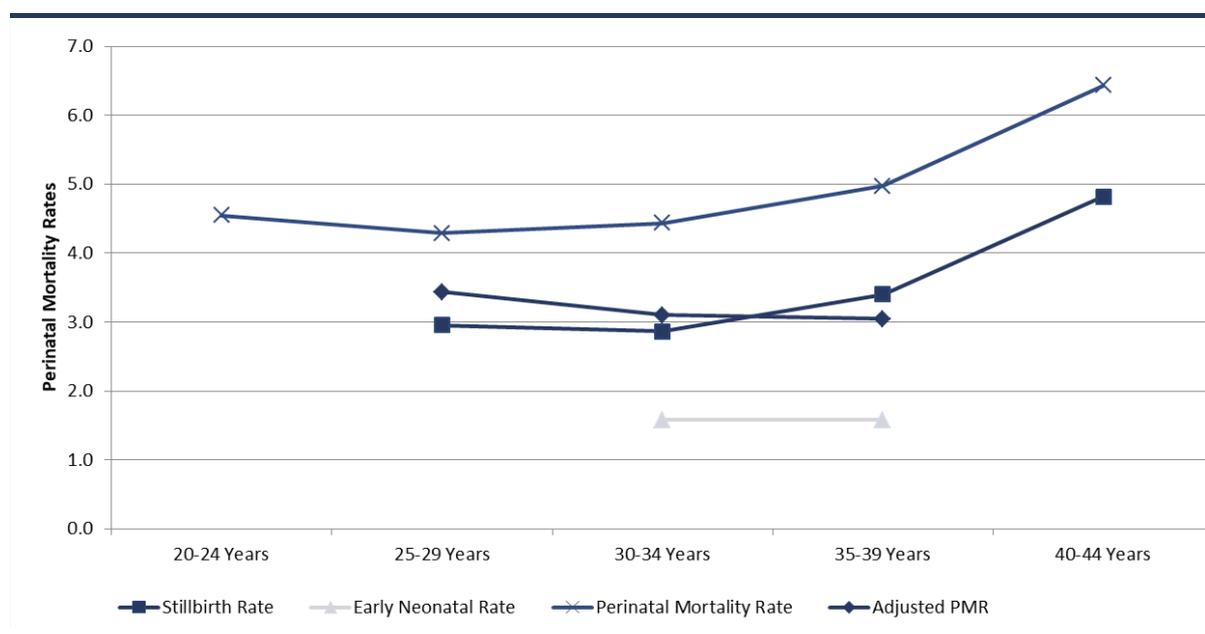
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. There were five or fewer births to mothers with unknown maternal age; these were excluded from this table.

Figure 3.1 presents perinatal mortality rates.<sup>24</sup>

- The perinatal mortality rate was lowest for mothers aged in the 25 to 29 year age group (4.3 per 1,000 live births and stillbirths) and the adjusted perinatal mortality rate was lowest for mothers aged in the 35 to 39 year age group (3.0 per 1,000 live births and stillbirths). The highest perinatal rate of 6.4 per 1,000 live births and stillbirths was recorded for mothers aged in the 40 to 44 year age group (excludes rates based on 20 or fewer observations).
- The highest stillbirth rate was recorded for mothers in the 40 to 44 year age group (at 4.8 per 1,000 live births and stillbirths), while the lowest stillbirth rate was recorded for the 30 to 34 year age group (2.9 per 1,000 live births and stillbirths).
- The 30 to 34 year age group and the 35 to 39 year age group both recorded early neonatal rates of 1.6 per 1,000 live births.

**FIGURE 3.1**

Age-Specific Stillbirth, Early Neonatal and Perinatal Mortality Rates



Notes: See Table 3.1 for data.  
Rates based on 20 or fewer observations are not included in this Figure.  
Certain age groups are not presented due to small numbers associated with all categories within these age groups.

<sup>24</sup> Rates calculated on more than 20 observations are included in the discussion.

## MOTHER'S CIVIL STATUS

Table 3.2 presents data on mother's civil status and shows that married women accounted for almost 61 per cent of total births.

**TABLE 3.2**

Mother's Civil Status: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Married	37,233	60.8	37,122	3.0	1.6	4.6	3.0	36,457
Single	23,182	37.8	23,099	3.6	1.9	5.5	3.8	22,833
Widowed	54	0.1	54	-	-	-	-	53
Separated	389	0.6	388	2.6	-	2.6	2.6	381
Divorced	247	0.4	246	4.0	-	4.0	4.0	246
Civil Partner†	26	0.0	26	-	-	-	-	26
Not Stated	127	0.2	126	7.9	7.9	15.7	15.7	123
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
Married	35,691	60.5	35,589	2.9	1.4	4.3	2.7	35,691
Single	22,489	38.1	22,411	3.5	1.4	4.9	3.4	22,489
Widowed	*	^	*	-	-	-	-	*
Separated	373	0.6	372	2.7	-	2.7	2.7	373
Divorced	*	^	*	4.1	-	4.1	4.1	*
Civil Partner†	26	0.0	26	-	-	-	-	26
Not Stated	120	0.2	119	8.3	8.4	16.7	16.7	*
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
Married	1,542	68.2	1,533	5.8	5.9	11.7	10.4	766
Single	693	30.6	688	7.2	17.4	24.5	16.0	344
Widowed	~	^	~	-	-	-	-	~
Separated	16	0.7	16	-	-	-	-	8
Divorced	~	^	~	-	-	-	-	~
Civil Partner†	0	0.0	0	-	-	-	-	0
Not Stated	7	0.3	7	-	-	-	-	~
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

**Notes:**

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- <sup>a</sup> Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.
- † Includes civil partner, former civil partner and surviving civil partner.

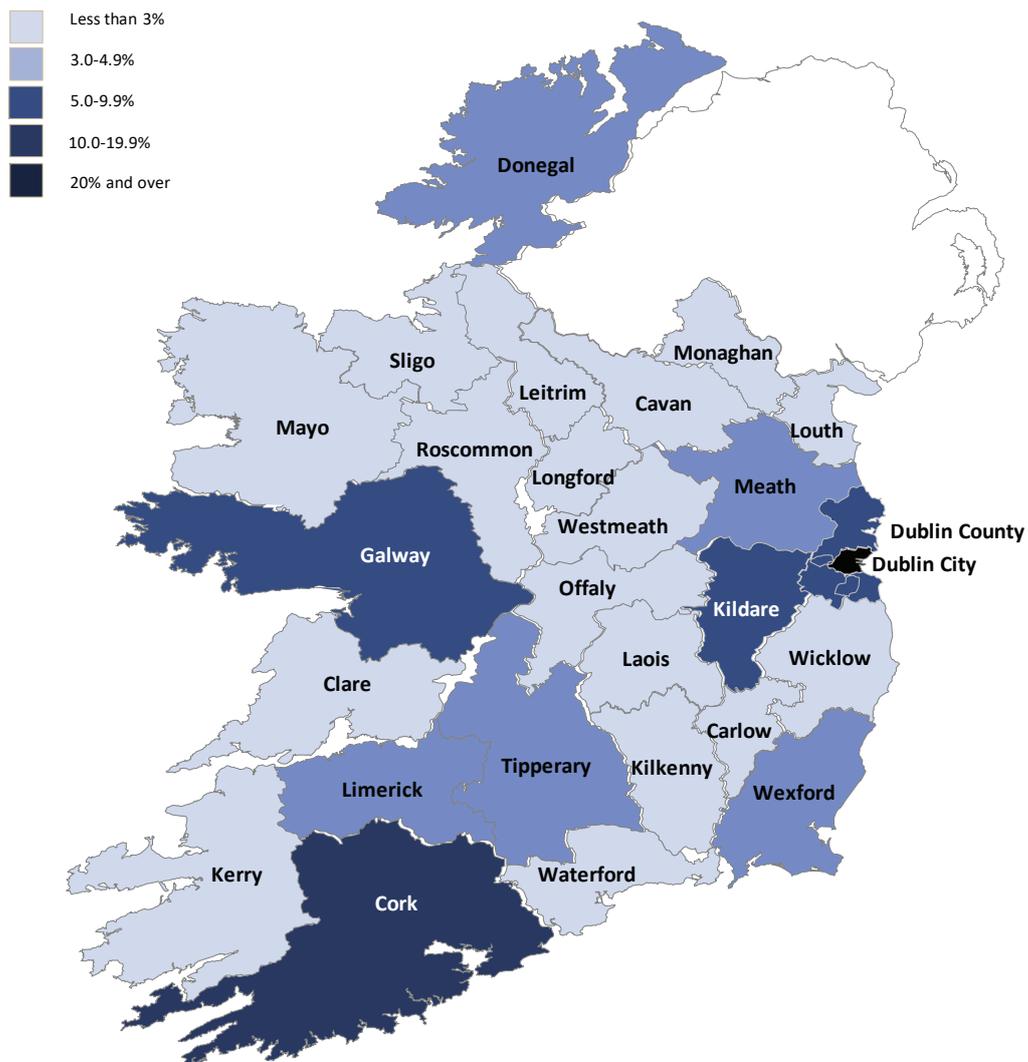
## MOTHER'S COUNTY OF RESIDENCE

Figure 3.2 presents the distribution of births by mother's county of residence.

- 22.0 per cent of births were to mothers resident in Dublin City, and 11.4 per cent were to mothers resident in Cork.
- There were less than 1 per cent of births to mothers resident in both Leitrim and Longford.

**FIGURE 3.2**

Percentage of Births by Mother's County of Residence, Total Births



Notes: See Appendix G, Table G1 for data.  
 Example: 1.4 per cent of all births were to mothers resident in Carlow.  
 See Appendix E for details of county of residence classification.

## SOCIO-ECONOMIC GROUP

### MOTHER'S SOCIO-ECONOMIC GROUP

Table 3.3 presents data on mother's socio-economic group.

- The highest proportion of total births were to mothers whose socio-economic group was classified as 'lower-professional' (21.1 per cent) followed by 'intermediate non-manual workers' (17.5 per cent) and 'home duties' (16.0 per cent).
- Mothers classified as 'other non-manual workers' group accounted for a further 14.3 per cent of total births.

Where rates are calculated on more than 20 perinatal deaths (see Figure 3.3):

- The highest perinatal mortality rate of 6.3 per 1,000 live births and stillbirths was reported for mothers in the socio-economic group 'home duties' followed by 'intermediate non-manual workers' (5.2 per 1,000 live births and stillbirths) .
- The lowest perinatal mortality rate was recorded for mothers in the 'lower professional' socio-economic group (4.1 per 1,000 live births and stillbirths).

TABLE 3.3

Mother's Socio-economic Group: Total Births, Live Births, Mortality Rates, and Maternities

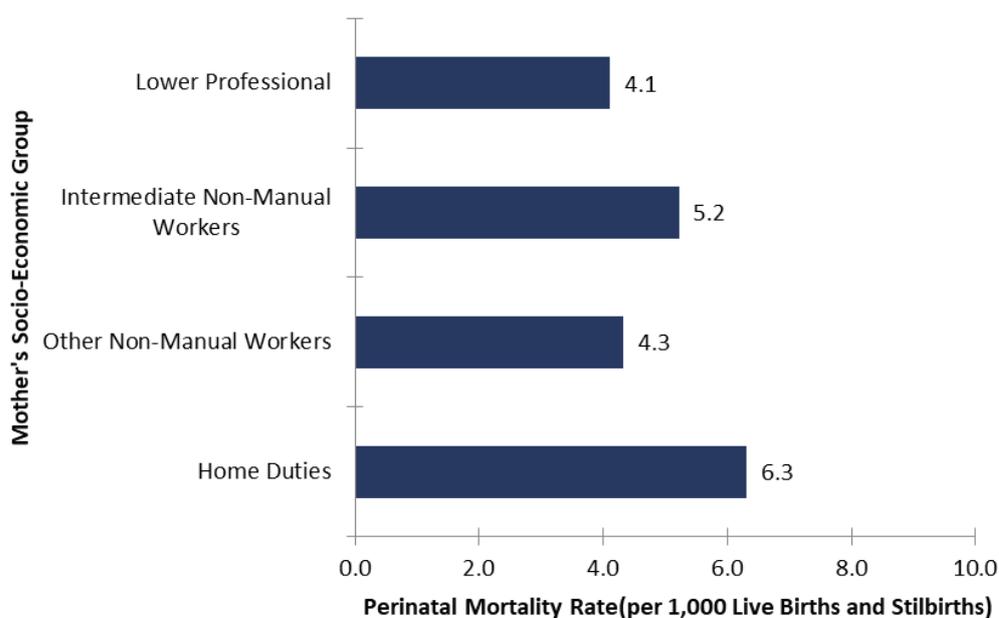
	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Farmers & Farm Managers	78	0.1	78	-	-	-	-	78
Other Agricultural Occupations & Fishermen	99	0.2	99	-	-	-	-	99
Higher Professional	4,765	7.8	4,752	2.7	1.5	4.2	2.1	4,653
Lower Professional	12,903	21.1	12,866	2.9	1.2	4.1	3.2	12,652
Employers & Managers	4,534	7.4	4,523	2.4	1.8	4.2	2.2	4,436
Salaried Employees	670	1.1	667	4.5	-	4.5	4.5	654
Intermediate Non-Manual Workers	10,736	17.5	10,703	3.1	2.1	5.2	3.5	10,532
Other Non-Manual Workers	8,787	14.3	8,758	3.3	1.0	4.3	2.8	8,637
Skilled Manual Workers	760	1.2	759	1.3	-	1.3	-	741
Semi-Skilled Manual Workers	1,515	2.5	1,506	5.9	4.0	9.9	9.2	1,487
Unskilled Manual Workers	23	0.0	23	-	-	-	-	23
Unemployed	2,990	4.9	2,976	4.7	1.3	6.0	4.7	2,949
Not Classifiable	2,116	3.5	2,113	1.4	1.4	2.8	2.4	2,084
Home Duties	9,824	16.0	9,787	3.8	2.6	6.3	3.8	9,653
Not Stated	1,458	2.4	1,451	4.8	2.1	6.9	4.8	1,441
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
Farmers & Farm Managers	78	0.1	78	-	-	-	-	78
Other Agricultural Occupations & Fishermen	99	0.2	99	-	-	-	-	99
Higher Professional	4,543	7.7	4,533	2.2	1.3	3.5	1.3	4,543
Lower Professional	12,400	21.0	12,365	2.8	1.1	4.0	3.0	12,400
Employers & Managers	4,341	7.4	4,330	2.5	1.6	4.1	2.3	4,341
Salaried Employees	640	1.1	637	4.7	-	4.7	4.7	640
Intermediate Non-Manual Workers	10,329	17.5	10,298	3.0	1.7	4.6	3.0	10,329
Other Non-Manual Workers	8,490	14.4	8,461	3.4	0.9	4.4	2.9	8,490
Skilled Manual Workers	723	1.2	722	1.4	-	1.4	-	723
Semi-Skilled Manual Workers	1,459	2.5	1,451	5.5	0.7	6.2	5.5	1,459
Unskilled Manual Workers	23	0.0	23	-	-	-	-	23
Unemployed	2,908	4.9	2,895	4.5	1.0	5.5	4.5	2,908
Not Classifiable	2,053	3.5	2,050	1.5	1.5	2.9	2.4	2,053
Home Duties	9,485	16.1	9,451	3.6	2.2	5.8	3.6	9,485
Not Stated	1,425	2.4	1,420	3.5	2.1	5.6	3.5	1,425
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
Farmers & Farm Managers	0	0.0	0	-	-	-	-	0
Other Agricultural Occupations & Fishermen	0	0.0	0	-	-	-	-	0
Higher Professional	222	9.8	219	13.5	4.6	18.0	18.0	110
Lower Professional	503	22.2	501	4.0	4.0	8.0	8.0	252
Employers & Managers	193	8.5	193	-	5.2	5.2	-	95
Salaried Employees	30	1.3	30	-	-	-	-	14
Intermediate Non-Manual Workers	407	18.0	405	4.9	14.8	19.7	17.2	203
Other Non-Manual Workers	297	13.1	297	-	3.4	3.4	-	147
Skilled Manual Workers	37	1.6	37	-	-	-	-	18
Semi-Skilled Manual Workers	56	2.5	55	17.9	90.9	107.1	107.1	28
Unskilled Manual Workers	0	0.0	0	-	-	-	-	0
Unemployed	82	3.6	81	12.2	12.3	24.4	12.3	41
Not Classifiable	63	2.8	63	-	-	-	-	31
Home Duties	339	15.0	336	8.8	11.9	20.6	9.0	168
Not Stated	33	1.5	31	60.6	-	60.6	60.6	16
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

## Notes:

Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. See Appendix C for a description of the classification system for socio-economic group.

**FIGURE 3.3**  
Perinatal Mortality Rates by Mother's Socio-economic Group



Notes: See Table 3.3 for data.  
Rates based on 20 or fewer observations are not included in this Figure.

#### FATHER'S SOCIO-ECONOMIC GROUP

Father's details are only required for registration purposes where mother's civil status is recorded as 'married'. As a result, there is a proportion of records for which information is incomplete; these are assigned to the category 'not applicable'. This category is combined with 'not stated' for the purposes of presenting data on father's socio-economic group in this report. The data presented in the following table reports father's socio-economic group where occupation was recorded, regardless of mother's civil status.

Table 3.4 presents data on father's socio-economic group.

- 17.6 per cent of total births were to fathers whose socio-economic group was classified as 'skilled manual workers'.
- Fathers classified as 'other non-manual workers' accounted for 8.0 per cent of total births.

TABLE 3.4

## Father's Socio-economic Group: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Farmers & Farm Managers	1,539	2.5	1,535	2.6	1.3	3.9	2.6	1,514
Other Agricultural Occupations & Fishermen	559	0.9	557	3.6	-	3.6	1.8	548
Higher Professional	3,898	6.4	3,893	1.3	1.3	2.6	1.0	3,812
Lower Professional	4,473	7.3	4,464	2.0	1.3	3.4	2.5	4,373
Employers & Managers	4,418	7.2	4,406	2.7	1.4	4.1	2.7	4,322
Salaried Employees	735	1.2	734	1.4	-	1.4	1.4	726
Intermediate Non-Manual Workers	4,446	7.3	4,436	2.2	2.0	4.3	2.5	4,351
Other Non-Manual Workers	4,921	8.0	4,903	3.7	1.8	5.5	3.5	4,839
Skilled Manual Workers	10,783	17.6	10,747	3.3	0.4	3.7	2.6	10,578
Semi-Skilled Manual Workers	2,421	4.0	2,413	3.3	2.9	6.2	4.6	2,388
Unskilled Manual Workers	382	0.6	378	10.5	-	10.5	7.9	373
Unemployed	1,801	2.9	1,796	2.8	2.8	5.6	2.8	1,779
Not Classifiable	1,855	3.0	1,850	2.7	2.7	5.4	3.2	1,811
Home Duties	158	0.3	158	-	-	-	-	155
Not Stated/Not Applicable	18,869	30.8	18,791	4.1	2.4	6.6	4.8	18,550
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
Farmers & Farm Managers	1,488	2.5	1,485	2.0	0.7	2.7	2.0	1,488
Other Agricultural Occupations & Fishermen	536	0.9	534	3.7	-	3.7	1.9	536
Higher Professional	3,731	6.3	3,727	1.1	1.3	2.4	0.8	3,731
Lower Professional	4,274	7.2	4,266	1.9	1.2	3.0	2.1	4,274
Employers & Managers	4,224	7.2	4,212	2.8	0.9	3.8	2.4	4,224
Salaried Employees	716	1.2	715	1.4	-	1.4	1.4	716
Intermediate Non-Manual Workers	4,259	7.2	4,249	2.3	1.9	4.2	2.6	4,259
Other Non-Manual Workers	4,759	8.1	4,743	3.4	1.7	5.0	3.2	4,759
Skilled Manual Workers	10,376	17.6	10,341	3.4	0.3	3.7	2.5	10,376
Semi-Skilled Manual Workers	2,355	4.0	2,348	3.0	1.7	4.7	3.0	2,355
Unskilled Manual Workers	364	0.6	360	11.0	-	11.0	8.3	*
Unemployed	1,757	3.0	1,752	2.8	2.9	5.7	2.9	1,757
Not Classifiable	1,768	3.0	1,764	2.3	2.8	5.1	2.8	1,768
Home Duties	152	0.3	152	-	-	-	-	*
Not Stated/Not Applicable	18,237	30.9	18,165	3.9	1.9	5.9	4.3	18,237
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
Farmers & Farm Managers	51	2.3	50	19.6	20.0	39.2	20.0	26
Other Agricultural Occupations & Fishermen	23	1.0	23	-	-	-	-	12
Higher Professional	167	7.4	166	6.0	-	6.0	6.0	81
Lower Professional	199	8.8	198	5.0	5.1	10.1	10.1	99
Employers & Managers	194	8.6	194	-	10.3	10.3	10.3	98
Salaried Employees	19	0.8	19	-	-	-	-	10
Intermediate Non-Manual Workers	187	8.3	187	-	5.3	5.3	-	92
Other Non-Manual Workers	162	7.2	160	12.3	6.3	18.5	12.4	80
Skilled Manual Workers	407	18.0	406	2.5	2.5	4.9	4.9	202
Semi-Skilled Manual Workers	66	2.9	65	15.2	46.2	60.6	60.6	33
Unskilled Manual Workers	18	0.8	18	-	-	-	-	*
Unemployed	44	1.9	44	-	-	-	-	22
Not Classifiable	87	3.8	86	11.5	-	11.5	11.5	43
Home Duties	6	0.3	6	-	-	-	-	~
Not Stated/Not Applicable	632	27.9	626	9.5	17.6	26.9	19.1	313
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

## Notes:

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. See Appendix C for a description of the classification system for socio-economic group.

## NATIONALITY

### MOTHER'S NATIONALITY

Mother's nationality relates to 'place of birth' of the mother. Table 3.5 presents data on mother's nationality.

- Almost 76 per cent of total births were recorded for babies born to mothers from Ireland.
- The next highest proportion of total births were to mothers from the European Union (excluding Ireland and United Kingdom) at 11.9 per cent.<sup>25</sup>
- Births to mothers from Asia accounted for 4.1 per cent of total births, followed by 2.4 per cent to mothers from Africa.
- The remainder of births were to mothers from the UK, Rest of Europe, America, Australia, New Zealand and Other Oceania and Multi-Nationality.

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<sup>25</sup> See Appendix F for a description of the classification system for nationality.

TABLE 3.5

Mother's Nationality: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Ireland	46,277	75.5	46,137	3.0	1.6	4.6	3.1	45,393
UK	1,415	2.3	1,412	2.1	3.5	5.7	2.8	1,382
EU15 (excluding Ireland & UK)	1,074	1.8	1,070	3.7	0.9	4.7	4.7	1,054
EU15 to EU28	6,227	10.2	6,206	3.4	1.6	5.0	3.2	6,132
Rest of Europe	776	1.3	775	1.3	-	1.3	1.3	757
Africa	1,450	2.4	1,443	4.8	2.8	7.6	5.5	1,419
Asia	2,527	4.1	2,513	5.5	1.2	6.7	4.8	2,499
America	1,007	1.6	1,006	1.0	3.0	4.0	4.0	988
Australia	89	0.1	89	-	-	-	-	87
New Zealand and Other Oceania	28	0.0	28	-	-	-	-	26
Multi-Nationality	10	0.0	10	-	-	-	-	10
Not Stated	378	0.6	372	15.9	8.1	23.8	16.0	372
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
Ireland	44,517	75.5	44,385	3.0	1.3	4.3	2.8	44,517
UK	1,349	2.3	1,346	2.2	2.2	4.4	3.0	1,349
EU15 (excluding Ireland & UK)	1,034	1.8	1,030	3.9	1.0	4.8	4.8	1,034
EU15 to EU28	6,040	10.2	6,024	2.6	1.2	3.8	2.3	6,040
Rest of Europe	740	1.3	739	1.4	-	1.4	1.4	740
Africa	1,392	2.4	1,385	5.0	2.9	7.9	5.8	1,392
Asia	2,470	4.2	2,457	5.3	1.2	6.5	4.5	2,470
America	969	1.6	968	1.0	3.1	4.1	4.1	969
Australia	*	^	*	-	-	-	-	*
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Multi-Nationality	10	0.0	10	-	-	-	-	10
Not Stated	366	0.6	360	16.4	8.3	24.6	16.5	366
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
Ireland	1,760	77.8	1,752	4.5	9.1	13.6	11.4	876
UK	66	2.9	66	-	30.3	30.3	-	33
EU15 (excluding Ireland & UK)	40	1.8	40	-	-	-	-	20
EU15 to EU28	187	8.3	182	26.7	16.5	42.8	32.4	92
Rest of Europe	36	1.6	36	-	-	-	-	17
Africa	58	2.6	58	-	-	-	-	27
Asia	57	2.5	56	17.5	-	17.5	17.5	29
America	38	1.7	38	-	-	-	-	19
Australia	~	^	~	-	-	-	-	~
New Zealand and Other Oceania	~	^	~	-	-	-	-	~
Multi-Nationality	0	0.0	0	-	-	-	-	0
Not Stated	12	0.5	12	-	-	-	-	6
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

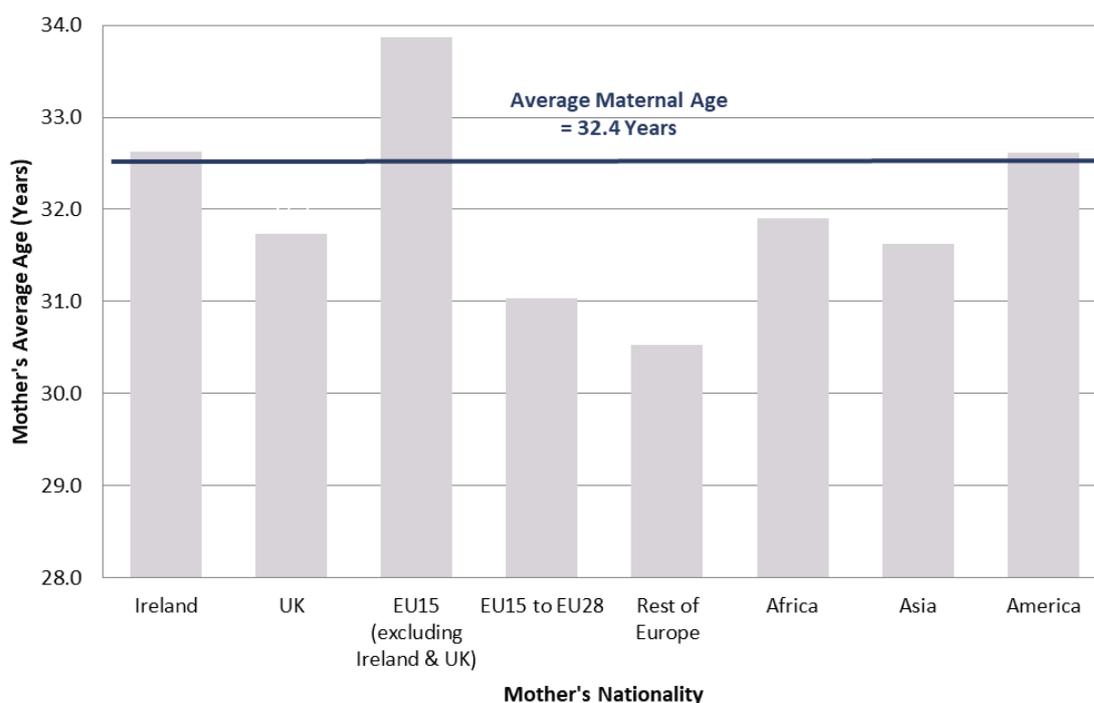
## Notes:

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. See Appendix F for a description of the classification system for nationality.

Figure 3.4 presents the average age of mother by mother's nationality for 2018.

- The average age of all mothers giving birth was 32.4 years and the average age of mothers from Ireland giving birth was slightly higher at 32.6 years.
- Mothers giving birth from the Rest of the Europe were on average younger at 30.5 years, while mothers from the EU15 (excluding Ireland and United Kingdom) recorded the highest average maternal age at 33.9 years.

**FIGURE 3.4**  
Average Age of Mother by Mother's Nationality, Total Maternities



Notes: See Appendix G, Table G2 for data.  
Average ages calculated for nationalities with greater than 100 births.

### FATHER'S NATIONALITY

Father's nationality relates to 'place of birth' of the father. Father's details are only required for registration purposes where mother's civil status is recorded as 'married'. As a result, there is a proportion of records for which information is incomplete; these are assigned to the category 'not applicable'. This category is combined with 'not stated' for the purposes of presenting data on father's nationality in this report. The data presented in the following table reports father's nationality where recorded, regardless of mother's civil status.

Table 3.6 presents information on father's nationality (where recorded).

- Births to Irish fathers accounted for 56.0 per cent of total births.
- Births to fathers from the EU15 to EU28 and Asia accounted for 6.1 per cent and 3.0 per cent of total births respectively.

**TABLE 3.6**

Father's Nationality: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Ireland	34,283	56.0	34,183	2.9	1.2	4.1	2.7	33,589
UK	898	1.5	897	1.1	3.3	4.5	2.2	881
EU15 (excluding Ireland & UK)	695	1.1	693	2.9	-	2.9	1.4	680
EU15 to EU28	3,721	6.1	3,712	2.4	1.6	4.0	2.2	3,668
Rest of Europe	398	0.6	398	-	-	-	-	391
Africa	883	1.4	881	2.3	2.3	4.5	2.3	867
Asia	1,840	3.0	1,830	5.4	1.1	6.5	5.4	1,819
America	449	0.7	447	4.5	4.5	8.9	8.9	441
Australia	53	0.1	53	-	-	-	-	52
New Zealand and Other Oceania	46	0.1	46	-	-	-	-	45
Multi-Nationality	9	0.0	9	-	-	-	-	9
Not Stated/ Not Applicable	17,983	29.4	17,912	3.9	2.6	6.6	4.7	17,677
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
Ireland	32,898	55.8	32,802	2.9	1.0	4.0	2.5	32,898
UK	865	1.5	864	1.2	2.3	3.5	2.3	865
EU15 (excluding Ireland & UK)	665	1.1	663	3.0	-	3.0	1.5	665
EU15 to EU28	3,618	6.1	3,612	1.7	1.4	3.0	1.1	3,618
Rest of Europe	384	0.7	384	-	-	-	-	384
Africa	851	1.4	849	2.4	2.4	4.7	2.4	851
Asia	1,797	3.0	1,789	4.5	1.1	5.6	4.5	1,797
America	433	0.7	431	4.6	4.6	9.2	9.2	433
Australia	*	^	*	-	-	-	-	*
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Multi-Nationality	9	0.0	9	-	-	-	-	9
Not Stated/ Not Applicable	17,381	29.5	17,315	3.8	2.1	5.9	4.2	17,381
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
Ireland	1,385	61.2	1,381	2.9	5.8	8.7	7.2	691
UK	33	1.5	33	-	30.3	30.3	-	16
EU15 (excluding Ireland & UK)	30	1.3	30	-	-	-	-	15
EU15 to EU28	103	4.6	100	29.1	10.0	38.8	38.8	50
Rest of Europe	14	0.6	14	-	-	-	-	7
Africa	32	1.4	32	-	-	-	-	16
Asia	43	1.9	41	46.5	-	46.5	46.5	22
America	16	0.7	16	-	-	-	-	8
Australia	~	^	~	-	-	-	-	~
New Zealand and Other Oceania	~	^	~	-	-	-	-	~
Multi-Nationality	0	0.0	0	-	-	-	-	0
Not Stated/ Not Applicable	602	26.6	597	8.3	18.4	26.6	18.4	296
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

**Notes:**

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
  - \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
  - ^ Percentage not provided to prevent disclosure of small numbers.
  - a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. See Appendix F for a description of the classification system for nationality.

## MATERNAL PARITY

Maternal parity refers to a mother's total number of previous live births and stillbirths. Table 3.7 presents data on maternal parity.

- Primiparous mothers accounted for 38.8 per cent of all maternities, with 9.2 per cent of maternities having three or more previous live births or stillbirths.

**TABLE 3.7**

Maternal Parity: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0	23,790	38.8	23,718	3.0	1.8	4.8	3.3	23,326
1	21,129	34.5	21,077	2.5	1.4	3.9	2.5	20,768
2	10,591	17.3	10,554	3.5	1.8	5.3	3.6	10,397
3	3,704	6.0	3,679	6.7	1.4	8.1	5.4	3,634
4	1,110	1.8	1,104	5.4	4.5	9.9	9.0	1,082
5	461	0.8	456	10.8	2.2	13.0	10.9	448
6	217	0.4	217	-	4.6	4.6	-	214
More than 6	157	0.3	157	-	6.4	6.4	-	153
Not stated	99	0.2	99	-	-	-	-	97
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
0	22,873	38.8	22,808	2.8	1.5	4.4	2.8	22,873
1	20,411	34.6	20,362	2.4	1.1	3.5	2.3	20,411
2	10,205	17.3	10,169	3.5	1.5	5.0	3.2	10,205
3	3,562	6.0	3,538	6.7	1.1	7.9	5.3	3,562
4	1,054	1.8	1,048	5.7	4.8	10.4	9.5	1,054
5	436	0.7	433	6.9	2.3	9.2	6.9	436
6	*	^	*	-	-	-	-	*
More than 6	*	^	*	-	6.7	6.7	-	*
Not stated	*	^	*	-	-	-	-	*
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
0	917	40.5	910	7.6	7.7	15.3	15.3	453
1	718	31.7	715	4.2	11.2	15.3	7.0	357
2	386	17.1	385	2.6	10.4	13.0	13.0	192
3	142	6.3	141	7.0	7.1	14.1	7.1	72
4	56	2.5	56	-	-	-	-	28
5	25	1.1	23	80.0	-	80.0	80.0	12
6	*	^	*	-	166.7	166.7	-	~
More than 6	*	^	*	-	-	-	-	~
Not stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

**Notes:**

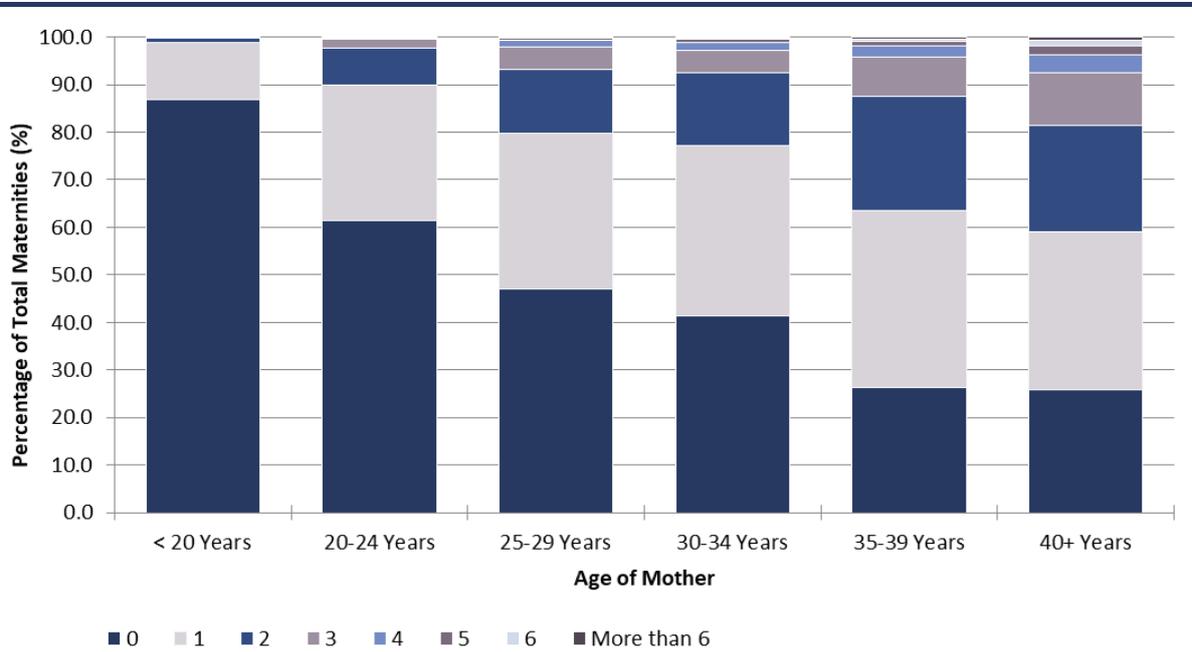
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

Figure 3.5 shows data on maternal parity by age of mother.

- Of mothers aged less than 20 years, 86.9 per cent gave birth for the first time.
- Just over 1 in 4 women aged 40 years or more gave birth for the first time and almost 1 in 3 women in this age group delivered for the second time.

**FIGURE 3.5**

Parity by Age of Mother, Total Maternities



Note: See Appendix G, Table G3 for data.

## NUMBER OF PREVIOUS STILLBIRTHS

Table 3.8 shows the number of previous stillbirths for multiparous women.

- In 2018, 98.4 per cent of multiparous women giving birth recorded no previous stillbirths while 1.6 per cent recorded one or more previous stillbirths.

**TABLE 3.8**

Previous Stillbirths: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0	36,766	98.4	36,651	3.1	1.6	4.7	3.1	36,103
1	553	1.5	544	16.1	5.5	21.5	16.2	544
2 and Over	50	0.1	49	20.0	20.4	40.0	40.0	49
<b>Total</b>	<b>37,369</b>	<b>100</b>	<b>37,244</b>	<b>3.3</b>	<b>1.7</b>	<b>5.0</b>	<b>3.3</b>	<b>36,696</b>
<b>Singleton Births</b>								
0	35,444	98.4	35,335	3.1	1.2	4.3	2.9	35,444
1	*	^	*	14.8	5.6	20.4	14.9	*
2 and Over	*	^	*	20.4	20.8	40.8	40.8	*
<b>Total</b>	<b>36,028</b>	<b>100</b>	<b>35,910</b>	<b>3.3</b>	<b>1.3</b>	<b>4.6</b>	<b>3.1</b>	<b>36,028</b>
<b>Multiple Births</b>								
0	1,322	98.6	1,316	4.5	10.6	15.1	9.1	659
1	*	^	*	55.6	-	55.6	55.6	9
2 and Over	~	^	~	-	-	-	-	0
<b>Total</b>	<b>1,341</b>	<b>100</b>	<b>1,334</b>	<b>5.2</b>	<b>10.5</b>	<b>15.6</b>	<b>9.7</b>	<b>668</b>

**Notes:**

- ~ Percentage column is subject to rounding.
  - ~ Denotes five or fewer births (or maternities) reported to NPRS.
  - \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
  - ^ Percentage not provided to prevent disclosure of small numbers.
  - a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.
- This table only includes women having second and subsequent births. Primiparous women (i.e. women who have had no previous pregnancy resulting in a live birth or stillbirth) are not included in this table.

## INTERVAL SINCE LAST BIRTH

Table 3.9 shows the interval since the last birth for multiparous women.

- An interval of 1 year or less was recorded for 1.2 per cent of all multiparous mothers.
- Over 25 per cent recorded an interval of between two and three years since the last birth.
- 17.3 per cent had their previous birth more than six years earlier.

**TABLE 3.9**

Interval in Years since Last Birth: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
1 year or less	435	1.2	430	11.5	9.3	20.7	16.2	423
>1 year to 2 years	7,995	21.4	7,970	3.1	1.6	4.7	2.2	7,864
>2 years to 3 years	9,632	25.8	9,605	2.8	1.3	4.1	3.0	9,479
>3 years to 4 years	5,873	15.7	5,861	2.0	1.0	3.1	2.6	5,786
>4 years to 5 years	3,819	10.2	3,811	2.1	1.0	3.1	1.6	3,745
>5 years to 6 years	2,431	6.5	2,421	4.1	0.8	4.9	4.5	2,378
More than 6 years	6,457	17.3	6,428	4.5	2.0	6.5	4.0	6,317
Not Stated	727	1.9	718	12.4	9.7	22.0	18.0	704
<b>Total</b>	<b>37,369</b>	<b>100</b>	<b>37,244</b>	<b>3.3</b>	<b>1.7</b>	<b>5.0</b>	<b>3.3</b>	<b>36,696</b>
<b>Singleton Births</b>								
1 year or less	411	1.1	406	12.2	4.9	17.0	12.2	411
>1 year to 2 years	7,735	21.5	7,710	3.2	1.3	4.5	2.3	7,735
>2 years to 3 years	9,324	25.9	9,298	2.8	1.4	4.2	3.0	9,324
>3 years to 4 years	5,698	15.8	5,687	1.9	0.9	2.8	2.5	5,698
>4 years to 5 years	3,672	10.2	3,665	1.9	0.5	2.4	1.4	3,672
>5 years to 6 years	2,324	6.5	2,314	4.3	0.9	5.2	4.7	2,324
More than 6 years	6,183	17.2	6,158	4.0	1.8	5.8	3.6	6,183
Not Stated	681	1.9	672	13.2	4.5	17.6	13.3	681
<b>Total</b>	<b>36,028</b>	<b>100</b>	<b>35,910</b>	<b>3.3</b>	<b>1.3</b>	<b>4.6</b>	<b>3.1</b>	<b>36,028</b>
<b>Multiple Births</b>								
1 year or less	24	1.8	24	-	83.3	83.3	83.3	12
>1 year to 2 years	260	19.4	260	-	11.5	11.5	-	129
>2 years to 3 years	308	23.0	307	3.2	-	3.2	3.2	155
>3 years to 4 years	175	13.0	174	5.7	5.7	11.4	5.7	88
>4 years to 5 years	147	11.0	146	6.8	13.7	20.4	6.9	73
>5 years to 6 years	107	8.0	107	-	-	-	-	54
More than 6 years	274	20.4	270	14.6	7.4	21.9	14.7	134
Not Stated	46	3.4	46	-	87.0	87.0	87.0	23
<b>Total</b>	<b>1,341</b>	<b>100</b>	<b>1,334</b>	<b>5.2</b>	<b>10.5</b>	<b>15.7</b>	<b>9.8</b>	<b>668</b>

Notes:

Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. This table only includes women having second and subsequent births. Primiparous women (i.e. women who have had no previous pregnancy resulting in a live birth or stillbirth) are not included in this table.

## BIRTHWEIGHT

The birthweight of a baby is widely used as a key indicator of health status. According to the World Health Organization (WHO), low birthweight babies are defined as weighing less than 2,500 grams. This is further divided into very low birthweight (weighing less than 1,500 grams) and extremely low birthweight (weighing less than 1,000 grams). Low birthweight babies are more likely to have poor perinatal outcomes with consequences for later life experience.<sup>26</sup>

- The average birthweight for live births was 3,473.8 grams for singletons, 2,434.1 grams for multiples, and 3,435.6 grams for total live births.
- The average birthweight for live births was 3,492.8 grams for males compared to 3,375.4 grams for females.

Table 3.10 and Figures 3.6 – 3.8 present data on birthweight.

- The percentage of total live births classified as low birthweight was 5.7 per cent (4.1 per cent of singletons and 48.0 per cent of multiples).
- There was considerable variation in very low birthweight rates between singleton and multiple live births with 0.6 per cent of singleton live births weighing less than 1,500 grams compared to 7.0 per cent for multiple births (see Figure 3.6).
- 92.2 per cent of total live births were in the healthy birthweight category weighing between 2,500 and 4,499 grams (see Figure 3.7).
- A smaller proportion of male live births were low birthweight (5.3 per cent) compared with female live births (6.2 per cent) (see Figure 3.8).
- The percentage of total live births weighing 4,500 grams and over was 2.0 per cent (2.8 per cent of males compared to 1.3 per cent of females) (see Figure 3.8).

<sup>26</sup> EURO-PERISTAT Project with SCPE and EUROCAT. *European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010*. May 2013. Available at [www.europeristat.com](http://www.europeristat.com)

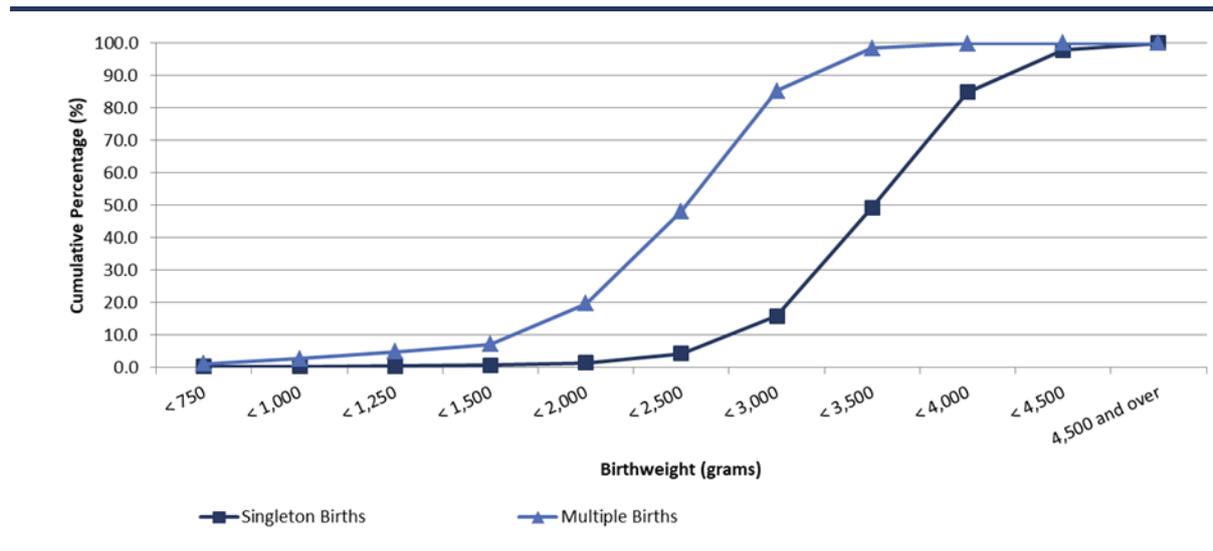
**TABLE 3.10**  
Birthweight (grams): Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
500-749	128	0.2	93	273.4	236.6	445.3	403.4	*
750-999	137	0.2	117	146.0	85.5	219.0	176.9	116
1000-1249	152	0.2	131	138.2	61.1	190.8	151.7	120
1250-1499	171	0.3	159	70.2	44.0	111.1	55.9	147
1500-1999	770	1.3	738	41.6	19.0	59.7	29.5	620
2000-2499	2,295	3.7	2,271	10.5	7.0	17.4	9.2	1,963
2500-2999	7,714	12.6	7,695	2.5	1.6	4.0	2.5	7,302
3000-3499	20,031	32.7	20,010	1.0	0.4	1.4	1.2	19,895
3500-3999	20,950	34.2	20,944	0.3	0.3	0.6	0.4	20,938
4000-4499	7,655	12.5	7,650	0.7	0.1	0.8	0.5	7,654
4500 and Over	1,246	2.0	1,245	0.8	-	0.8	0.8	1,246
Not Stated	9	0.0	8	111.1	-	111.1	111.1	~
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
500-749	99	0.2	70	292.9	228.6	454.5	400.0	99
750-999	99	0.2	82	171.7	73.2	232.3	182.8	99
1000-1249	100	0.2	82	180.0	48.8	220.0	170.2	100
1250-1499	120	0.2	108	100.0	46.3	141.7	72.1	120
1500-1999	485	0.8	454	63.9	26.4	88.7	45.4	485
2000-2499	1,658	2.8	1,634	14.5	8.0	22.3	12.8	1,658
2500-2999	6,881	11.7	6,862	2.8	1.7	4.5	2.8	6,881
3000-3499	19,735	33.5	19,714	1.1	0.4	1.5	1.3	19,735
3500-3999	20,919	35.5	20,913	0.3	0.3	0.6	0.4	20,919
4000-4499	*	^	*	0.7	0.1	0.8	0.5	*
4500 and Over	1,246	2.1	1,245	0.8	-	0.8	0.8	1,246
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
500-749	29	1.3	23	206.9	260.9	413.8	413.8	*
750-999	38	1.7	35	78.9	114.3	184.2	162.2	17
1000-1249	52	2.3	49	57.7	81.6	134.6	117.6	20
1250-1499	51	2.3	51	-	39.2	39.2	20.0	27
1500-1999	285	12.6	284	3.5	7.0	10.5	3.5	135
2000-2499	637	28.2	637	-	4.7	4.7	-	305
2500-2999	833	36.8	833	-	-	-	-	421
3000-3499	296	13.1	296	-	-	-	-	160
3500-3999	31	1.4	31	-	-	-	-	19
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	0	0.0	0	-	-	-	-	0
Not Stated	*	^	*	142.9	-	142.9	142.9	~
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

**Notes:**

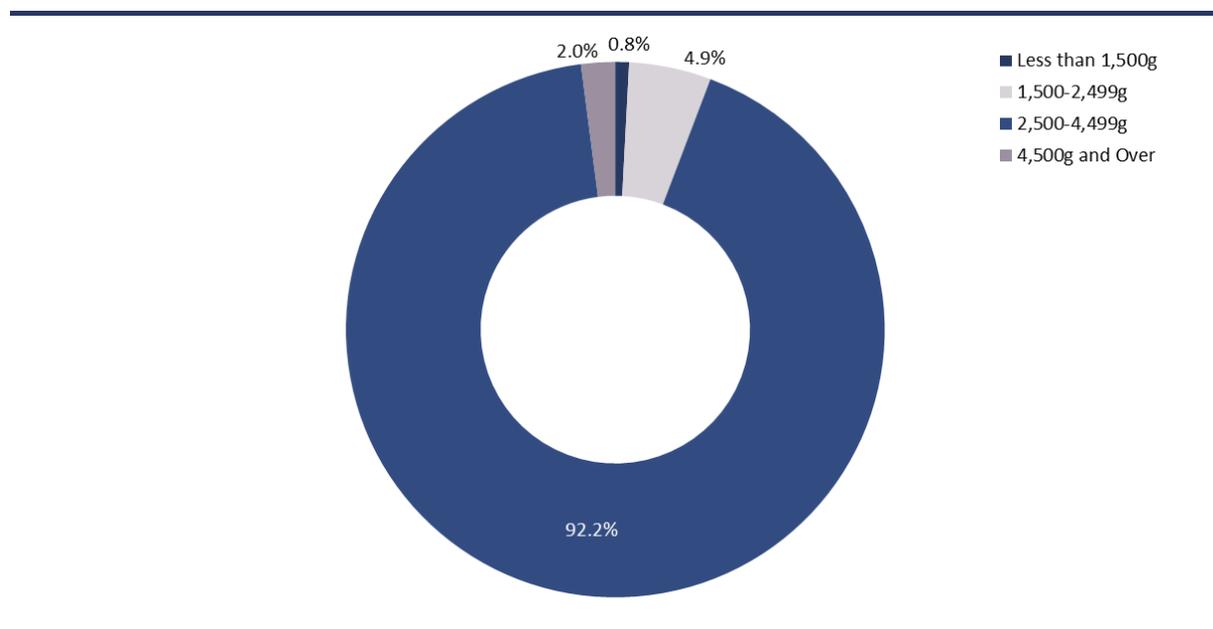
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- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Birthweight tables by primiparous and multiparous women are provided in Appendix G, Tables G4 and G5.

**FIGURE 3.6**  
Birthweight: Cumulative Percentages of Total Live Births



Note: See Table 3.10 for data.

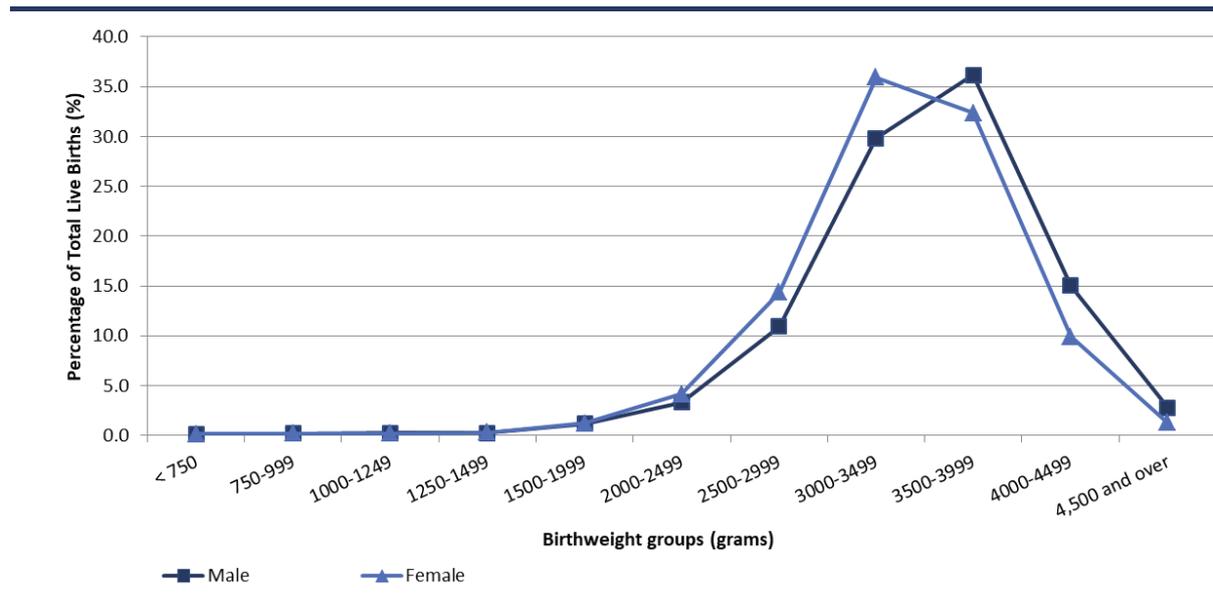
**FIGURE 3.7**  
Percentage of Births by Birthweight Groups, Total Live Births



Note: See Table 3.10 for data.

**FIGURE 3.8**

Percentage Distribution for Males and Females across Birthweight Groups, Total Live Births



Note: See Appendix G, Table G6 for data.

## GESTATIONAL AGE

Based on maternities, the average gestational age for total births was 39.0 weeks. Live births reported an average gestational age of 39.0 weeks and stillbirths reported an average gestational age of 32.3 weeks. The average gestational age for singleton live births was 39.1 weeks compared with 35.6 weeks for live twin births and 31.7 weeks for higher-order multiple live births.

Table 3.11 presents data on gestational age.

- Almost 92 per cent of all babies were born at term (37 to 41 weeks).
- Preterm birth (born before 37 weeks) occurred in 6.9 per cent of live births (5.0 per cent for singleton births and 55.1 per cent for multiple births).

**TABLE 3.11**

Gestational Age (weeks) at Delivery: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Less than 28	255	0.4	210	176.5	157.1	305.9	280.5	220
28-31	452	0.7	411	90.7	36.5	123.9	76.9	382
32-36	3,624	5.9	3,571	14.6	7.3	21.8	12.3	3,093
37-41	56,113	91.6	56,058	1.0	0.5	1.5	1.0	55,611
42 and Over	805	1.3	803	2.5	1.2	3.7	3.7	804
Not Stated	9	0.0	8	111.1	-	111.1	111.1	9
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
Less than 28	*	^	*	185.8	147.7	306.0	274.3	*
28-31	321	0.5	280	127.7	39.3	162.0	103.3	321
32-36	2,574	4.4	2,524	19.4	8.3	27.6	15.7	2,574
37-41	55,106	93.4	55,051	1.0	0.5	1.5	1.0	55,106
42 and Over	*	^	*	2.5	1.2	3.7	3.7	*
Not Stated	9	0.0	8	111.1	-	111.1	111.1	9
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
Less than 28	*	^	*	152.8	180.3	305.6	295.8	*
28-31	131	5.8	131	-	30.5	30.5	15.5	61
32-36	1,050	46.4	1,047	2.9	4.8	7.6	3.8	519
37-41	1,007	44.5	1,007	-	1.0	1.0	-	505
42 and Over	~	^	~	-	-	-	-	~
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

**Notes:**

- Percentage column is subject to rounding.
  - ~ Denotes five or fewer births (or maternities) reported to NPRS.
  - \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
  - ^ Percentage not provided to prevent disclosure of small numbers.
  - a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.
- Gestational age tables by primiparous and multiparous women are provided in Appendix G, Tables G7 and G8.

## MONTH OF BIRTH

Table 3.12 presents data on the month of birth.

- Total births were fairly evenly spread throughout the year, with the lowest proportion of births occurring in February (7.5 per cent) and the highest occurring in July (8.7 per cent).
- July recorded the highest proportion of singleton births (8.7 per cent) and multiple births (9.3 per cent) (see Figure 3.9).

**TABLE 3.12**

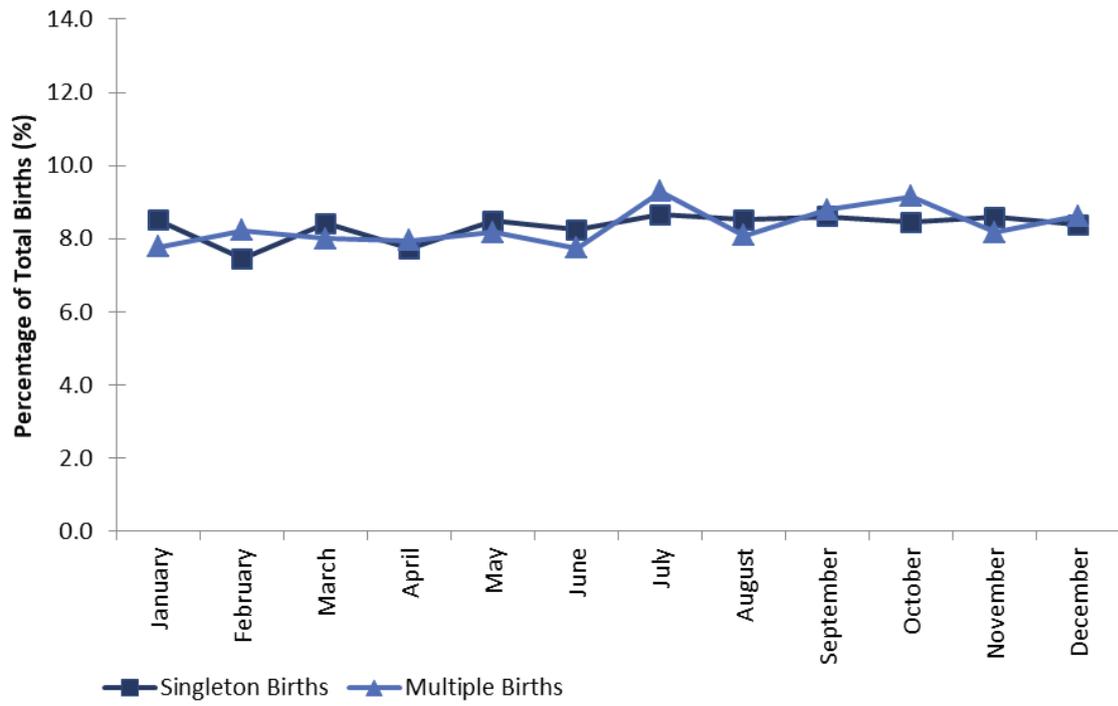
Month of Birth: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
January	5,191	8.5	5,176	2.9	2.3	5.2	3.5	5,102
February	4,580	7.5	4,567	2.8	2.4	5.2	3.5	4,487
March	5,150	8.4	5,130	3.9	2.1	6.0	4.3	5,061
April	4,736	7.7	4,719	3.6	1.5	5.1	3.6	4,646
May	5,192	8.5	5,176	3.1	1.9	5.0	2.5	5,100
June	5,035	8.2	5,020	3.0	1.2	4.2	3.0	4,945
July	5,317	8.7	5,298	3.6	3.0	6.6	4.5	5,212
August	5,208	8.5	5,192	3.1	1.3	4.4	2.9	5,116
September	5,270	8.6	5,247	4.4	1.5	5.9	4.2	5,172
October	5,187	8.5	5,176	2.1	1.0	3.1	1.9	5,080
November	5,249	8.6	5,229	3.8	1.0	4.8	3.6	5,156
December	5,143	8.4	5,131	2.3	1.2	3.5	2.5	5,042
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
January	5,015	8.5	5,000	3.0	2.2	5.2	3.6	5,015
February	4,394	7.4	4,383	2.5	2.5	5.0	3.2	4,394
March	4,969	8.4	4,950	3.8	1.2	5.0	3.4	4,969
April	4,556	7.7	4,539	3.7	0.7	4.4	3.3	4,556
May	5,007	8.5	4,992	3.0	1.6	4.6	2.2	5,007
June	4,860	8.2	4,847	2.7	1.2	3.9	2.7	4,860
July	5,107	8.7	5,090	3.3	2.8	6.1	3.9	5,107
August	5,025	8.5	5,010	3.0	0.6	3.6	2.4	5,025
September	5,071	8.6	5,049	4.3	1.2	5.5	3.8	5,071
October	4,980	8.4	4,969	2.2	1.0	3.2	2.0	4,980
November	5,064	8.6	5,044	3.9	1.0	4.9	3.8	5,064
December	4,948	8.4	4,940	1.6	1.0	2.6	1.8	4,948
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
January	176	7.8	176	-	5.7	5.7	-	87
February	186	8.2	184	10.8	-	10.8	10.8	93
March	181	8.0	180	5.5	27.8	33.1	27.8	92
April	180	8.0	180	-	22.2	22.2	11.2	90
May	185	8.2	184	5.4	10.9	16.2	10.9	93
June	175	7.7	173	11.4	-	11.4	11.4	85
July	210	9.3	208	9.5	9.6	19.0	19.0	105
August	183	8.1	182	5.5	22.0	27.3	16.6	91
September	199	8.8	198	5.0	10.1	15.1	15.1	101
October	207	9.2	207	-	-	-	-	100
November	185	8.2	185	-	-	-	-	92
December	195	8.6	191	20.5	5.2	25.6	20.6	94
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

**FIGURE 3.9**  
 Percentage of Births by Month of Birth, Singleton and Multiple Births



Note: See Table 3.12 for data.



# **SECTION FOUR**

## **PERINATAL CARE**

## INTRODUCTION

This section presents a detailed review of aspects of perinatal care for the mother and baby. Tables and figures are presented for a number of variables, including:

- type of antenatal care
- timing of first antenatal visit
- mother's antenatal and postnatal length of stay
- method of delivery
- mother's immunity to rubella
- infant's length of stay
- type of feeding.

For selected variables, the tables outline data for total births, live births and perinatal mortality rates, as well as presenting the number of maternities.

## TYPE OF ANTENATAL CARE

Table 4.1 presents type of antenatal care.

- The preferred choice of antenatal care was combined hospital and G.P., which accounted for 82.6 per cent of total maternities.
- Hospital/Obstetrician care was more common for maternities delivering multiple births (31.3 per cent) than those delivering singleton births (16.7 per cent).

**TABLE 4.1**

Type of Antenatal Care: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Hospital/Obstetrician	10,579	17.3	10,546	3.1	3.3	6.4	3.9	10,218
General Practitioner only	93	0.2	93	-	-	-	-	93
Hospital & G.P. combined	50,451	82.4	50,291	3.2	1.3	4.5	3.1	49,680
None	118	0.2	115	25.4	17.4	42.4	42.4	116
Not Stated	17	0.0	16	58.8	62.5	117.6	117.6	12
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
Hospital/Obstetrician	9,867	16.7	9,839	2.8	2.1	5.0	2.6	9,867
General Practitioner only	*	^	*	-	-	-	-	*
Hospital & G.P. combined	48,916	82.9	48,765	3.1	1.3	4.3	3.0	48,916
None	*	^	*	26.3	-	26.3	26.3	*
Not Stated	7	0.0	6	142.9	166.7	285.7	285.7	*
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
Hospital/Obstetrician	712	31.5	707	7.0	19.8	26.7	21.2	351
General Practitioner only	~	^	~	-	-	-	-	~
Hospital & G.P. combined	1,535	67.9	1,526	5.9	3.3	9.1	6.5	764
None	~	^	~	-	500.0	500.0	500.0	~
Not Stated	10	0.4	10	-	-	-	-	~
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

- Notes:
- Percentage column is subject to rounding.
  - ~ Denotes five or fewer births (or maternities) reported to NPRS.
  - \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
  - ^ Percentage not provided to prevent disclosure of small numbers.
  - a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Deliveries under hospital schemes (including domino, early transfer home, planned community midwives, and midwifery-led units) and domiciliary births were included in hospital and G.P. combined care.

## DURATION OF PREGNANCY AT FIRST ANTENATAL VISIT

Table 4.2 presents the time of first antenatal visit.

- The first antenatal visit was within the first 12 weeks of pregnancy for 64.1 per cent of total maternities.
- Maternities recording a first antenatal visit at 20 weeks and over accounted for 10.7 per cent of total maternities.

**TABLE 4.2**

Time of First Visit (weeks) to Doctor or Hospital during Pregnancy: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0-12	39,310	64.2	39,207	2.6	1.1	3.7	2.5	38,554
13-19	14,688	24.0	14,652	2.5	1.6	4.0	2.6	14,443
20 and over	6,513	10.6	6,492	3.2	4.3	7.5	4.3	6,427
Not Stated	747	1.2	710	49.5	15.5	64.3	52.8	695
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
0-12	37,810	64.1	37,715	2.5	1.0	3.5	2.3	37,810
13-19	14,201	24.1	14,166	2.5	1.3	3.7	2.4	14,201
20 and over	6,343	10.8	6,324	3.0	3.2	6.1	3.5	6,343
Not Stated	642	1.1	608	53.0	11.5	63.9	52.1	642
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
0-12	1,500	66.3	1,492	5.3	2.7	8.0	7.3	744
13-19	487	21.5	486	2.1	10.3	12.3	8.2	242
20 and over	170	7.5	168	11.8	47.6	58.8	36.1	84
Not Stated	105	4.6	102	28.6	39.2	66.7	57.7	53
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Although 82.4 per cent of total births were recorded as receiving combined antenatal care, the date of the first visit to the doctor was recorded as 'not known' for 39.2 per cent of these births. As a result of the absence of these data, the timing of first contact with health professionals within this category may reflect the date of the first hospital visit, even though this is likely to have been later than the first doctor visit. Consequently, caution should be exercised in interpreting the data presented here on the timing of the first visit to health services.

## ADVANCE HOSPITAL BOOKINGS

- Almost 99 per cent of total births had an advance hospital booking at time of admission to hospital (see Table 4.3).<sup>26</sup>

**TABLE 4.3**

Advance Hospital Bookings: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Booked	44,024	98.7	43,892	3.0	1.2	4.2	2.9	43,235
Not Booked	587	1.3	582	8.5	5.2	13.6	10.2	572
Not Stated	12	0.0	12	-	83.3	83.3	83.3	12
<b>Total</b>	<b>44,623</b>	<b>100</b>	<b>44,486</b>	<b>3.1</b>	<b>1.3</b>	<b>4.4</b>	<b>3.0</b>	<b>43,819</b>
<b>Singleton Births</b>								
Booked	42,454	98.7	42,328	3.0	1.1	4.0	2.8	42,454
Not Booked	557	1.3	552	9.0	5.4	14.4	10.8	557
Not Stated	12	0.0	12	-	83.3	83.3	83.3	12
<b>Total</b>	<b>43,023</b>	<b>100</b>	<b>42,892</b>	<b>3.0</b>	<b>1.1</b>	<b>4.2</b>	<b>2.9</b>	<b>43,023</b>
Booked	1,570	98.1	1,564	3.8	5.8	9.6	7.0	781
Not Booked	30	1.9	30	-	-	-	-	15
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>1,600</b>	<b>100</b>	<b>1,594</b>	<b>3.8</b>	<b>5.6</b>	<b>9.4</b>	<b>6.9</b>	<b>796</b>

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Domiciliary births, of which there were 189 in 2018, are excluded from this table. See Appendix H for detailed analysis.

<sup>26</sup> This table excludes two major hospitals in which there were known technical issues with the data on booked admissions. As it was not possible to accurately identify the booked status in these hospitals, they have been excluded from this table.

## MOTHER'S ANTENATAL LENGTH OF STAY

The average antenatal length of stay was less than one day (0.8 days) for singleton births and 2.3 days for multiple births.

Table 4.4 presents data on mother's antenatal length of stay.

- 87.8 per cent of singleton births and 76.7 per cent of multiple births were delivered within a day of mother's admission to hospital.
- For total births, 2.2 per cent were delivered more than 5 days after mother's admission to hospital.

**TABLE 4.4**

Mother's Antenatal Length of Stay: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0-1 Days	53,360	87.4	53,206	2.9	1.3	4.2	2.8	52,488
2 Days	4,062	6.7	4,038	5.9	1.2	7.1	4.0	3,996
3-5 Days	1,981	3.2	1,967	7.1	4.6	11.6	10.1	1,907
6-8 Days	501	0.8	500	2.0	10.0	12.0	12.0	466
9-11 Days	223	0.4	222	4.5	9.0	13.5	13.5	207
12-14 Days	169	0.3	169	-	5.9	5.9	5.9	152
More than 2 Weeks	431	0.7	428	7.0	14.0	20.9	14.0	381
Not Stated	342	0.6	342	-	20.5	20.5	11.8	333
<b>Total</b>	<b>61,069</b>	<b>100</b>	<b>60,872</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>59,930</b>
<b>Singleton Births</b>								
0-1 Days	51,625	87.8	51,481	2.8	1.1	3.9	2.6	51,625
2 Days	3,929	6.7	3,906	5.9	1.3	7.1	3.8	3,929
3-5 Days	1,831	3.1	1,818	7.1	3.9	10.9	9.3	1,831
6-8 Days	433	0.7	432	2.3	4.6	6.9	6.9	433
9-11 Days	192	0.3	192	-	10.4	10.4	10.4	192
12-14 Days	137	0.2	137	-	7.3	7.3	7.3	137
More than 2 Weeks	337	0.6	335	5.9	11.9	17.8	11.9	337
Not Stated	323	0.5	323	-	18.6	18.6	9.4	323
<b>Total</b>	<b>58,807</b>	<b>100</b>	<b>58,624</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,807</b>
<b>Multiple Births</b>								
0-1 Days	1,735	76.7	1,725	5.8	7.5	13.3	9.3	863
2 Days	133	5.9	132	7.5	-	7.5	7.5	67
3-5 Days	150	6.6	149	6.7	13.4	20.0	20.0	76
6-8 Days	68	3.0	68	-	44.1	44.1	44.1	33
9-11 Days	31	1.4	30	32.3	-	32.3	32.3	15
12-14 Days	32	1.4	32	-	-	-	-	15
More than 2 Weeks	94	4.2	93	10.6	21.5	31.9	21.5	44
Not Stated	19	0.8	19	-	52.6	52.6	52.6	10
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Domiciliary births, of which there were 189 in 2018, are excluded from this table. See Appendix H for detailed analysis.

## MOTHER'S POSTNATAL LENGTH OF STAY

Maternal postnatal length of stay can be influenced by factors such as method of delivery, post-delivery complications, neonatal mortality, and hospital discharge policies. Average maternal postnatal lengths of stay for singleton and multiple births were 2.6 days and 4.2 days respectively.

Table 4.5 presents data on mother's postnatal length of stay.

- 52.2 per cent of maternities delivering singleton births remained in hospital for up to 2 days following delivery, compared to 11.3 per cent of maternities delivering multiple births.
- For total maternities, 44.6 per cent of singleton births and 72.7 per cent of multiple births were discharged 3 to 5 days post delivery.
- 2.8 per cent of total maternities had a postnatal length of stay of 6 or more days (2.6 per cent of singleton births and 15.1 per cent of multiple births).

**TABLE 4.5**

Mother's Postnatal Length of Stay: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0-1 Days	12,763	20.9	12,684	6.2	2.0	8.1	5.4	12,742
2 Days	18,169	29.8	18,119	2.8	1.2	3.9	2.6	18,061
3-5 Days	27,883	45.7	27,826	2.0	1.3	3.3	2.4	27,063
6-8 Days	1,571	2.6	1,564	4.5	9.6	14.0	7.7	1,414
9-11 Days	195	0.3	194	5.1	-	5.1	5.1	176
12-14 Days	46	0.1	44	43.5	-	43.5	43.5	41
More than 2 Weeks	40	0.1	40	-	-	-	-	40
Not Stated	402	0.7	401	2.5	17.5	19.9	15.0	393
<b>Total</b>	<b>61,069</b>	<b>100</b>	<b>60,872</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>59,930</b>
<b>Singleton Births</b>								
0-1 Days	12,720	21.6	12,642	6.1	1.9	8.0	5.3	12,720
2 Days	17,956	30.5	17,908	2.7	1.1	3.7	2.5	17,956
3-5 Days	26,247	44.6	26,197	1.9	1.0	2.9	2.0	26,247
6-8 Days	1,268	2.2	1,262	4.7	7.1	11.8	6.3	1,268
9-11 Days	156	0.3	156	-	-	-	-	*
12-14 Days	37	0.1	37	-	-	-	-	*
More than 2 Weeks	40	0.1	40	-	-	-	-	40
Not Stated	383	0.7	382	2.6	15.7	18.3	13.1	383
<b>Total</b>	<b>58,807</b>	<b>100</b>	<b>58,624</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,807</b>
<b>Multiple Births</b>								
0-1 Days	43	1.9	42	23.3	23.8	46.5	46.5	22
2 Days	213	9.4	211	9.4	9.5	18.8	14.2	105
3-5 Days	1,636	72.3	1,629	4.3	6.8	11.0	8.6	816
6-8 Days	303	13.4	302	3.3	19.9	23.1	13.3	146
9-11 Days	39	1.7	38	25.6	-	25.6	25.6	*
12-14 Days	9	0.4	7	222.2	-	222.2	222.2	~
More than 2 Weeks	0	0.0	0	-	-	-	-	0
Not Stated	19	0.8	19	0.0	52.6	52.6	52.6	10
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

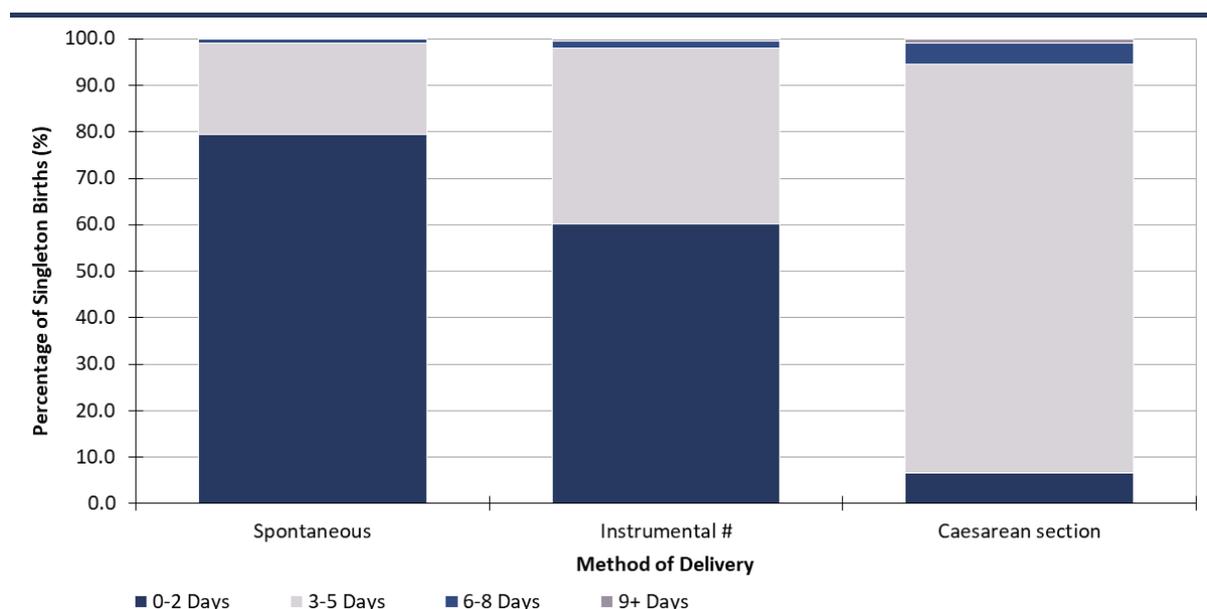
**Notes:**

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Domiciliary births, of which there were 189 in 2018, are excluded from this table. See Appendix H for detailed analysis.

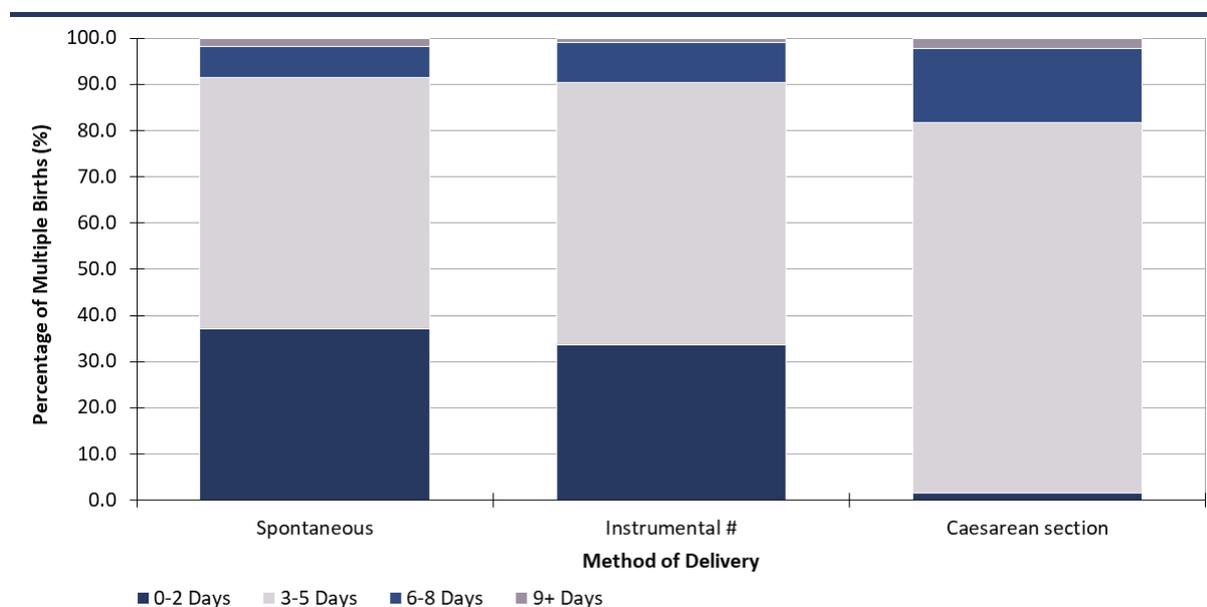
Figures 4.1 and 4.2 present data on mother’s postnatal length of stay by method of delivery for singleton and multiple births.

- The postnatal length of stay for mothers differed by method of delivery and plurality.
- Mother's postnatal length of stay was 2 days or less for 79.4 per cent of singleton spontaneous deliveries compared to 37.1 per cent of multiple spontaneous deliveries.
- For Caesarean section deliveries, mother's postnatal length of stay was greater than 6 days for 5.4 per cent of singleton deliveries compared to 18.4 per cent for multiple deliveries.

**FIGURE 4.1**  
Mother's Postnatal Length of Stay by Method of Delivery, Singleton Births



**FIGURE 4.2**  
Mother's Postnatal Length of Stay by Method of Delivery, Multiple Births



Notes: See Appendix G, Table G9 for data.  
# Instrumental delivery includes breech/forceps, forceps or vacuum extraction.

## RUBELLA: IMMUNE STATUS OF MOTHER

The rubella immune status of the mother is presented in Table 4.6, 89.7 per cent of total maternities were rubella immune.<sup>27,28</sup>

**TABLE 4.6**

Rubella: Immune Status of Mother, Numbers and Percentages

Rubella Immunity	Number of Maternities	Per Cent
<b>Total Births</b>		
Immune	39,485	89.7
Not Immune	3,642	8.3
Not known	881	2.0
<b>Total</b>	<b>44,008</b>	<b>100</b>
<b>Singleton Births</b>		
Immune	38,758	89.7
Not Immune	3,584	8.3
Not known	870	2.0
<b>Total</b>	<b>43,212</b>	<b>100</b>
<b>Multiple Births</b>		
Immune	727	91.3
Not Immune	58	7.3
Not known	11	1.4
<b>Total</b>	<b>796</b>	<b>100</b>

Note: Percentage column is subject to rounding.

## METHOD OF DELIVERY<sup>29</sup>

### METHOD OF DELIVERY BY BIRTHS AND PLURALITY

Table 4.7a and Figure 4.3 present data on method of delivery for total births.

- There were 20,954 live births delivered by Caesarean section, representing 34.3 per cent of total live births (32.9 per cent of live singleton births, and 71.0 per cent of live multiple births).
- 51.3 per cent of total live births delivered spontaneously (52.5 per cent of live singleton births and 19.2 per cent of live multiple births).
- Just over 14 per cent of total live births were born by instrumental delivery (either breech/forceps, forceps or vacuum extraction) with higher percentages for live singleton births (14.4 per cent) compared with live multiple births (8.9 per cent).

<sup>27</sup> For further discussion and analysis on this issue see O'Dwyer V, Bonham S, Mulligan A, O'Connor C, Farah N, Kennelly MM, Turner MJ. *Antenatal rubella immunity in Ireland*. IMJ 2013;106:232-5

<sup>28</sup> This table excludes two major hospitals in which there were known technical issues with the data on the immune status of the mother. As it was not possible to accurately identify the rubella status in these hospitals, they have been excluded from this table.

<sup>29</sup> Throughout this section, method of delivery recorded as 'other specified & combined' are not presented in the figures displaying data on method of delivery.

TABLE 4.7a

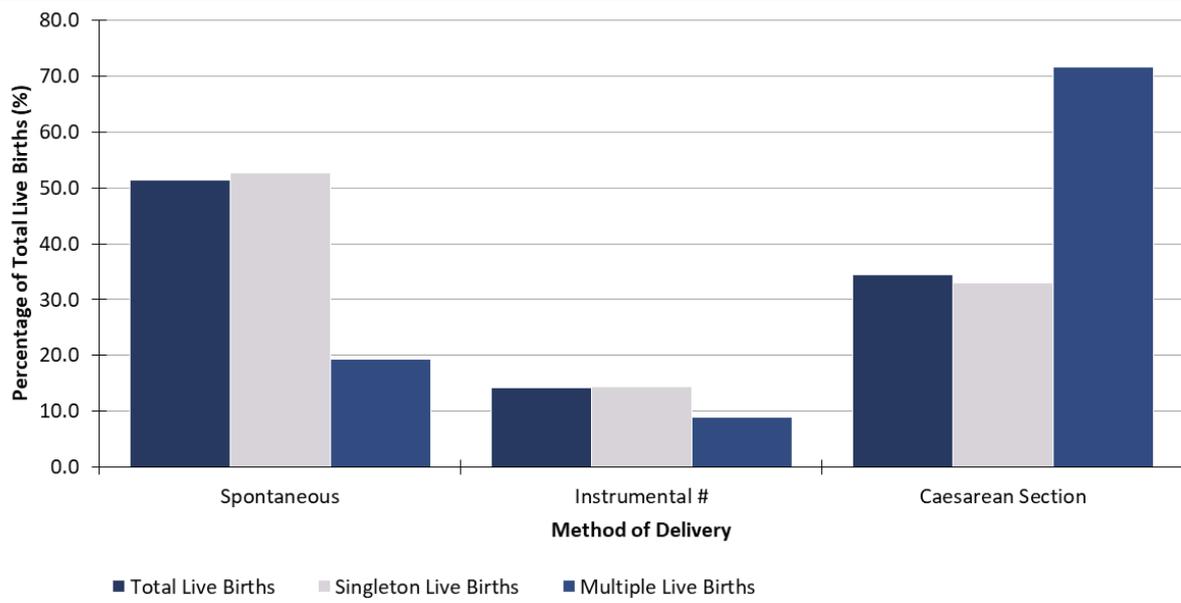
Method of Delivery: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Spontaneous	31,462	51.4	31,323	4.4	1.2	5.6	4.1	31,258
Breech / Forceps	283	0.5	262	74.2	19.1	91.9	51.7	224
Forceps	1,853	3.0	1,853	-	-	-	-	1,838
Vacuum extraction	6,531	10.7	6,531	-	0.5	0.5	-	6,495
Caesarean section	20,990	34.3	20,954	1.7	2.7	4.4	2.8	20,176
Other specified & combined <sup>b</sup>	89	0.1	89	-	-	-	-	86
Not Stated	50	0.1	49	20.0	20.4	40.0	40.0	42
<b>Total</b>	<b>61,258</b>	<b>100</b>	<b>61,061</b>	<b>3.2</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>	<b>60,119</b>
<b>Singleton Births</b>								
Spontaneous	31,027	52.6	30,891	4.4	1.0	5.4	3.8	31,027
Breech / Forceps	201	0.3	180	104.5	22.2	124.4	73.7	201
Forceps	1,824	3.1	1,824	-	-	-	-	1,824
Vacuum extraction	6,443	10.9	6,443	-	0.5	0.5	-	6,443
Caesarean section	19,384	32.9	19,358	1.3	2.3	3.6	2.2	19,384
Other specified & combined <sup>b</sup>	83	0.1	83	-	-	-	-	*
Not Stated	34	0.1	34	-	29.4	29.4	29.4	*
<b>Total</b>	<b>58,996</b>	<b>100</b>	<b>58,813</b>	<b>3.1</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>	<b>58,996</b>
<b>Multiple Births</b>								
Spontaneous	435	19.2	432	6.9	16.2	23.0	23.0	231
Breech / Forceps	82	3.6	82	0.0	12.2	12.2	-	23
Forceps	29	1.3	29	0.0	-	-	-	14
Vacuum extraction	88	3.9	88	0.0	-	0.0	-	52
Caesarean section	1,606	71.0	1,596	6.2	8.1	14.3	10.0	792
Other specified & combined <sup>b</sup>	6	0.3	6	-	-	-	-	~
Not Stated	16	0.7	15	62.5	-	62.5	62.5	*
<b>Total</b>	<b>2,262</b>	<b>100</b>	<b>2,248</b>	<b>6.2</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>	<b>1,123</b>

## Notes:

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.
- b The Other specified & combined category includes, for example, a combination of spontaneous delivery followed by a vacuum extraction or caesarean section.

**FIGURE 4.3**  
Percentage Distribution of Total Live Births by Method of Delivery



*Notes:* See Table 4.7a for data.  
The percentages in this figure exclude 'Other specified & combined' and 'Not Stated' method of delivery and may differ slightly from the percentages in the corresponding table.  
# Instrumental delivery includes breech/forceps, forceps or vacuum extraction.

**METHOD OF DELIVERY BY MATERNAL AGE**

Table 4.7b presents method of delivery by maternal age.

- The percentage of babies delivered spontaneously declined with maternal age and was reported at 60.8 per cent for mothers aged less than 20 years compared to 39.1 per cent to mothers aged 40 years and over.
- Caesarean section rates ranged from 19.6 per cent for mothers aged less than 20 years to 50.1 per cent for mothers aged 40 years and over (see Figure 4.4).

**TABLE 4.7b**

Method of Delivery by Maternal Age

Frequency Col. Per Cent	Age of Mother						Total
	Under 20 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40 Years and Over	
Spontaneous	587 60.8	2,981 58.9	5,806 55.4	10,680 50.9	9,578 50.2	1,827 39.1	31,459 51.4
Breech/Forceps	~ ^	25 0.5	54 0.5	108 0.5	72 0.4	* ^	283 0.5
Forceps	35 3.6	159 3.1	349 3.3	721 3.4	506 2.6	83 1.8	1,853 3.0
Vacuum extraction	147 15.2	620 12.3	1,237 11.8	2,469 11.8	1,668 8.7	390 8.4	6,531 10.7
Caesarean section	189 19.6	1,258 24.9	3,014 28.7	6,956 33.2	7,232 37.9	2,341 50.1	20,990 34.3
Other specified & combined <sup>a</sup>	~ ^	* ^	* ^	25 0.1	22 0.1	~ ^	89 0.1
Not stated	0 0.0	~ ^	~ ^	16 0.1	19 0.1	6 0.1	49 0.1
<b>Total</b>	<b>965</b> <b>100</b>	<b>5,059</b> <b>100</b>	<b>10,488</b> <b>100</b>	<b>20,975</b> <b>100</b>	<b>19,097</b> <b>100</b>	<b>4,670</b> <b>100</b>	<b>61,254</b> <b>100</b>

Notes: Percentage columns are subject to rounding.

~ Denotes five or fewer births (or maternities) reported to NPRS.

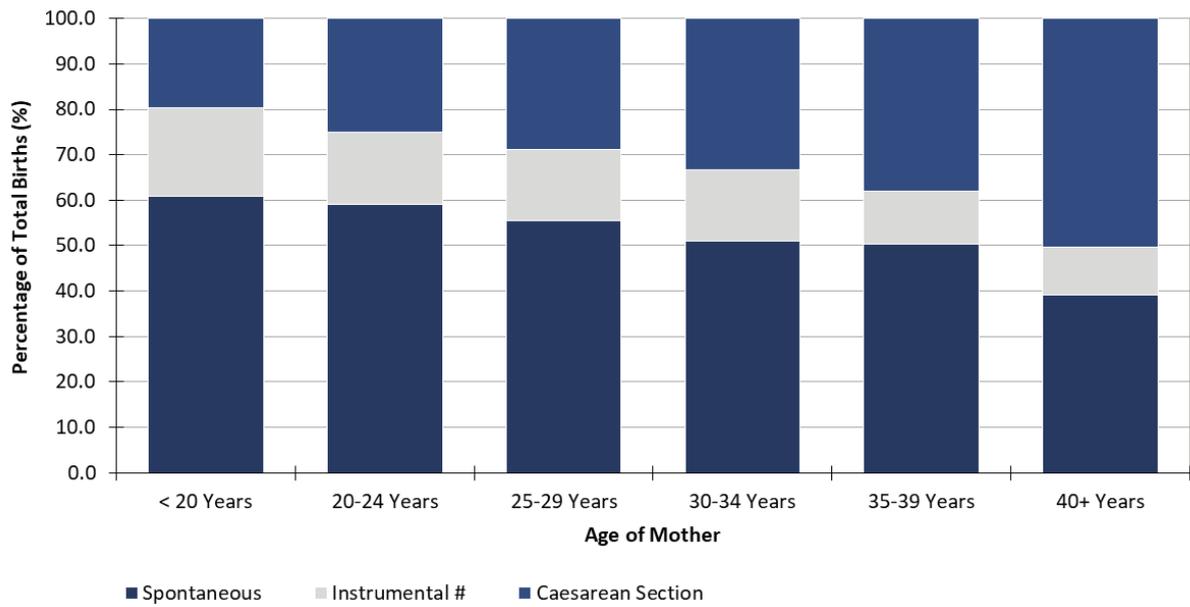
\* Further suppression required to prevent disclosure of five or fewer births (or maternities).

^ Percentage not provided to prevent disclosure of small numbers.

There were five or fewer births to mothers with unknown maternal age; these were excluded from this table.

a The Other specified & combined category includes, for example, a combination of spontaneous delivery followed by a vacuum extraction or caesarean section.

**FIGURE 4.4**  
Percentage of Total Births by Method of Delivery and Age of Mother



Notes: See Table 4.7b for data.  
The percentages in this figure exclude 'Other specified & combined' and 'Not Stated' method of delivery and may differ slightly from the percentages in the corresponding table.  
# Instrumental delivery includes breech/forceps, forceps or vacuum extraction.

## DISTRIBUTION OF BIRTHS BY SIZE OF MATERNITY UNIT

Analysis of births by size of maternity unit is based on births registered by either maternity hospitals or hospitals with dedicated maternity units. Table 4.8 presents data on the size of maternity units.

- Over a quarter (28.5 per cent) of total births took place in 11 maternity units accommodating between 1,000 and 1,999 births each annually.
- Two maternity units each accommodated 8,000 or more births, accounting for 27.6 per cent of total births (see Figure 4.5).

**TABLE 4.8**

Size of Maternity Unit (Number of Live Births and Stillbirths Annually) by Number of Units: Total Births, Live Births, Stillbirths, Early Neonatal Deaths and Mortality Rates

	Number of Units <sup>#</sup>	Total Births	Total Births %	Live Births	Stillbirths	Stillbirth Rate <sup>a</sup>	Early Neonatal Deaths	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>
Less than 999	1	969	1.6	*	~	^	0	-	^	^
1000-1999	11	17,381	28.5	17,316	65	3.7	16	0.9	4.7	3.2
2000-2999	1	2,858	4.7	2,850	8	2.8	~	^	3.5	2.1
3000-3999	1	3,070	5.0	3,063	7	2.3	~	^	2.9	2.3
4000-4999	1	4,436	7.3	*	*	^	12	2.7	4.1	2.9
7000-7999	2	15,511	25.4	15,450	61	3.9	33	2.1	6.1	4.1
8000 and Over	2	16,844	27.6	16,797	47	2.8	39	2.3	5.1	3.3
<b>Total</b>	<b>19</b>	<b>61,069</b>	<b>100</b>	<b>60,872</b>	<b>197</b>	<b>3.2</b>	<b>104</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>

*Notes:*

Percentage column is subject to rounding.

~ Denotes five or fewer births (or maternities) reported to NPRS.

\* Further suppression required to prevent disclosure of five or fewer births (or maternities).

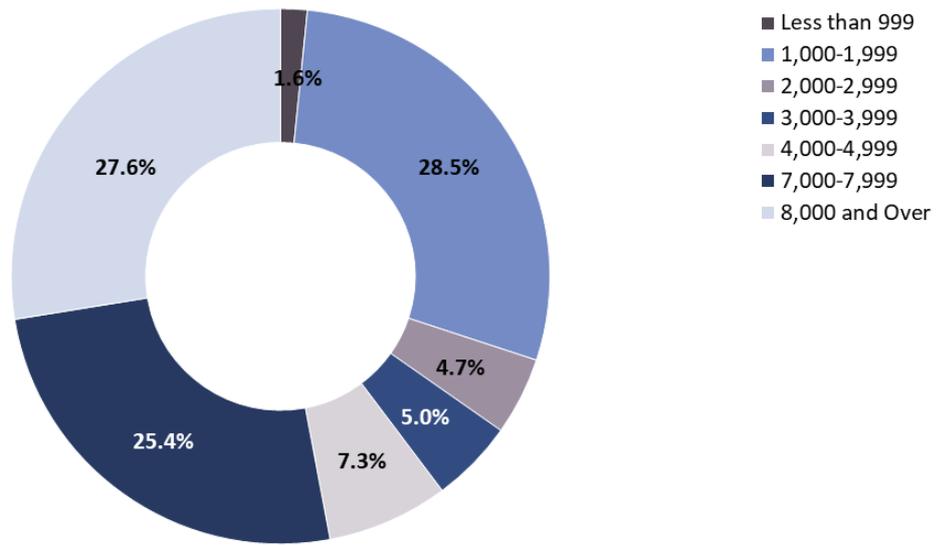
^ Rate not provided to prevent disclosure of small numbers.

a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

# This table is based on the 19 maternity units reporting to NPRS. No unit delivered between 5,000 and 6,999 births. Domiciliary births, of which there were 189 in 2018, are excluded from this table. See Appendix H for detailed analysis.

**FIGURE 4.5**

Percentage Distribution of Births by Size of Maternity Unit, Total Births



Notes: See Table 4.8 for data. The size of the maternity unit refers to the number of live births and stillbirths occurring in 2018.

## INTER-HOSPITAL TRANSFER OF INFANTS

Table 4.9 presents data on inter-hospital transfer of infants.

- Over 99 per cent of infants remained in the hospital in which they were born until they were discharged.
- 3.5 per cent of multiple births were transferred to another hospital for medical reasons.

**TABLE 4.9**

Inter-Hospital Transfer of Infants

	Live Births	Per Cent Live Births
<b>Total Births</b>		
Transferred	526	0.9
Not Transferred	60,301	99.1
Not Stated	45	0.1
<b>Total</b>	<b>60,872</b>	<b>100</b>
<b>Singleton Births</b>		
Transferred	448	0.8
Not Transferred	58,131	99.2
Not Stated	45	0.1
<b>Total</b>	<b>58,624</b>	<b>100</b>
<b>Multiple Births</b>		
Transferred	78	3.5
Not Transferred	2,170	96.5
Not Stated	0	0.0
<b>Total</b>	<b>2,248</b>	<b>100</b>

Notes: Percentage column is subject to rounding.  
Domiciliary births, of which there were 189 in 2018, are excluded from this table. See Appendix H for detailed analysis.

## INFANT'S LENGTH OF STAY

The mean length of stay for infants was 3.3 days. When analysed by birth weight, low birthweight babies (weighing less than 2,500 grams) recorded a mean length of stay of 14.1 days, while babies weighing 2,500 grams and over reported a mean length of stay of 2.7 days. Preterm births (born before 37 weeks) reported a mean length of stay of 12.8 days while babies born at term reported a mean length of stay of 2.7 days. Over 95 per cent of infants were discharged home within the perinatal period (before the 7<sup>th</sup> day of life).

Table 4.10 and Figure 4.6 present data relating to infant's length of stay in hospital.

- Over half (51.9 per cent) of singleton live births were discharged from hospital within 2 days, compared to just 10.7 per cent of multiple live births.
- Almost 95 per cent of singleton live births were discharged from hospital within 5 days of birth, compared to 63.4 per cent of multiple live births.
- 6.2 per cent of total live births had a length of stay of 6 or more days (5.0 per cent for singleton live births compared to 36.5 per cent for multiple births).

**TABLE 4.10**

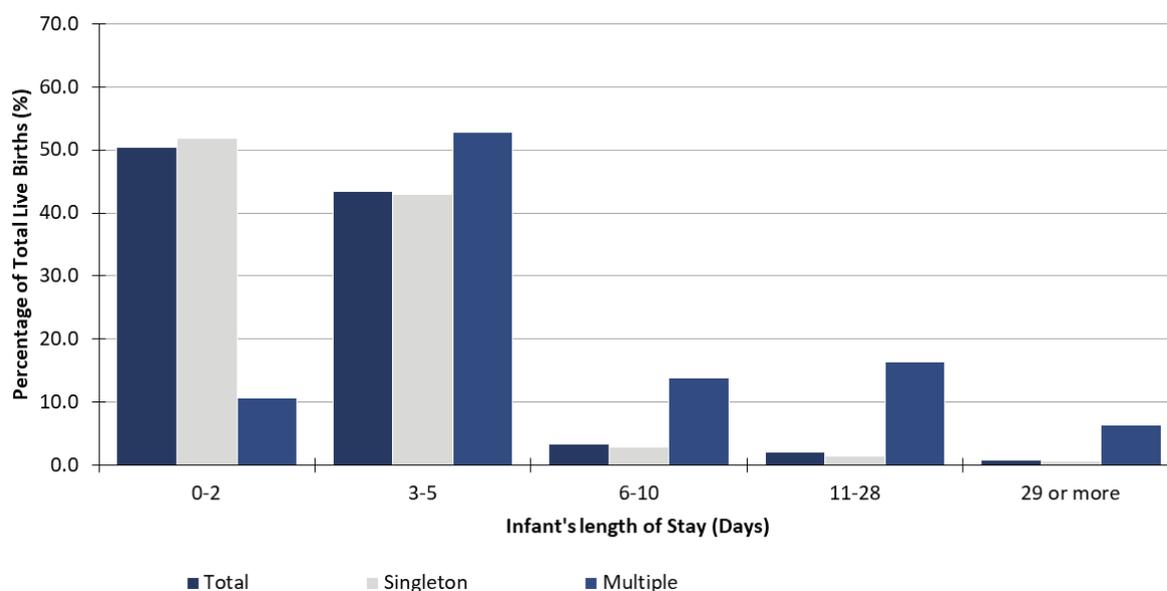
Infant's Length of Stay (days) in Hospital, Live Births

	Live Births	Per Cent Live Births
<b>Total Births</b>		
0-2 Days	30,611	50.4
3-5 Days	26,337	43.3
6-10 Days	2,020	3.3
11-28 Days	1,238	2.0
29 Days or more	490	0.8
Not Stated	72	0.1
<b>Total</b>	<b>60,768</b>	<b>100</b>
<b>Singleton Births</b>		
0-2 Days	30,373	51.9
3-5 Days	25,163	43.0
6-10 Days	1,711	2.9
11-28 Days	875	1.5
29 Days or more	*	^
Not Stated	*	^
<b>Total</b>	<b>58,541</b>	<b>100</b>
<b>Multiple Births</b>		
0-2 Days	238	10.7
3-5 Days	1,174	52.7
6-10 Days	309	13.9
11-28 Days	363	16.3
29 Days or more	*	^
Not Stated	~	^
<b>Total</b>	<b>2,227</b>	<b>100</b>

**Notes:**

- Percentage column is subject to rounding.
  - ~ Denotes five or fewer births (or maternities) reported to NPRS.
  - \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
  - ^ Percentage not provided to prevent disclosure of small numbers.
- This table does not include domiciliary births and early neonatal deaths.

**FIGURE 4.6**  
Percentage Distribution of Total Live Births by Infant's Length of Stay



*Note:* See Table 4.10 for data.  
The percentages in this figure exclude 'Not Stated' and may differ slightly from the percentages in the corresponding table.

## INFANT'S TYPE OF FEEDING

Type of feeding is recorded at the time of discharge from hospital or by midwife attending a domiciliary birth. The presentation of type of feeding in this report is based on live births only and excludes early neonatal deaths.

Table 4.11 and Figure 4.7 present type of feeding by age of mother.<sup>30</sup>

- At 47.0 per cent, a higher proportion of total births were breastfed compared to 39.4 per cent reporting artificial feeding.
- Artificial feeding was more common for multiple births (45.0 per cent) compared to singleton births (39.2 per cent), while breastfeeding was more common for singleton births (47.7 per cent for singleton births compared to 28.1 per cent for multiple births).
- Breastfeeding rates increased with mothers age up to the 35 to 39 year age group, after which the rate declined. Mothers in the 35 to 39 year age group reported the highest breastfeeding rate at 53.4 per cent.
- Just over one-fifth (21.7 per cent) of infants born to mothers aged under 20 years were exclusively breastfed.

<sup>30</sup> Throughout this section, discussion of breastfeeding refers to exclusive breastfeeding only.

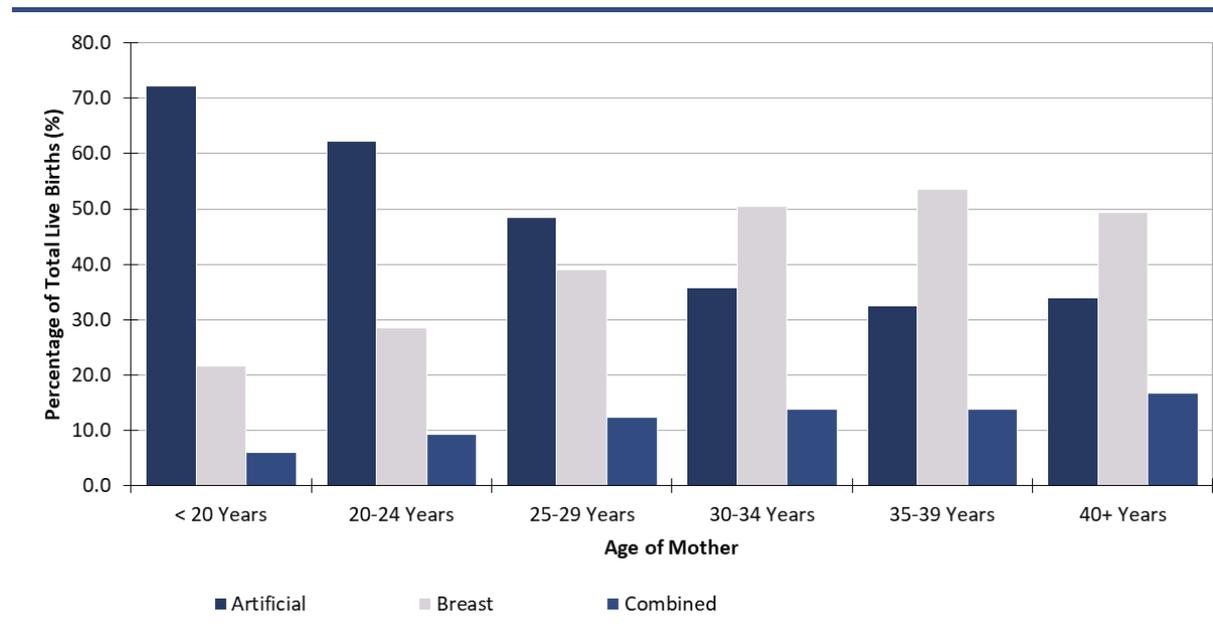
**TABLE 4.11**  
Age of Mother by Infant's Type of Feeding, Numbers and Percentages, Total Live Births

Frequency Row Per Cent Col. Per Cent	Type of Feeding														
	Total Births					Singleton Births					Multiple Births				
	Artificial	Breast	Combined	Not Stated	Total	Artificial	Breast	Combined	Not Stated	Total	Artificial	Breast	Combined	Not Stated	Total
Under 20 Years	688	207	*	~	955	679	207	*	~	944	*	0	~	0	11
	72.0	21.7	^	^	100.0	71.9	21.9	^	^	100.0	^	0.0	^	0.0	100.0
	2.9	0.7	^	^	1.6	2.9	0.7	^	^	1.6	^	0.0	^	0.0	0.5
20-24 Years	3,124	1,429	466	17	5,036	3,066	1,408	450	13	4,937	58	21	*	~	99
	62.0	28.4	9.3	0.3	100.0	62.1	28.5	9.1	0.3	100.0	58.6	21.2	^	^	100.0
	13.0	5.0	5.8	8.0	8.3	13.3	5.0	6.0	8.3	8.4	5.8	3.4	^	^	4.4
25-29 Years	5,048	4,062	1,297	36	10,443	4,897	4,008	1,258	30	10,193	151	54	39	6	250
	48.3	38.9	12.4	0.3	100.0	48.0	39.3	12.3	0.3	100.0	60.4	21.6	15.6	2.4	100.0
	21.0	14.2	16.0	17.0	17.1	21.3	14.3	16.7	19.1	17.4	15.1	8.6	7.2	10.9	11.2
30-34 Years	7,441	10,498	2,865	78	20,882	7,150	10,303	2,682	59	20,194	291	195	183	19	688
	35.6	50.3	13.7	0.4	100.0	35.4	51.0	13.3	0.3	100.0	42.3	28.3	26.6	2.8	100.0
	31.0	36.7	35.4	36.8	34.3	31.0	36.8	35.6	37.6	34.4	29.0	31.2	33.6	34.5	30.9
35-39 Years	6,165	10,154	2,632	51	19,002	5,809	9,889	2,419	42	18,159	356	265	213	9	843
	32.4	53.4	13.9	0.3	100.0	32.0	54.5	13.3	0.2	100.0	42.2	31.4	25.3	1.1	100.0
	25.7	35.5	32.6	24.1	31.2	25.2	35.3	32.1	26.8	30.9	35.5	42.4	39.1	16.4	37.9
40-44 Years	1,450	2,153	700	24	4,327	1,334	2,076	*	*	4,043	116	77	78	13	284
	33.5	49.8	16.2	0.6	100.0	33.0	51.3	^	^	100.0	40.8	27.1	27.5	4.6	100.0
	6.0	7.5	8.7	11.3	7.1	5.8	7.4	^	^	6.9	11.6	12.3	14.3	23.6	12.8
45 Years and Over	117	121	*	~	310	96	108	54	0	258	*	13	14	~	52
	37.7	39.0	^	^	100.0	37.2	41.9	20.9	0.0	100.0	^	25.0	26.9	^	100.0
	0.5	0.4	^	^	0.5	0.4	0.4	0.7	0.0	0.4	^	2.1	2.6	^	2.3
<b>Total</b>	<b>24,033</b>	<b>28,624</b>	<b>8,086</b>	<b>212</b>	<b>60,955</b>	<b>23,031</b>	<b>27,999</b>	<b>7,541</b>	<b>157</b>	<b>58,728</b>	<b>1,002</b>	<b>625</b>	<b>545</b>	<b>55</b>	<b>2,227</b>
	<b>39.4</b>	<b>47.0</b>	<b>13.3</b>	<b>0.3</b>	<b>100.0</b>	<b>39.2</b>	<b>47.7</b>	<b>12.8</b>	<b>0.3</b>	<b>100.0</b>	<b>45.0</b>	<b>28.1</b>	<b>24.5</b>	<b>2.5</b>	<b>100.0</b>
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Notes: Percentage rows and columns are subject to rounding.  
 ~ Denotes five or fewer births (or maternities) reported to NPRS.  
 \* Further suppression required to prevent disclosure of five or fewer births (or maternities).  
 ^ Percentage not provided to prevent disclosure of small numbers.  
 This table excludes early neonatal deaths.  
 There were five or fewer births to mothers with unknown maternal age; these were excluded from this table.

**FIGURE 4.7**

Percentage Distribution of Infant's Type of Feeding by Age of Mother, Total Live Births



Note: See Table 4.11 for data.

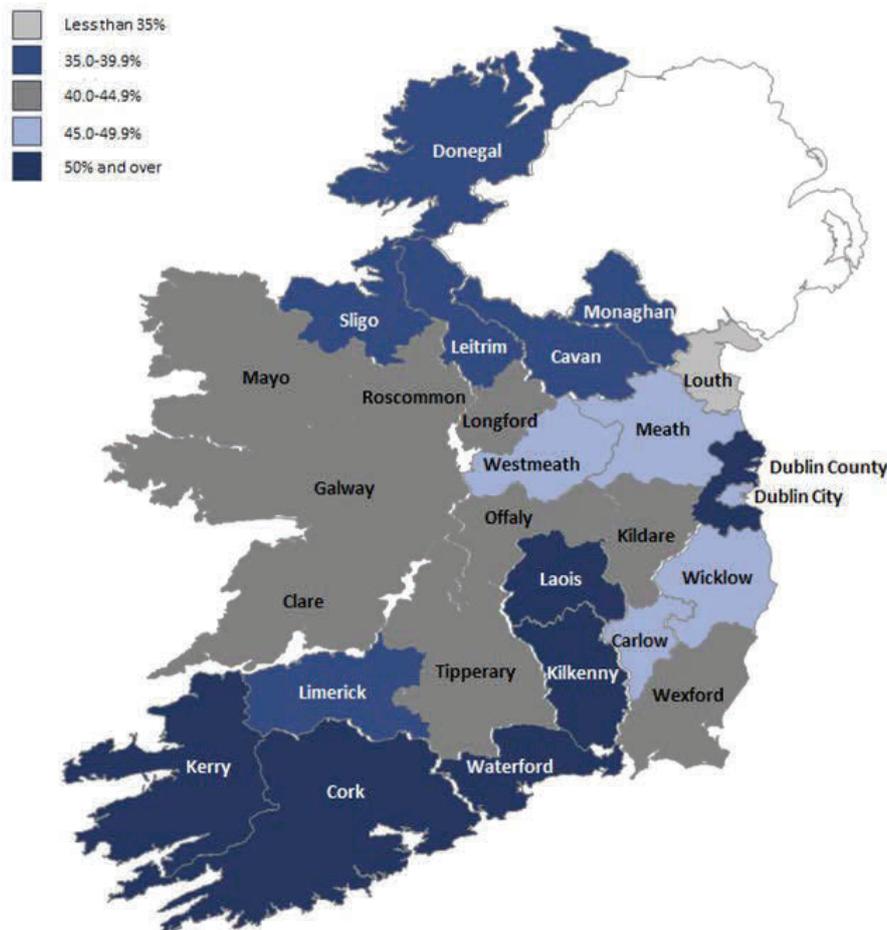
The percentages in this figure exclude 'Not Stated' and may differ slightly from the percentages in the corresponding table.

Figure 4.8 presents the rate of exclusive breastfeeding by geographic location.

- Infants born to mothers resident in Cork recorded the highest rate of breastfeeding at 63.2 per cent, with Kilkenny and Kerry reporting rates at 59.9 per cent and 57.5 per cent respectively.
- Other counties reporting exclusive breastfeeding rates higher than the national rate of 47.1 per cent include Waterford, Laois, Dublin County, Wicklow and Westmeath.

**FIGURE 4.8**

Percentage Distribution of Exclusively Breastfed Infants by Mother's County of Residence, Total Live Births



Notes: See Appendix G, Table G10 for data.

Example: Of all live births to mothers resident in Westmeath, 47.2 per cent were breastfed.

Table 4.12 and Figure 4.9 present data on type of feeding by mother's socio-economic group.

- Breastfeeding was most common among mothers in 'higher professional' (64.3 per cent) and 'skilled manual workers' (60.6 per cent) socio-economic groups. Breastfeeding was least common among 'unemployed' mothers (27.8 per cent).
- Artificial feeding was most common among 'unemployed' mothers with a rate of 62.4 per cent, and mothers whose socio-economic group was recorded as 'home duties' (50.5 per cent).

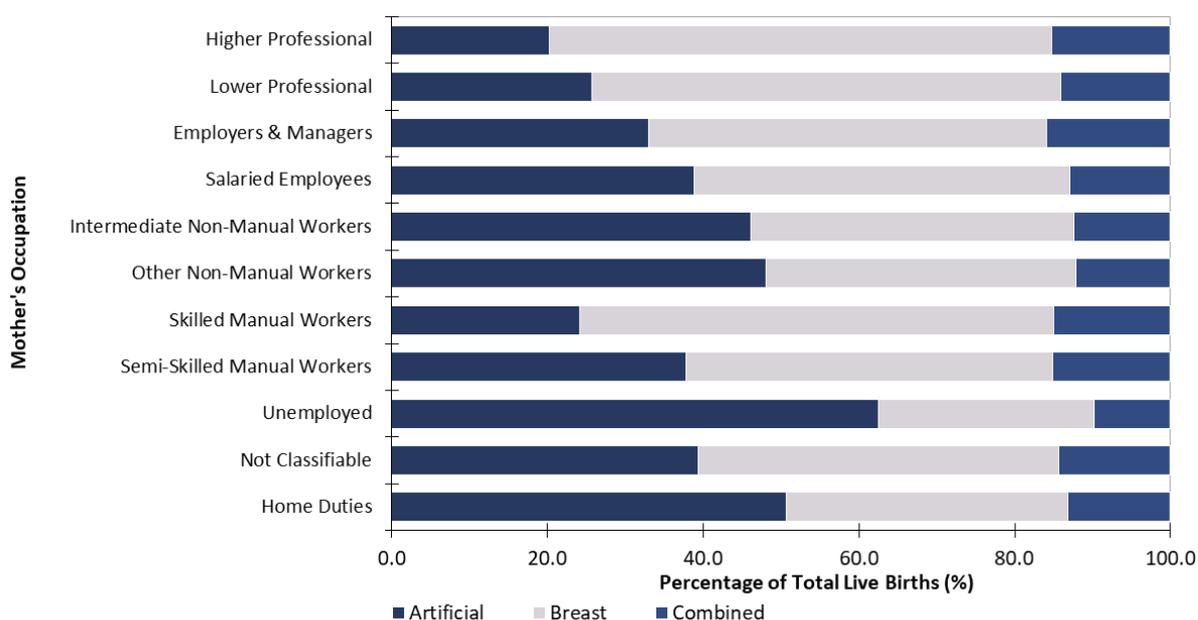
**TABLE 4.12**  
**Mother's Socio-economic Group by Infant's Type of Feeding, Total Live Births**

Frequency Row Per Cent	Type of Feeding				Total
	Artificial	Breast	Combined	Not Stated	
Farmers & Farm Managers	24 30.8	43 55.1	11 14.1	0 0.0	78 100
Other Agricultural Occupations &	34 34.3	52 52.5	13 13.1	0 0.0	99 100
Higher Professional	954 20.1	3,049 64.3	721 15.2	21 0.4	4,745 100.0
Lower Professional	3,289 25.6	7,716 60.0	1,801 14.0	44 0.3	12,850 100
Employers & Managers	1,482 32.8	2,305 51.1	714 15.8	14 0.3	4,515 100
Salaried Employees	258 38.7	320 48.0	* ^	~ ^	667 100
Intermediate Non-Manual Workers	4,914 46.0	4,410 41.3	1,318 12.3	38 0.4	10,680 100
Other Non-Manual Workers	4,187 47.9	3,479 39.8	1,057 12.1	26 0.3	8,749 100
Skilled Manual Workers	183 24.1	460 60.6	* ^	~ ^	759 100
Semi-Skilled Manual Workers	* ^	704 46.9	227 15.1	~ ^	1,500 100
Unskilled Manual Workers	* ^	11 47.8	~ ^	0 0.0	23 100
Unemployed	1,856 62.4	825 27.8	291 9.8	0 0.0	2,972 100
Not Classifiable	830 39.3	975 46.2	* ^	~ ^	2,110 100
Home Duties	4,928 50.5	3,504 35.9	1,283 13.1	47 0.5	9,762 100
Not Stated	518 35.8	773 53.4	147 10.2	10 0.7	1,448 100
<b>Total</b>	<b>24,033</b> <b>39.4</b>	<b>28,626</b> <b>47.0</b>	<b>8,086</b> <b>13.3</b>	<b>212</b> <b>0.3</b>	<b>60,957</b> <b>100</b>

Notes: Percentage rows are subject to rounding.  
~ Denotes five or fewer births (or maternities) reported to NPRS.  
\* Further suppression required to prevent disclosure of five or fewer births (or maternities).  
^ Percentage not provided to prevent disclosure of small numbers.  
This table excludes early neonatal deaths.

FIGURE 4.9

Percentage Distribution of Infant's Type of Feeding by Mother's Socio-economic Group, Total Live Births



Notes: See Table 4.12 for data.

Categories where percentages would be based on <100 births are not included.

The percentages in this figure exclude 'Not Stated' and may differ slightly from the percentages in the corresponding table.

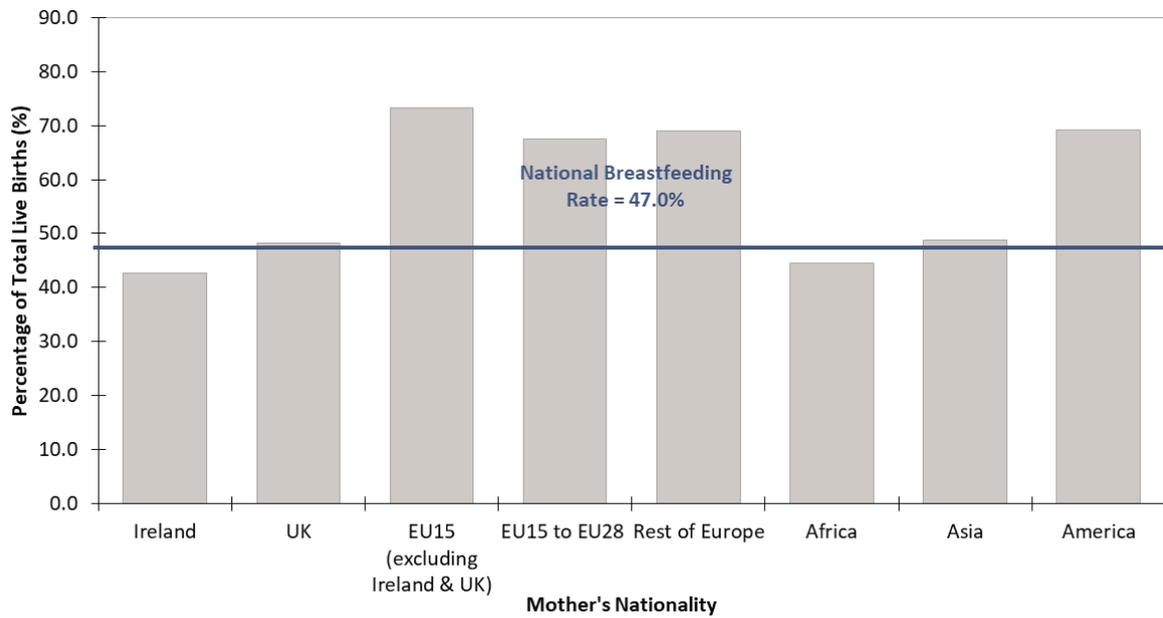
Figure 4.10 presents the rate of exclusive breastfeeding by mother's nationality.<sup>31</sup>

- At 42.7 per cent, births to mothers from Ireland recorded the lowest proportion of breastfeeding, while births to mothers from the EU15 (excluding Ireland and UK) reported the highest proportion of breastfeeding at 73.3 per cent.
- Births to mothers from EU15 to EU28 and the Rest of Europe each record breastfeeding percentages of 67.5 per cent and 69.1 per cent respectively.
- Breastfeeding rates are reported at 48.3 per cent for mothers from the UK, 44.5 per cent for mothers from Africa and 48.8 per cent for mothers from Asia, while mothers from America reported a breastfeeding rate of 69.2 per cent.

<sup>31</sup> For further discussion and analysis on this issue see Brick, A. & Nolan, A. (2014) Maternal country of birth differences in breastfeeding at hospital discharge in Ireland. *The Economic and Social Review*, 45(4), 455-484 and Brick, A. & Nolan, A. (2014) Explaining the increase in breastfeeding at hospital discharge in Ireland, 2004–2010. *Irish Journal of Medical Science*, 183(3), 333-339.

**FIGURE 4.10**

Percentage Distribution of Exclusively Breastfed Infants by Mother's Nationality, Total Live Births



Notes: See Appendix G, Table G11 for data.

Categories where percentages are based on <100 live births are not included.

# **SECTION FIVE**

## **PERINATAL OUTCOMES**

## INTRODUCTION

This section presents a detailed review of aspects of perinatal outcomes for infants. Cause of death is examined according to the guidelines set out by the WHO in the International Classification of Diseases (ICD-10).<sup>30</sup> A detailed description of the cause of death classification and the coding rules applied is available in Appendix D.

Of the 61,258 births recorded by the NPRS in 2018, 197 were stillbirths and 104 were early neonatal deaths, giving a total of 301 perinatal deaths and a perinatal mortality rate of 4.9 per 1,000 live births and stillbirths.

The number of perinatal deaths is broken down by type of death (antepartum and intrapartum stillbirths and early neonatal deaths), with tables presenting data in relation to

- birthweight distribution by parity and cause of death
- gestational age at delivery and cause of death
- cause of death categorised by ICD-10 codes
- age at death for early neonatal deaths
- post-mortem examinations.

## MORTALITY BY BIRTHWEIGHT AND PARITY

Table 5.1 presents mortality rates by birthweight and parity.<sup>31,32</sup>

- Almost 74 per cent of total perinatal deaths weighed less than 2,500 grams, 72.8 per cent for primiparous women and 74.2 per cent for multiparous women (see Figure 5.1).
- The perinatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 60.6 per 1,000 live births and stillbirths (47.6 per 1,000 for primiparous women and 72.4 per 1,000 for multiparous women).
- The early neonatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 22.0 per 1,000 live births (18.3 per 1,000 for primiparous women and 25.4 per 1,000 for multiparous women).
- The stillbirth rate for low birthweight babies (weighing less than 2,500 grams) was 39.5 per 1,000 live births and stillbirths (29.9 per 1,000 for primiparous women and 48.3 per 1,000 for multiparous women).
- For births weighing 2,500 grams or more, the perinatal mortality rate was 1.4 per 1,000 live births and stillbirths (1.4 for both primiparous women and multiparous women).
- Higher perinatal mortality rates for all births were recorded for births less than 1,500 grams at 229.6 per 1,000 live births and stillbirths and an adjusted perinatal mortality rate of 183.8 per 1,000 live births and stillbirths (see Figure 5.2).

<sup>30</sup> World Health Organisation, 2005, *International Statistical Classification of Diseases and Related Health Problems*, 10<sup>th</sup> Revision, Vols. 1-3. Geneva: World Health Organisation

<sup>31</sup> For details of birthweight by plurality for total births, antepartum and intrapartum stillbirths, early neonatal deaths and associated rates see Appendix G, Table G12.

<sup>32</sup> Tables and figures presented in this section exclude cases for which parity and birthweight was unknown.

TABLE 5.1

Birthweight (grams): Total Perinatal Deaths, Antepartum and Intrapartum Stillbirths, Early Neonatal Deaths, and Mortality Rates by Parity

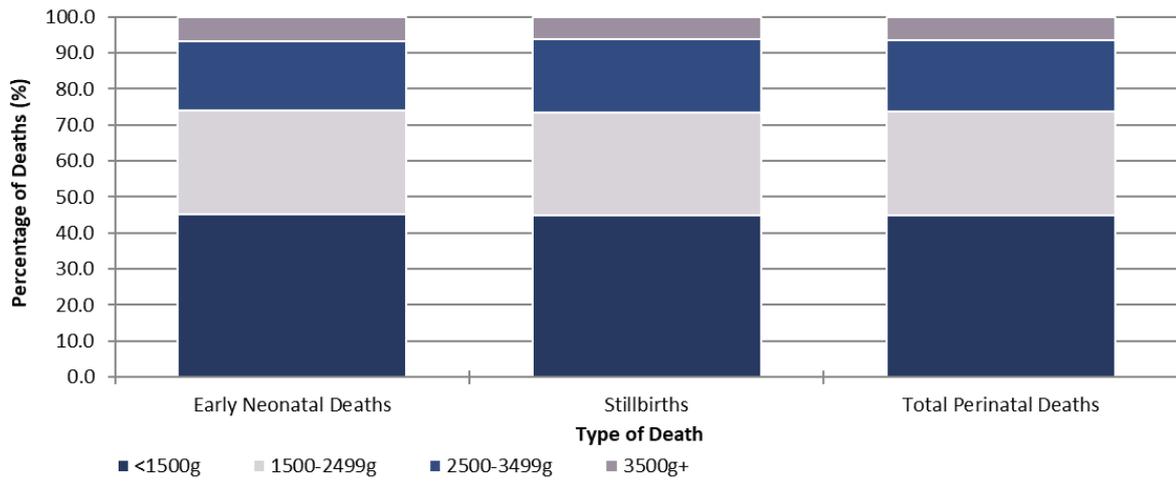
	Total Perinatal Deaths	Total Perinatal Deaths %	Ante-partum Stillbirths	Intra-Partum Stillbirths	Not Stated	Stillbirth Rate <sup>a</sup>	Early Neonatal Deaths	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adj. PMR <sup>a</sup>
<b>Total</b>										
500-749	57	19.0	27	~	6	273.4	22	236.6	445.3	403.4
750-999	30	10.0	17	~	~	146.0	10	85.5	219.0	176.9
1000-1249	29	9.7	18	~	~	138.2	8	61.1	190.8	151.7
1250-1499	19	6.3	12	0	0	70.2	7	44.0	111.1	55.9
1500-1999	46	15.3	26	~	~	41.6	14	19.0	59.8	29.5
2000-2499	40	13.3	21	~	~	10.5	16	7.1	17.5	9.2
2500-2999	31	10.3	13	~	~	2.5	12	1.6	4.0	2.5
3000-3499	29	9.7	16	~	~	1.0	8	0.4	1.4	1.3
3500-3999	12	4.0	~	~	0	0.3	6	0.3	0.6	0.4
4000-4499	*	^	~	0	0	0.7	~	0.1	0.8	0.5
4500 and over	~	^	~	0	0	0.8	0	-	0.8	0.8
<b>Total</b>	<b>300</b>	<b>100</b>	<b>161</b>	<b>17</b>	<b>18</b>	<b>3.2</b>	<b>104</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>
<b>Primiparous Women</b>										
500-749	25	21.9	8	~	~	205.9	11	203.7	367.6	338.5
750-999	12	10.5	7	~	~	130.4	~	50.0	173.9	149.3
1000-1249	15	13.2	7	~	0	127.0	*	127.3	238.1	186.4
1250-1499	~	3.5	~	0	0	13.2	~	40.0	52.6	13.7
1500-1999	14	12.3	9	~	~	31.5	~	5.4	36.7	18.7
2000-2499	13	11.4	8	0	0	7.4	~	4.6	12.0	4.6
2500-2999	12	10.5	~	~	~	2.1	~	1.5	3.6	2.1
3000-3499	10	8.8	6	~	~	1.0	~	0.2	1.2	1.1
3500-3999	*	^	~	~	0	0.5	~	0.4	0.9	0.8
4000-4499	~	^	~	0	0	0.4	~	0.4	0.8	0.4
4500 and over	0	0	0	0	0	0.0	0	-	-	-
<b>Total</b>	<b>114</b>	<b>100</b>	<b>54</b>	<b>8</b>	<b>10</b>	<b>3.0</b>	<b>42</b>	<b>1.8</b>	<b>4.8</b>	<b>3.3</b>
<b>Multiparous Women</b>										
500-749	32	17.2	19	0	~	350.0	11	282.1	533.3	481.5
750-999	18	9.7	10	0	~	161.8	*	122.8	264.7	206.3
1000-1249	14	7.5	11	0	~	146.1	~	13.2	157.3	127.9
1250-1499	*	^	*	0	0	115.8	~	47.6	157.9	90.9
1500-1999	32	17.2	17	~	~	51.5	*	32.6	82.5	40.4
2000-2499	27	14.5	13	~	~	13.3	*	9.3	22.4	13.4
2500-2999	19	10.2	*	~	~	2.7	*	1.6	4.3	2.7
3000-3499	19	10.2	10	~	0	1.1	*	0.5	1.6	1.4
3500-3999	~	^	~	0	0	0.2	~	0.2	0.4	0.2
4000-4499	~	^	~	0	0	0.8	0	-	0.8	0.6
4500 and over	~	^	~	0	0	1.1	0	-	1.1	1.1
<b>Total</b>	<b>186</b>	<b>100</b>	<b>107</b>	<b>9</b>	<b>8</b>	<b>3.3</b>	<b>62</b>	<b>1.7</b>	<b>5.0</b>	<b>3.3</b>

## Notes:

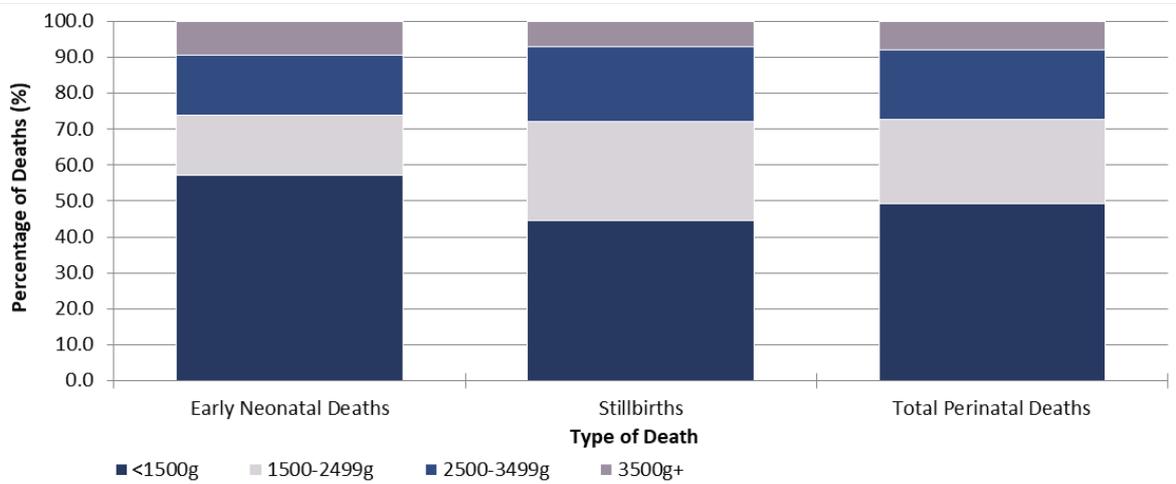
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. There were five or fewer perinatal deaths with birthweight unknown which are not presented in this table; total perinatal deaths therefore differs to the figures presented in other tables.

**FIGURE 5.1**  
Perinatal Deaths by Birthweight Groups and Parity

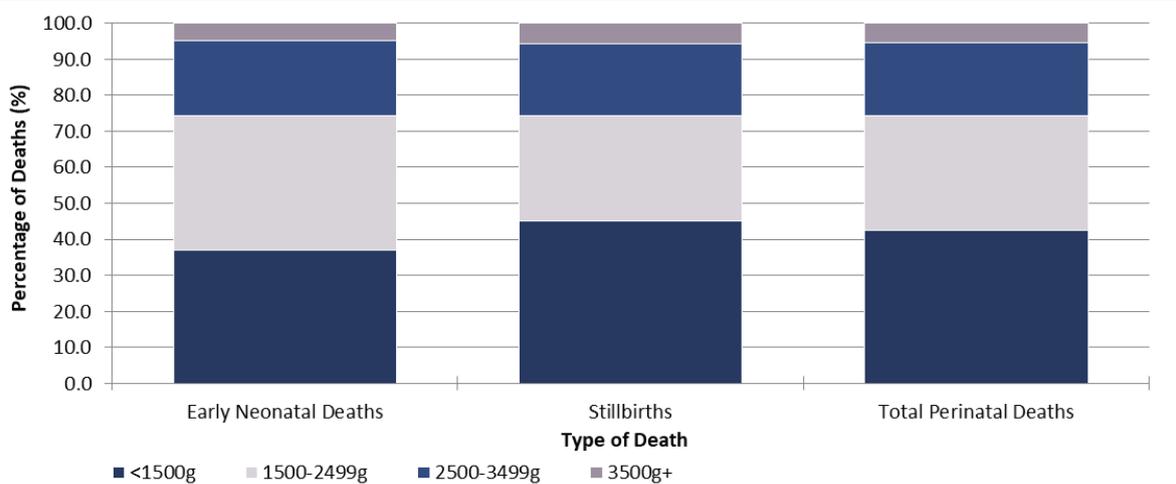
**Total Perinatal Deaths**



**Perinatal Deaths: Primiparous Women**

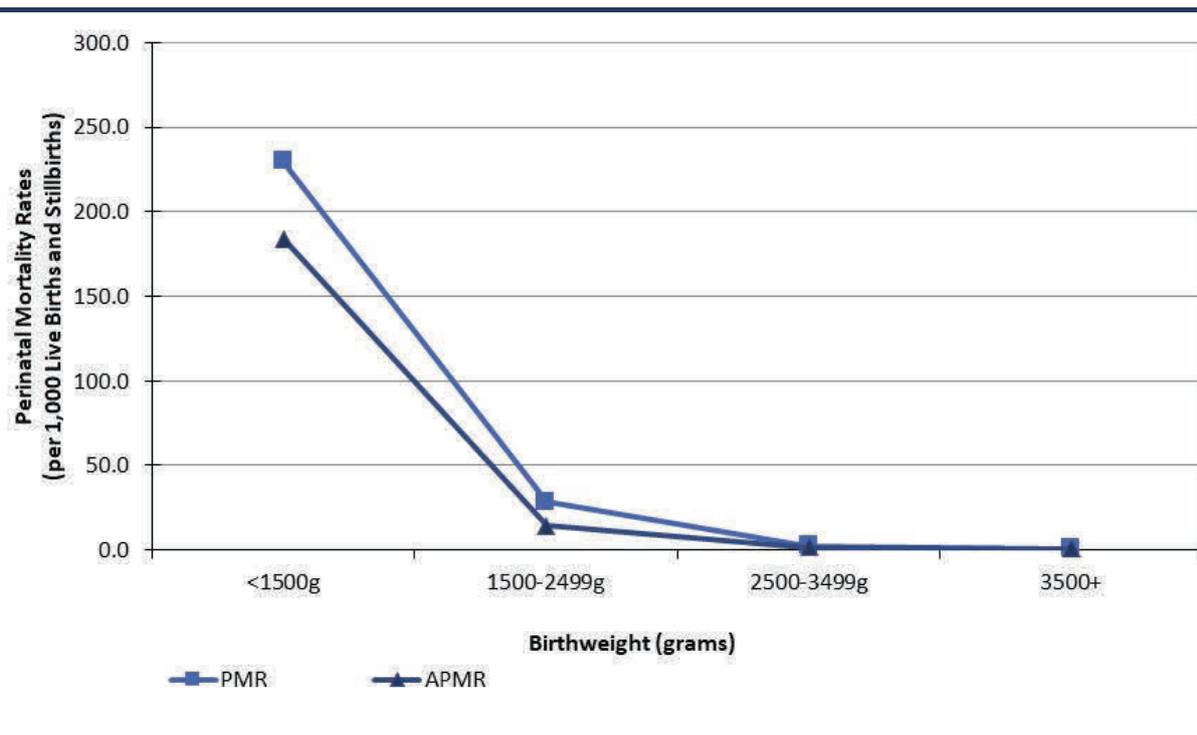


**Perinatal Deaths: Multiparous Women**



Note: See Table 5.1 for data.

**FIGURE 5.2**  
Perinatal Mortality Rates by Birthweight Groups



Note: See Table 5.1 for data.

### CAUSE OF DEATH BY BIRTHWEIGHT

Cause of death data are recorded using the WHO ICD-10 classification.<sup>33</sup> Under this system, the main cause of death is defined as the pathological condition of the infant or foetus which, in the opinion of the certifier, made the greatest contribution towards the death.<sup>34</sup>

Table 5.2 presents cause of death by birthweight for total, singleton and multiple births.

- Congenital malformations (Q00-Q99) accounted for the largest proportion of total perinatal deaths (32.3 per cent) followed by maternal factors (P00-P04), which accounted for 26.0 per cent.
- Approximately 74 per cent of perinatal deaths weighed <2,500 grams, and of these 34.4 per cent were due to congenital malformations (Q00-Q99), followed by maternal factors (P00-P04) which accounted for 25.8 per cent (see Figure 5.3).
- Over 26 per cent of perinatal deaths weighed  $\geq 2,500$  grams. Maternal factors (P00-P04) and congenital malformations (Q00-Q99) each accounted for 26.6 per cent of perinatal deaths (see Figure 5.4).

<sup>33</sup> World Health Organisation, *op. cit.*

<sup>34</sup> See Appendix D for more detail.

TABLE 5.2

Total Perinatal Deaths: Cause of Death by ICD-10 Chapter by Birthweight, Perinatal Mortality Rate<sup>a</sup> and Numbers (Total)

ICD-10 Code	Birthweight (grams)														Total	PMR <sup>b</sup>
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	4500 and over	N				
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	125.0	43.8	59.2	17.5	15.6	4.8	0.6	0.5	0.2	0.1	--	78	1.3			
Disorders related to length of gestation and foetal growth	140.6	21.9	13.2	11.7	2.6	0.4	0.0	0.0	-	-	-	29	0.5			
Birth Trauma	-	7.3	-	-	-	-	-	-	-	-	-	~	0.0			
Respiratory and cardiovascular disorders specific to the perinatal period	15.6	14.6	13.2	5.8	1.3	1.3	0.5	0.3	0.0	-	-	23	0.4			
Infections specific to the perinatal period	39.1	21.9	-	-	2.6	0.4	-	-	-	-	-	11	0.2			
Haemorrhagic and haematological disorders of foetus and newborn	15.6	14.6	6.6	-	-	0.4	0.1	-	-	-	-	7	0.1			
Transitory endocrine and metabolic disorders specific to foetus and newborn	-	-	-	-	-	-	-	-	-	-	0.8	~	0.0			
Digestive system disorders of foetus and newborn	7.8	-	-	-	-	-	-	-	-	0.1	-	~	0.0			
Conditions involving the integument and temperature regulation of foetus and newborn	-	21.9	-	-	3.9	-	-	-	-	-	-	6	0.1			
Other disorders originating in the perinatal period	-	-	-	-	1.3	-	-	-	0.1	-	-	~	0.1			
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	31.3	21.9	52.6	17.5	1.3	1.7	1.0	0.3	0.0	0.3	-	40	0.7			
Congenital malformations of the nervous system	-	7.3	19.7	5.8	9.1	0.9	0.4	0.1	0.0	-	-	21	0.3			
Congenital malformations of the circulatory system	-	7.3	-	5.8	3.9	0.4	0.3	-	0.1	-	-	10	0.2			
Congenital malformations of the respiratory system	-	-	-	-	-	0.4	0.3	-	-	-	-	~	0.0			
Congenital malformations of the urinary system	-	7.3	-	5.8	2.6	1.7	-	-	-	-	-	8	0.1			
Congenital malformations and deformations of the musculoskeletal system	15.6	-	6.6	-	1.3	0.4	0.3	-	-	0.1	-	8	0.1			
Other congenital malformations	7.8	14.6	6.6	17.5	2.6	2.6	0.1	0.0	-	-	-	17	0.3			
Chromosomal abnormalities, not elsewhere classified	46.9	14.6	13.2	23.4	11.7	1.7	0.3	-	-	0.1	-	30	0.5			
All other causes	-	-	-	-	-	-	0.1	-	-	-	-	~	0.0			
<b>Total</b>	<b>57</b>	<b>30</b>	<b>29</b>	<b>19</b>	<b>46</b>	<b>40</b>	<b>31</b>	<b>29</b>	<b>12</b>	<b>*</b>	<b>~</b>	<b>300</b>	<b>-</b>			
<b>PMR</b>	<b>445.3</b>	<b>219.0</b>	<b>190.8</b>	<b>111.1</b>	<b>59.7</b>	<b>17.4</b>	<b>4.0</b>	<b>1.4</b>	<b>0.6</b>	<b>0.8</b>	<b>0.8</b>	<b>-</b>	<b>4.9</b>			



**TABLE 5.2**  
Multiple Perinatal Deaths: Cause of Death by ICD-10 Chapter by Birthweight, Perinatal Mortality Rate<sup>a</sup> and Numbers (Total)

ICD-10 Code	Birthweight (grams)												Total	PMR <sup>a</sup>
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	4500 and over	N		
Footest and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	137.9	52.6	57.7	0.0	3.5	-	-	-	-	-	-	-	10	4.4
Disorders related to length of gestation and foetal growth	103.4	-	19.2	19.6	-	-	-	-	-	-	-	-	~	2.2
Respiratory and cardiovascular disorders specific to the perinatal period	-	52.6	-	-	-	-	-	-	-	-	-	-	~	0.9
Infections specific to the perinatal period	34.5	52.6	-	-	-	-	-	-	-	-	-	-	~	1.3
Haemorrhagic and haematological disorders of foetus and newborn	34.5	-	19.2	-	-	-	-	-	-	-	-	-	~	0.9
Digestive system disorders of foetus and newborn	34.5	-	-	-	-	-	-	-	-	-	-	-	~	0.4
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	69.0	-	19.2	-	-	-	-	-	-	-	-	-	~	1.3
Congenital malformations of the nervous system	-	-	19.2	-	-	1.6	-	-	-	-	-	-	~	0.9
Congenital malformations of the circulatory system	-	26.3	-	-	-	-	-	-	-	-	-	-	~	0.4
Congenital malformations of the urinary system	-	-	-	19.6	3.5	-	-	-	-	-	-	-	~	0.9
Congenital malformations and deformations of the musculoskeletal system	-	-	-	-	3.5	-	-	-	-	-	-	-	~	0.4
Other congenital malformations	-	-	-	-	-	3.1	-	-	-	-	-	-	~	0.9
<b>Total</b>	<b>12</b>	<b>7</b>	<b>7</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>-</b>
<b>PMR</b>	<b>413.8</b>	<b>184.2</b>	<b>134.6</b>	<b>39.2</b>	<b>10.5</b>	<b>4.7</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>15.1</b>

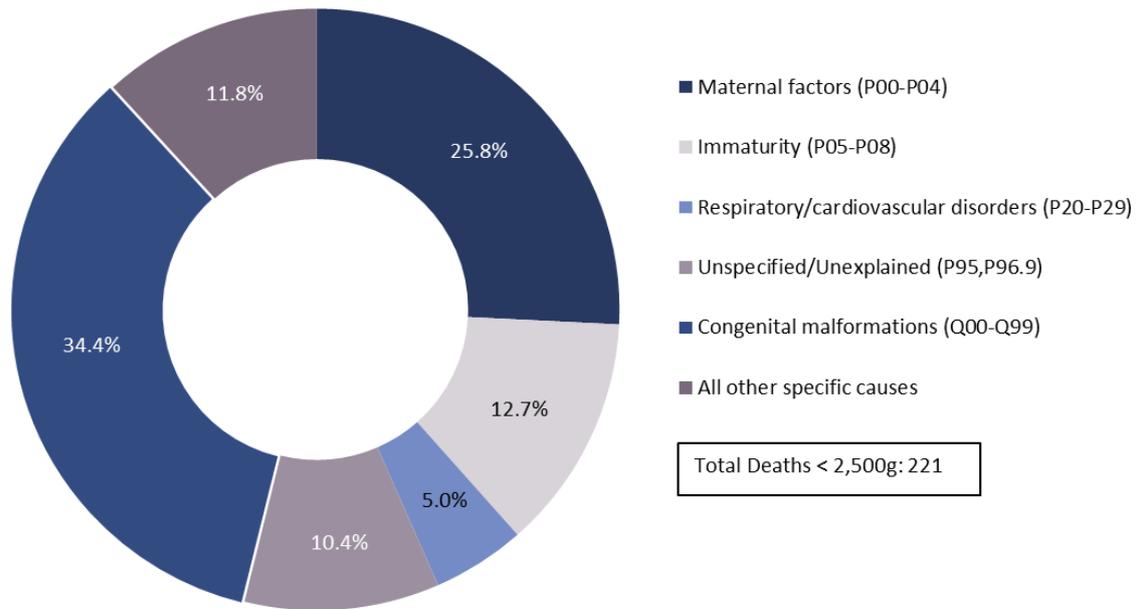
Notes: ~ Denotes five or fewer births reported to NPRS.

\* Further suppression required to prevent disclosure of five or fewer births (or maternities).

a Rates are calculated per 1,000 births. For perinatal deaths, rates are calculated on total live births and stillbirths.

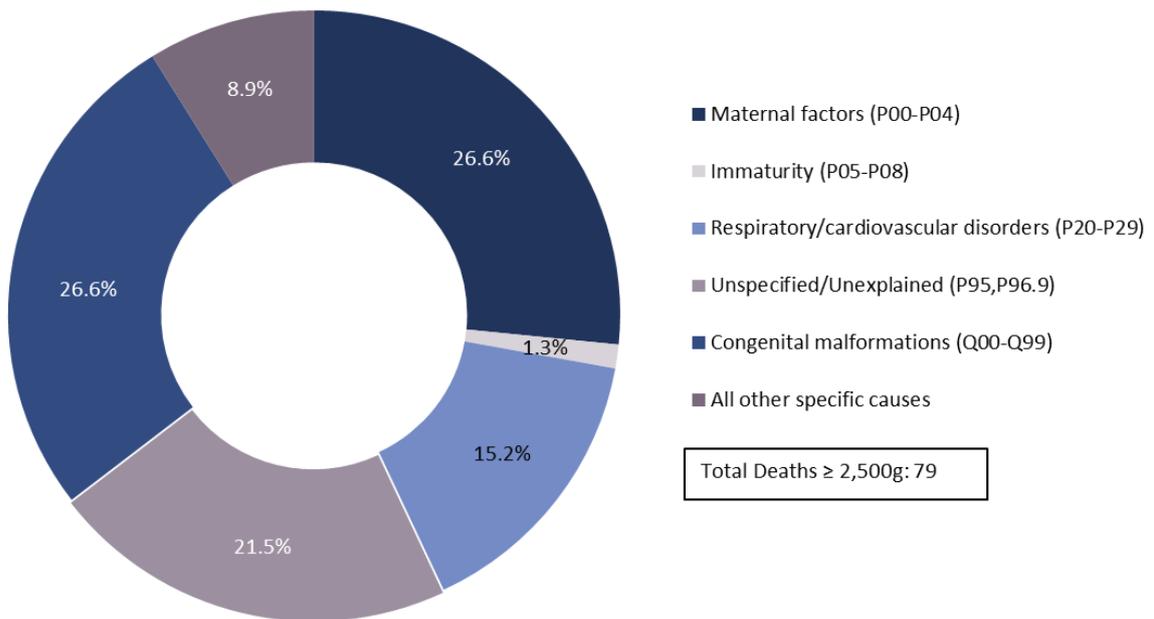
There were five or fewer perinatal deaths with birthweight unknown which are not presented in this table; total perinatal deaths therefore differs to the figures presented in other tables.

**FIGURE 5.3**  
Total Perinatal Deaths with Birthweight < 2,500 grams by Cause of Death



Note: See Table 5.2 for data.

**FIGURE 5.4**  
Total Perinatal Deaths with Birthweight ≥ 2,500 grams by Cause of Death



Note: See Table 5.2 for data.

## MORTALITY BY GESTATIONAL AGE

Table 5.3 presents data on mortality by gestational age.

- Prematurity has a significant impact on stillbirth and early neonatal mortality rates with over two-thirds of total perinatal deaths born preterm.<sup>35,36</sup>
- Almost 68 per cent of singleton perinatal deaths and 97.1 per cent of multiple perinatal deaths were preterm.
- Almost 32 per cent of early neonatal deaths recorded a gestational age of less than 28 completed weeks compared to 23.0 per cent of stillbirths (see Figure 5.5).
- The perinatal mortality rate for babies born before 37 completed weeks of gestation was 49.2 per 1,000 live births and stillbirths (58.2 per 1,000 singleton births and 27.1 per 1,000 multiple births).
- For babies born at 37 or more completed weeks of gestation, the perinatal mortality rate was 1.5 per 1,000 live births and stillbirths.

**TABLE 5.3**

Gestational Age (weeks): Total Perinatal Deaths, Antepartum and Intrapartum Stillbirths, Early Neonatal Deaths, and Mortality Rates

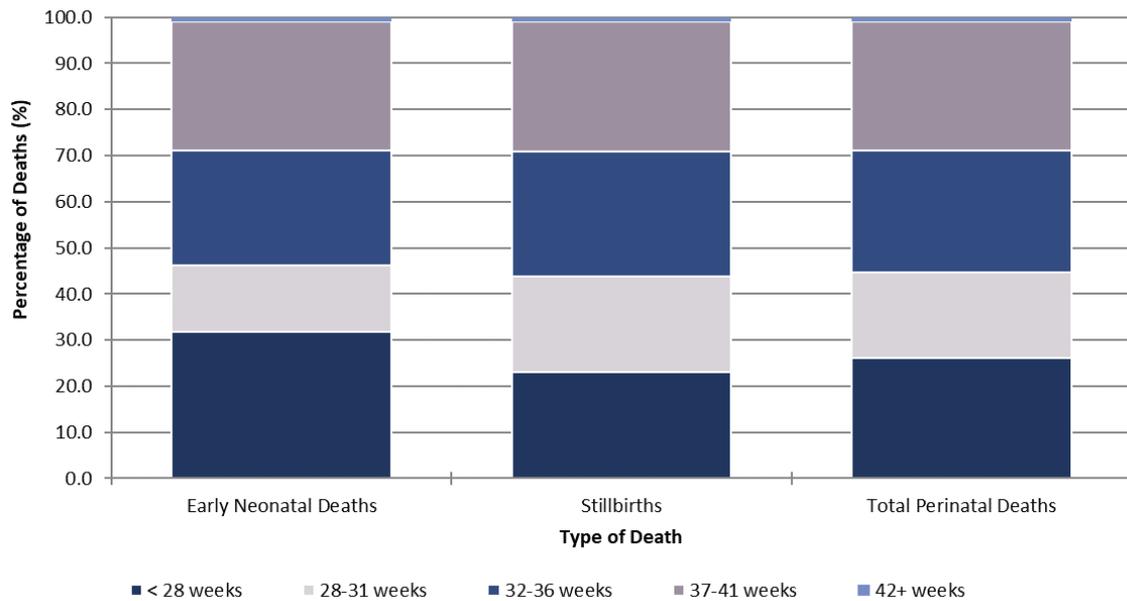
	Total Perinatal Deaths	Total Perinatal Deaths %	Ante-Partum Stillbirths	Intra-Partum Stillbirths	Not Stated	Stillbirth Rate <sup>a</sup>	Early Neonatal Deaths	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adj. PMR <sup>a</sup>
<b>Total Births</b>										
Less than 28	78	26.0	*	~	8	176.5	33	157.1	305.9	280.5
28-31	*	^	37	~	~	90.7	*	36.5	123.9	76.9
32-36	79	26.3	45	~	~	14.6	26	7.3	21.8	12.3
37-41	84	28.0	42	10	~	1.0	29	0.5	1.5	1.0
42 and Over	~	1.0	~	0	0	2.5	~	1.2	3.7	3.7
<b>Total</b>	<b>300</b>	<b>100</b>	<b>160</b>	<b>17</b>	<b>19</b>	<b>3.2</b>	<b>104</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>
<b>Singleton Births</b>										
Less than 28	56	21.1	31	~	~	185.8	22	147.7	306.0	274.3
28-31	52	19.6	37	~	~	127.7	*	39.3	162.0	103.3
32-36	71	26.8	*	~	~	19.4	*	8.3	27.6	15.7
37-41	*	^	42	10	~	1.0	*	0.5	1.5	1.0
42 and Over	~	1.1	~	0	0	2.5	~	1.2	3.7	3.7
<b>Total</b>	<b>265</b>	<b>100</b>	<b>*</b>	<b>*</b>	<b>11</b>	<b>3.1</b>	<b>83</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>
<b>Multiple Births</b>										
Less than 28	22	62.9	~	~	*	152.8	11	180.3	305.6	295.8
28-31	~	11.4	0	0	0	-	~	30.5	30.5	15.5
32-36	8	22.9	~	0	~	2.9	~	4.8	7.6	3.8
37-41	~	^	0	0	0	-	~	1.0	1.0	-
42 and Over	0	0.0	0	0	0	-	0	-	-	-
<b>Total</b>	<b>35</b>	<b>100</b>	<b>~</b>	<b>~</b>	<b>8</b>	<b>6.2</b>	<b>21</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>

Notes: Percentage column is subject to rounding.  
 ~ Denotes five or fewer births reported to NPRS.  
 \* Further suppression required to prevent disclosure of five or fewer births.  
 ^ Percentage not provided to prevent disclosure of small numbers.  
 a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. There were five or fewer perinatal deaths with gestation unknown which are not presented in this table; total perinatal deaths therefore differs to the figures presented in other tables.

<sup>35</sup> Preterm is defined as less than 37 completed weeks of gestation.

<sup>36</sup> In 2018, 7.1 per cent of total births were preterm.

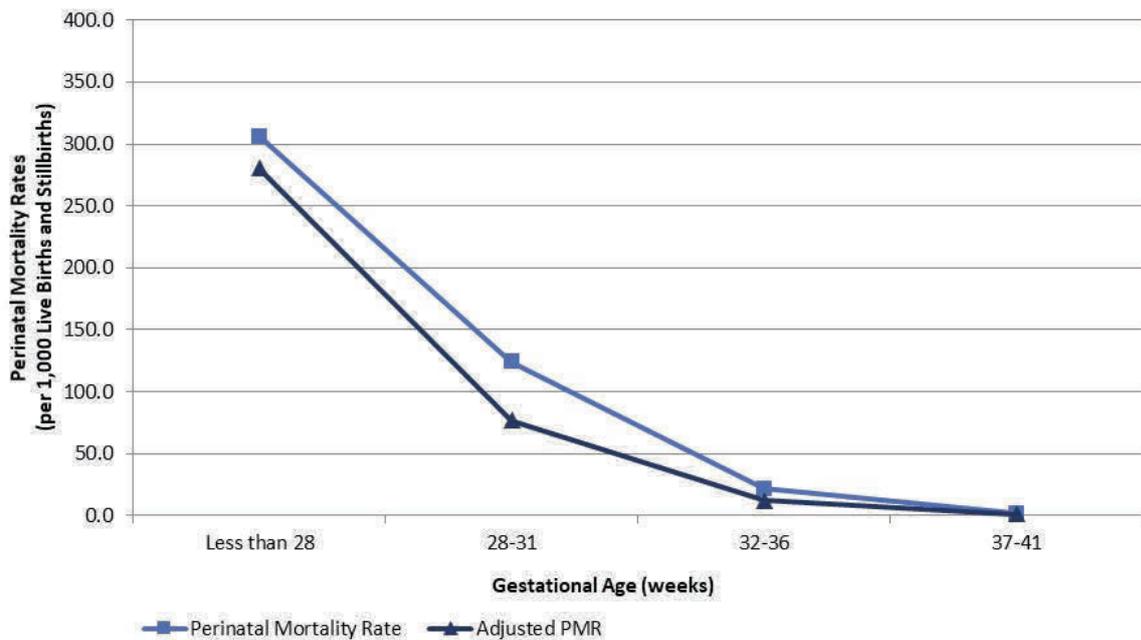
**FIGURE 5.5**  
Total Perinatal Deaths by Gestational Age (weeks)



Note: See Table 5.3 for data.

Figure 5.6 shows the perinatal mortality rates by gestational age at delivery, illustrating the higher rates associated with lower gestational age.

**FIGURE 5.6**  
Perinatal Mortality Rates by Gestational Age (weeks) at Delivery



Notes: See Table 5.3 for data.  
Rates based on 20 or fewer observations are not included in this Figure.

## CAUSE OF DEATH

Cause of death data and mortality rates for stillbirths, early neonatal deaths and total perinatal deaths are presented in Table 5.4.

Figures 5.7-5.9 show the percentage distribution of stillbirths, early neonatal deaths and total perinatal deaths categorised into groups by cause of death.

Figure 5.9 shows that 13.3 per cent of total perinatal deaths were classified as 'unspecified/unexplained' (P95, P96.9). The fact that over 50 per cent of all perinatal deaths in Ireland do not undergo post-mortem examinations may be a contributing factor to the numbers assigned to this category (see also Table 5.5). This finding is not unique to Ireland, however, as many countries report high percentages of unexplained deaths in the perinatal period.

**TABLE 5.4**  
Cause of Death by ICD-10 Chapter and Subcategories, Mortality Rates<sup>a</sup> and Numbers (Total)

ICD-10 Code	Total Deaths			Singleton Deaths			Multiple Deaths		
	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths
	Rate	Rate	N Rate	Rate	Rate	N Rate	Rate	Rate	N Rate
<b>P00-P04</b>	<b>1.2</b>	<b>0.1</b>	<b>79 1.3</b>	<b>1.1</b>	<b>0.1</b>	<b>68 1.2</b>	<b>3.5</b>	<b>1.3</b>	<b>11 4.9</b>
<b>P000-P009</b>	0.0	-	~ 0.0	-	-	0 0.4	0.4	-	~ 0.4
<b>P010-P019</b>	0.0	0.0	~ 0.0	0.0	0.0	~ 0.0	-	-	0 -
<b>P020-P029</b>	1.1	0.1	74 1.2	1.1	0.0	64 1.1	3.1	1.3	10 4.4
<b>P030-P039</b>	0.0	-	~ 0.0	0.0	-	~ 0.0	-	-	0 -
<b>P05-P08</b>	<b>0.2</b>	<b>0.2</b>	<b>29 0.5</b>	<b>0.2</b>	<b>0.2</b>	<b>24 0.4</b>	<b>0.9</b>	<b>1.3</b>	<b>~ 2.2</b>
<b>P050-P059</b>	0.1	-	~ 0.1	0.1	-	~ 0.1	-	-	0 -
<b>P070-P073</b>	0.2	0.2	25 0.4	0.1	0.2	20 0.3	0.9	1.3	~ 2.2
<b>P10-P15</b>	-	-	~ 0.0	-	0.0	~ 0.0	-	-	0 -
<b>P100-P109</b>	-	-	~ 0.0	-	0.0	~ 0.0	-	-	0 -
<b>P20-P29</b>	<b>0.2</b>	<b>0.1</b>	<b>23 0.4</b>	<b>0.3</b>	<b>0.1</b>	<b>21 0.4</b>	-	<b>0.9</b>	<b>~ 0.9</b>
<b>P200-P209</b>	0.1	-	7 0.1	0.1	-	7 0.1	-	-	0 -
<b>P230-P239</b>	-	0.0	~ 0.0	-	0.0	~ 0.0	-	-	0 -
<b>P240-P249</b>	0.0	-	~ 0.0	0.0	-	~ 0.0	-	-	0 -
<b>P250-P258</b>	-	0.0	~ 0.0	-	0.0	~ 0.0	-	0.9	~ 0.9
<b>P260-P269</b>	-	0.0	~ 0.0	-	0.0	~ 0.0	-	-	0 -
<b>P280-P289</b>	-	0.0	~ 0.0	-	0.0	~ 0.0	-	-	0 -
<b>P290-P299</b>	0.1	0.0	8 0.1	0.1	0.0	8 0.1	-	-	0 -
<b>P35-P39</b>	<b>0.1</b>	<b>0.1</b>	<b>11 0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>8 0.1</b>	<b>0.4</b>	<b>0.9</b>	<b>~ 1.3</b>
<b>P360-P369</b>	0.0	0.0	~ 0.0	0.0	0.0	~ 0.0	-	0.9	~ 0.9
<b>P390-P399</b>	0.1	0.0	7 0.1	0.1	0.0	6 0.1	0.4	-	~ 0.4
<b>P50-P61</b>	<b>0.1</b>	<b>0.0</b>	<b>7 0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>~ 0.1</b>	<b>0.0</b>	<b>0.9</b>	<b>~ 0.9</b>
<b>P500-P509</b>	0.1	-	~ 0.1	0.1	-	~ 0.1	-	-	0 -
<b>P520-P529</b>	-	0.0	~ 0.0	-	0.0	~ 0.0	-	0.4	~ 0.4
<b>P610-P619</b>	-	0.0	~ 0.0	-	-	0 0.4	-	0.4	~ 0.4

**Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery**

Foetus and newborn affected by maternal conditions that may be unrelated to present pregnancy

Foetus and newborn affected by maternal complications of pregnancy

Foetus and newborn affected by complications of placenta, cord and membranes

Foetus and newborn affected by other complications of labour and delivery

**Disorders related to length of gestation and foetal growth**

Slow foetal growth and foetal malnutrition

Disorders related to short gestation and low birth weight, not elsewhere classified

**Birth trauma**

Intracranial laceration and haemorrhage due to birth injury

**Respiratory and cardiovascular disorders specific to the perinatal period**

Intrauterine hypoxia

Congenital pneumonia

Neonatal aspiration syndromes

Interstitial emphysema and related conditions originating in the perinatal period

Pulmonary haemorrhage originating in the perinatal period

Other respiratory conditions originating in the perinatal period

Cardiovascular disorders originating in the perinatal period

**Infections specific to the perinatal period**

Bacterial sepsis of newborn

Other infections specific to the perinatal period

**Haemorrhagic and haematological disorders of foetus and newborn**

Foetal blood loss

Intracranial nontraumatic haemorrhage of foetus and newborn

Other perinatal haematological disorders

Table 5.4: Cause of Death by ICD-10 Chapter and Subcategories, Mortality Rates<sup>a</sup> and Numbers (Total) (cont.)

ICD-10 Code	Total Deaths				Singleton Deaths				Multiple Deaths				
	Stillbirths Rate	Early Neonatal Deaths Rate	Total Perinatal Deaths Rate	N	Stillbirths Rate	Early Neonatal Deaths Rate	Total Perinatal Deaths Rate	N	Stillbirths Rate	Early Neonatal Deaths Rate	Total Perinatal Deaths Rate	N	Rate
<b>Transitory endocrine and metabolic disorders specific to foetus and newborn</b>													
P700 - P709	0.0	-	0.0	~	0.0	-	~	0.0	-	0.0	-	~	0.0
Transitory disorders of carbohydrate metabolism specific to foetus and newborn	0.0	-	0.0	~	0.0	-	~	0.0	-	0.0	-	~	0.0
P75-P78	0.0	0.0	0.0	~	0.0	-	~	0.0	-	0.0	-	~	0.4
Digestive system disorders of foetus and newborn	0.0	-	0.0	~	0.0	-	~	0.0	-	0.0	-	~	0.4
P760 - P769	0.0	-	0.0	~	0.0	-	~	0.0	-	0.0	-	~	0.0
Other intestinal obstruction of newborn	0.0	-	0.0	~	0.0	-	~	0.0	-	0.0	-	~	0.0
<b>Necrotizing enterocolitis of foetus and newborn</b>													
P77	-	0.0	0.0	~	0.0	-	0	-	-	0.4	-	~	0.4
Conditions involving the integument and temperature regulation of foetus and newborn	0.1	0.0	0.1	6	0.1	0.0	6	0.1	-	-	-	0	-
P80-P83	0.1	0.0	0.1	6	0.1	0.0	6	0.1	-	-	-	0	-
Other conditions of integument specific to foetus and newborn	0.1	0.0	0.1	6	0.1	0.0	6	0.1	-	-	-	0	-
P830 - P839	0.1	0.0	0.1	6	0.1	0.0	6	0.1	-	-	-	0	-
<b>Other disorders originating in the perinatal period</b>													
P90-P96	0.5	0.2	0.7	44	0.5	0.2	41	0.7	1.3	-	-	~	1.3
Other disorders of cerebral status of newborn	-	0.0	0.0	~	0.0	-	~	0.1	-	-	-	0	-
P910 - P919	-	0.0	0.0	~	0.0	-	~	0.1	-	-	-	0	-
Other conditions originating in the perinatal period	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
P960 - P968	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Foetal death of unspecified cause, Condition origination in the perinatal period, unspecified	0.5	0.1	0.7	40	0.5	0.1	37	0.6	1.3	-	-	~	1.3
P95, P969	0.5	0.1	0.7	40	0.5	0.1	37	0.6	1.3	-	-	~	1.3
<b>Congenital malformations of the nervous system</b>													
Q00-Q07	0.1	0.2	0.3	21	0.1	0.2	19	0.3	-	0.9	-	~	0.9
Anencephaly and similar malformations	0.1	0.2	0.3	21	0.1	0.2	19	0.3	-	0.9	-	~	0.9
Q000 - Q002	0.1	0.2	0.3	14	0.1	0.2	13	0.2	-	0.4	-	~	0.4
Encephalocele	0.0	-	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Q010 - Q019	0.0	-	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Congenital hydrocephalus	0.0	0.0	0.0	~	0.0	0.0	~	0.0	-	-	-	0	-
Q030 - Q039	0.0	0.0	0.0	~	0.0	0.0	~	0.0	-	-	-	0	-
Other congenital malformations of the brain	0.0	0.0	0.0	~	0.0	0.0	~	0.0	-	-	-	0	-
Q040 - Q049	0.0	0.0	0.0	~	0.0	0.0	~	0.0	-	-	-	0	-
Spina bifida	-	0.0	0.0	~	0.0	-	0	-	-	0.4	-	~	0.4
Q050 - Q059	-	0.0	0.0	~	0.0	-	0	-	-	0.4	-	~	0.4
<b>Congenital malformations of the circulatory system</b>													
Q20-Q28	0.0	0.1	0.2	10	0.0	0.1	9	0.2	-	0.4	-	~	0.4
Congenital malformations of cardiac chambers and connections	0.0	0.1	0.2	10	0.0	0.1	9	0.2	-	0.4	-	~	0.4
Q200 - Q209	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Congenital malformations of cardiac chambers and connections	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Q220 - Q229	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Congenital malformations of pulmonary and tricuspid valves	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Q230 - Q239	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Congenital malformations of aortic and mitral valves	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Q240 - Q249	0.0	0.1	0.1	6	0.0	0.1	~	0.1	-	0.4	-	~	0.4
Other congenital malformations of heart	0.0	0.1	0.1	6	0.0	0.1	~	0.1	-	0.4	-	~	0.4
Q280 - Q289	0.0	-	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Other congenital malformations of circulatory system	0.0	-	0.0	~	0.0	-	~	0.0	-	-	-	0	-
<b>Congenital malformations of the respiratory system</b>													
Q30-Q34	-	0.0	0.0	~	0.0	-	~	0.1	-	-	-	0	-
Congenital malformations of the respiratory system	-	0.0	0.0	~	0.0	-	~	0.1	-	-	-	0	-
Q320 - Q324	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Congenital malformations of trachea and bronchus	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Q330 - Q339	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-
Congenital malformations of lung	-	0.0	0.0	~	0.0	-	~	0.0	-	-	-	0	-

Table 5.4: Cause of Death by ICD-10 Chapter and Subcategories, Mortality Rates<sup>a</sup> and Numbers (Total) (cont.)

	ICD-10 Code	Total Deaths			Singleton Deaths			Multiple Deaths		
		Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths
		Rate	Rate	N	Rate	Rate	N	Rate	Rate	N
<b>Congenital malformations of the urinary system</b>	<b>Q60-Q64</b>	<b>0.0</b>	<b>0.1</b>	<b>8</b>	<b>0.0</b>	<b>0.1</b>	<b>6</b>	<b>0.1</b>	<b>0.9</b>	<b>0.9</b>
Renal agenesis and other reduction defects of kidney	Q600 - Q606	0.0	0.1	6	0.0	0.1	~	0.1	0.9	0.9
Congenital obstructive defects of renal pelvis and congenital malformations of ureter	Q620 - Q628	-	0.0	~	-	0.0	~	0.0	-	0
Other congenital malformations of urinary system	Q640 - Q649	-	0.0	~	-	0.0	~	0.0	-	0
<b>Congenital malformations and deformations of the musculoskeletal system</b>	<b>Q65-Q79</b>	<b>0.0</b>	<b>0.1</b>	<b>8</b>	<b>0.1</b>	<b>0.1</b>	<b>7</b>	<b>0.1</b>	<b>0.4</b>	<b>0.4</b>
Other congenital malformations of limbs	Q740 - Q749	0.0	-	~	0.0	-	~	0.0	-	0
Osteochondrodysplasia with defects of growth of tubular bones and spine	Q770 - Q779	-	0.0	~	-	0.0	~	0.0	-	0
Other osteochondrodysplasias	Q780 - Q789	0.0	-	~	0.0	-	~	0.0	-	0
Congenital malformations of musculoskeletal system, not elsewhere classified	Q790 - Q799	0.0	0.1	~	0.0	0.1	~	0.1	0.4	0.4
<b>Other congenital malformations</b>	<b>Q80-Q89</b>	<b>0.1</b>	<b>0.1</b>	<b>17</b>	<b>0.3</b>	<b>0.2</b>	<b>15</b>	<b>0.3</b>	<b>0.9</b>	<b>0.9</b>
Congenital malformation syndromes due to known exogenous causes, not elsewhere classified	Q860 - Q868	-	0.0	~	-	0.0	~	0.0	-	0
Other specified congenital malformation syndromes affecting multiple systems	Q870 - Q878	0.0	0.0	~	0.0	0.0	~	0.0	-	0
Other congenital malformations, not elsewhere classified	Q890 - Q899	0.1	0.1	14	0.2	0.1	12	0.2	0.9	0.9
<b>Chromosomal abnormalities, not elsewhere classified</b>	<b>Q90-Q99</b>	<b>0.4</b>	<b>0.1</b>	<b>30</b>	<b>0.5</b>	<b>0.4</b>	<b>30</b>	<b>0.5</b>	<b>0</b>	<b>0</b>
Downs syndrome	Q900 - Q909	0.1	0.0	10	0.2	0.1	10	0.2	-	0
Edwards syndrome and Patau syndrome	Q910 - Q917	0.2	0.1	16	0.3	0.2	16	0.3	-	0
Monosomies and deletions from the autosomes, not elsewhere classified	Q930 - Q939	0.0	-	~	0.0	-	~	0.0	-	0
Turner's syndrome	Q960 - Q969	0.0	-	~	0.0	-	~	0.0	-	0
Other chromosome abnormalities, not elsewhere classified	Q990 - Q999	0.0	0.0	~	0.0	0.0	~	0.0	-	0
<b>All other causes</b>	<b>A00.0-Q99.9, R00.0-Z99.9</b>	-	<b>0.0</b>	<b>0.0</b>	-	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0</b>
<b>Total</b>		<b>3.2</b>	<b>1.7</b>	<b>301</b>	<b>3.1</b>	<b>1.4</b>	<b>266</b>	<b>4.5</b>	<b>6.2</b>	<b>15.5</b>

Notes: ~ Denotes five or fewer births reported to NPRS.

\* Further suppression required to prevent disclosure of five or fewer births.

a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

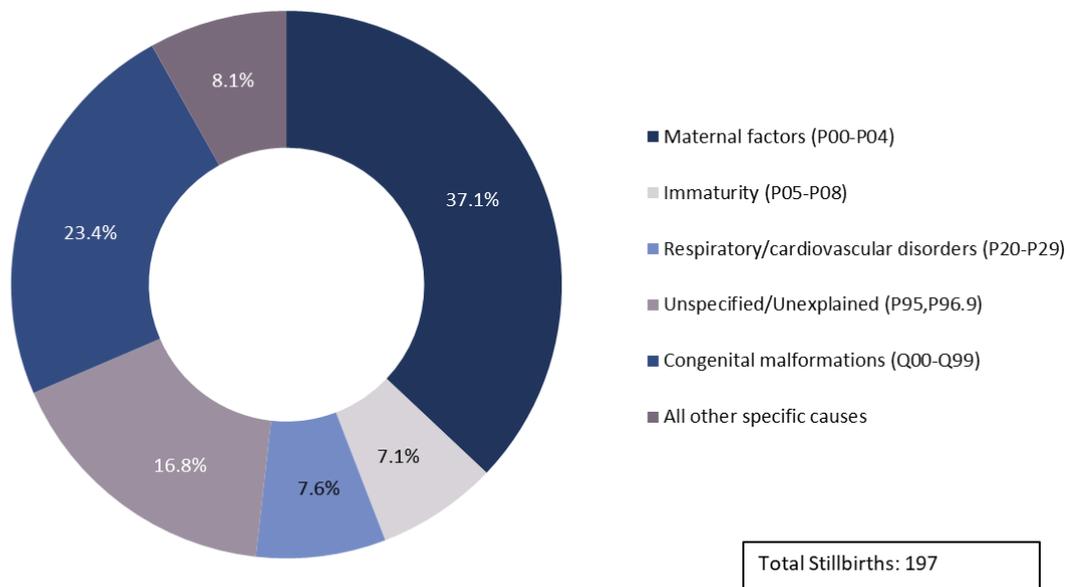
## STILLBIRTHS

Figure 5.7 presents the main cause of death for stillbirths.

- Maternal factors (P00-P04) were the leading cause of death for total stillbirths (37.1 per cent).
- The cause of death was congenital malformations (Q00-Q99) for 23.4 per cent of total stillbirths.

**FIGURE 5.7**

Total Stillbirths by Cause of Death



Notes: Percentages are subject to rounding.  
See Appendix G, Table G13 for data.

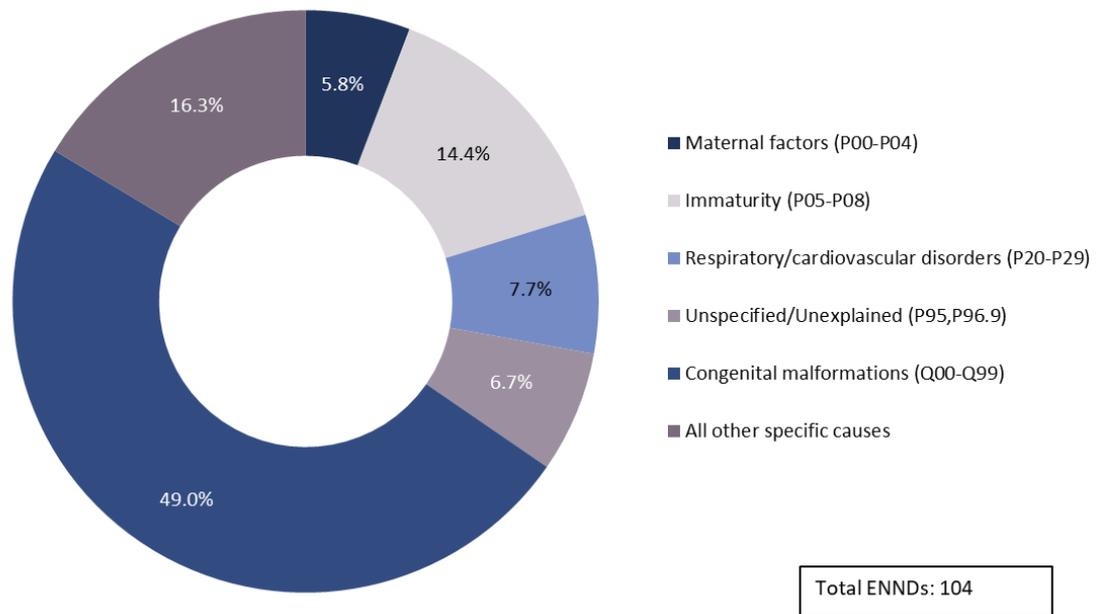
## EARLY NEONATAL DEATHS

Figure 5.8 presents the main cause of death for early neonatal deaths.

- Congenital malformations (Q00-Q99) was recorded as the leading cause of death for total early neonatal deaths (49.0 per cent).
- The cause of death was immaturity (P05-P08) for 14.4 per cent of total early neonatal deaths.

**FIGURE 5.8**

Total Early Neonatal Deaths by Cause of Death



Notes: Percentages are subject to rounding.  
See Appendix G, Table G13 for data.

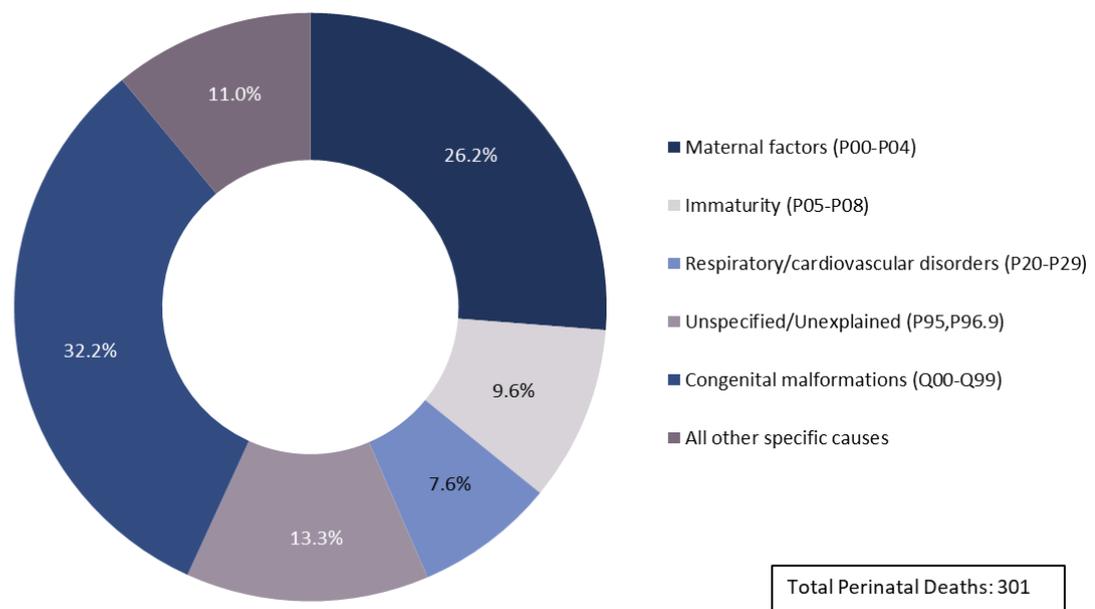
## TOTAL PERINATAL DEATHS

Figure 5.9 presents data on all perinatal deaths.

- Congenital malformations (Q00-Q99) accounted for approximately 1 in 3 total perinatal deaths (32.2 per cent).
- Maternal factors (P00-P04) was reported for cause of death for 26.2 per cent of total perinatal deaths.
- The cause of death was unspecified/unexplained (P95, P96.9) for 13.3 per cent of total perinatal deaths.

**FIGURE 5.9**

Total Perinatal Deaths by Cause of Death



Notes: Percentages are subject to rounding  
See Table 5.4 and Appendix G, Table G13 for data.

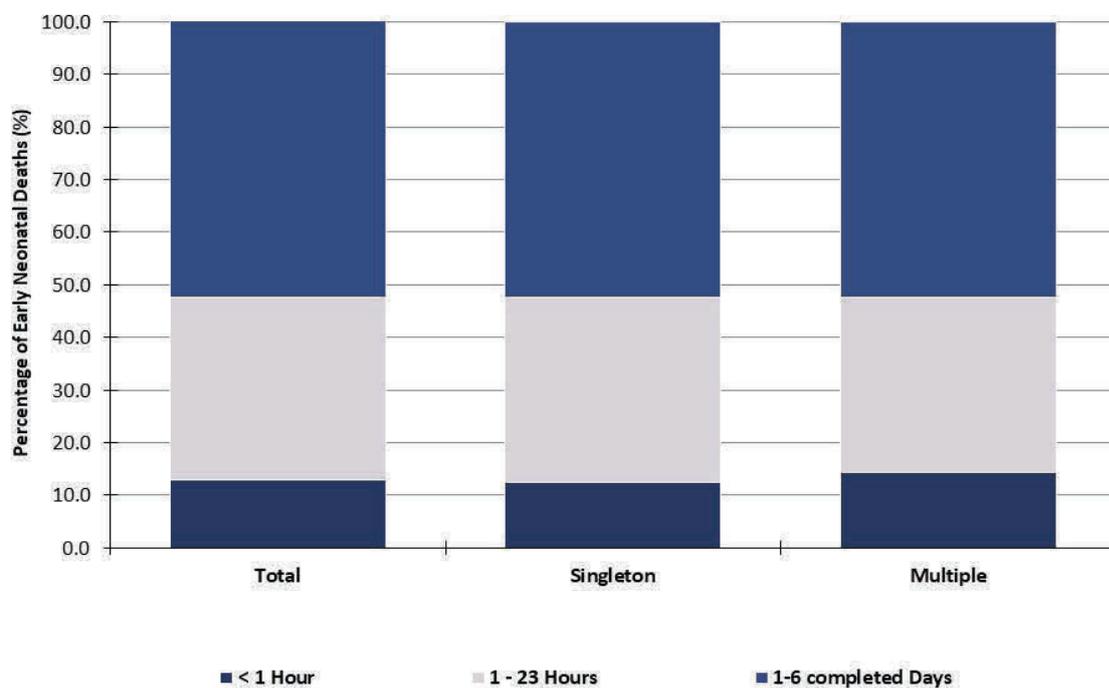
## AGE AT DEATH

Figure 5.10 presents age at death by plurality for early neonatal deaths.

- Almost 13 per cent of total early neonatal deaths occurred within the first hour of life (12.5 per cent for singleton early neonatal deaths and 14.3 per cent for multiple early neonatal deaths).
- Almost 48 per cent of total early neonatal deaths occurred within the first day of life (47.5 per cent for singleton early neonatal deaths and 47.6 per cent for multiple early neonatal deaths).
- Over 52 per cent of total early neonatal deaths occurred between 1 and 6 completed days of life (52.5 per cent for singleton early neonatal deaths and 52.4 per cent for multiple early neonatal deaths).

**FIGURE 5.10**

Early Neonatal Deaths by Age at Death and Plurality



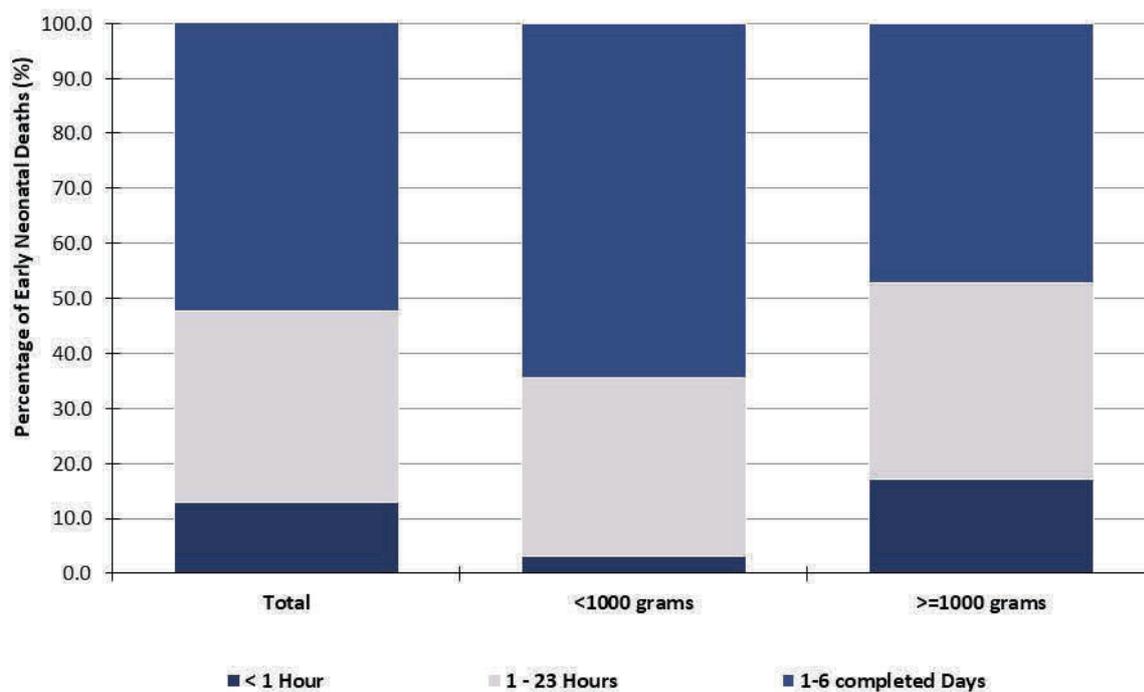
Notes: Percentages are subject to rounding  
See Appendix G, Table G14 for data.

Figure 5.11 presents age at death for early neonatal deaths by birthweight groups below and above 1,000 grams.

- For early neonatal deaths recording a birthweight of less than 1,000 grams, 35.5 per cent died within the first day of life compared to 52.9 per cent for early neonatal deaths with a birthweight of 1,000 grams or more.

**FIGURE 5.11**

Early Neonatal Deaths by Age at Death and Birthweight Groups



Notes: Percentages are subject to rounding  
See Appendix G, Table G15 for data.

## POST-MORTEM EXAMINATIONS

Post-mortem examinations were less likely in the case of early neonatal deaths compared to stillbirths and this trend is consistent over recent years.<sup>37</sup> Table 5.5 presents data on post-mortem examinations.

- A post-mortem examination was undertaken for just under 40 per cent of total perinatal deaths in 2018.
- Over 42 per cent of stillbirths underwent a post-mortem examination compared to 35.6 per cent of early neonatal deaths.

**TABLE 5.5**

Post-Mortem Examinations, Total Perinatal Deaths

Frequency Col. Per Cent	Type of Death		
	Stillbirths	Early Neonatal Deaths	Total
Post-Mortem	83 42.1	37 35.6	120 39.9
No Post-Mortem	102 51.8	57 54.8	159 52.8
Not Stated	12 6.1	10 9.6	22 7.3
<b>Total</b>	<b>197</b> <b>100</b>	<b>104</b> <b>100</b>	<b>301</b> <b>100</b>

Note: Percentage column is subject to rounding.

<sup>37</sup> Previous reports in this series can be downloaded from [www.hpo.ie](http://www.hpo.ie)



# APPENDICES

## APPENDIX A

### DEFINITIONS

This section collates the definitions of the terms used in the analyses for this report. All perinatal statistics and definitions are based on WHO ICD-10 Classifications.

**Age at Death:** The age of early neonatal deaths is given in completed hours if the infant survived less than one day and in completed days otherwise.

**Age-Specific Fertility Rate (ASFR):** refers to the number of live births to women in a particular age group divided by the female population in that age group, multiplied by 1,000 (see also definition for Total Period Fertility Rate (TPFR)).

**Antenatal Length of Stay:** This is computed as the difference, in days, between a mother's date of admission and her date of delivery. Domiciliary births are not included in tables relating to this variable.

**Antepartum and Intrapartum Stillbirths:** These refer to stillbirths occurring prior to and during labour respectively.

**Birth Rate:** The Birth Rate or Crude Birth Rate is the ratio of total live births to total population over a specified period of time. The birth rate is often expressed as the number of live births per 1,000 members of the population in a particular time period (for example one year).

**Birthweight:** Birthweight is given in grams and hospitals are asked to record the weight within the first hour after birth. In accordance with WHO guidelines, only births weighing 500 grams or more are included in any analysis of NPRS data.

**Born Before Arrival (BBA):** Where BBA is recorded as place of birth this indicates that an infant was delivered before arrival at hospital.

**Cause of Death:** This categorisation indicates the principal underlying pathological cause, which in the opinion of the certifier made the greatest contribution to the death of the infant or foetus. In assigning cause of death in the NPRS, the guidelines recommended by the WHO have been followed. A summary of these guidelines is provided in Appendix D. Since 2005 the *International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision*, Vols. 1-3. Geneva: World Health Organisation is used to code Irish births.

**Civil Status:** Six categories are used:

1. Married
2. Single
3. Widowed

4. Separated (including deserted, legally separated, Church decree of nullity, and otherwise separated)
5. Divorced
6. Civil partner (includes civil partner, former civil partner, surviving civil partner)

**Congenital Anomalies:** These are physiological or structural abnormalities that develop at or before birth and are present at the time of birth. Congenital anomalies are those diseases/conditions categorised in ICD-10, Chapter XVII, *Congenital Malformations, Deformities and Chromosomal Abnormalities* (Q00.0-Q99.9).

**Domiciliary Birth:** Domiciliary births are *planned* home births. The vast majority of these are attended by an independent midwife and are not associated with a hospital. In 2018, there were 61 births under hospital administered home birth schemes. For the purposes of this report these births are treated as hospital births due to their small numbers.

**Early Neonatal Death (ENND) and Early Neonatal Mortality Rate:** An early neonatal death refers to the death of a live born infant during the first week of life. The **early neonatal mortality rate** is calculated as follows:

$$\frac{\text{Number of Early Neonatal Deaths} \times 1,000}{\text{Total Number of Live Births}}$$

**Hospital Admission Booked or Unbooked:** This indicates whether a mother's admission to hospital for delivery was booked or unbooked prior to delivery. Domiciliary births are not included in the tables relating to this variable.

**Immunity to Rubella:** An affirmative answer should be recorded only where there is documented evidence of a rubella antibody test. A history of rubella or previous immunisation is not sufficient to indicate immunity to rubella.

**Length of Infant's Stay:** This is computed as the difference, in days, between the infant's date of birth and the date of the infant's discharge from hospital. A return of 'not stated' for this variable may indicate that the completed form was returned before the infant had been discharged. Where an infant was transferred to another hospital, the date of the transfer is given as the date of the infant's discharge. Domiciliary births and perinatal deaths are not included in the tables relating to this variable.

**Live Birth:** A live birth is defined as the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. In accordance with WHO guidelines, only births weighing 500 grams or more are included in any analysis of NPRS data.

**Maternity:** Refers to a woman who has delivered a baby irrespective of outcome. In accordance with WHO guidelines, only births weighing 500 grams or more are included in any analysis of NPRS data.

**Method of Delivery:** Six categories are used:<sup>37</sup>

1. Spontaneous cephalic delivery
2. Breech delivery, spontaneous, with or without forceps to after-coming head, breech extraction
3. Forceps delivery
4. Vacuum extraction<sup>38</sup>
5. Caesarean section
6. Other Specified and Combined (for example, combination of spontaneous delivery followed by a vacuum extraction or caesarean section).

**Mother's and Father's Nationality:** This indicates place of birth for mother and father. This definition is for the sole purpose of giving the necessary directions for the completion of the Birth Notification Form and is not a legal definition. Details are given in Appendix F.

**Mother's and Father's Socio-economic Groups:** Occupations are coded and grouped, with minor modifications, according to the system of socio-economic groupings as used by the Central Statistics Office in the *1991 Census of Population, Volume 6*. Details are given in Appendix C.

**Parity:** Maternal parity indicates a mother's total number of previous live births and stillbirths.

**Primiparous:** Women who have had no previous pregnancy resulting in a live birth or stillbirth.

**Multiparous:** Women who have had at least one previous pregnancy resulting in a live birth or stillbirth.

**Perinatal Death and Perinatal Mortality Rate (PMR):** Perinatal deaths include stillbirths and early neonatal deaths. The **perinatal mortality rate (PMR)** is calculated as follows:

$$\frac{\text{Number of Stillbirths and Early Neonatal Deaths} \times 1,000}{\text{Total Number of Live Births and Stillbirths}}$$

In this report a second perinatal mortality rate has been calculated excluding all stillbirths and early neonatal deaths due to congenital anomalies. This **adjusted rate (Adjusted PMR)** to some extent removes those perinatal events where death was unavoidable, but no attempt has been made to exclude only invariably fatal congenital anomalies.

**Perinatal Period:** For the purposes of NPRS the perinatal period covers pregnancy, delivery and ends at seven completed days after birth.

**Period of Gestation:** Gestational age at delivery is recorded in completed weeks, and is measured or estimated according to the best method available in each case.

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<sup>37</sup> For the purpose of presenting data in this report 'instrumental delivery' includes breech/forceps, forceps or vacuum extraction.

<sup>38</sup> Also known as Ventouse Deliveries (Source: World Health Organization, 2005, *International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision*, Vol. 1. Geneva: World Health Organization).

**Plurality:** This indicates the number of births resulting from a single pregnancy.  
**Singleton birth:** Results when one baby is born from a single pregnancy.  
**Multiple births:** Results when more than one baby is born from a single pregnancy.

**Post-mortem:** This indicates whether or not a post-mortem examination was performed. In some cases a return of 'not stated' may be due to the notification form being returned prior to post-mortem.

**Postnatal Length of Stay:** This is computed as the difference, in days, between the date of delivery and the date of the mother's discharge from hospital. A return of 'not stated' for this variable may indicate that the completed form was returned before the mother had been discharged. Domiciliary births are not included in tables relating to this variable.

**Size of Maternity Unit:** Size in this context refers to the number of live births and stillbirths occurring during the year in a dedicated maternity hospital/unit.

**Stillbirth and Stillbirth Rate:** Foetal death is defined as death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy. A foetal death is indicated by the fact that, after such separation, the foetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Following WHO guidelines, a stillbirth in this report refers to the death of a foetus weighing at least 500 grams. The **stillbirth rate** is given as follows:

$$\frac{\text{Number of Stillbirths} \times 1,000}{\text{Total Number of Live Births and Stillbirths}}$$

**Time since Last Birth:** This variable gives the time, grouped into yearly intervals, since the mother's last live birth or stillbirth.

**Total Births:** includes live births and stillbirths for singleton and multiple births.

**Total Period Fertility Rate (TPFR):** is compiled by summing the Age-Specific Fertility Rate (ASFR) for the relevant five-year age groups, dividing by 1,000 and multiplying by 5. It gives the theoretical average number of children who would be born alive to a woman during her lifetime if she were to pass through her childbearing years conforming to the age-specific fertility rates of a given year. See also definition for ASFR.

**Transfer of Infants:** This identifies infants who were transferred to another hospital for medical reasons.

**Twinning Rate:** This is given by:

$$\frac{\text{Number of Twin Births} / 2}{\text{Total Number of Maternities}} \times 1,000$$

Twin births, which resulted in stillbirths, are included in the calculation of the twinning rate.

**Type of Feeding:** This indicates whether artificial feeding, breastfeeding, or a combination of both was being used at the time of discharge. Type of feeding is based on live births only (excluding early neonatal deaths). Any breastfeeding includes type of feeding recorded as either breast or combined at discharge from hospital.

# APPENDIX B

## COPY OF PART 3 OF THE BIRTH NOTIFICATION FORM USED BY NPRS

The following format was used for births in 2018.

**Notification of Birth – To: National Perinatal Reporting System, Healthcare Pricing Office (HPO)**

TYPE OF BIRTH (Live = 1, Still = 2) 1 <input type="checkbox"/>	PLACE OF BIRTH (Hospital = 1, BBA = 2, Domiciliary = 3) 2 <input type="checkbox"/>	NAME AND _____
HOSPITAL NO. 3 _____		ADDRESS OF _____
CASE NO. 6 _____		HOSPITAL _____

<b>INFANT'S DETAILS</b> DATE OF BIRTH (DDMM/YYYY) 14 _____ TIME OF BIRTH _____ IF MULTIPLE BIRTH ORDER OF BIRTH No. <input type="checkbox"/> 22 of <input type="checkbox"/> 23 SEX (Male = 1, Female = 2, Indeterminate = 3) 24 <input type="checkbox"/> BIRTHWEIGHT 25 _____ GRAMMBS PERIOD OF GESTATION 29 _____ WEEKS <b>FATHER'S DETAILS</b> COUNTY _____ 31 _____ COUNTRY _____ 34 _____ NATIONALITY _____ 38 _____ OCCUPATION _____ 42 _____ DATE OF BIRTH (DDMM/YYYY) 44 _____ <b>MOTHER'S DETAILS</b> COUNTY _____ 52 _____ COUNTRY _____ 55 _____ NATIONALITY _____ 59 _____ OCCUPATION _____ 63 _____ DATE OF BIRTH (DDMM/YYYY) 65 _____ CIVIL STATUS (Married = 1, Single = 2, Widowed = 3, Separated = 4, Divorced = 5, Civil Partner = 6, Former Civil Partner = 7, Surviving Civil Partner = 8) 73 <input type="checkbox"/> DATE OF PRESENT MARRIAGE/CIVIL PARTNERSHIP (DDMMYYYY) 74 _____ DATE OF LAST BIRTH (live or still) (DDMMYYYY) 82 _____ NO. OF PREVIOUS LIVE BIRTHS 90 _____ CHILDREN STILL LIVING 92 _____ STILLBIRTHS 94 _____ SPONTANEOUS ABORTIONS 96 _____ <b>PERINATAL DEATH</b> TYPE OF DEATH (Early Neonatal = 1, Stillbirth = 2) 98 <input type="checkbox"/> WAS AUTOPSY PERFORMED (Yes = 1, No = 2) 99 <input type="checkbox"/> AGE AT DEATH 100 _____ DAYS 101 _____ HOURS PLACE OF DEATH _____ 103 _____ IF STILLBIRTH, DID DEATH OCCUR BEFORE LABOUR (1) DURING LABOUR (2) NOT KNOWN (3) 106 _____ <b>CAUSE OF DEATH</b> MAIN DISEASE OR CONDITION IN FETUS OR INFANT _____ 107 _____ OTHER DISEASES OR CONDITIONS IN FETUS OR INFANT _____ 112 _____	<b>MOTHER'S HEALTH</b> ANTENATAL CARE THIS PREGNANCY (Hospital / Obstetrician = 1, O.P. Only = 2, Combined = 3, None = 4, Midwife Only = 5) 117 <input type="checkbox"/> DATE OF FIRST VISIT TO DOCTOR DURING PREGNANCY (DDMMYYYY) 118 _____ DATE OF FIRST VISIT TO HOSPITAL DURING PREGNANCY (DDMMYYYY) 126 _____ WAS MOTHER IMMUNE TO RUBELLA (Yes = 1, No = 2, Not Known = 3) 134 <input type="checkbox"/> METHOD OF DELIVERY (Spontaneous = 1, Suced = Forceps = 2, Forceps = 3, Vac. Extraction = 4, Caesarian Sec. = 5, Other = 6) 135 <input type="checkbox"/> MAIN MATERNAL DISEASE OR CONDITION AFFECTING FETUS OR INFANT _____ 136 _____ OTHER MATERNAL DISEASES OR CONDITIONS AFFECTING FETUS OR INFANT _____ 141 _____ <b>INFANT'S HEALTH</b> TYPE OF FEEDING (Artificial = 1, Breast = 2, Combined = 3) 146 <input type="checkbox"/> WAS BCG ADMINISTERED (Yes = 1, No = 2) 147 <input type="checkbox"/> MAIN DISEASE OR CONGENITAL MALFORMATION AFFECTING INFANT _____ 148 _____ OTHER DISEASES OR CONGENITAL MALFORMATIONS AFFECTING INFANT _____ 153 _____ <b>HOSPITAL</b> WAS ADMISSION BOOKED (Yes = 1, No = 2) 158 <input type="checkbox"/> DATE OF MOTHER'S ADMISSION (DDMMYYYY) 159 _____ DATE OF MOTHER'S DISCHARGE (DDMMYYYY) 167 _____ DATE OF INFANT'S DISCHARGE (DDMMYYYY) 175 _____ WAS INFANT TRANSFERRED TO OTHER HOSPITAL FOR MEDICAL REASONS (Yes = 1, No = 2) 183 <input type="checkbox"/> IF 'YES', NAME OF HOSPITAL _____ 184 _____ <b>GENERAL PRACTITIONER ATTENDED BY MOTHER</b>
--	--

Signature \_\_\_\_\_ Date \_\_\_\_\_ BNF01/2014

## APPENDIX C

### CLASSIFICATION OF SOCIO-ECONOMIC GROUPS

Occupations have been coded and classified in a set of socio-economic groups according to a system devised by the CSO. The final CSO category of 'Unknown' has been differentiated into five distinct groups for the purposes of the Perinatal Reporting System. These are 'Unemployed', 'Not Classifiable', 'Not Applicable', 'Home Duties', and 'Not Stated'. Occupation is coded to the socio-economic group unemployed when occupation is given as unemployed and where no previous occupation is stated. If a previous occupation is stated then occupation is coded to the relevant socio-economic group. 'Not Classifiable' has been used to categorise indecipherable, unclear, or unlisted occupations where efforts to clarify the information have failed. 'Home Duties' is recorded as the socio-economic group where occupation has been entered as 'full-time mother/father/parent', 'stay at home mother/father/parent', 'housewife', 'home duties', etc. 'Not Stated' applies to those cases where either the mother's or father's occupation has been left blank or has been recorded as 'Unknown'.

#### **Under Father's occupation, the following applies:**

'Not Applicable' is entered when the civil status of the mother has been given as single, widowed, separated, divorced, civil partner, former civil partner or surviving civil partner, and where father's occupation has been left blank. 'Not Stated' applies to those cases where the civil status of the mother is recorded as either married or not stated, and where father's occupation has been left blank or has been recorded as 'Unknown'. In either case, if an occupation is given for the father then the appropriate occupational code has been used. For the purposes of presenting data on father's socio-economic group in this report, the categories 'Not Applicable' and 'Not Stated' are combined.

#### **The full list of socio-economic groups used in this report is as follows:**

- Farmers & Farm Managers
- Other Agricultural Occupations & Fishermen
- Higher Professional
- Lower Professional
- Employers & Managers
- Salaried Employees
- Intermediate Non-Manual Workers
- Other Non-Manual Workers
- Skilled Manual Workers
- Semi-Skilled Manual Workers
- Unskilled Manual Workers
- Unemployed
- Not Classifiable
- Not Applicable (Father's Occupation Only)
- Home Duties
- Not Stated.

## APPENDIX D

### CAUSE OF DEATH CLASSIFICATION

The main cause of death has been determined according to the guidelines set out by the WHO in the Tenth Revision of the ICD.<sup>39</sup> The principal coding criteria are summarised here.

The main cause of death should as far as possible indicate the pathological condition of the infant or foetus which, in the opinion of the certifier, made the greatest contribution towards the death.

The following rules are extracted from *ICD-10, Second Edition, 2005, 4. Rules and guidelines for mortality and morbidity coding*. These rules have been applied to cause of death coding in the NPRS data set as follows:

Section (A) – main disease or condition in foetus or infant

Section (B) – other diseases or conditions in foetus or infant

Section (C) – main maternal disease or condition affecting foetus or infant

Section (D) – other maternal disease or condition affecting foetus or infant.

#### **Rule P1. Mode of death or prematurity entered in section (a):**

If heart or cardiac failure, asphyxia or anoxia (any condition in P20.-, P21.-) or prematurity (any condition in P07.-) is entered in section (a) and other conditions of the infant or foetus are entered in either section (a) or section (b), code the first-mentioned of these other conditions as if it had been entered alone in section (a) and code the condition actually entered in section (a) as if it had been entered in section (b).

#### **Rule P2. Two or more conditions entered in sections (a) or (c):**

If two or more conditions are entered in section (a) or section (c), code the first-mentioned of these as if it had been entered alone in section (a) or (c) and code the others as if they had been entered in sections (b) or (d).

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<sup>39</sup> World Health Organization, 2005, *International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision*, Vols. 1- 3. Geneva: World Health Organization

**Rule P3. No entry in sections (a) or (c)**

If there is no entry in section (a) but there are conditions of the infant or foetus entered in section (b), code the first-mentioned of these as if it had been entered in section (a). If there are no entries in either section (a) or section (b), either code P95 (Foetal death of unspecified cause) for stillbirths or code P96.9 (Condition originating in the perinatal period, unspecified) for early neonatal deaths should be used for section (a).

Similarly, if there is no entry in section (c) but there are maternal conditions entered in section (d), code the first-mentioned of these as if it had been entered in section (c). If there are no entries in either section (c) or section (d) use some artificial code, e.g. xxx.x for section (c) to indicate that no maternal condition was reported.

**Rule P4. Conditions entered in wrong section**

If a maternal condition (i.e. conditions in P00-P04) is entered in section (a) or section (b), or if a condition of the infant or foetus is entered in section (c) or section (d), code the conditions as if they had been entered in the respective correct section.

For the purpose of the cause of death tables included in this report, one further criterion has been applied. Where no infant's condition is given, then, where a specific maternal condition is given (any condition in P00-P04), the main cause of death is classified under the maternal condition.

Table D1 summarises these rules.

**TABLE D1**  
Cause of Death Coding Rules

ICD-10 Rule	Cause of Death as recorded on the Birth Notification Form				Action
	Section A	Section B	Section C	Section D	
	Main disease or condition in foetus or infant	Other disease or condition in foetus or infant	Main maternal disease or condition affecting foetus or infant	Other maternal disease or condition affecting foetus or infant	
Rule 1	Heart or cardiac failure, asphyxia, anoxia, prematurity (P20.-, P21.- or P07.-)	Other condition	No entry	No entry	Code the stated 'other condition' in section A and move condition entered in section A to section B.
Rule 2	Two or more conditions listed	No entry	Two or more conditions listed	No entry	Code the first mentioned condition in sections A and C respectively and code the second mentioned conditions in sections B and D respectively.
Rule 3	No entry	Condition entered	No entry	Condition entered	Code the first mentioned condition in section B to section A and the first mentioned condition in section D to section C.
Rule 4	No entry	No entry	No entry	No entry	Code 'Foetal death of unspecified cause' (P95) for stillbirths or 'Conditions originating in the perinatal period, unspecified' (P96.9) for early neonatal deaths in section A.
Additional Rule	Maternal condition entered (P00-P04)	Maternal condition entered (P00-P04)	Infant condition entered	Infant condition entered	Code maternal conditions in sections C and D respectively. Code infant conditions in sections A and B respectively. Code maternal condition to section A.

Table D2 illustrates the main chapter blocks relating to cause of death categories in this report.

**TABLE D2**

ICD 10, Cause of Death Codes

ICD-10 CODE	CAUSE OF DEATH
P00–P04	Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery
P05–P08	Disorders related to length of gestation and foetal growth
P10–P15	Birth trauma
P20–P29	Respiratory and cardiovascular disorders specific to the perinatal period
P35–P39	Infections specific to the perinatal period
P50–P61	Haemorrhagic and haematological disorders of foetus and newborn
P70–P74	Transitory endocrine and metabolic disorders specific to foetus and newborn
P75–P78	Digestive system disorders of foetus and newborn
P80–P83	Conditions involving the integument and temperature regulation of foetus and newborn
P90–P96	Other disorders originating in the perinatal period
Q00–Q07	Congenital malformations of the nervous system
Q10–Q18	Congenital malformations of eye, ear, face and neck
Q20–Q28	Congenital malformations of the circulatory system
Q30–Q34	Congenital malformations of the respiratory system
Q35–Q37	Cleft lip and cleft palate
Q38–Q45	Other congenital malformations of the digestive system
Q50–Q56	Congenital malformations of genital organs
Q60–Q64	Congenital malformations of the urinary system
Q65–Q79	Congenital malformations and deformations of the musculoskeletal system
Q80–Q89	Other congenital malformations
Q90–Q99	Chromosomal abnormalities, not elsewhere classified

All other codes (A00–O99, R00–Z99) have been classified in the category ‘all other causes’.

## APPENDIX E

### CLASSIFICATION OF COUNTY OF RESIDENCE

The following codes are applied to mother's and father's county of residence. Where a Dublin postal code, such as Dublin 13, is entered then a code of 10 is applied for Dublin City. Where there is no postal code and Dublin is recorded then a code of 11 is applied for Dublin County. Where a mother's or father's county of residence is unknown the code 99 is applied. The code 90 is applied where the address given is outside the Republic of Ireland.

10	Dublin City	50	Donegal
11	Dublin County	51	Sligo
12	Kildare	52	Leitrim
13	Wicklow	60	Carlow
20	Laois	61	Kilkenny
21	Offaly	62	Tipperary South Riding
22	Longford	63	Waterford
23	Westmeath	64	Wexford
30	Clare	70	Cork
31	Limerick	71	Kerry
32	Tipperary North Riding	80	Galway
40	Meath	81	Mayo
41	Cavan	82	Roscommon
42	Monaghan	90	Other – all places outside Republic of Ireland
43	Louth	99	Not Stated.

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*Note:* For the purposes of this report Tipperary North Riding and Tipperary South Riding have been combined for County Tipperary.

## APPENDIX F

### CLASSIFICATION OF NATIONALITY

Nationality for mother and father is defined by the place of their birth. This definition is for the sole purpose of giving the necessary directions for the completion of the Birth Notification Form and is not a legal definition.

Nationalities have been coded and classified into groupings according to a system devised by the CSO, as follows:

Ireland includes the following:

Ireland  
Irish American  
Irish English  
Irish European  
Irish Other.

UK includes the following:

England  
Great Britain  
Northern Ireland  
Scotland  
Wales.

EU 15 (excluding Ireland and the UK) includes the following:

Austria	Italy
Belgium	Luxembourg
Denmark	Netherlands
Finland	Portugal
France	Spain
Germany	Sweden.
Greece	

EU 15 to EU 28 includes the following:

Bulgaria	Lithuania
Cyprus	Malta
Croatia	Poland
Czech Republic	Slovakia
Estonia	Slovenia
Hungary	Romania.
Latvia	

Rest of Europe includes the following:

Albania	Liechtenstein
Andorra	Macedonia, The Former Yugoslav Republic of,
Armenia	Moldova, Republic of
Azerbaijan	Monaco
Belarus	Montenegro
Bosnia and Herzegovina	Norway
Faroe Islands	Russian Federation
Georgia	San Marino
Gibraltar	Serbia
Guernsey	Switzerland
Iceland	Turkey

Isle of Man  
Jersey  
Kosovo

Ukraine  
Vatican City  
Yugoslavia, Federal Republic of.

Africa includes the following:

Algeria  
Angola  
Benin  
Botswana  
Burkina Faso  
Burundi  
Cameroon  
Cape Verde  
Central African Republic  
Chad  
Comoros  
Congo  
Congo, The Democratic Republic of the  
Cote d'Ivoire  
Djibouti  
Egypt  
Equatorial Guinea  
Eritrea  
Ethiopia  
Gabon  
Gambia  
Ghana  
Guinea  
Guinea-Bissau  
Kenya  
Lesotho  
Liberia  
Libyan Arab Jamahiriya  
Madagascar

Malawi  
Mali  
Mauritania  
Mauritius  
Mayotte  
Morocco  
Mozambique  
Namibia  
Niger  
Nigeria  
Reunion  
Rwanda  
Saint Helena  
Sao Tome and Principe  
Senegal  
Seychelles  
Sierra Leone  
Somalia  
South Africa  
Sudan  
Swaziland  
Tanzania, United Republic of  
Togo  
Tunisia  
Uganda  
Western Sahara  
Zambia  
Zimbabwe.

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Asia includes the following:

Afghanistan	Macao
Bahrain	Malaysia
Bangladesh	Maldives
Bhutan	Mongolia
British Indian Ocean Territory	Myanmar
Brunei Darussalam	Nepal
Cambodia	Oman
China	Pakistan
East Timor	Palestinian Territory, Occupied
Hong Kong	Philippines
India	Qatar
Indonesia	Saudi Arabia
Iran, Islamic Republic of	Singapore
Iraq	Sri Lanka
Israel	Syrian Arab Republic
Japan	Taiwan, Province of China
Jordan	Tajikistan
Kazakhstan	Thailand
Korea, Democratic People's Republic of	Turkmenistan
Korea, Republic of	United Arab Emirates
Kuwait	Uzbekistan
Kyrgyzstan	Vietnam
Lao People's Democratic Republic	Yemen.
Lebanon	

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America includes the following:

Anguilla	Guyana
Antigua and Barbuda	Haiti
Argentina	Honduras
Aruba	Jamaica
Bahamas	Martinique
Barbados	Mexico
Belize	Montserrat
Bermuda	Netherlands Antilles
Bolivia	Nicaragua
Brazil	Panama
Canada	Paraguay
Cayman Islands	Peru
Chile	Puerto Rico
Colombia	Saint Kitts and Nevis
Costa Rica	Saint Lucia
Cuba	Saint Martin
Dominica	Saint Pierre and Miquelon
Dominican Republic	Saint Vincent and the Grenadines
Ecuador	Suriname
El Salvador	Trinidad and Tobago

Falkland Islands (Malvinas)	Turks and Caicos Islands
French Guiana	United States
Greenland	Uruguay
Grenada	Venezuela
Guadeloupe	Virgin Islands, British
Guatemala	Virgin Island, US.

Australia includes the following:  
Australia.

New Zealand and Other Oceania includes the following:

American Samoa	Niue
Antarctica	Norfolk Island
Bouvet Island	Northern Mariana Islands
Christmas Island	Palau
Cocos (Keeling) Islands	Papua New Guinea
Cook Islands	Pitcairn
Fiji	Samoa
French Polynesia	Solomon Islands
French Southern Territories	South Georgia and the South Sandwich Islands
Guam	Svalbard and Jan Mayen
Heard Island and McDonald Islands	Tokelau
Kiribati	Tonga
Marshall Islands	Tuvalu
Micronesia, Federated States of	United States Minor Outlying Islands
Nauru	Vanuatu
New Caledonia	Wallis and Futuna.
New Zealand	

Multi-Nationality includes the following:  
Mixed/Multi-Nationality (stated as so).

No Nationality:  
Stated as so

Not Stated:  
Where nationality is not provided

Not Applicable:

This applies to father's nationality only. Where the civil status of the mother has been given as single, widowed, separated, divorced, civil partner, former civil partner or surviving civil partner the General Register Office does not require father's details to register the birth, and as such this information is generally not provided. If a nationality is given for the father then the appropriate nationality code has been used. For the purposes of presenting data on father's nationality in this report, the categories 'Not Applicable' and 'Not Stated' are combined.

All Other Nationalities:

Where nationality is not recorded to any category listed above

## APPENDIX G

### SOURCE NPRS DATA FOR FIGURES

- G1 Mother's County of Residence, Total Births
- G2 Mother's Average Age by Mother's Nationality, Total Maternities
- G3 Age of Mother by Maternal Parity, Total Maternities
- G4 Birthweight (grams) for Primiparous Women
- G5 Birthweight (grams) for Multiparous Women
- G6 Birthweight (grams) by Sex, Total Live Births
- G7 Gestational Age (weeks) at Delivery for Primiparous Women
- G8 Gestational Age (weeks) at Delivery for Multiparous Women
- G9 Method of Delivery by Mother's Postnatal Length of Stay, Singleton and Multiple Births
- G10 Mother's County of Residence by Infant's Type of Feeding, Total Live Births
- G11 Mother's Nationality by Exclusively Breastfed Infants, Total Live Births
- G12 Birthweight (grams) Total Perinatal Deaths, Antepartum and Intrapartum Stillbirths, Early Neonatal Deaths, and Mortality Rates
- G13 Cause of Death: Total Perinatal Deaths
- G14 Age at Death by Plurality, Early Neonatal Deaths
- G15 Age at Death by Birthweight (<1,000g and >=1,000g), Early Neonatal Deaths

**TABLE G1**

## Mother's County of Residence, Total Births

Mother's County of Residence	Number	Per Cent
Carlow	831	1.4
Cavan	1,039	1.7
Clare	1,315	2.2
Cork	6,923	11.4
Donegal	1,900	3.1
Dublin City	13,377	22.0
Dublin County	4,398	7.2
Galway	3,299	5.4
Kerry	1,616	2.7
Kildare	3,050	5.0
Kilkenny	1,105	1.8
Laois	1,049	1.7
Leitrim	415	0.7
Limerick	2,604	4.3
Longford	565	0.9
Louth	1,723	2.8
Mayo	1,473	2.4
Meath	2,601	4.3
Monaghan	820	1.3
Offaly	935	1.5
Roscommon	680	1.1
Sligo	799	1.3
Tipperary	2,059	3.4
Waterford	1,431	2.4
Westmeath	1,234	2.0
Wexford	1,839	3.0
Wicklow	1,705	2.8
<b>Total</b>	<b>60,785</b>	<b>100</b>

Notes: Percentage column is subject to rounding.  
 See Appendix E for details of county of residence classification.  
 Births where mother's county of residence was not stated or 'other' were excluded from this table.

**TABLE G2**  
Mother's Average Age by Mother's Nationality, Total Maternities

Mother's Nationality	Average Age in Years
Ireland	32.6
UK	31.7
EU15 (excluding Ireland & UK)	33.9
EU15 to EU28	31.0
Rest of Europe	30.5
Africa	31.9
Asia	31.6
America	32.6
<b>Total</b>	<b>32.4</b>

Notes: Average ages calculated for nationalities with greater than 100 births.  
See Appendix F for a description of the classification system for nationality.

**TABLE G3**  
Age of Mother by Maternal Parity, Total Maternities

Frequency Row Per Cent	Maternal Parity								Total
	0	1	2	3	4	5	6	More than 6	
Under 20 Years	832 86.9	113 11.8	* ^	~ ^	0 0.0	0 0.0	0 0.0	0 0.0	957 100
20-24 Years	3,074 61.5	1,416 28.3	* ^	* ^	13 0.3	6 0.1	~ ^	0 0.0	5,000 100
25-29 Years	4,866 47.1	3,380 32.7	1,380 13.4	479 4.6	148 1.4	56 0.5	* ^	* ^	10,329 100
30-34 Years	8,502 41.3	7,394 35.9	3,139 15.2	1,006 4.9	322 1.6	124 0.6	63 0.3	41 0.2	20,591 100
35-39 Years	4,889 26.2	6,975 37.4	4,468 24.0	1,547 8.3	431 2.3	174 0.9	93 0.5	71 0.4	18,648 100
40 Years and Over	1,161 25.8	1,489 33.1	1,005 22.4	504 11.2	168 3.7	88 2.0	* ^	* ^	4,493 100
<b>Total</b>	<b>23,324</b> <b>38.9</b>	<b>20,767</b> <b>34.6</b>	<b>10,396</b> <b>17.3</b>	<b>3,634</b> <b>6.1</b>	<b>1,082</b> <b>1.8</b>	<b>448</b> <b>0.7</b>	<b>214</b> <b>0.4</b>	<b>153</b> <b>0.3</b>	<b>60,018</b> <b>100</b>

Notes: Percentage rows are subject to rounding.  
~ Denotes five or fewer births reported to NPRS.  
\* Further suppression required to prevent disclosure of five or fewer births.  
^ Percentage not provided to prevent disclosure of small numbers.  
Births to mothers with unknown maternal age or parity unknown were excluded from this table.

**TABLE G4**

**Birthweight (grams) for Primiparous Women: Total Births, Live Births, Mortality Rates, and Maternities**

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
500-749	68	0.3	54	205.9	203.7	367.6	338.5	56
750-999	69	0.3	60	130.4	50.0	173.9	149.3	54
1000-1249	63	0.3	55	127.0	127.3	238.1	186.4	52
1250-1499	76	0.3	75	13.2	40.0	52.6	13.7	64
1500-1999	381	1.6	369	31.5	5.4	36.7	18.7	297
2000-2499	1,085	4.6	1,077	7.4	4.6	12.0	4.6	922
2500-2999	3,323	14.0	3,316	2.1	1.5	3.6	2.1	3,193
3000-3499	8,205	34.5	8,197	1.0	0.2	1.2	1.1	8,171
3500-3999	7,699	32.4	7,695	0.5	0.4	0.9	0.8	7,697
4000-4499	2,481	10.4	2,480	0.4	0.4	0.8	0.4	2,481
4500 and Over	339	1.4	339	-	-	-	-	339
<b>Total</b>	<b>23,789</b>	<b>100</b>	<b>23,717</b>	<b>3.0</b>	<b>1.8</b>	<b>4.8</b>	<b>3.3</b>	<b>23,326</b>
<b>Singleton Births</b>								
500-749	46	0.2	37	195.7	243.2	391.3	348.8	46
750-999	45	0.2	37	177.8	54.1	222.2	186.0	45
1000-1249	42	0.2	34	190.5	117.6	285.7	210.5	42
1250-1499	52	0.2	51	19.2	39.2	57.7	0.0	52
1500-1999	226	1.0	215	48.7	9.3	57.5	27.4	226
2000-2499	776	3.4	768	10.3	6.5	16.8	6.5	776
2500-2999	3,040	13.3	3,033	2.3	1.6	3.9	2.3	3,040
3000-3499	8,134	35.6	8,126	1.0	0.2	1.2	1.1	8,134
3500-3999	*	^	*	0.5	0.4	0.9	0.8	*
4000-4499	*	^	*	0.4	0.4	0.8	0.4	*
4500 and Over	339	1.5	339	-	-	-	-	339
<b>Total</b>	<b>22,873</b>	<b>100</b>	<b>22,808</b>	<b>2.8</b>	<b>1.5</b>	<b>4.4</b>	<b>2.8</b>	<b>22,873</b>
<b>Multiple Births</b>								
500-749	22	2.4	17	227.3	117.6	318.2	318.2	10
750-999	24	2.6	23	41.7	43.5	83.3	83.3	9
1000-1249	21	2.3	21	-	142.9	142.9	142.9	10
1250-1499	24	2.6	24	-	41.7	41.7	41.7	12
1500-1999	155	16.9	154	6.5	-	6.5	6.5	71
2000-2499	309	33.7	309	-	-	-	-	146
2500-2999	283	30.9	283	-	-	-	-	153
3000-3499	71	7.8	71	-	-	-	-	37
3500-3999	*	^	*	-	-	-	-	~
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>916</b>	<b>100</b>	<b>909</b>	<b>7.6</b>	<b>7.7</b>	<b>15.3</b>	<b>15.3</b>	<b>453</b>

Notes: Percentage column is subject to rounding.  
 ~ Denotes five or fewer births (or maternities) reported to NPRS.  
 \* Further suppression required to prevent disclosure of five or fewer births (or maternities).  
 ^ Percentage not provided to prevent disclosure of small numbers.  
 a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.  
 There were five or fewer births with unknown birthweight; these were excluded from this table.

TABLE G5

Birthweight (grams) for Multiparous Women: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
500-749	60	0.2	39	350.0	282.1	533.3	481.5	*
750-999	68	0.2	57	161.8	122.8	264.7	206.3	62
1000-1249	89	0.2	76	146.1	13.2	157.3	127.9	68
1250-1499	95	0.3	84	115.8	47.6	157.9	90.9	83
1500-1999	388	1.0	368	51.5	32.6	82.5	40.4	323
2000-2499	1,205	3.2	1,189	13.3	9.3	22.4	13.4	1,036
2500-2999	4,375	11.7	4,363	2.7	1.6	4.3	2.7	4,094
3000-3499	11,796	31.6	11,783	1.1	0.5	1.6	1.4	11,694
3500-3999	13,223	35.4	13,221	0.2	0.2	0.4	0.2	13,213
4000-4499	5,160	13.8	5,156	0.8	-	0.8	0.6	5,159
4500 and Over	902	2.4	901	1.1	-	1.1	1.1	902
Not Stated	8	0.0	7	125.0	-	125.0	125.0	~
<b>Total</b>	<b>37,369</b>	<b>100</b>	<b>37,244</b>	<b>3.3</b>	<b>1.7</b>	<b>5.0</b>	<b>3.4</b>	<b>36,696</b>
<b>Singleton Births</b>								
500-749	*	0.1	33	377.4	212.1	509.4	446.8	*
750-999	54	0.1	45	166.7	88.9	240.7	180.0	54
1000-1249	58	0.2	48	172.4	0.0	172.4	142.9	58
1250-1499	68	0.2	57	161.8	52.6	205.9	129.0	68
1500-1999	259	0.7	239	77.2	41.8	115.8	61.5	259
2000-2499	879	2.4	863	18.2	9.3	27.3	18.4	879
2500-2999	3,826	10.6	3,814	3.1	1.8	5.0	3.1	3,826
3000-3499	11,571	32.1	11,558	1.1	0.5	1.6	1.4	11,571
3500-3999	13,198	36.6	13,196	0.2	0.2	0.4	0.2	13,198
4000-4499	*	14.3	*	0.8	-	0.8	0.6	*
4500 and Over	902	2.5	901	1.1	-	1.1	1.1	902
Not Stated	~	0.0	~	-	-	-	-	~
<b>Total</b>	<b>36,028</b>	<b>100</b>	<b>35,910</b>	<b>3.3</b>	<b>1.3</b>	<b>4.6</b>	<b>3.1</b>	<b>36,028</b>
<b>Multiple Births</b>								
500-749	*	0.5	6	142.9	666.7	714.3	714.3	~
750-999	14	1.0	12	142.9	250.0	357.1	307.7	8
1000-1249	31	2.3	28	96.8	35.7	129.0	100.0	10
1250-1499	27	2.0	27	-	37.0	37.0	-	15
1500-1999	129	9.6	129	-	15.5	15.5	-	64
2000-2499	326	24.3	326	-	9.2	9.2	-	157
2500-2999	549	40.9	549	-	-	-	-	268
3000-3499	225	16.8	225	-	-	-	-	123
3500-3999	25	1.9	25	-	-	-	-	15
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	0	0.0	0	-	-	-	-	0
Not Stated	*	^	~	166.7	-	166.7	166.7	~
<b>Total</b>	<b>1,341</b>	<b>100</b>	<b>1,334</b>	<b>5.2</b>	<b>10.5</b>	<b>15.7</b>	<b>9.8</b>	<b>668</b>

## Notes:

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

**TABLE G6**  
Birthweight (grams) by Sex, Total Live Births

	Male		Female		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
500-749	44	0.1	49	0.2	93	0.2
750-999	64	0.2	53	0.2	117	0.2
1000-1249	72	0.2	58	0.2	130	0.2
1250-1499	77	0.2	82	0.3	159	0.3
1500-1999	372	1.2	365	1.2	737	1.2
2000-2499	1,039	3.3	1,230	4.1	2,269	3.7
2500-2999	3,430	10.9	4,265	14.4	7,695	12.6
3000-3499	9,349	29.8	10,661	35.9	20,010	32.8
3500-3999	11,338	36.1	9,606	32.4	20,944	34.3
4000-4499	4,708	15.0	2,942	9.9	7,650	12.5
4500 and Over	871	2.8	374	1.3	1,245	2.0
<b>Total</b>	<b>31,364</b>	<b>100</b>	<b>29,685</b>	<b>100</b>	<b>61,049</b>	<b>100</b>

Notes: Percentage columns are subject to rounding.  
Births where sex was recorded as indeterminate or where birthweight was recorded as not stated were excluded from this table.

**TABLE G7**  
Gestational Age (weeks) at Delivery for Primiparous Women: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Less than 28	120	0.5	102	150.0	156.9	283.3	265.0	102
28-31	200	0.8	186	70.0	26.9	95.0	47.4	162
32-36	1,512	6.4	1493	12.6	6.7	19.2	12.0	1,271
37-41	21,421	90.0	21402	0.9	0.5	1.4	0.9	21,254
42 and Over	531	2.2	529	3.8	-	3.8	3.8	531
Not Stated	6	0.0	6	-	-	-	-	6
<b>Total</b>	<b>23,790</b>	<b>100</b>	<b>23,718</b>	<b>3.0</b>	<b>1.8</b>	<b>4.8</b>	<b>3.3</b>	<b>23,326</b>
<b>Singleton Births</b>								
Less than 28	81	0.4	69	148.1	173.9	296.3	269.2	81
28-31	131	0.6	117	106.9	25.6	129.8	57.9	131
32-36	1,038	4.5	1,020	17.3	8.8	26.0	15.6	1,038
37-41	21,086	92.2	21,067	0.9	0.5	1.4	0.9	21,086
42 and Over	531	2.3	529	3.8	-	3.8	3.8	531
Not Stated	6	0.0	6	-	-	-	-	6
<b>Total</b>	<b>22,873</b>	<b>100</b>	<b>22,808</b>	<b>2.8</b>	<b>1.5</b>	<b>4.4</b>	<b>2.8</b>	<b>22,873</b>
<b>Multiple Births</b>								
Less than 28	39	4.3	33	153.8	121.2	256.4	256.4	21
28-31	69	7.5	69	-	29.0	29.0	29.0	31
32-36	474	51.7	473	2.1	2.1	4.2	4.2	233
37-41	335	36.5	335	-	-	-	-	168
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>917</b>	<b>100</b>	<b>910</b>	<b>7.6</b>	<b>7.7</b>	<b>15.3</b>	<b>15.3</b>	<b>453</b>

Notes: Percentage column is subject to rounding.  
~ Denotes five or fewer births (or maternities) reported to NPRS.  
\* Further suppression required to prevent disclosure of five or fewer births (or maternities).  
^ Percentage not provided to prevent disclosure of small numbers.  
a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

**TABLE G8**

Gestational Age (weeks) at Delivery for Multiparous Women: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Less than 28	135	0.4	108	200.0	157.4	325.9	294.6	118
28-31	252	0.7	225	107.1	44.4	146.8	100.4	220
32-36	2,110	5.6	2,076	16.1	7.7	23.7	12.5	1,820
37-41	34,595	92.6	34,559	1.0	0.5	1.6	1.0	34,262
42 and Over	274	0.7	274	-	3.6	3.6	3.6	273
<b>Total</b>	<b>37,366</b>	<b>100</b>	<b>37,242</b>	<b>3.3</b>	<b>1.7</b>	<b>5.0</b>	<b>3.4</b>	<b>36,693</b>
<b>Singleton Births</b>								
Less than 28	102	0.3	80	215.7	125.0	313.7	278.4	102
28-31	190	0.5	163	142.1	49.1	184.2	134.1	190
32-36	1,534	4.3	1502	20.9	8.0	28.7	15.9	1,534
37-41	33,927	94.2	33891	1.1	0.5	1.6	1.0	33,927
42 and Over	272	0.8	272	0.0	3.7	3.7	3.7	272
<b>Total</b>	<b>36,025</b>	<b>100</b>	<b>35,908</b>	<b>3.2</b>	<b>1.3</b>	<b>4.6</b>	<b>3.1</b>	<b>36,025</b>
<b>Multiple Births</b>								
Less than 28	33	2.5	28	151.5	250.0	363.6	343.8	16
28-31	62	4.6	62	-	32.3	32.3	-	30
32-36	576	43.0	574	3.5	7.0	10.4	3.5	286
37-41	668	49.8	668	-	1.5	1.5	-	335
42 and Over	2	0.1	2	-	-	-	-	1
<b>Total</b>	<b>1,341</b>	<b>100</b>	<b>1,334</b>	<b>5.2</b>	<b>10.5</b>	<b>15.7</b>	<b>9.8</b>	<b>668</b>

**Notes:**

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

**TABLE G9**

Method of Delivery by Mother's Postnatal Length of Stay, Singleton and Multiple Births

	Postnatal Length of Stay			
	0-2 Days	3-5 Days	6-8 Days	9+ Days
<b>Singleton Births</b>				
Spontaneous	79.4	19.7	0.8	0.1
Instrumental <sup>#</sup>	60.1	37.9	1.6	0.4
Caesarean section	6.5	88.1	4.6	0.8
<b>Multiple Births</b>				
Spontaneous	37.1	54.4	6.7	1.8
Instrumental <sup>#</sup>	33.7	56.8	8.5	1.0
Caesarean section	1.6	80.1	16.0	2.3

**Notes:**

- Percentages are subject to rounding.
- # Instrumental delivery includes breech/forceps, forceps or vacuum extraction. Domiciliary births are excluded from this table. See Appendix H for detailed analysis.

**TABLE G10**

Mother's County of Residence by Infant's Type of Feeding, Total Live Births

Frequency Row Per Cent Col. Per Cent	Artificial	Breast	Combined	Total
Carlow	388 47.1 1.6	384 46.6 1.4	52 6.3 0.6	824 100.0 1.4
Cavan	536 51.9 2.2	392 37.9 1.4	105 10.2 1.3	1,033 100.0 1.7
Clare	574 43.8 2.4	559 42.7 2.0	177 13.5 2.2	1,310 100.0 2.2
Cork	2,385 34.6 10.0	4,355 63.2 15.3	155 2.2 1.9	6,895 100.0 11.4
Donegal	992 52.6 4.2	703 37.3 2.5	191 10.1 2.4	1,886 100.0 3.1
Dublin City	4,470 33.9 18.7	6,183 46.8 21.8	2,547 19.3 31.8	13,200 100.0 21.9
Dublin County	1,268 29.2 5.3	2,239 51.5 7.9	842 19.4 10.5	4,349 100.0 7.2
Galway	1,208 36.8 5.1	1,374 41.8 4.8	702 21.4 8.8	3,284 100.0 5.4
Kerry	614 38.1 2.6	926 57.5 3.3	70 4.3 0.9	1,610 100.0 2.7
Kildare	1,140 37.6 4.8	1,319 43.6 4.6	569 18.8 7.1	3,028 100.0 5.0
Kilkenny	410 37.3 1.7	658 59.9 2.3	31 2.8 0.4	1,099 100.0 1.8
Laois	410 39.2 1.7	557 53.2 2.0	80 7.6 1.0	1,047 100.0 1.7
Leitrim	199 48.2 0.8	157 38.0 0.6	57 13.8 0.7	413 100.0 0.7
Limerick	1,306 50.4 5.5	1,011 39.0 3.6	274 10.6 3.4	2,591 100.0 4.3
Longford	293 52.0 1.2	250 44.3 0.9	21 3.7 0.3	564 100.0 0.9
Louth	873 50.9 3.7	542 31.6 1.9	300 17.5 3.7	1,715 100.0 2.8
Mayo	603 41.2 2.5	608 41.5 2.1	253 17.3 3.2	1,464 100.0 2.4

**TABLE G10**

Mother's County of Residence by Infant's Type of Feeding, Total Live Births (cont.)

Frequency Row Per Cent Col. Per Cent	Artificial	Breast	Combined	Total
Meath	983 38.4 4.1	1,165 45.5 4.1	412 16.1 5.1	2,560 100.0 4.2
Monaghan	401 49.3 1.7	316 38.9 1.1	96 11.8 1.2	813 100.0 1.3
Offaly	488 52.8 2.0	374 40.4 1.3	63 6.8 0.8	925 100.0 1.5
Roscommon	281 41.8 1.2	288 42.8 1.0	104 15.5 1.3	673 100.0 1.1
Sligo	360 45.5 1.5	300 37.9 1.1	131 16.6 1.6	791 100.0 1.3
Tipperary	1,026 50.1 4.3	826 40.3 2.9	196 9.6 2.4	2,048 100.0 3.4
Waterford	596 41.9 2.5	776 54.6 2.7	50 3.5 0.6	1,422 100.0 2.4
Westmeath	553 45.1 2.3	579 47.2 2.0	94 7.7 1.2	1,226 100.0 2.0
Wexford	878 48.2 3.7	770 42.3 2.7	172 9.5 2.1	1,820 100.0 3.0
Wicklow	622 36.8 2.6	805 47.6 2.8	264 15.6 3.3	1,691 100.0 2.8
<b>Total</b>	<b>23,857</b> <b>39.6</b> <b>100</b>	<b>28,416</b> <b>47.1</b> <b>100</b>	<b>8,008</b> <b>13.3</b> <b>100</b>	<b>60,281</b> <b>100</b> <b>100</b>

Notes: Percentage rows and columns are subject to rounding.  
See Appendix E for details of county of residence classification.  
This table excludes early neonatal deaths.  
Births where mother's county of residence was unknown or 'other' and births with unknown type of feeding were excluded from this table.

**TABLE G11**

Mother's Nationality by Exclusively Breastfed Infants, Total Live Births

Mother's Nationality	Breastfeeding (%)
Ireland	42.7
UK	48.3
EU15 (excluding Ireland & UK)	73.3
EU15 to EU28	67.5
Rest of Europe	69.1
Africa	44.5
Asia	48.8
America	69.2

Notes: Percentage rows are subject to rounding.  
Categories where percentages were based on <100 live births and where nationality was not stated are not included.  
The calculation of percentages exclude not stated feeding type.  
See Appendix F for a description of the classification system for nationality.  
This table excludes early neonatal deaths.

**TABLE G12**

Birthweight (grams): Total Perinatal Deaths, Antepartum and Intrapartum Stillbirths, Early Neonatal Deaths, and Mortality Rates

	Total Perinatal Deaths	Total Perinatal Deaths %	Ante-partum Stillbirths	Intra-partum Stillbirths	Not Stated	Stillbirth Rate <sup>a</sup>	Early Neonatal Deaths	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adj. PMR <sup>a</sup>
<b>Total Births</b>										
500-749	57	18.9	27	~	*	273.4	22	236.6	445.3	403.4
750-999	30	10	17	~	~	146.0	10	85.5	219.0	176.9
1000-1249	29	9.6	18	~	~	138.2	8	61.1	190.8	151.7
1250-1499	19	6.3	12	0	0	70.2	7	44.0	111.1	55.9
1500-1999	46	15.3	26	~	~	41.6	14	19.0	59.7	29.5
2000-2499	40	13.3	21	~	~	10.5	16	7.0	17.4	9.2
2500-2999	31	10.3	13	~	~	2.5	12	1.6	4.0	2.5
3000-3499	29	9.6	16	~	~	1.0	8	0.4	1.4	1.2
3500-3999	12	4	~	~	0	0.3	*	0.3	0.6	0.4
4000-4499	*	^	~	0	0	0.7	~	0.1	0.8	0.5
4500 and over	~	^	~	0	0	0.8	0		0.8	0.8
<b>Total</b>	<b>300</b>	<b>100</b>	<b>161</b>	<b>17</b>	<b>18</b>	<b>3.2</b>	<b>104</b>	<b>1.7</b>	<b>4.9</b>	<b>3.3</b>
<b>Singleton Births</b>										
500-749	45	16.9	26	~	~	292.9	16	228.6	454.5	400.0
750-999	23	8.6	16	0	~	171.7	*	73.2	232.3	182.8
1000-1249	22	8.3	16	~	~	180.0	~	48.8	220.0	170.2
1250-1499	17	6.4	*	0	0	100.0	~	46.3	141.7	72.1
1500-1999	43	16.2	26	~	~	63.9	12	26.4	88.7	45.4
2000-2499	37	13.9	21	~	~	14.5	13	8.0	22.3	12.8
2500-2999	31	11.7	13	~	~	2.8	12	1.7	4.5	2.8
3000-3499	29	10.9	16	~	~	1.1	8	0.4	1.5	1.3
3500-3999	12	4.5	~	~	0	0.3	6	0.3	0.6	0.4
4000-4499	*	^	~	0	0	0.7	~	0.1	0.8	0.5
4500 and over	~	^	~	0	0	0.8	0	0.0	0.8	0.8
<b>Total</b>	<b>266</b>	<b>100</b>	<b>157</b>	<b>15</b>	<b>11</b>	<b>3.1</b>	<b>83</b>	<b>1.4</b>	<b>4.5</b>	<b>3.0</b>
<b>Multiple Births</b>										
500-749	12	34.3	~	~	~	206.9	6	260.9	413.8	413.8
750-999	7	20	~	~	~	78.9	~	114.3	184.2	162.2
1000-1249	7	20	~	0	~	57.7	~	81.6	134.6	117.6
1250-1499	~	^	0	0	0	0.0	~	39.2	39.2	20.0
1500-1999	~	^	0	0	~	3.5	~	7.0	10.5	3.5
2000-2499	~	^	0	0	0	-	~	4.7	4.7	-
2500-2999	0	0	0	0	0	-	0	-	-	-
3000-3499	0	0	0	0	0	-	0	-	-	-
3500-3999	0	0	0	0	0	-	0	-	-	-
4000-4499	0	0	0	0	0	-	0	-	-	-
4500 and over	0	0	0	0	0	-	0	-	-	-
<b>Total</b>	<b>34</b>	<b>100</b>	<b>~</b>	<b>~</b>	<b>7</b>	<b>5.8</b>	<b>21</b>	<b>9.3</b>	<b>15.5</b>	<b>12.0</b>

Notes: Percentage column is subject to rounding.  
 ~ Denotes five or fewer births reported to NPRS.  
 \* Further suppression required to prevent disclosure of five or fewer births.  
 ^ Percentage not provided to prevent disclosure of small numbers.  
 a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. There were five or fewer births with not stated birthweight; these were excluded from this table.

**TABLE G13**

Cause of Death: Total Perinatal Deaths

	Stillbirth		Early Neonatal Death		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Maternal factors (P00-P04)	73	37.1	6	5.8	79	26.2
Immaturity (P05-P08)	14	7.1	15	14.4	29	9.6
Respiratory/cardiovascular disorders (P20-P29)	15	7.6	8	7.7	23	7.6
Unspecified/Unexplained (P95,P96.9)	33	16.8	7	6.7	40	13.3
Congenital malformations (Q00-Q99)	46	23.4	51	49.0	97	32.2
All other specific causes	16	8.1	17	16.3	33	11.0
<b>Total</b>	<b>197</b>	<b>100</b>	<b>104</b>	<b>100</b>	<b>301</b>	<b>100</b>

Note: Percentage columns are subject to rounding.

**TABLE G14**

Age at Death by Plurality, Early Neonatal Deaths

	Total Births	Singleton Births	Multiple Births
	Per Cent	Per Cent	Per Cent
<b>Completed Hours</b>			
<1 hour	12.9	12.5	14.3
1-23 hours	34.7	35.0	33.3
<b>Total under 1 day</b>	<b>47.5</b>	<b>47.5</b>	<b>47.6</b>
<b>1-6 completed days</b>	<b>52.5</b>	<b>52.5</b>	<b>52.4</b>
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Note: Percentages are subject to rounding.

**TABLE G15**

Age at Death by Birthweight (&lt;1,000g and &gt;=1,000g), Early Neonatal Deaths

	Total Births	Birthweight < 1,000g	Birthweight >= 1,000g
	Per Cent	Per Cent	Per Cent
<b>Completed Hours</b>			
<1 hour	12.9	3.2	17.1
1-23 hours	34.7	32.3	35.7
<b>Total under 1 day</b>	<b>47.5</b>	<b>35.5</b>	<b>52.9</b>
<b>1-6 completed days</b>	<b>52.5</b>	<b>64.5</b>	<b>47.1</b>
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Note: Percentages are subject to rounding.

# APPENDIX H

## DOMICILIARY BIRTHS, 2009–2018

### INTRODUCTION

In the NPRS, domiciliary births are defined as planned home births attended by a Self Employed Community Midwife and are not associated with a hospital. Births delivered under hospital-administered home birth schemes are recorded as hospital births. Domiciliary births have been included, unless otherwise stated, in the analysis presented in previous sections.

Table H1 presents selected statistics for domiciliary births for the period 2009–2018.

- There were 189 domiciliary births in 2018 representing 0.3 per cent of all births.
- The number of domiciliary births has increased by 27.7 per cent over the decade and has increased by 12.5 per cent from 2017 to 2018. The lowest number of domiciliary births over the 10-year period was reported for 2009 at 148 and the highest number was reported in 2015 at 206 (see Figure H1).
- The average age of mothers having domiciliary births has remained stable, ranging from 33.2 years in 2011 to 34.5 years in 2009 and is recorded as 34.2 years in 2018.
- Women choosing a domiciliary delivery in 2018 had an average maternal parity of 1.5 previous births.
- The percentage of women recording any breastfeeding ranged from 92.3 per cent in 2017 to 99.4 per cent in 2011 and is reported at 97.4 per cent in 2018.
- Exclusive breastfeeding was reported for 96.8 per cent of domiciliary births in 2018, an increase of 7.0 per cent since 2017.
- The average birthweight for domiciliary births in 2018 was 3,739.8 grams.

TABLE H1

Trends in Domiciliary Births—Selected Statistics, 2009–2018

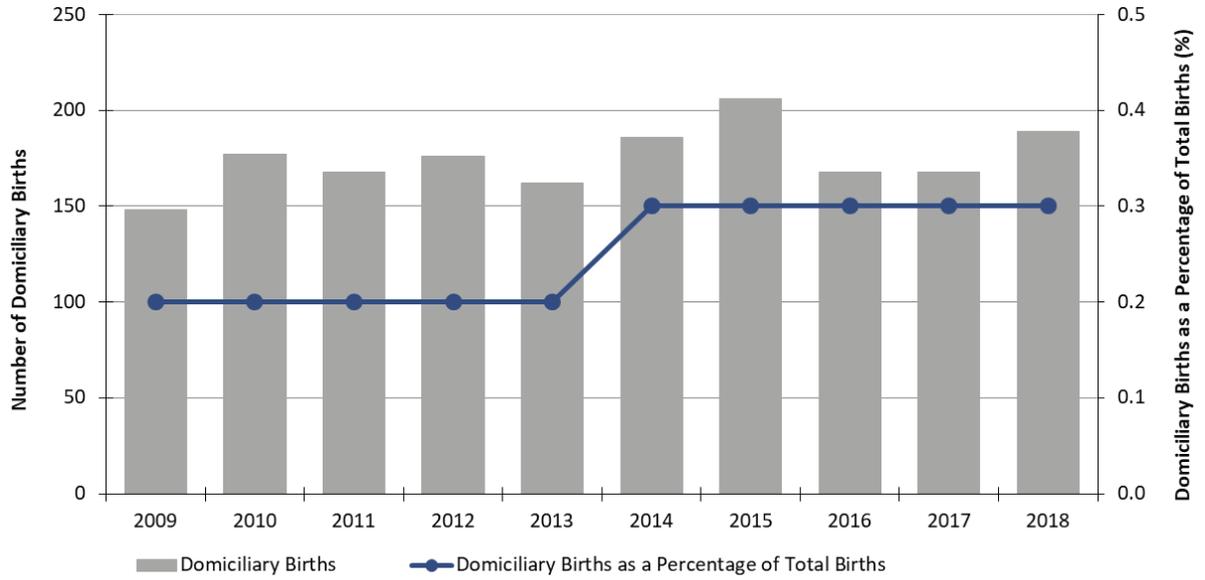
General Characteristics	N	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% Change	
													2009-2018
<b>Total Domiciliary Births</b>		<b>148</b>	<b>177</b>	<b>168</b>	<b>176</b>	<b>162</b>	<b>186</b>	<b>206</b>	<b>168</b>	<b>168</b>	<b>189</b>	<b>27.7</b>	<b>12.5</b>
Age of mother (years) <sup>1</sup>	Avg	34.5	33.4	33.2	33.8	33.3	34.1	33.7	34.0	34.3	34.2	-0.9	-0.4
Single mothers <sup>1</sup>	%	22.3	24.3	29.2	27.3	24.1	24.7	28.2	29.2	25.0	23.8	6.7	-4.8
Maternal parity <sup>1</sup>	Avg	1.7	1.4	1.5	1.5	1.5	1.6	1.5	1.4	1.5	1.5	-11.8	0.0
Gestational age at delivery in weeks <sup>1</sup>	Avg	40	40	40	39.9	39.8	40.0	39.9	39.8	39.9	39.9	-0.3	0.0
Interval since last birth (years) <sup>2</sup>	Avg	3.2	2.9	2.7	2.9	2.6	2.5	2.9	2.6	2.9	2.8	-12.5	-3.4
Immunity to Rubella <sup>1</sup>	%	98.0	97.2	97.0	96.6	95.1	96.2	92.7	92.9	96.4	95.2	-2.9	-1.2
Any Breastfeeding <sup>3,4</sup>	%	96.6	97.2	99.4	98.3	96.3	93.5	96.1	95.2	92.3	97.4	0.8	5.5
Exclusive Breastfeeding <sup>3</sup>	%	96.6	96.6	98.2	96.6	93.8	91.4	95.1	94.0	90.5	96.8	0.2	7.0
Combined Antenatal Care – Midwife and G.P./Hospital <sup>5</sup>	%	99.3	98.9	93.5	86.9	96.9	93.0	99.5	97.6	100.0	98.9	-0.4	-1.1
Birthweight (grams) <sup>6</sup>	Avg	3,764.9	3,833.9	3,679.6	3,713.1	3,720.1	3,767.7	3,712.8	3,753.1	3,687.5	3,739.8	-0.7	1.4

## Notes:

Percentages are subject to rounding.

<sup>1</sup> There were no domiciliary multiple births in the years 2009–2018.<sup>2</sup> Based on maternities.<sup>3</sup> Based on multiparous maternities.<sup>4</sup> Based on maternities with live births. Excludes early neonatal deaths.<sup>5</sup> Any breastfeeding includes type of feeding recorded as either breast or combined.<sup>6</sup> Based on maternities. This figure applies to the percentage of home births where antenatal care is stated as 'combined', rather than 'midwife only'.

**FIGURE H1**  
 Number and Percentage of Domiciliary Births Reported, 2009–2018



Note: See Table 2.1 and Table H1 for data.

# APPENDIX I

## METHOD OF DELIVERY FOR PRIMIPAROUS AND MULTIPAROUS WOMEN

Table I1 outlines trends in the percentage distribution for method of delivery for primiparous and multiparous women over the decade 2009 to 2018.

- The proportion of women having a spontaneous delivery has fallen from 57.0 per cent in 2009 to 52.0 per cent in 2018, with the rate of decrease higher for primiparous than multiparous women.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 26.2 per cent in 2009 to 33.6 per cent in 2018.
- 35.7 per cent of primiparous women delivered by Caesarean section in 2018 compared to 27.3 per cent in 2009, with a similar rate of increase for Caesarean section delivery for multiparous women, increasing from 25.4 per cent in 2009 to 33.2 per cent in 2018 (see Figure I1).

**TABLE I1**

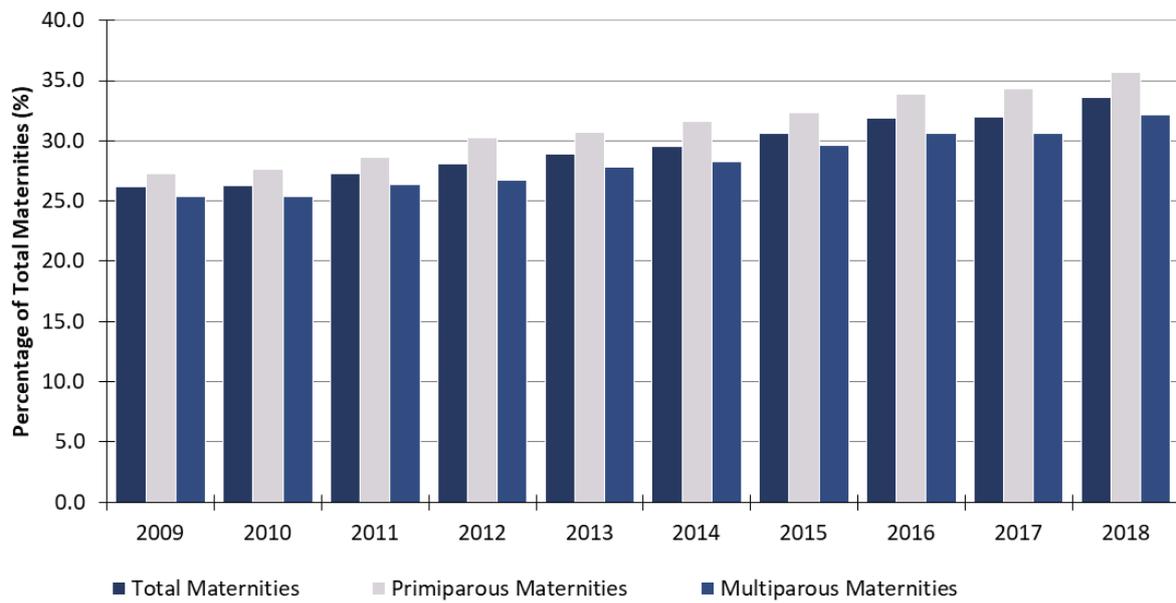
Percentage Distribution of Maternities by Method of Delivery, Primiparous and Multiparous Women, 2009–2018

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% Change		
											2009–2018	2017–2018	
<b>Total Maternities</b>													
Spontaneous	57.0	57.2	56.6	56.3	55.9	55.0	54.2	52.9	53.2	52.0	-8.8	-2.3	
Breech/forceps	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.0	0.0	
Forceps	4.1	4.0	4.1	3.9	3.9	3.8	3.5	3.6	3.6	3.1	-24.4	-13.9	
Vacuum extraction	12.2	11.9	11.5	11.3	10.9	11.3	11.3	11.2	10.7	10.8	-11.5	0.9	
Caesarean section	26.2	26.3	27.3	28.1	28.9	29.5	30.6	31.9	32.0	33.6	28.2	5.0	
Other specified & combined	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	
<b>Total</b>	<b>100</b>	-	-										
<b>Primiparous</b>													
Spontaneous	42.7	42.7	41.2	40.5	40.2	39.0	38.4	36.6	37.4	36.8	-13.8	-1.6	
Breech/forceps	0.5	0.7	0.6	0.4	0.4	0.4	0.4	0.6	0.6	0.5	0.0	-16.7	
Forceps	8.2	8.0	8.6	8.3	8.4	8.2	7.9	7.9	7.8	6.6	-19.5	-15.4	
Vacuum extraction	21.2	21.0	21.0	20.5	20.3	20.8	21.0	21.0	19.9	19.9	-6.1	0.0	
Caesarean section	27.3	27.6	28.6	30.3	30.7	31.6	32.3	33.9	34.3	35.7	30.8	4.1	
Other specified & combined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	
<b>Total</b>	<b>100</b>	-	-										
<b>Multiparous</b>													
Spontaneous	67.4	67.5	66.8	66.4	65.7	65.0	64.1	62.9	63.2	61.6	-8.6	-2.5	
Breech/forceps	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.0	0.0	
Forceps	1.1	1.2	1.1	1.1	1.0	1.0	0.8	1.0	0.9	0.8	-27.3	-11.1	
Vacuum extraction	5.7	5.4	5.2	5.4	5.1	5.4	5.3	5.2	4.9	5.0	-12.3	2.0	
Caesarean section	25.4	25.4	26.4	26.7	27.8	28.3	29.6	30.6	30.6	32.2	26.8	5.2	
Other specified & combined	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	-100.0	-100.0	
<b>Total</b>	<b>100</b>	-	-										

Notes: Percentage columns are subject to rounding.  
Births where method of delivery was recorded as not stated were excluded from this table.

**FIGURE I1**

Percentage Distribution of Maternities Delivering by Caesarean Section for Total, Primiparous and Multiparous Women, 2009–2018



Note: See Table I1 for data.









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