

Perinatal Statistics Report

2019

Healthcare Pricing Office
December 2021



ISBN 978-1-78602-189-2

METADATA

TITLE

Perinatal Statistics Report, 2019

CREATOR

Healthcare Pricing Office (HPO), Health Service Executive (HSE)

SUBJECT

Key words – free text: Births, Perinatal, Stillbirth, Early Neonatal Death

SUMMARY DESCRIPTION

This is a report on national data on Perinatal events in 2019. Information on every birth in the Republic of Ireland is submitted to the National Perinatal Reporting System (NPRS). All births are notified 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.

PUBLISHER

Health Service Executive

CONTRIBUTORS

Healthcare Pricing Office, Health Service Executive

DATE

First published December 2021

TYPE

Report

IDENTIFIER

978-1-78602-189-2

LANGUAGE

en – English

COVERAGE

National

RIGHTS

Downloadable from www.hpo.ie

VERSION

1.0 (December 2021) File [NPRS_2019_ASOF_0621_V01_NATIONAL](#)

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 for information on updates.

ACKNOWLEDGEMENTS

The production of this annual report requires commitment and hard work from many individuals. Responsibility for the collection of perinatal data for the National Perinatal Reporting System (NPRS) rests with colleagues in maternity hospitals and units throughout Ireland together with Self Employed Community Midwives (SECMs). We gratefully acknowledge the input of medical records staff, IT personnel, and administrative departments, together with hospital managers. We are indebted to these individuals for their support and contribution to NPRS.

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 Gosia Chance, Brian Heanue, Emma Keegan, Aldas Kruminis, Avril McManus, Izabela Sikora 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.

We would like to thank Deirdre Murphy and Izabela Sikora for reviewing and commenting on earlier drafts of this report. We would also like to express our gratitude to the members of the NPRS Governance Group, especially Professor John Murphy (HSE), John Heslin (Department of Health) and Joan Molloy (HSE), for their valuable contributions and comments on an early draft of this report.

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 Amy Philips 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 2019 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 2019.

SUMMARY STATISTICS, 2019

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 ^b	
	Number	Number	Number	Rate ^a	Number	Rate ^a	Number	Rate ^a	Number	Rate ^a
Singleton	57,377	57,164	213	3.7	97	1.7	310	5.4	208	3.6
Multiple	2,159	2,149	10	4.6	19	8.8	29	13.4	26	12.1
Total	59,536	59,313	223	3.7	116	2.0	339	5.7	234	3.9

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

BABIES, 2019

- 59,536 births were reported to NPRS in 2019, representing a 2.8 per cent decrease between 2018 and 2019
- 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)
- 61% of babies recorded any breastfeeding in 2019 compared to 54% in 2010
- 46% of babies were exclusively breastfed in 2019
- 35% of total live births were delivered by Caesarean section, with 34% of singleton and 71% of multiple live births delivered by this method. In 2010, 27% of total live births were delivered by Caesarean section
- 95% of singleton births and 66% of multiple births were discharged from hospital within 5 days of birth
- Average total infant's length of stay was 3.3 days in 2019, compared to 3.2 days in 2010
- The perinatal mortality rate was 5.7 per 1,000 live births and stillbirths (5.4 per 1,000 singleton births and 13.4 per 1,000 multiple births). This rate has fallen by 16.2% since 2010, when it was 6.8 per 1,000 live births and stillbirths.

Mothers, 2019

- 58,450 maternities were reported to NPRS in 2019, representing a 2.8 per cent decrease between 2018 and 2019
- The average age of mothers has increased from 31.0 years in 2010 to 32.5 years in 2019
- 39% of mothers were aged 35 years or older, up from 28% in 2010
- 27% of first births were to women aged 35 years or older, compared to 15% in 2010
- 1% of total mothers giving birth were aged under 20 years, compared to 3% in 2010
- 39% of mothers gave birth for the first time, with an average age for first time mothers of 30.8 years
- 2% of mothers had a multiple pregnancy
- 61% of mothers recorded any breastfeeding compared to 54% in 2010
- 46% of mothers exclusively breastfed in 2019
- 52% of women having a singleton live birth delivered spontaneously, while deliveries by Caesarean section accounted for 34%, 3% were delivered using forceps and 10% via vacuum extractions
- 21% of women having a multiple live birth delivered spontaneously, while deliveries by Caesarean section accounted for 70%, 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 46% 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 74% had a postnatal length of stay of 3-5 days
- 24% of births in 2019 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 1st 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.¹ 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 2019.² 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.

¹ 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).

² Previous reports in this series can be downloaded from 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 2010 to 2019. Appendix I includes data on method of delivery for primiparous and multiparous women for 2010 to 2019.

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.^{3,4}
- 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.

³ See www.who.int/classifications/icd/ICD-10_2nd_ed_volume2.pdf ; pg 96, 5.7.2. Reporting Criteria

⁴ 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 ≥ 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 group⁵ 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.

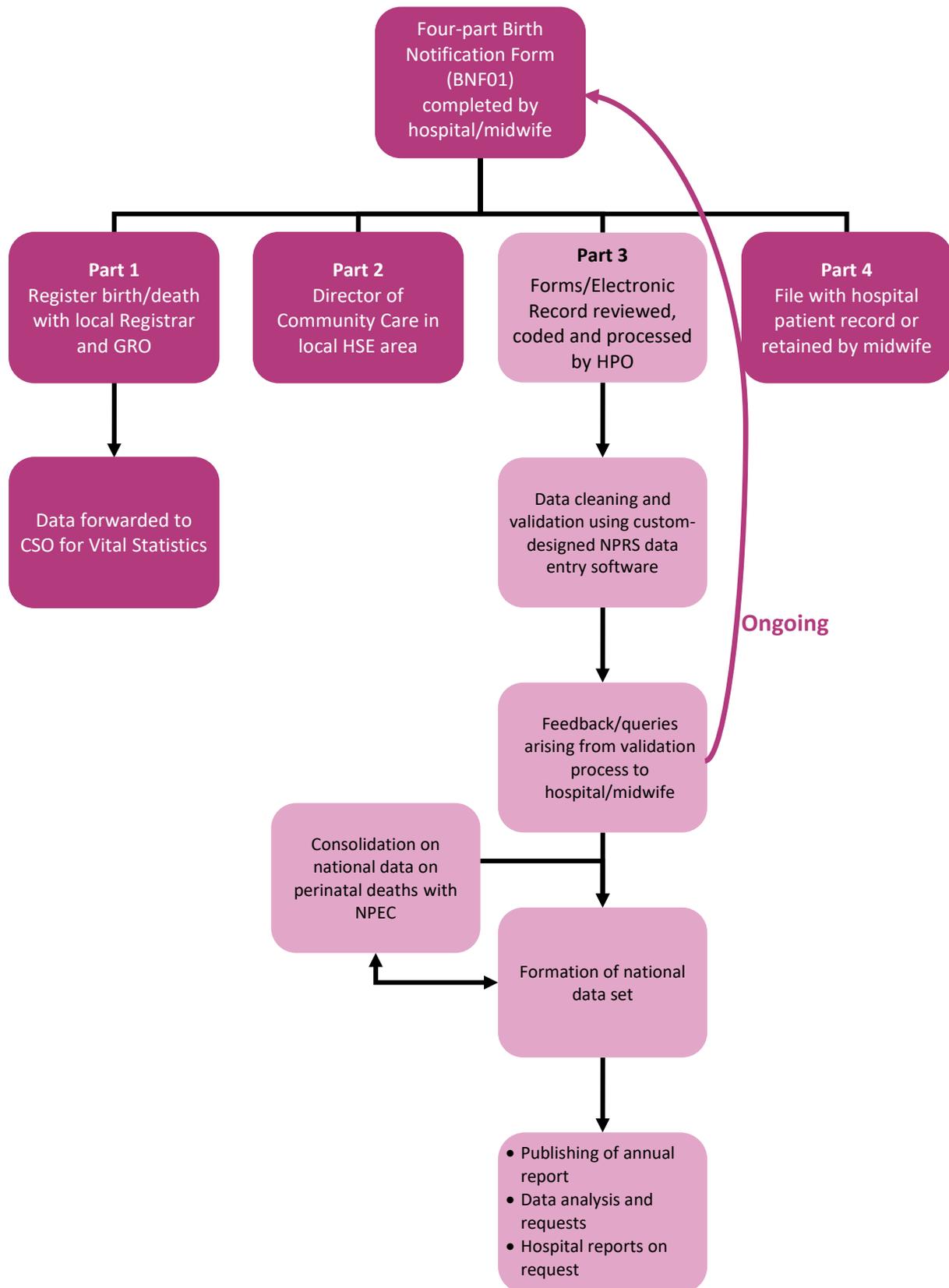
The link between the Birth Notification Form and the birth registration process for the General Register Office (GRO) ensures complete coverage of all births for the NPRS. The number of total births included in the NPRS are based on the data collected by the NPRS via part 3 of the Birth Notification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

It should be noted that notification of birth differs to registration of birth. While the *Civil Registration 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.⁶

⁵ 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.

⁶ During 2021, a NPRS Governance Group was established. This group provides 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. The terms of reference for this group include support and development of the NPRS and BNF, and 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 Software Development Team 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 Portlaoise⁷ 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 2019 to both reporting systems. As a result of this data reconciliation exercise, the data reported on perinatal deaths for 2019 (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/>⁸ for further details). See Table 1.1.

⁷ 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>

⁸ 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 1.1Total births, Stillbirths, Early Neonatal Deaths and Perinatal Deaths (≥ 500 grams only), NPRS and NPEC, 2019

	NPRS		NPEC	
	Number	Rate ^a	Number	Rate
Total births	59,536	-	-	-
Stillbirths	223	3.7	223	3.7
Early neonatal deaths	116	2.0	116	2.0
Perinatal deaths	339	5.7	339	5.7
Adjusted perinatal deaths ^b	234	3.9	207	3.5

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 '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 105 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.⁹ Further phases of the project, which will include all 19 maternity units, are planned over the next number of years.

⁹ 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.⁹ International comparisons allow the most recent statistics for Ireland to be compared with those for other European countries.¹⁰ The indicators for Ireland were calculated using data from the NPRS for the period 2010 to 2019.¹¹

TRENDS IN SELECTED STATISTICS

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

- Since 2010 the trend in total births has been downward, decreasing from 75,600 in 2010 to 59,536 in 2019, a decline of 21.2 per cent over the decade.
- Mothers giving birth in Ireland in 2019, with an average age of 32.5 years, were on average 1.5 years older than those who gave birth in 2010 (31.0 years) and just slightly older than those giving birth in 2018 (average age 32.4 years).
- Over the decade 2010 to 2019, 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 5.9 per cent of births in 2010 to 3.3 per cent in 2019. Births to primiparous women aged 40 years and older increased from 2.6 per cent of births in 2010 to 5.1 per cent in 2019.
- Births to multiparous women aged less than 20 years accounted for 0.5 per cent of births in 2010 compared with 0.3 per cent in 2019. Births to multiparous women aged 40 years and older increased from 6.3 per cent of births in 2010 to 9.5 per cent in 2019.
- The percentage of women recording any breastfeeding was 54.1 per cent in 2010, increasing to 60.9 per cent in 2019.
- The percentage of women exclusively breastfeeding has decreased from 46.2 per cent in 2010 to 45.9 per cent in 2019.
- The proportion of Irish mothers exclusively breastfeeding has increased by 7.2 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.

⁹ For reports from 2018 onwards, 'Not Stated' values are excluded in the compilation of the figures and are only presented in data tables when there are more than five cases reported in this category. 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 2018.

¹⁰ 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.

¹¹ Previous reports in this series can be downloaded from www.hpo.ie.

- Mothers' average length of stay in hospital has remained stable over the decade and is recorded at 3.5 days in 2019.

Data on parents' nationality show the following:¹²

- The percentage of births to mothers born in Ireland has increased slightly from 75.4 per cent of births in 2010 to 76.2 per cent of births in 2019, an increase of 1.1 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 56.5 per cent in 2010 to 51.2 per cent in 2019. The upward trend in delivery by Caesarean section continues with a rate of 27.1 per cent reported in 2010 compared with 34.9 per cent for 2019.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 33.6 per cent in 2018 to 34.1 per cent in 2019 and has increased from 26.3 per cent in 2010 to 34.1 per cent in 2019, an increase of 29.7 per cent over the decade.

Regarding infant characteristics, trends have been largely consistent over the decade 2010 to 2019.

- The average birthweight for total live births was 3,437.5 grams in 2019, which is broadly consistent with the preceding decade.
- The average birthweight for both singleton (3,474.8 grams) and multiple (2,445.6 grams) births has remained largely consistent over the decade.
- The percentage of total live births recording low birthweight (<2,500 grams) was 5.1 per cent in 2010 compared with 5.6 per cent in 2019.
- The percentage of total live births classified as high birthweight (4,500 grams or more) has decreased from 2.7 per cent in 2010 to 2.0 per cent in 2019.
- For total births, infant's average length of stay in hospital has remained consistent across the decade, increasing slightly from 3.2 days in 2010 to 3.3 days in 2019.
- In 2019, infant's average length of stay in hospital was recorded as 3.1 days for singleton births and 8.9 days for multiple births.

¹² Based on EU27 for 2007-2013 and EU28 for 2014-2019. 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, 2010–2019

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% Change			
													2010–2019	2018–2019	
Total Births	N	75,600	74,377	71,986	69,267	67,610	65,869	64,097	62,070	61,258	59,536		-21.2	-2.8	
Total Maternities	N	74,318	73,008	70,709	67,952	66,338	64,624	62,871	60,910	60,119	58,450		-21.4	-2.8	
Birth Rate ¹	Per 1,000 population	16.5	16.2	15.6	15.0	14.6	14.2	13.5	12.9	12.6	12.1		-26.7	-4.0	
Maternal Characteristics															
Age of mother (years) ^{2,3}	Avg	31.0	31.2	31.4	31.6	31.8	31.9	32.2	32.3	32.4	32.5		4.8	0.3	
Mother's Civil Status	Married	%	65.2	65.2	63.8	62.6	62.2	62.2	61.3	60.8	60.6		-7.6	-0.3	
	Single	%	32.8	33.2	34.3	34.7	35.8	36.4	37.3	37.8	38.0		15.9	0.5	
	All other	%	1.6	1.6	1.7	1.5	1.5	1.4	1.4	1.5	1.4		-25.0	-14.3	
Maternal parity ²	Avg	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0		0.0	0.0	
	Under 20 Years	%	5.9	5.2	5.1	4.7	4.3	4.3	4.1	4.0	3.6	3.3		-44.1	-8.3
	20–24 Years	%	16.8	15.5	15.3	14.8	14.1	14.1	13.5	13.6	13.2	13.0		-22.6	-1.5
	25–29 Years	%	29.2	27.5	26.1	24.5	23.5	22.6	21.8	20.9	20.9	20.5		-29.8	-1.9
	30–34 Years	%	32.6	34.7	35.6	36.3	36.9	36.8	37.3	36.3	36.4	36.7		12.6	0.8
35–39 Years	%	12.9	14.1	14.8	16.2	17.4	18.1	19.1	20.6	21.0	21.4		65.9	1.9	
40 Years and Older	%	2.6	3.0	3.2	3.5	3.8	4.0	4.3	4.7	5.0	5.1		96.2	2.0	
Births to Primiparous Women by Maternal Age ²	Under 20 Years	%	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3		-40.0	0.0	
	20–24 Years	%	6.7	6.4	6.1	6.0	5.6	5.5	5.0	5.1	5.2	4.7		-29.9	-9.6
	25–29 Years	%	19.9	19.4	18.5	17.7	17.3	16.7	15.6	15.3	14.9	14.7		-26.1	-1.3
	30–34 Years	%	36.2	37.0	36.8	37.0	36.5	35.7	35.3	34.3	32.9	32.7		-9.7	-0.6
	35–39 Years	%	30.4	30.2	31.1	31.8	32.7	34.1	35.5	36.7	37.5	38.1		25.3	1.6
	40 Years and Older	%	6.3	6.5	7.0	7.2	7.6	7.7	8.3	8.2	9.1	9.5		50.8	4.4
Number of previous stillbirths per 1,000 maternities ²	Avg	11.5	11.9	9.7	10.9	10.8	9.5	10.2	9.5	10.0	9.4		-18.3	-6.0	
Gestational age at delivery (weeks) ²	Avg	39.4	39.3	39.3	39.3	39.2	39.2	39.2	39.1	39.0	39.0		-1.0	0.0	
Interval since last birth (years) ^{3,4}	Avg	3.4	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.5	3.6		5.9	2.9	
Immunity to rubella ^{2,14}	%	92.3	94.3	94.3	94.2	93.4	92.9	91.5	90.9	89.7	89.6		-2.9	-0.1	
Any breastfeeding ^{1,2,5,6}	%	54.1	55.3	55.4	55.9	57.0	58.0	59.9	59.8	60.4	60.9		12.6	0.8	
Exclusive breastfeeding ^{1,2,5}	%	46.2	47.0	46.9	46.6	46.6	48.0	49.8	48.6	47.3	45.9		-0.6	-3.0	
Exclusive breastfeeding by Mother's Nationality ^{1,2,5}	Irish	%	39.1	40.1	40.0	40.5	41.1	42.6	43.6	42.9	41.9		7.2	-2.3	
	UK	%	54.4	51.2	51.0	54.2	50.9	53.4	51.7	50.8	48.7		-7.9	2.9	
	EU ⁷	%	76.2	76.9	77.5	75.3	74.4	73.7	74.2	72.6	68.5		-14.3	-4.7	
	Africa	%	51.2	51.3	51.6	47.4	45.3	45.8	50.6	50.0	44.5		-10.2	3.4	
	Asia	%	57.9	60.2	58.5	54.5	53.3	55.7	58.9	54.5	48.8		-18.0	-2.7	
Mother's length of stay (days) ^{1,2,8}	Avg	3.4	3.3	3.2	3.4	3.4	3.4	3.4	3.5	3.5	3.5		2.9	0.0	

TABLE 2.1 Trends in Selected Statistics, 2010–2019 (contd.)

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% Change		
													2010–2019	2018–2019
Parents Nationality														
Mother's Nationality	Irish	%	75.4	76.1	76.0	77.1	77.8	77.5	76.3	76.9	75.5	76.2	1.1	0.9
	UK	%	2.7	2.3	2.4	2.3	2.2	2.4	2.3	2.2	2.3	2.2	-18.5	-4.3
	EU ⁷	%	12.9	13.0	12.9	12.7	12.4	12.5	12.7	12.2	11.9	11.3	-12.4	-5.0
	Africa	%	3.0	2.6	2.7	2.4	2.3	2.1	2.3	2.4	2.4	2.2	-26.7	-8.3
	Asia	%	3.8	4.0	4.0	3.4	3.2	3.2	3.7	3.4	4.1	4.2	10.5	2.4
Father's Nationality ⁹	Irish	%	59.1	59.4	57.5	57.1	56.0	58.2	58.8	59.1	56.0	51.7	-12.5	-7.7
	UK	%	2.4	2.2	2.0	2.0	1.9	1.9	1.6	1.6	1.5	1.4	-41.7	-6.7
	EU ⁷	%	8.6	8.8	8.4	8.1	7.9	7.9	7.9	7.7	7.2	6.7	-22.1	-6.9
	Africa	%	2.4	2.1	1.9	1.6	1.5	1.4	1.5	1.5	1.4	1.5	-37.5	7.1
	Asia	%	3.1	3.3	3.1	2.4	2.2	2.4	2.8	2.6	3.0	3.3	6.5	10.0
Perinatal Care														
Hospital & G.P. combined antenatal care ^{2,10}		%	80.9	77.3	77.3	79.5	80.9	81.9	81.9	81.3	82.6	85.4	5.6	3.4
Booked hospital admissions ^{2,8}		%	99.3	99.3	99.3	99.2	96.9	99.1	99.0	97.2	89.2	97.9	-1.4	9.8
Method of delivery ¹¹		%	56.5	55.8	55.6	55.1	54.2	53.5	52.2	52.5	51.3	51.2	-9.4	-0.2
Total live births ¹²		%	27.1	28.1	28.9	29.7	30.4	31.4	32.7	32.8	34.3	34.9	28.8	1.7
Forceps ¹³		%	4.0	4.1	3.9	3.8	3.8	3.5	3.6	3.5	3.0	3.4	-15.0	13.3
Spontaneous		%	57.2	56.6	56.3	55.9	55.0	54.2	52.9	53.2	52.0	52.0	-9.1	0.0
Caesarean section		%	26.3	27.3	28.1	28.9	29.5	30.6	31.9	32.0	33.6	34.1	29.7	1.5
Forceps ¹³		%	4.0	4.1	3.9	3.9	3.8	3.5	3.6	3.6	3.1	3.4	-15.0	9.7
Infant Characteristics														
Total births		Avg	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	3,437.5	-0.9	0.1
Singleton births		Avg	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	3,474.8	-0.8	0.0
Multiple births		Avg	2,447.2	2,464.6	2,420.2	2,411.7	2,428.6	2,412.2	2,415.3	2,412.4	2,434.1	2,445.6	-0.1	0.5
Low birthweight (<2500 grams) ¹		%	5.1	5.2	5.4	5.5	5.6	5.7	5.7	5.7	5.7	5.6	9.8	-1.8
Singleton births		%	3.6	3.6	3.8	3.8	3.9	3.9	3.9	4.0	4.1	4.0	11.1	-2.4
Multiple births		%	47.6	46.0	49.9	49.0	49.4	49.9	49.6	48.5	48.1	47.1	-1.1	-2.1
High birthweight (≥4500 grams) ¹		%	2.7	2.6	2.5	2.3	2.3	2.2	2.2	2.1	2.0	2.0	-25.9	0.0
Total births		Avg	3.2	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.4	3.3	3.1	-2.9
Singleton births		Avg	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.3	0.0
Multiple births		Avg	9.5	8.6	9.4	9.7	9.3	9.5	9.5	9.3	9.3	8.9	-6.3	-4.3
Post-mortems for early neonatal deaths		%	32.9	24.8	27.3	35.2	31.6	37.8	31.5	36.1	35.6	36.2	10.0	1.7

Notes: Percentages are subject to rounding.¹ Based on live births.² 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.⁴ Based on multiparous maternities.⁵ Excludes early neonatal deaths.⁶ Any breastfeeding includes type of feeding recorded as either 'breast or combined'.⁷ Based on EU27 for 2007–2013 and EU28 for 2014–2019. As the EU expanded over this period caution should be exercised when interpreting these data. See also Appendix F.⁸ Excludes domiciliary births.⁹ 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.¹⁰ 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.¹¹ See also Appendix I 'Method of Delivery for Primiparous and Multiparous Women'.¹² These figures were based on total live births, as each infant in a multiple pregnancy can have a different method of delivery.¹³ Excludes breech deliveries.¹⁴ In this table, the immunity to rubella percentage excludes two major hospitals in 2018 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 the 2018 figures.

SINGLETON AND MULTIPLE BIRTHS

Table 2.2 shows the numbers of singleton and multiple births each year for the period 2010 to 2019.

- Of the 59,536 births presented in this report for 2019, 57,377 were singleton births, 2,083 were twin births and 76 were higher-order multiple births.¹³
- The twinning rate was 17.8 per 1,000 maternities in 2019; this represents an increase of 6.6 per cent over the decade and a decrease of 1.7 per cent between 2018 and 2019.

TABLE 2.2
Singleton and Multiple Births, 2010–2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% Change	
											2010-2019	2018-2019
Singleton births	73,046	71,651	69,452	66,650	65,070	63,384	61,655	59,749	58,996	57,377	-21.5	-2.7
Twin births	2,480	2,638	2,435	2,526	2,461	2,390	2,363	2,273	2,174	2,083	-16.0	-4.2
Higher-order multiple births	74	88	99	91	79	95	79	48	88	76	2.7	-13.6
Twinning rate (per 1,000 maternities)	16.7	18.1	17.2	18.6	18.5	18.5	18.8	18.7	18.1	17.8	6.6	-1.7

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 2010 and 2019 are presented in Table 2.3.¹⁴

- While mortality rates have declined over the decade, higher mortality rates are observed for multiple births when compared to singleton births.
- The total perinatal mortality rate for singleton births was recorded at 5.4 in 2019, compared to 6.5 per 1,000 live births and stillbirths in 2010.
- The total perinatal mortality rate for multiple births was recorded at 13.4 in 2019, compared to 17.2 per 1,000 live births and stillbirths in 2010.
- For 2019 the stillbirth mortality rate was recorded at 3.7 per 1,000 live births and stillbirths.
- The early neonatal mortality rate for 2019 was recorded at 2.0 per 1,000 live births.

¹³ 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 2019, there were 57,436 singleton births, 2,101 twin births, 67 triplets and 12 quadruplets reported to the NPRS; of these, 80 births weighed less than 500 grams (including 59 singleton births and 21 multiple births) and so were excluded from the analysis.

¹⁴ 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 Registration 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, 2010–2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% Change	
	Number of Births and Perinatal Deaths										2010-2019	2018-2019
Total Births	75,600	74,377	71,986	69,267	67,610	65,869	64,097	62,070	61,258	59,536	-21.2	-2.8
Singleton	73,046	71,651	69,452	66,650	65,070	63,384	61,655	59,749	58,996	57,377	-21.5	-2.7
Multiple	2,554	2,726	2,534	2,617	2,540	2,485	2,442	2,321	2,262	2,159	-15.5	-4.6
Live Births	75,245	74,080	71,705	68,990	67,324	65,607	63,870	61,854	61,061	59,313	-21.2	-2.9
Singleton	72,709	71,375	69,188	66,386	64,803	63,151	61,440	59,549	58,813	57,164	-21.4	-2.8
Multiple	2,536	2,705	2,517	2,604	2,521	2,456	2,430	2,305	2,248	2,149	-15.3	-4.4
Stillbirths	355	297	281	277	286	262	227	216	197	223	-37.2	13.2
Singleton	337	276	264	264	267	233	215	200	183	213	-36.8	16.4
Multiple	18	21	17	13	19	29	12	16	14	10	-44.4	-28.6
Early Neonatal Deaths	161	153	143	159	136	164	124	108	104	116	-28.0	11.5
Singleton	135	126	122	133	117	137	108	87	83	97	-28.1	16.9
Multiple	26	27	21	26	19	27	16	21	21	19	-26.9	-9.5
Perinatal Deaths	516	450	424	436	422	426	351	324	301	339	-34.3	12.6
Singleton	472	402	386	397	384	370	323	287	266	310	-34.3	16.5
Multiple	44	48	38	39	38	56	28	37	35	29	-34.1	-17.1
	Rates ^a											
Stillbirths	4.7	4.0	3.9	4.0	4.2	4.0	3.5	3.5	3.2	3.7	-21.3	15.6
Singleton	4.6	3.9	3.8	4.0	4.1	3.7	3.5	3.3	3.1	3.7	-19.6	19.4
Multiple	7.0	7.7	6.7	5.0	7.5	11.7	4.9	6.9	6.2	4.6	-34.3	-25.8
Early Neonatal Deaths	2.1	2.1	2.0	2.3	2.0	2.5	1.9	1.7	1.7	2.0	-4.8	17.6
Singleton	1.9	1.8	1.8	2.0	1.8	2.2	1.8	1.5	1.4	1.7	-10.5	21.4
Multiple	10.3	10.0	8.3	10.0	7.5	11.0	6.6	9.1	9.3	8.8	-14.6	-5.4
Perinatal Deaths	6.8	6.1	5.9	6.3	6.2	6.5	5.5	5.2	4.9	5.7	-16.2	16.3
Singleton	6.5	5.6	5.6	6.0	5.9	5.8	5.2	4.8	4.5	5.4	-16.9	20.0
Multiple	17.2	17.6	15.0	14.9	15.0	22.5	11.5	15.9	15.5	13.4	-22.1	-13.5

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.¹⁵ Stillbirths accounted for 65.8 per cent of perinatal deaths in 2019.^{16,17} Table 2.4 presents the numbers and rates for total births and perinatal deaths for Ireland from 2010 to 2019.

- In 2019 approximately 1 in every 267 births was stillborn and 1 in every 511 live births died in the first week of life.
- Over the decade, the perinatal mortality rate has fallen from 6.8 per 1,000 live births and stillbirths in 2010 to 5.7 per 1,000 live births and stillbirths in 2019. This represents a 16.2 per cent decrease over the decade. Despite a decrease over the decade, the perinatal mortality rate has increased by 16.3 per cent from 2018 to 2019.
- The stillbirth rate has declined over the period from 4.7 per 1,000 live births and stillbirths in 2010 to 3.7 per 1,000 live births and stillbirths in 2019, a decline of 21.3 per cent over the decade.
- The early neonatal mortality rate has also declined from 2.1 per 1,000 live births in 2010 to 2.0 per 1,000 live births in 2019, a decline of 4.8 per cent over the decade (see Figure 2.1).

TABLE 2.4

Live Births, Stillbirths, Early Neonatal Deaths, and Perinatal Deaths, 2010–2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% Change	
	Number of Births and Perinatal Deaths										2010–2019	2018–2019
Total Births	75,600	74,377	71,986	69,267	67,610	65,869	64,097	62,070	61,258	59,536	-21.2	-2.8
Live Births	75,245	74,080	71,705	68,990	67,324	65,607	63,870	61,854	61,061	59,313	-21.2	-2.9
Stillbirths	355	297	281	277	286	262	227	216	197	223	-37.2	13.2
Early Neonatal Deaths	161	153	143	159	136	164	124	108	104	116	-28.0	11.5
Perinatal Deaths	516	450	424	436	422	426	351	324	301	339	-34.3	12.6
Adjusted Perinatal Deaths	368	308	309	297	304	287	234	217	204	234	-36.4	14.7
Rates^a												
Stillbirth	4.7	4.0	3.9	4.0	4.2	4.0	3.5	3.5	3.2	3.7	-21.3	15.6
Early Neonatal Deaths	2.1	2.1	2.0	2.3	2.0	2.5	1.9	1.7	1.7	2.0	-4.8	17.6
Perinatal Mortality	6.8	6.1	5.9	6.3	6.2	6.5	5.5	5.2	4.9	5.7	-16.2	16.3
Adjusted Perinatal Mortality	4.9	4.1	4.3	4.3	4.5	4.4	3.7	3.5	3.3	3.9	-20.4	18.2

Notes: Percentage columns are subject to rounding.

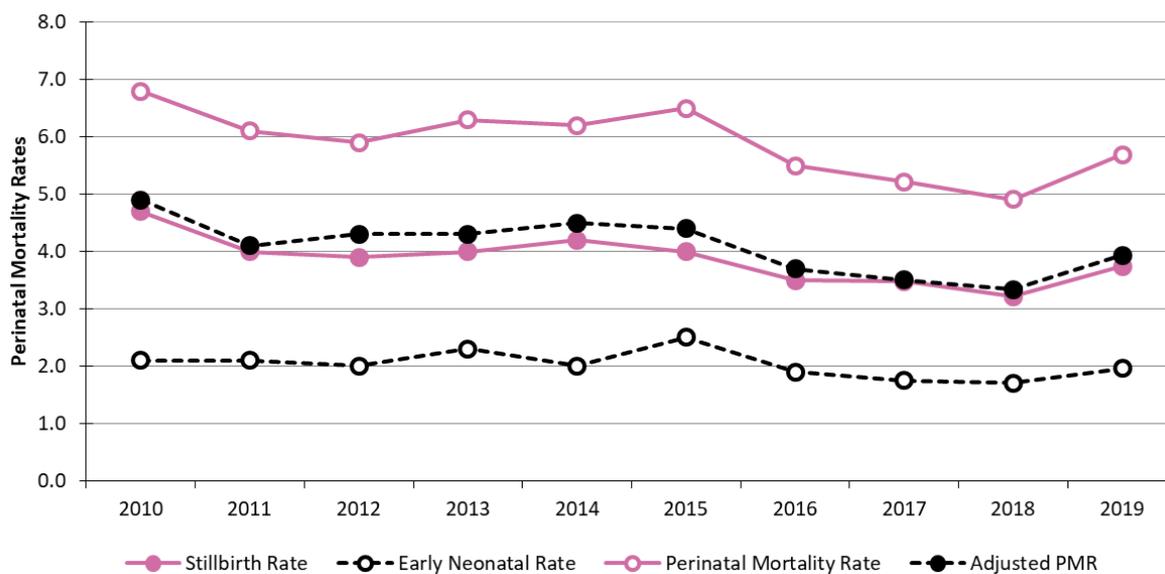
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. For numbers and rates by singleton and multiple births see Section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

¹⁵ 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

¹⁶ Details on rate calculations are in Appendix A.

¹⁷ 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, 2010–2019



Note: See Table 2.4 for data.

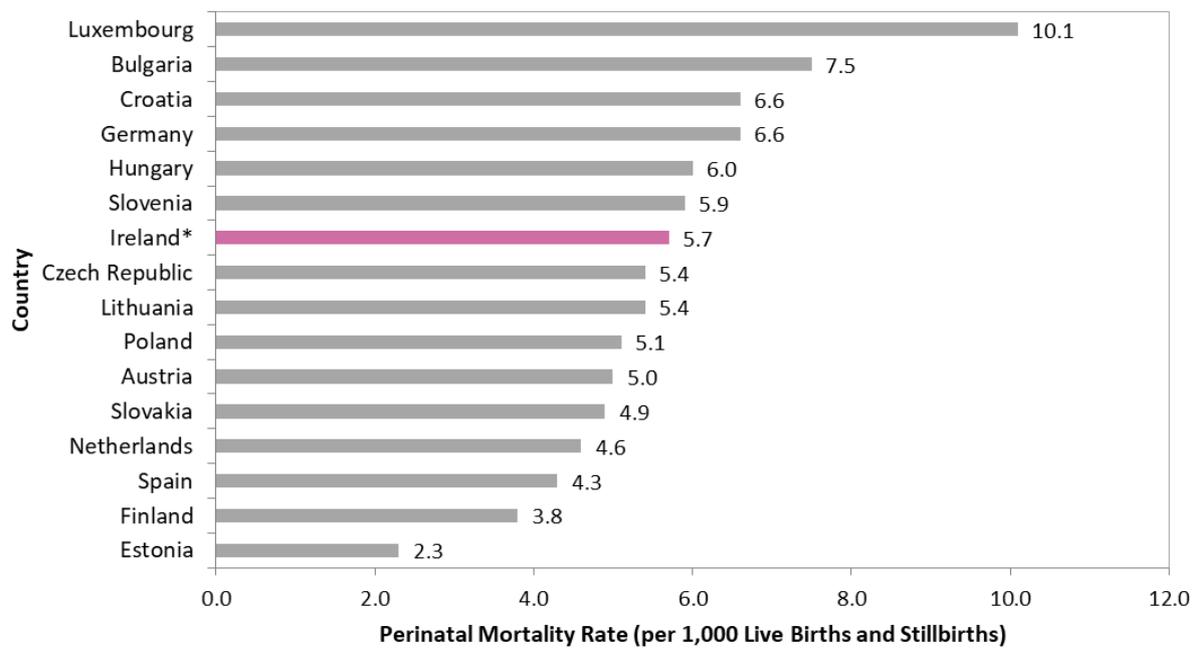
Using available data, a European comparison¹⁸ of perinatal mortality rates in Figure 2.2 shows that for the countries included:

- Luxembourg recorded the highest perinatal mortality rate for 2019, at 10.1 per 1,000 live births and stillbirths.
- Estonia had the lowest perinatal mortality rate recording 2.3 per 1,000 live births and stillbirths.
- In 2019, the perinatal mortality rate for Ireland was recorded at 5.7 per 1,000 live births and stillbirths.

¹⁸ 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted August 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, 2019



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

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

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

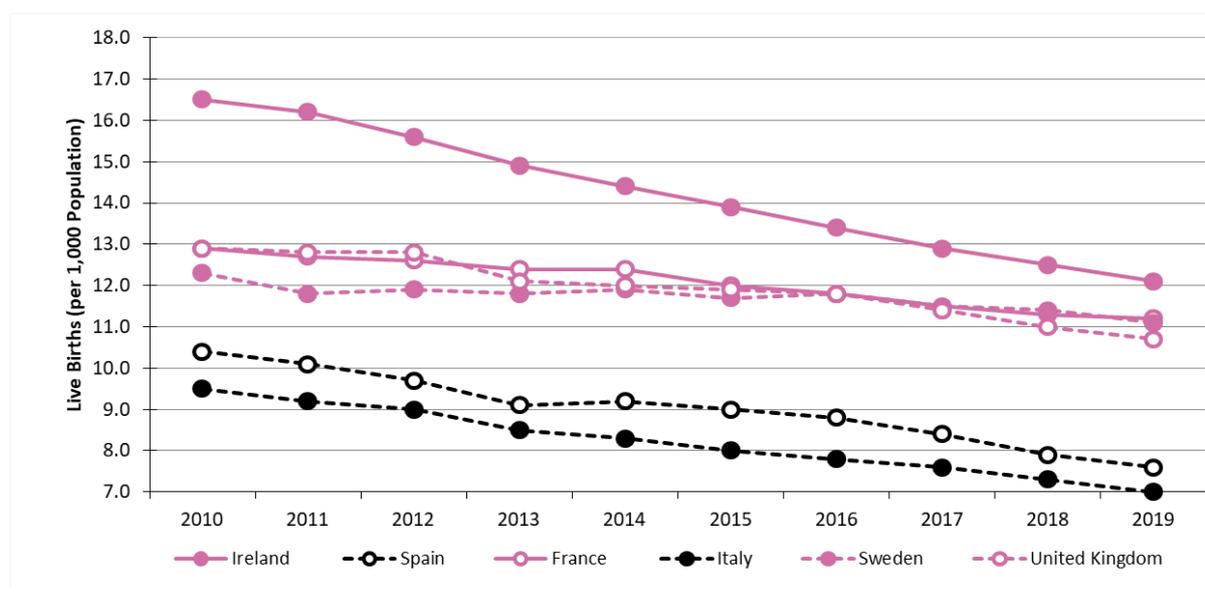
BIRTH RATES¹⁹

The birth rate is based on the total number of live births per 1,000 population.²⁰ Figure 2.3 presents trends in birth rates for selected EU countries over the decade 2010 to 2019. Figure 2.4 presents birth rates in the 28 EU countries for 2019.

- The birth rate for Ireland has declined from a high of 16.5 per 1,000 population in 2010 to 12.1 per 1,000 population in 2019 (see Figure 2.3).
- Of the countries reviewed, Ireland has consistently had the highest birth rate over the period (see Figure 2.4).²¹
- After Ireland, of the countries reviewed, the next highest birth rates in 2019 are reported in France (11.2) and Sweden (11.1) followed by the United Kingdom (10.7).
- In 2019, based on the 28 EU countries, Italy had the lowest birth rate (7.0), followed by Spain (7.6) (see Figure 2.4).

FIGURE 2.3

Trends in Birth Rates for Selected EU Countries, 2010–2019



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

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

Data for Ireland are based on NPRS data on live births from 2010 onwards. The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted August 2021.

www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0

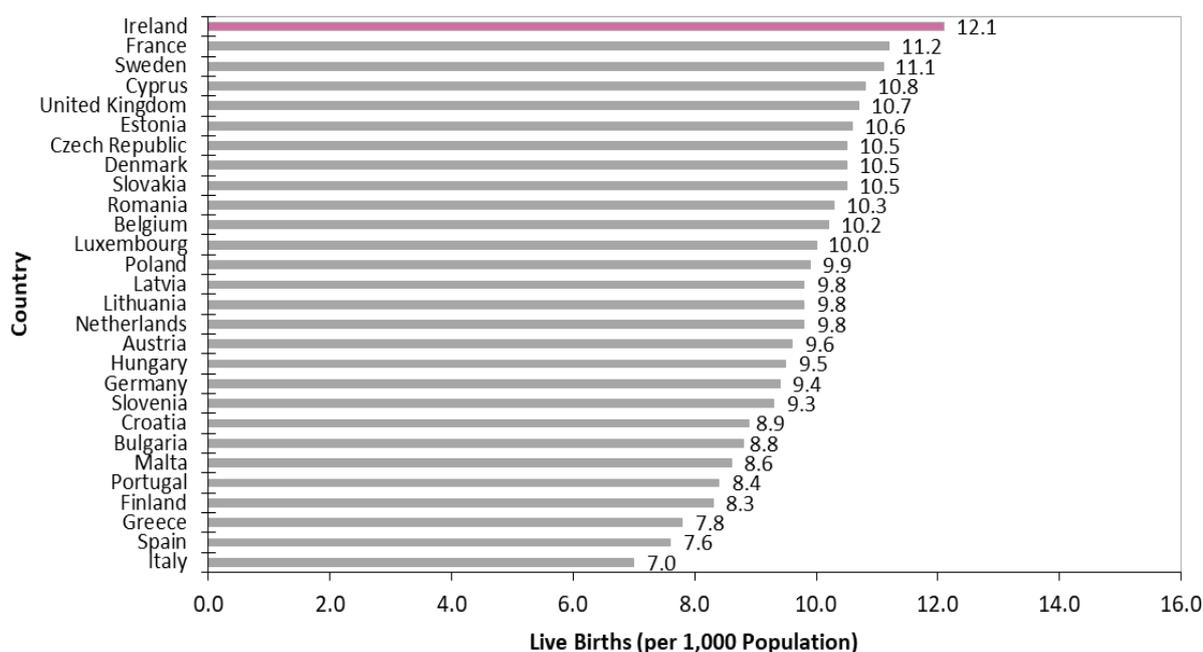
¹⁹ It should be noted that the birth rate (or crude birth rate) could rise or fall depending on the numbers of women in the age cohorts from 15 to 49 years old. Changes in the birth rate often mask underlying trends in fertility.

²⁰ The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted August 2021.

www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0

²¹ The CSO also estimates the Irish birth rate at 12.1 per 1,000 population for 2019. See Vital Statistics, Yearly Summary 2019, May 2020. CSO data 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, 2019



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

www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0

FERTILITY

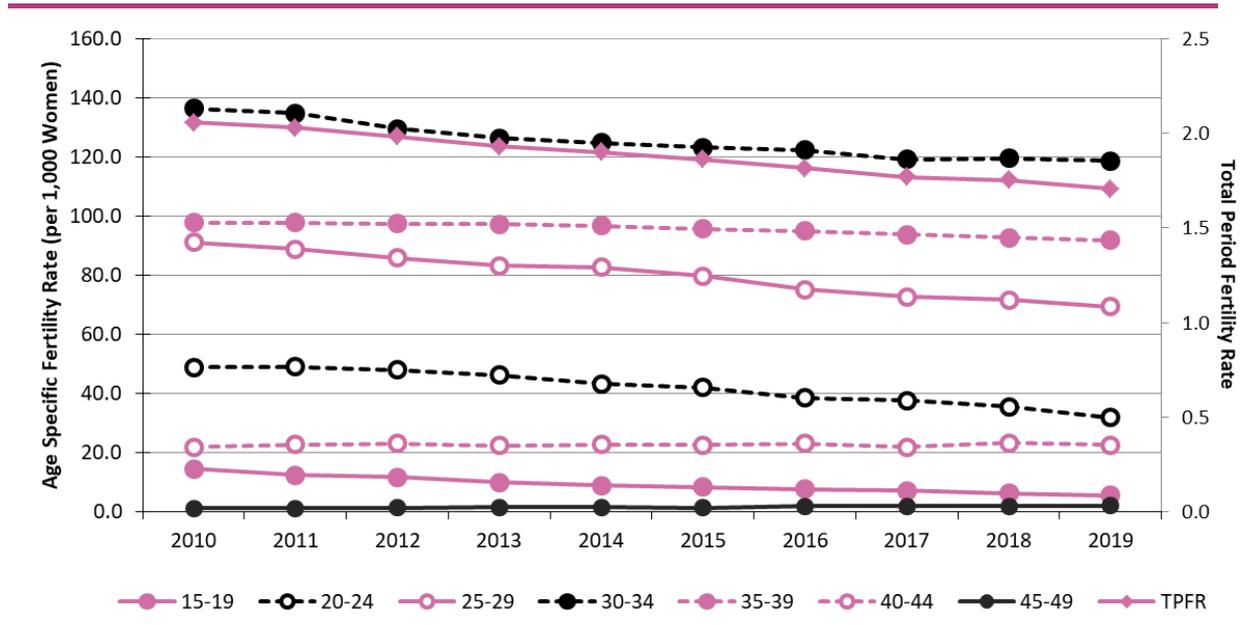
The Total Period Fertility Rate (TPFR) for a given year indicates the number of children a woman could expect to have if the Age-Specific Fertility Rates (ASFR) for that year applied throughout her fertile years.²² The ASFR refers to the number of live births to women in a particular age group per 1,000 women. Figure 2.5 displays the trend in the ASFR and TPFR in Ireland from 2010–2019.

- The Irish TPFR was recorded at a high of 2.1 in 2010 and is estimated at 1.7 in 2019.²³
- Over the decade 2010–2019, the ASFRs for age groups under 40 years have mostly declined, while the 40 years and over age groups mainly recorded higher ASFRs over the decade.
- In all years, the 30–34 year age group recorded the highest ASFR when compared to other age groups. Apart from a slight increase seen in 2018, the ASFR has been declining in this age group over the decade.

²² See Appendix A, definitions for calculation of TPFR and ASFR.

²³ The CSO estimates the TPFR at 1.7 for 2019. See Vital Statistics, Yearly Summary 2019, May 2020. CSO 2019 data 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, 2010–2019



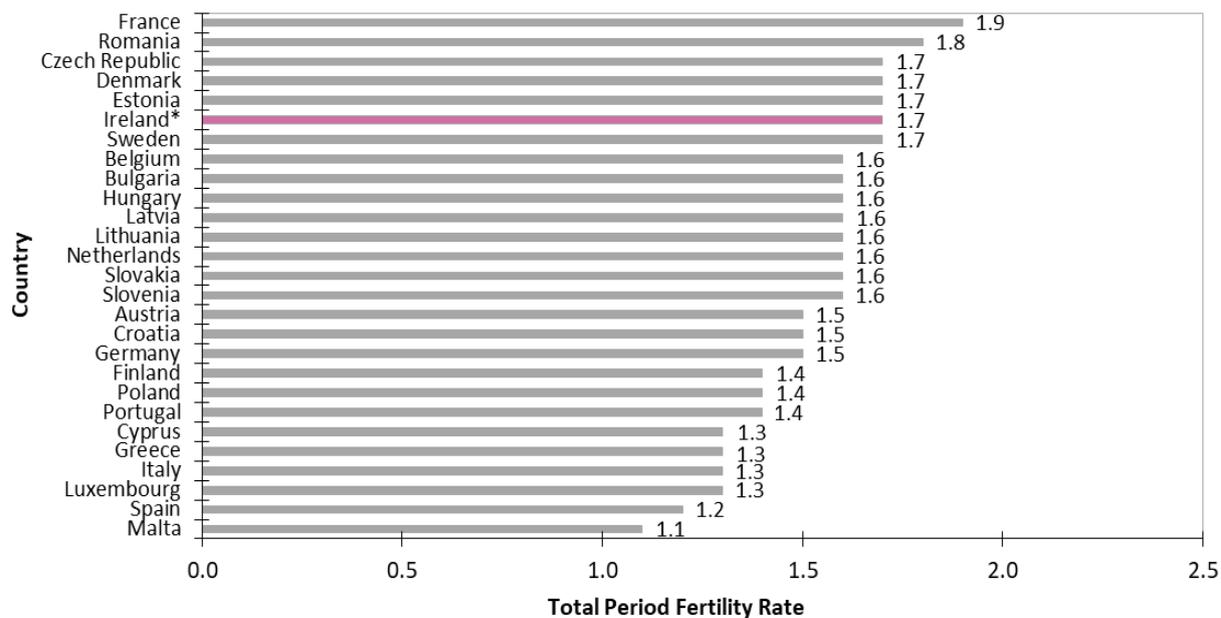
Sources: Total period fertility rates (TPFRs) and age-specific fertility rates (ASFRs) are calculated using NPRS data from 2010 onwards. Female population estimates from 2010 onwards were obtained from the CSO Statistical Databases, date consulted August 2021. <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0>

The TPFR for Ireland is based on population data for 2019, and at 1.7 is below the level required for the long-term replacement of the population in the absence of any net inward migration (2.1).²⁴ Figure 2.6 presents data on TPFRs for 2019 using data from Eurostat and the NPRS.

- At 1.9, France recorded the highest TPFR in the EU, followed by Romania which reported a TPFR of 1.8.

²⁴ See Vital Statistics, Yearly Summary 2019, May 2020.

FIGURE 2.6
Total Period Fertility Rates for EU Countries, 2019



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

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

Data for the United Kingdom is not presented in this table as data on TPRs was not available for 2019 as of August 2021.

*Data for Ireland are based on NPRS data on live births. Female population estimates for 2019 were obtained from the CSO Statistical Databases, date consulted August 2021.

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 2019.

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 2019, 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Under 20 Years	871	1.5	868	3.4	4.6	8.0	5.8	865
20-24 Years	4,671	7.8	4,656	3.2	2.1	5.4	4.5	4,625
25-29 Years	10,025	16.8	9,986	3.9	2.4	6.3	4.3	9,886
30-34 Years	20,361	34.2	20,295	3.2	1.9	5.2	4.0	20,019
35-39 Years	18,900	31.7	18,826	3.9	1.3	5.2	3.4	18,492
40-44 Years	4,347	7.3	4,321	6.0	3.2	9.2	4.4	4,231
45 Years and Over	361	0.6	361	-	-	-	-	332
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Under 20 Years	861	1.5	858	3.5	4.7	8.1	5.8	*
20-24 Years	4,582	8.0	4,569	2.8	1.8	4.6	3.7	4,582
25-29 Years	9,745	17.0	9,709	3.7	2.2	5.8	3.8	9,745
30-34 Years	19,676	34.3	19,611	3.3	1.5	4.8	3.7	19,676
35-39 Years	18,094	31.5	18,022	4.0	1.2	5.1	3.3	18,094
40-44 Years	4,114	7.2	4,090	5.8	3.4	9.2	4.2	4,114
45 Years and Over	305	0.5	305	0.0	0.0	0.0	0.0	*
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Under 20 Years	10	0.5	10	-	-	-	-	~
20-24 Years	89	4.1	87	22.5	23.0	44.9	44.9	43
25-29 Years	280	13.0	277	10.7	10.8	21.4	21.4	141
30-34 Years	685	31.7	684	1.5	14.6	16.1	13.2	343
35-39 Years	806	37.3	804	2.5	5.0	7.4	6.2	398
40-44 Years	233	10.8	231	8.6	-	8.6	8.6	117
45 Years and Over	56	2.6	56	-	-	-	-	*
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

Notes: Percentage column is subject to rounding.

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

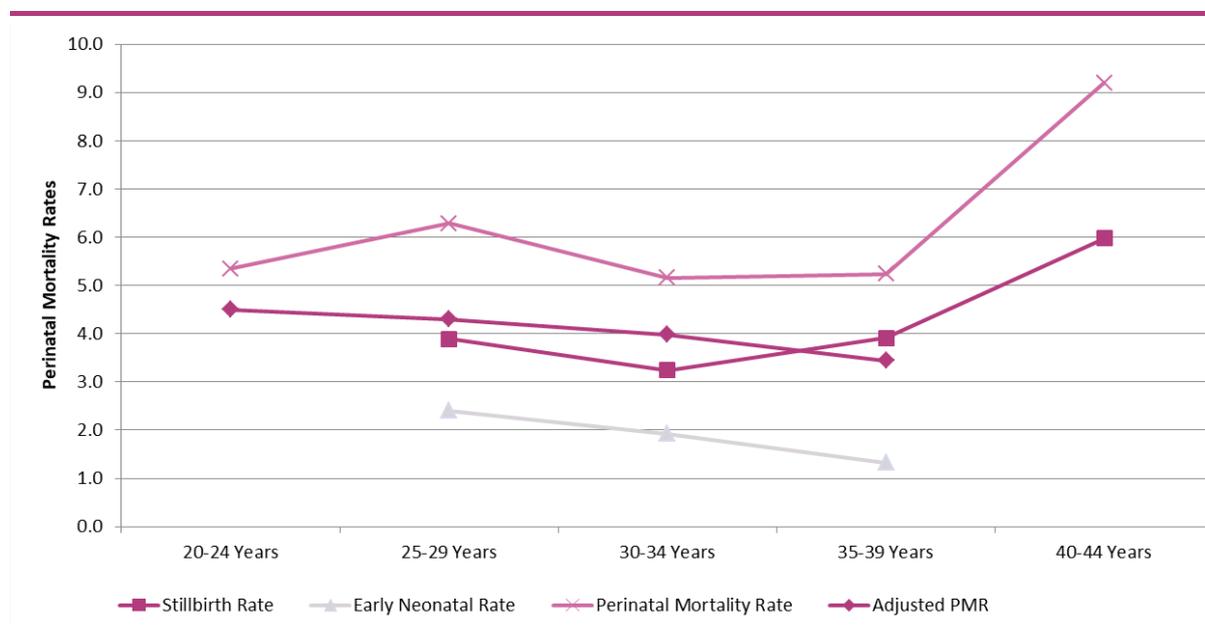
* Further suppression required to prevent disclosure of five or fewer births (or maternities).

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.

Figure 3.1 presents perinatal mortality rates.²⁴

- The perinatal mortality rate was lowest for mothers aged in the 30 to 34 year and the 35 to 39 year age groups (5.2 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 (3.4 per 1,000 live births and stillbirths). The highest perinatal mortality rate of 9.2 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 6.0 per 1,000 live births and stillbirths), while the lowest stillbirth rate was recorded for the 30 to 34 year age group (3.2 per 1,000 live births and stillbirths).
- The early neonatal rate was lowest for mothers aged in the 35 to 39 year age group (1.3 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.

²⁴ 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Married	36,071	60.6	35,941	3.6	1.8	5.4	3.5	35,349
Single	22,645	38.0	22,556	3.9	2.3	6.2	4.6	22,298
Widowed	50	0.1	50	-	-	-	-	49
Separated	374	0.6	373	2.7	2.7	5.3	5.3	370
Divorced	272	0.5	270	7.4	-	7.4	3.7	263
Civil Partner†	36	0.1	36	-	-	-	-	35
Not Stated	88	0.1	87	11.4	-	11.4	11.4	86
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Married	34,640	60.4	34,518	3.5	1.5	5.0	3.2	34,640
Single	21,952	38.3	21,865	4.0	2.0	6.0	4.3	21,952
Widowed	*	^	*	-	-	-	-	*
Separated	366	0.6	365	2.7	2.7	5.5	5.5	*
Divorced	253	0.4	251	7.9	-	7.9	4.0	253
Civil Partner†	*	^	*	-	-	-	-	*
Not Stated	*	^	*	11.9	-	11.9	11.9	*
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Married	1,431	66.3	1,423	5.6	7.7	13.3	12.6	709
Single	693	32.1	691	2.9	11.6	14.4	11.6	346
Widowed	~	^	~	-	-	-	-	~
Separated	8	0.4	8	-	-	-	-	~
Divorced	19	0.9	19	-	-	-	-	10
Civil Partner†	~	^	~	-	-	-	-	~
Not Stated	~	^	~	-	-	-	-	~
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

Notes:

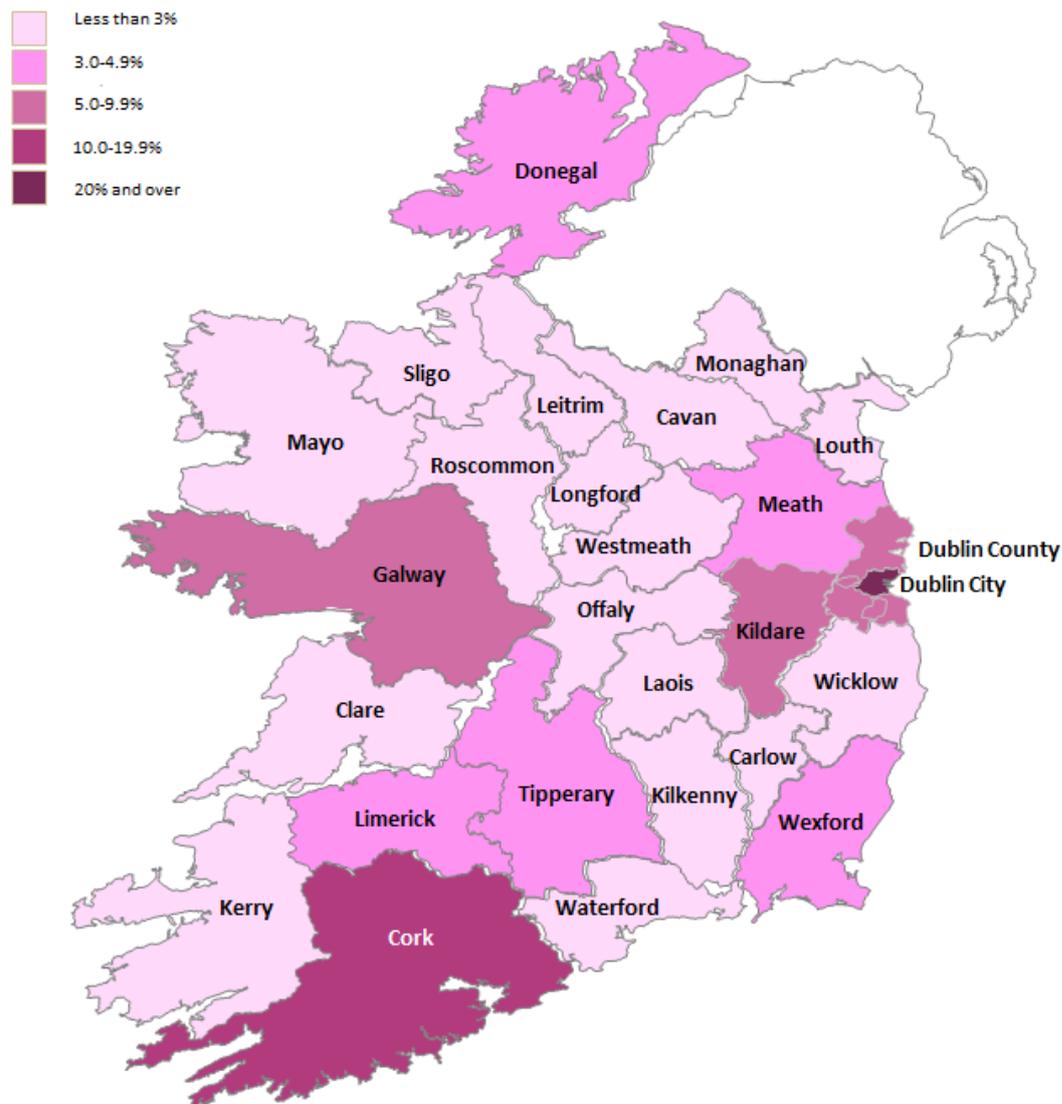
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- ^a Rates are calculated 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.
- † 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 11.1 per cent were to mothers resident in Cork.
- There were less than 1 per cent of births to mothers resident in Leitrim.

FIGURE 3.2
Percentage of Births by Mother's County of Residence, Total Births



Notes: See Appendix G, Table G1 for data.
Example: 1.3 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.²⁵

- The highest proportion of total births were to mothers whose socio-economic group was classified as 'lower-professional' (21.5 per cent) followed by 'intermediate non-manual workers' (17.5 per cent) and 'home duties' (15.0 per cent).
- Mothers classified as 'other non-manual workers' group accounted for a further 14.1 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 8.0 per 1,000 live births and stillbirths was reported for mothers in the socio-economic group 'home duties' followed by 'intermediate non-manual workers' (4.9 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).

²⁵ See Appendix C for a description of the classification system for socio-economic group.

TABLE 3.3
Mother's Socio-economic Group: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Farmers & Farm Managers	73	0.1	73	-	-	-	-	70
Other Agricultural Occupations & Fisherwomen	131	0.2	131	-	-	-	-	128
Higher Professional	4,817	8.1	4,803	2.9	0.8	3.7	2.7	4,723
Lower Professional	12,793	21.5	12,761	2.5	1.6	4.1	2.6	12,528
Employers & Managers	4,522	7.6	4,505	3.8	0.7	4.4	2.9	4,430
Salaried Employees	524	0.9	522	3.8	1.9	5.7	3.8	512
Intermediate Non-Manual Workers	10,417	17.5	10,379	3.6	1.3	4.9	3.7	10,228
Other Non-Manual Workers	8,421	14.1	8,396	3.0	1.2	4.2	3.0	8,277
Skilled Manual Workers	686	1.2	684	2.9	2.9	5.8	2.9	676
Semi-Skilled Manual Workers	1,397	2.3	1,389	5.7	5.0	10.7	7.2	1,381
Unskilled Manual Workers	12	0.0	12	-	-	-	-	12
Unemployed	2,557	4.3	2,550	2.7	2.4	5.1	3.5	2,533
Not Classifiable	1,840	3.1	1,830	5.4	3.8	9.2	6.0	1,813
Home Duties	8,921	15.0	8,881	4.5	3.5	8.0	5.5	8,759
Not Stated	2,425	4.1	2,397	11.5	4.6	16.1	11.6	2,380
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Farmers & Farm Managers	*	^	*	-	-	-	-	*
Other Agricultural Occupations & Fisherwomen	*	^	*	-	-	-	-	*
Higher Professional	4,628	8.1	4,614	3.0	0.9	3.9	2.8	4,628
Lower Professional	12,261	21.4	12,231	2.4	1.3	3.8	2.2	12,261
Employers & Managers	4,344	7.6	4,327	3.9	0.7	4.6	3.0	4,344
Salaried Employees	500	0.9	498	4.0	2.0	6.0	4.0	500
Intermediate Non-Manual Workers	10,044	17.5	10,006	3.8	1.0	4.8	3.7	10,044
Other Non-Manual Workers	8,132	14.2	8,108	3.0	1.1	4.1	2.8	8,132
Skilled Manual Workers	666	1.2	664	3.0	3.0	6.0	3.0	666
Semi-Skilled Manual Workers	1,366	2.4	1,360	4.4	2.9	7.3	3.7	1,366
Unskilled Manual Workers	12	0.0	12	-	-	-	-	12
Unemployed	2,509	4.4	2,502	2.8	2.4	5.2	3.6	2,509
Not Classifiable	1,787	3.1	1,777	5.6	3.4	9.0	6.2	1,787
Home Duties	8,600	15.0	8,563	4.3	3.2	7.4	4.9	8,600
Not Stated	2,336	4.1	2,310	11.1	3.9	15.0	10.3	2,336
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Farmers & Farm Managers	*	^	*	-	-	-	-	~
Other Agricultural Occupations & Fisherwomen	*	^	*	-	-	-	-	~
Higher Professional	189	8.8	189	-	-	-	-	95
Lower Professional	532	24.6	530	3.8	9.4	13.2	11.3	267
Employers & Managers	178	8.2	178	-	-	-	-	86
Salaried Employees	24	1.1	24	-	-	-	-	12
Intermediate Non-Manual Workers	373	17.3	373	-	8.0	8.0	5.4	184
Other Non-Manual Workers	289	13.4	288	3.5	3.5	6.9	6.9	145
Skilled Manual Workers	20	0.9	20	0.0	0.0	0.0	0.0	10
Semi-Skilled Manual Workers	31	1.4	29	64.5	103.4	161.3	161.3	15
Unskilled Manual Workers	0	0.0	0	-	-	-	-	0
Unemployed	48	2.2	48	-	-	-	-	24
Not Classifiable	53	2.5	53	-	18.9	18.9	-	26
Home Duties	321	14.9	318	9.3	12.6	21.8	21.8	159
Not Stated	89	4.1	87	22.5	23.0	44.9	44.9	44
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

Notes:

- ~ 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.

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'.²⁶ 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.²⁷

- 17.5 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 7.5 per cent of total births.

²⁶ See Section 22 (1) of the *Civil Registration Act 2004*
<https://www.irishstatutebook.ie/eli/2004/act/3/section/22/enacted/en/html#sec22>

²⁷ See Appendix C for a description of the classification system for socio-economic group.

TABLE 3.4

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Farmers & Farm Managers	1,353	2.3	1,349	3.0	0.7	3.7	3.0	1,307
Other Agricultural Occupations & Fishermen	513	0.9	511	3.9	-	3.9	3.9	505
Higher Professional	3,771	6.3	3,763	2.1	2.4	4.5	3.5	3,706
Lower Professional	4,163	7.0	4,151	2.9	1.7	4.6	2.6	4,088
Employers & Managers	4,193	7.0	4,188	1.2	1.2	2.4	1.2	4,106
Salaried Employees	544	0.9	543	1.8	-	1.8	-	534
Intermediate Non-Manual Workers	4,391	7.4	4,378	3.0	0.7	3.6	3.2	4,309
Other Non-Manual Workers	4,446	7.5	4,422	5.4	0.9	6.3	4.3	4,369
Skilled Manual Workers	10,409	17.5	10,378	3.0	1.5	4.5	3.0	10,213
Semi-Skilled Manual Workers	1,798	3.0	1,793	2.8	3.9	6.7	3.9	1,768
Unskilled Manual Workers	429	0.7	429	-	2.3	2.3	2.3	423
Unemployed	1,626	2.7	1,619	4.3	3.7	8.0	5.5	1,602
Not Classifiable	1,303	2.2	1,297	4.6	3.1	7.7	5.4	1,269
Home Duties	179	0.3	178	5.6	5.6	11.2	-	175
Not Stated/Not Applicable	20,418	34.3	20,314	5.1	2.6	7.6	5.4	20,076
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Farmers & Farm Managers	1,263	2.2	1,259	3.2	-	3.2	2.4	1,263
Other Agricultural Occupations & Fishermen	497	0.9	496	2.0	-	2.0	2.0	497
Higher Professional	3,641	6.3	3,634	1.9	1.9	3.8	2.7	3,641
Lower Professional	4,014	7.0	4,004	2.5	1.5	4.0	2.0	4,014
Employers & Managers	4,022	7.0	4,017	1.2	1.2	2.5	1.2	4,022
Salaried Employees	524	0.9	523	1.9	-	1.9	-	524
Intermediate Non-Manual Workers	4,229	7.4	4,216	3.1	0.7	3.8	3.3	4,229
Other Non-Manual Workers	4,290	7.5	4,267	5.4	0.7	6.1	4.0	4,290
Skilled Manual Workers	10,021	17.5	9,990	3.1	1.4	4.5	2.9	10,021
Semi-Skilled Manual Workers	1,737	3.0	1,732	2.9	3.5	6.3	4.0	1,737
Unskilled Manual Workers	419	0.7	419	-	2.4	2.4	2.4	*
Unemployed	1,579	2.8	1,572	4.4	3.8	8.2	5.7	1,579
Not Classifiable	1,233	2.1	1,229	3.2	3.3	6.5	4.1	1,233
Home Duties	171	0.3	170	5.8	5.9	11.7	-	*
Not Stated/Not Applicable	19,737	34.4	19,636	5.1	2.1	7.2	5.0	19,737
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Farmers & Farm Managers	90	4.2	90	-	11.1	11.1	11.1	44
Other Agricultural Occupations & Fishermen	16	0.7	15	62.5	-	62.5	62.5	8
Higher Professional	130	6.0	129	7.7	15.5	23.1	23.1	65
Lower Professional	149	6.9	147	13.4	6.8	20.1	20.1	74
Employers & Managers	171	7.9	171	-	-	-	-	84
Salaried Employees	20	0.9	20	-	-	-	-	10
Intermediate Non-Manual Workers	162	7.5	162	-	-	-	-	80
Other Non-Manual Workers	156	7.2	155	6.4	6.5	12.8	12.8	79
Skilled Manual Workers	388	18.0	388	-	5.2	5.2	5.2	192
Semi-Skilled Manual Workers	61	2.8	61	-	16.4	16.4	-	31
Unskilled Manual Workers	10	0.5	10	-	-	-	-	~
Unemployed	47	2.2	47	-	-	-	-	23
Not Classifiable	70	3.2	68	28.6	-	28.6	28.6	36
Home Duties	8	0.4	8	-	-	-	-	~
Not Stated/Not Applicable	681	31.5	678	4.4	16.2	20.6	17.7	339
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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.

- Over 76 per cent of total births were recorded for babies born to mothers whose place of birth was Ireland.
- The next highest proportion of total births were to mothers from the European Union (excluding Ireland and United Kingdom) at 11.3 per cent.²⁸
- Births to mothers from Asia accounted for 4.2 per cent of total births, followed by 2.2 per cent to mothers from both the UK and Africa.
- The remainder of births were to mothers from the Rest of Europe, America, Australia, New Zealand and Other Oceania and Multi-Nationality.

²⁸ 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Ireland	45,359	76.2	45,204	3.4	1.8	5.2	3.7	44,546
UK	1,325	2.2	1,319	4.5	2.3	6.8	3.0	1,306
EU15 (excluding Ireland & UK)	1,076	1.8	1,071	4.6	1.9	6.5	2.8	1,062
EU15 to EU28	5,656	9.5	5,633	4.1	2.7	6.7	4.6	5,592
Rest of Europe	735	1.2	730	6.8	1.4	8.2	6.8	*
Africa	1,299	2.2	1,287	9.2	3.1	12.3	10.0	1,276
Asia	2,472	4.2	2,463	3.6	2.0	5.7	2.8	2,442
America	964	1.6	960	4.1	2.1	6.2	3.1	950
Australia	*	^	*	-	-	-	-	87
New Zealand and Other Oceania	44	0.1	44	-	-	-	-	44
Multi-Nationality	~	^	~	-	-	-	-	~
Not Stated	517	0.9	513	7.7	3.9	11.6	11.6	419
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Ireland	43,741	76.2	43,591	3.4	1.5	5.0	3.4	43,741
UK	1,288	2.2	1,282	4.7	2.3	7.0	3.1	1,288
EU15 (excluding Ireland & UK)	1,048	1.8	1,043	4.8	1.9	6.7	2.9	1,048
EU15 to EU28	5,527	9.6	5,507	3.6	2.4	6.0	3.8	5,527
Rest of Europe	*	^	*	7.0	1.4	8.4	7.0	*
Africa	1,256	2.2	1,244	9.6	3.2	12.7	10.4	1,256
Asia	2,415	4.2	2,406	3.7	2.1	5.8	2.9	2,415
America	936	1.6	932	4.3	2.1	6.4	3.2	936
Australia	*	^	*	-	-	-	-	86
New Zealand and Other Oceania	44	0.1	44	-	-	-	-	44
Multi-Nationality	~	^	~	-	-	-	-	~
Not Stated	320	0.6	318	6.3	-	6.3	6.3	320
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Ireland	1,618	74.9	1,613	3.1	9.3	12.4	10.5	805
UK	37	1.7	37	-	-	-	-	18
EU15 (excluding Ireland & UK)	28	1.3	28	-	-	-	-	14
EU15 to EU28	129	6.0	126	23.3	15.9	38.8	38.8	65
Rest of Europe	*	*	*	-	-	-	-	*
Africa	43	2.0	43	-	-	-	-	20
Asia	57	2.6	57	-	-	-	-	27
America	28	1.3	28	-	-	-	-	14
Australia	~	0.1	~	-	-	-	-	~
New Zealand and Other Oceania	0	0.0	0	-	-	-	-	0
Multi-Nationality	0	0.0	0	-	-	-	-	0
Not Stated	197	9.1	195	10.2	10.3	20.3	20.3	99
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

Notes:

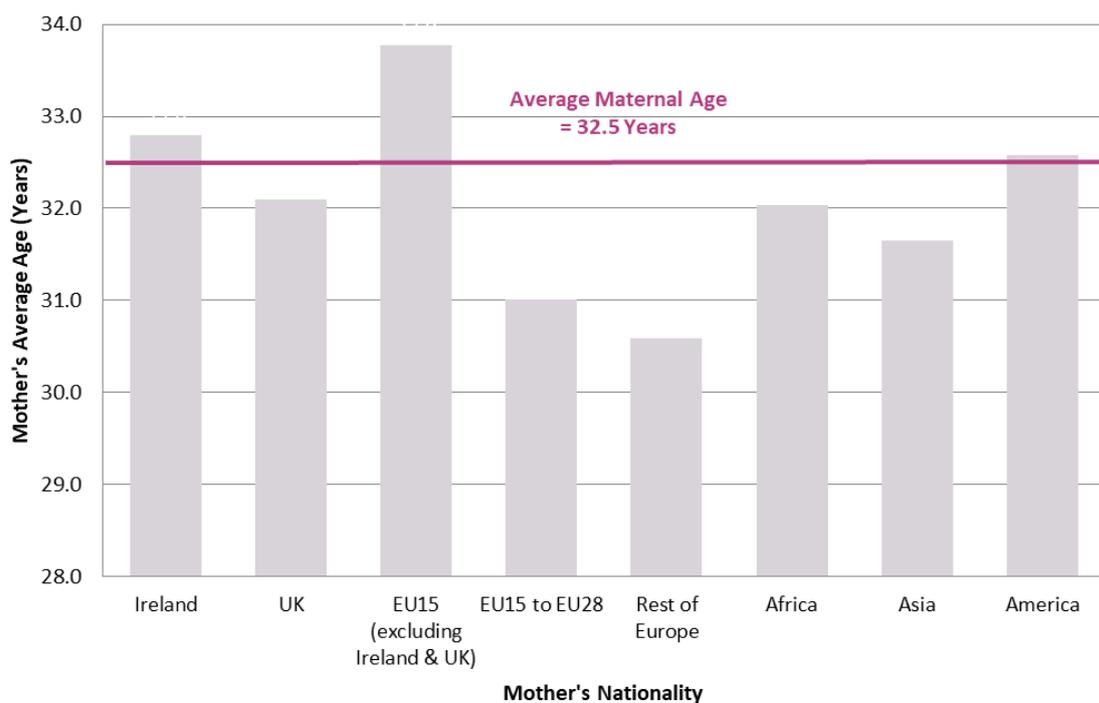
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated 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 2019.

- The average age of all mothers giving birth was 32.5 years and the average age of mothers from Ireland giving birth was slightly higher at 32.8 years.
- Mothers giving birth from the Rest of the Europe were on average younger at 30.6 years, while mothers from the EU15 (excluding Ireland and United Kingdom) recorded the highest average maternal age at 33.8 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'.²⁹ 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 51.7 per cent of total births.
- Births to fathers from the EU15 to EU28 and Asia accounted for 5.7 per cent and 3.3 per cent of total births respectively.

²⁹ See Section 22 (1) of the *Civil Registration Act 2004*
<https://www.irishstatutebook.ie/eli/2004/act/3/section/22/enacted/en/html#sec22>

TABLE 3.6
Father's Nationality: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Ireland	30,789	51.7	30,701	2.9	1.5	4.4	3.0	30,170
UK	858	1.4	857	1.2	1.2	2.3	2.3	846
EU15 (excluding Ireland & UK)	625	1.0	622	4.8	1.6	6.4	1.6	619
EU15 to EU28	3,374	5.7	3,358	4.7	2.7	7.4	5.3	3,332
Rest of Europe	471	0.8	469	4.2	-	4.2	4.2	460
Africa	878	1.5	872	6.8	4.6	11.4	8.0	856
Asia	1,941	3.3	1,931	5.2	2.1	7.2	4.1	1,920
America	487	0.8	485	4.1	2.1	6.2	4.1	480
Australia	56	0.1	56	-	-	-	-	54
New Zealand and Other Oceania	39	0.1	39	-	-	-	-	38
Not Stated/ Not Applicable	20,018	33.6	19,923	4.7	2.5	7.2	5.1	19,675
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Ireland	29,560	51.5	29,477	2.8	1.3	4.1	2.7	29,560
UK	834	1.5	833	1.2	1.2	2.4	2.4	834
EU15 (excluding Ireland & UK)	613	1.1	610	4.9	1.6	6.5	1.6	613
EU15 to EU28	3,288	5.7	3,274	4.3	2.4	6.7	4.6	3,288
Rest of Europe	449	0.8	447	4.5	-	4.5	4.5	449
Africa	836	1.5	830	7.2	4.8	12.0	8.4	836
Asia	1,901	3.3	1,891	5.3	2.1	7.4	4.2	1,901
America	473	0.8	471	4.2	2.1	6.3	4.2	473
Australia	*	^	*	-	-	-	-	*
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Not Stated/ Not Applicable	19,334	33.7	19,242	4.8	2.0	6.8	4.7	19,334
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Ireland	1,229	56.9	1,224	4.1	6.5	10.6	9.8	610
UK	24	1.1	24	-	-	-	-	12
EU15 (excluding Ireland & UK)	12	0.6	12	-	-	-	-	6
EU15 to EU28	86	4.0	84	23.3	11.9	34.9	34.9	44
Rest of Europe	22	1.0	22	-	-	-	-	11
Africa	42	1.9	42	-	-	-	-	20
Asia	40	1.9	40	-	-	-	-	19
America	14	0.6	14	-	-	-	-	7
Australia	~	^	~	-	-	-	-	~
New Zealand and Other Oceania	~	^	~	-	-	-	-	~
Not Stated/ Not Applicable	684	31.7	681	4.4	14.7	19.0	16.1	341
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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 9.0 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
0	23,140	38.9	23,040	4.3	1.9	6.2	4.5	22,675
1	20,731	34.8	20,674	2.7	1.6	4.4	2.9	20,375
2	10,333	17.4	10,294	3.8	2.1	5.9	3.6	10,157
3	3,477	5.8	3,461	4.6	2.6	7.2	4.9	3,422
4	1,074	1.8	1,068	5.6	0.9	6.5	5.6	1,054
5	431	0.7	428	7.0	-	7.0	4.7	424
6	177	0.3	176	5.6	17.0	22.6	22.6	176
More than 6	173	0.3	172	5.8	17.4	23.1	11.7	167
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
0	22,215	38.7	22,123	4.1	1.6	5.8	4.1	22,215
1	20,028	34.9	19,971	2.8	1.5	4.3	2.8	20,028
2	9,980	17.4	9,942	3.8	1.9	5.7	3.4	9,980
3	3,366	5.9	3,350	4.8	2.4	7.1	4.8	3,366
4	1,034	1.8	1,029	4.8	1.0	5.8	4.8	1,034
5	417	0.7	414	7.2	-	7.2	4.8	417
6	*	^	*	5.7	5.7	11.4	11.4	*
More than 6	*	^	*	6.2	18.6	24.7	12.5	*
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
0	925	42.8	917	8.6	8.7	17.3	15.2	460
1	703	32.6	703	-	7.1	7.1	7.1	347
2	353	16.4	352	2.8	8.5	11.3	8.5	177
3	111	5.1	111	-	9.0	9.0	9.0	56
4	40	1.9	39	25.0	-	25.0	25.0	20
5	14	0.6	14	-	-	-	-	7
6	~	^	~	-	1,000.0	1,000.0	1,000.0	~
More than 6	*	^	*	-	-	-	-	~
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

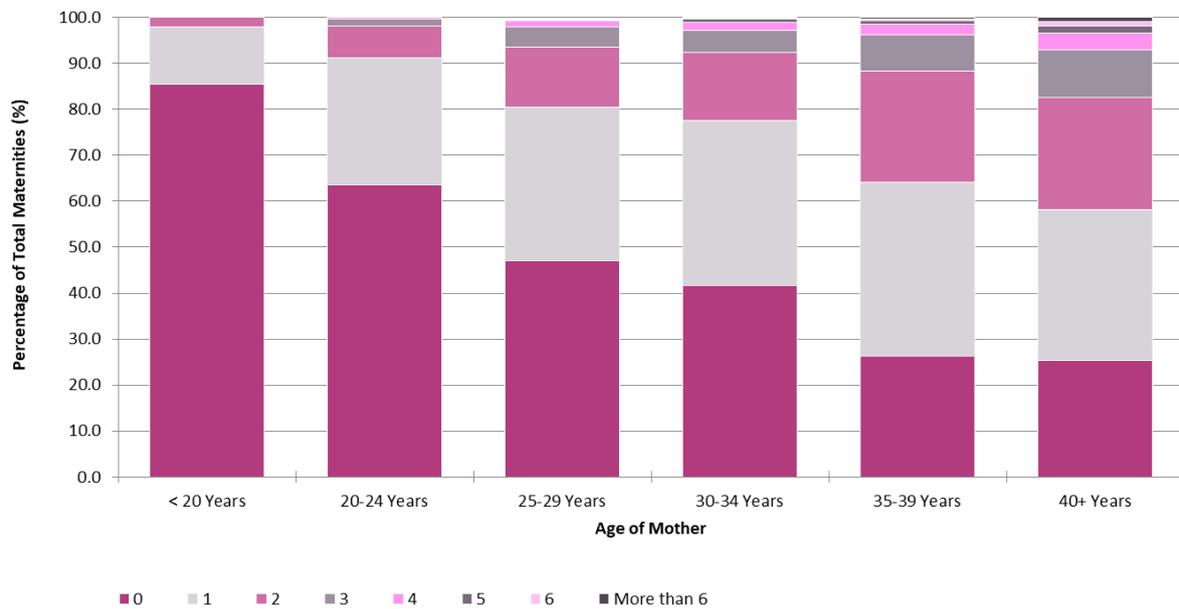
Notes:

- 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, 85.5 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 2019, 98.6 per cent of multiparous women giving birth recorded no previous stillbirths while 1.4 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
0	35,884	98.6	35,766	3.3	1.9	5.2	3.4	35,276
1	473	1.3	468	10.6	8.5	19.0	12.8	460
2 and Over	39	0.1	39	-	-	-	-	39
Total	36,396	100	36,273	3.4	2.0	5.4	3.6	35,775
Singleton Births								
0	34,677	98.6	34,560	3.4	1.6	5.0	3.2	34,677
1	*	^	*	8.9	9.0	17.9	11.3	*
2 and Over	*	^	*	-	-	-	-	*
Total	35,162	100	35,041	3.4	1.7	5.2	3.3	35,162
Multiple Births								
0	1,207	97.8	1,206	0.8	9.1	9.9	9.1	599
1	*	^	*	38.5	-	38.5	38.5	*
2 and Over	~	^	~	-	-	-	-	~
Total	1,234	100	1,232	1.6	8.9	10.5	9.7	613

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 1.0 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
1 year or less	379	1.0	377	5.3	13.3	18.5	15.9	368
>1 year to 2 years	7,654	21.0	7,621	4.3	1.6	5.9	3.9	7,507
>2 years to 3 years	9,157	25.2	9,132	2.7	1.5	4.3	2.3	9,005
>3 years to 4 years	5,582	15.3	5,566	2.9	0.9	3.8	3.2	5,488
>4 years to 5 years	3,507	9.6	3,497	2.9	1.1	4.0	1.4	3,456
>5 years to 6 years	2,405	6.6	2,396	3.7	2.1	5.8	3.3	2,369
More than 6 years	6,291	17.3	6,270	3.3	1.9	5.2	4.0	6,178
Not Stated	1,421	3.9	1,414	4.9	10.6	15.5	11.3	1,404
Total	36,396	100	36,273	3.4	2.0	5.4	3.6	35,775
Singleton Births								
1 year or less	357	1.0	355	5.6	8.5	14.0	11.2	357
>1 year to 2 years	7,361	20.9	7,328	4.5	1.5	6.0	4.1	7,361
>2 years to 3 years	8,862	25.2	8,838	2.7	1.4	4.1	2.0	8,862
>3 years to 4 years	5,393	15.3	5,377	3.0	0.9	3.9	3.3	5,393
>4 years to 5 years	3,405	9.7	3,395	2.9	1.2	4.1	1.5	3,405
>5 years to 6 years	2,332	6.6	2,323	3.9	2.2	6.0	3.4	2,332
More than 6 years	6,065	17.2	6,045	3.3	1.3	4.6	3.3	6,065
Not Stated	1,387	3.9	1,380	5.0	9.4	14.4	10.1	1,387
Total	35,162	100	35,041	3.4	1.7	5.2	3.3	35,162
Multiple Births								
1 year or less	22	1.8	22	-	90.9	90.9	90.9	11
>1 year to 2 years	293	23.7	293	-	3.4	3.4	-	146
>2 years to 3 years	295	23.9	294	3.4	6.8	10.2	10.2	143
>3 years to 4 years	189	15.3	189	-	-	-	-	95
>4 years to 5 years	102	8.3	102	-	-	-	-	51
>5 years to 6 years	73	5.9	73	-	-	-	-	37
More than 6 years	226	18.3	225	4.4	17.8	22.1	22.1	113
Not Stated	34	2.8	34	-	58.8	58.8	58.8	17
Total	1,234	100	1,232	1.6	8.9	10.5	9.7	613

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.³⁰

- The average birthweight for live births was 3,474.8 grams for singletons, 2,445.6 grams for multiples, and 3,437.5 grams for total live births.
- The average birthweight for live births was 3,493.1 grams for males compared to 3,379.3 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 5.6 per cent (4.0 per cent of singletons and 47.1 per cent of multiples).
- There was considerable variation in very low birthweight rates between singleton and multiple live births with 0.5 per cent of singleton live births weighing less than 1,500 grams compared to 6.7 per cent for multiple births (see Figure 3.6).
- 92.4 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 (5.2 per cent) compared with female live births (5.9 per cent) (see Figure 3.8).
- The percentage of total live births weighing 4,500 grams and over was 2.0 per cent (2.6 per cent of males compared to 1.3 per cent of females) (see Figure 3.8).

³⁰ 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

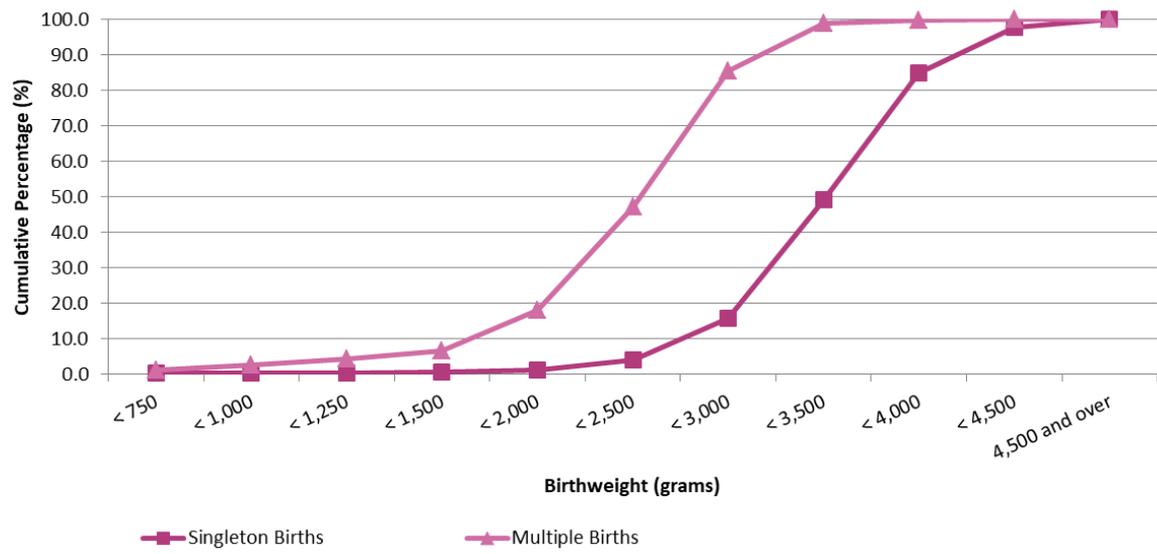
TABLE 3.10
Birthweight (grams): Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
500-749	138	0.2	91	340.6	307.7	543.5	479.3	123
750-999	113	0.2	88	221.2	125.0	318.6	214.3	95
1000-1249	142	0.2	125	119.7	80.0	190.1	101.6	121
1250-1499	166	0.3	152	84.3	26.3	108.4	75.0	136
1500-1999	671	1.1	637	50.7	31.4	80.5	44.9	541
2000-2499	2,240	3.8	2,218	9.8	5.0	14.7	9.4	1,925
2500-2999	7,474	12.6	7,447	3.6	1.6	5.2	4.2	7,069
3000-3499	19,562	32.9	19,543	1.0	0.7	1.6	1.4	19,422
3500-3999	20,345	34.2	20,331	0.7	0.3	1.0	0.8	20,334
4000-4499	7,501	12.6	7,497	0.5	0.1	0.7	0.7	7,500
4500 and Over	1,184	2.0	1,184	-	-	-	-	1,184
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
500-749	110	0.2	68	381.8	264.7	545.5	468.1	110
750-999	*	^	*	280.5	118.6	365.9	223.9	*
1000-1249	102	0.2	85	166.7	82.4	235.3	123.6	102
1250-1499	115	0.2	101	121.7	39.6	156.5	110.1	115
1500-1999	428	0.7	395	77.1	45.6	119.2	66.8	428
2000-2499	1,612	2.8	1,591	13.0	6.9	19.9	12.5	1,612
2500-2999	6,650	11.6	6,624	3.9	1.8	5.7	4.5	6,650
3000-3499	19,271	33.6	19,252	1.0	0.7	1.7	1.5	19,271
3500-3999	20,323	35.4	20,309	0.7	0.3	1.0	0.8	20,323
4000-4499	*	^	*	0.5	0.1	0.7	0.7	*
4500 and Over	1,184	2.1	1,184	-	-	-	-	1,184
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
500-749	28	1.3	23	178.6	434.8	535.7	518.5	13
750-999	*	^	*	64.5	137.9	193.5	193.5	13
1000-1249	40	1.9	40	-	75.0	75.0	51.3	19
1250-1499	51	2.4	51	-	-	-	-	21
1500-1999	243	11.3	242	4.1	8.3	12.3	8.3	113
2000-2499	628	29.1	627	1.6	-	1.6	1.6	313
2500-2999	824	38.2	823	1.2	-	1.2	1.2	419
3000-3499	291	13.5	291	-	-	-	-	151
3500-3999	22	1.0	22	-	-	-	-	11
4000-4499	~	^	~	-	-	-	-	0
4500 and Over	0	0.0	0	-	-	-	-	0
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

Notes:

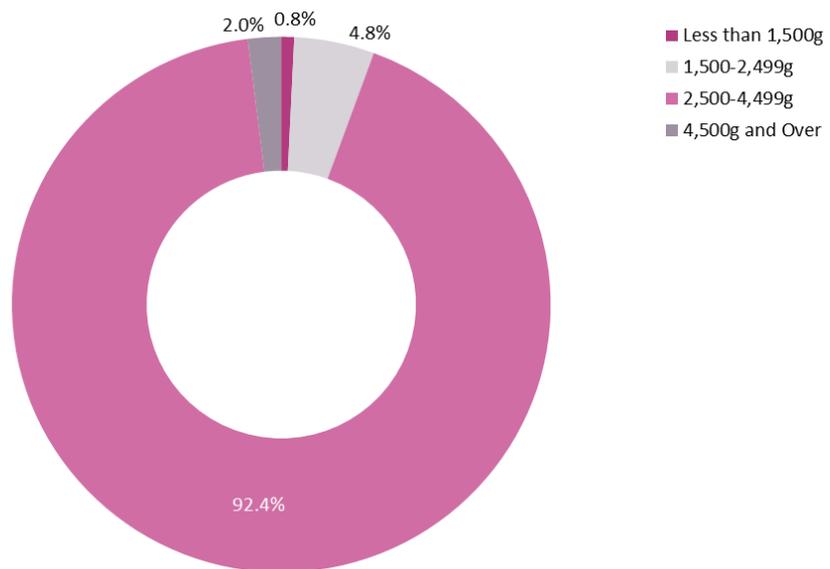
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- ^a Rates are calculated 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. 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



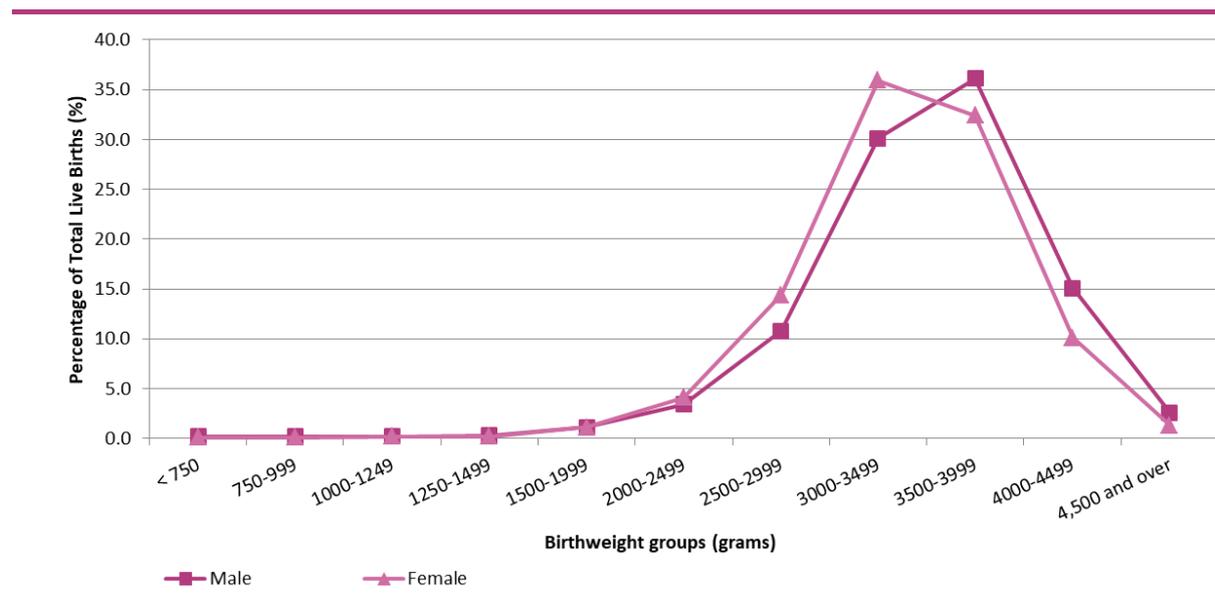
Note: See Table 3.10 for data.

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 31.9 weeks. The average gestational age for singleton live births was 39.1 weeks compared with 35.6 weeks for live twin births and 31.3 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 6.7 per cent of live births (4.9 per cent for singleton births and 56.7 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Less than 28	248	0.4	185	254.0	205.4	407.3	343.8	218
28-31	402	0.7	363	97.0	57.9	149.3	92.8	340
32-36	3,510	5.9	3,453	16.2	5.8	21.9	15.2	2,978
37-41	54,688	91.9	54,625	1.2	0.7	1.8	1.2	54,227
42 and Over	679	1.1	679	-	1.5	1.5	1.5	678
Not Stated	9	0.0	8	111.1	-	111.1	111.1	9
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Less than 28	*	^	*	296.3	188.0	428.6	345.5	*
28-31	285	0.5	246	136.8	69.1	196.5	126.0	285
32-36	2,458	4.3	2,404	22.0	7.5	29.3	20.1	2,458
37-41	53,759	93.7	53,696	1.2	0.7	1.8	1.2	53,759
42 and Over	*	^	*	-	1.5	1.5	1.5	*
Not Stated	9	0.0	8	111.1	-	111.1	111.1	9
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Less than 28	*	^	*	118.6	250.0	339.0	339.0	*
28-31	117	5.4	117	-	34.2	34.2	17.4	55
32-36	1,052	48.7	1,049	2.9	1.9	4.8	3.8	520
37-41	929	43.0	929	-	-	-	-	468
42 and Over	~	^	~	-	-	-	-	~
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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 August (8.9 per cent).
- August recorded the highest proportion of singleton births (8.9 per cent) while January recorded the highest proportion of multiple births (9.2 per cent) (see Figure 3.9).

TABLE 3.12

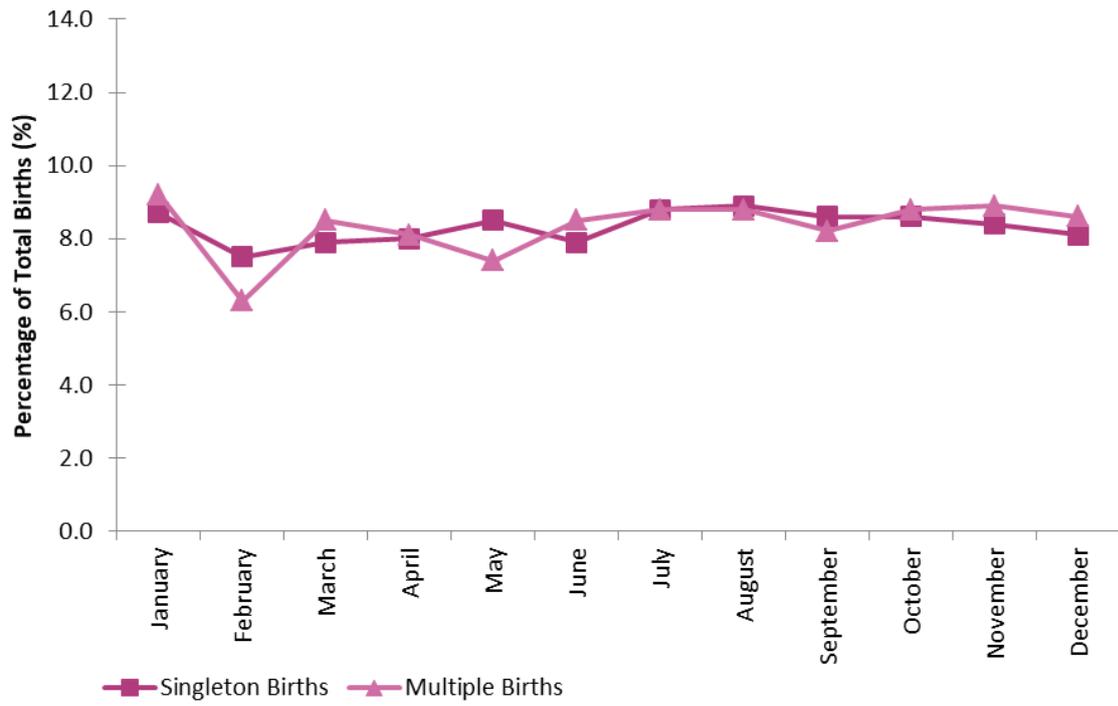
Month of Birth: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
January	5,189	8.7	5,169	3.9	2.5	6.4	3.9	5,091
February	4,449	7.5	4,432	3.8	2.5	6.3	4.1	4,381
March	4,720	7.9	4,703	3.6	2.1	5.7	4.5	4,627
April	4,770	8.0	4,749	4.4	1.3	5.7	3.4	4,682
May	5,038	8.5	5,014	4.8	3.2	7.9	5.6	4,959
June	4,727	7.9	4,711	3.4	1.9	5.3	3.2	4,634
July	5,256	8.8	5,239	3.2	1.5	4.8	3.0	5,162
August	5,290	8.9	5,272	3.4	1.7	5.1	3.8	5,193
September	5,105	8.6	5,092	2.5	2.2	4.7	2.9	5,015
October	5,137	8.6	5,115	4.3	0.8	5.1	4.1	5,043
November	5,039	8.5	5,018	4.2	2.0	6.2	4.6	4,940
December	4,816	8.1	4,799	3.5	1.9	5.4	4.4	4,723
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
January	4,991	8.7	4,972	3.8	1.8	5.6	3.0	4,991
February	4,314	7.5	4,297	3.9	2.1	6.0	3.9	4,314
March	4,536	7.9	4,520	3.5	1.1	4.6	3.3	4,536
April	4,595	8.0	4,574	4.6	0.9	5.4	3.3	4,595
May	4,879	8.5	4,856	4.7	3.1	7.8	5.3	4,879
June	4,544	7.9	4,529	3.3	1.5	4.8	2.6	4,544
July	5,067	8.8	5,050	3.4	1.4	4.7	3.0	5,067
August	5,100	8.9	5,085	2.9	1.8	4.7	3.3	5,100
September	4,927	8.6	4,914	2.6	2.0	4.7	2.8	4,927
October	4,948	8.6	4,928	4.0	0.8	4.9	3.8	4,948
November	4,846	8.4	4,826	4.1	1.9	6.0	4.5	4,846
December	4,630	8.1	4,613	3.7	2.0	5.6	4.5	4,630
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
January	198	9.2	197	5.1	20.3	25.3	25.3	100
February	135	6.3	135	-	14.8	14.8	7.5	67
March	184	8.5	183	5.4	27.3	32.6	32.6	91
April	175	8.1	175	-	11.4	11.4	5.7	87
May	159	7.4	158	6.3	6.3	12.6	12.6	80
June	183	8.5	182	5.5	11.0	16.4	16.4	90
July	189	8.8	189	-	5.3	5.3	5.3	95
August	190	8.8	187	15.8	-	15.8	15.8	93
September	178	8.2	178	-	5.6	5.6	5.6	88
October	189	8.8	187	10.6	-	10.6	10.6	95
November	193	8.9	192	5.2	5.2	10.4	5.2	94
December	186	8.6	186	-	-	-	-	93
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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 85.4 per cent of total maternities.
- Hospital/Obstetrician care was more common for maternities delivering multiple births (25.6 per cent) than those delivering singleton births (11.8 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Hospital/Obstetrician	7,354	12.4	7,310	6.0	2.5	8.4	5.5	7,070
General Practitioner only	37	0.1	37	-	-	-	-	37
Hospital & G.P. combined	50,704	85.2	50,543	3.2	1.7	4.9	3.4	49,915
None	56	0.1	51	89.3	39.2	125.0	125.0	54
Not Stated†	1,385	2.3	1,372	9.4	5.8	15.2	11.6	1,374
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Hospital/Obstetrician	6,795	11.8	6,754	6.0	1.9	7.9	4.9	6,795
General Practitioner only	*	^	*	-	-	-	-	*
Hospital & G.P. combined	49,132	85.6	48,978	3.1	1.6	4.7	3.2	49,132
None	*	^	*	96.2	-	96.2	96.2	*
Not Stated†	1,362	2.4	1,349	9.5	4.4	14.0	10.3	1,362
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Hospital/Obstetrician	559	25.9	556	5.4	9.0	14.3	12.5	275
General Practitioner only	~	^	~	-	-	-	-	~
Hospital & G.P. combined	1,572	72.8	1,565	4.5	6.4	10.8	9.6	783
None	~	^	~	-	500.0	500.0	500.0	~
Not Stated†	23	1.1	23	-	87.0	87.0	87.0	12
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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.
- † Difficulties in capturing data using the MN-CMS system has led to an increase in 'not stated' values for the antenatal care variable.
- 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 69.8 per cent of total maternities.
- Maternities recording a first antenatal visit at 20 weeks and over accounted for 5.0 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
0-12	41,558	69.8	41,422	3.3	1.5	4.7	3.3	40,776
13-19	14,179	23.8	14,131	3.4	1.6	5.0	3.5	13,959
20 and over	2,984	5.0	2,968	5.4	5.7	11.1	6.7	2,928
Not Stated	815	1.4	792	28.2	18.9	46.6	36.0	787
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
0-12	40,007	69.7	39,874	3.3	1.3	4.6	3.1	40,007
13-19	13,736	23.9	13,691	3.3	1.4	4.7	3.2	13,736
20 and over	2,873	5.0	2,859	4.9	4.9	9.7	5.9	2,873
Not Stated	761	1.3	740	27.6	16.2	43.4	31.9	761
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
0-12	1,551	71.8	1,548	1.9	5.8	7.7	7.7	769
13-19	443	20.5	440	6.8	9.1	15.8	13.6	223
20 and over	111	5.1	109	18.0	27.5	45.0	27.5	55
Not Stated	54	2.5	52	37.0	57.7	92.6	92.6	26
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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 85.2 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 31.5 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 98 per cent of total births had an advance hospital booking at time of admission to hospital (see Table 4.3).

TABLE 4.3

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Booked	58,100	97.9	57,895	3.5	1.6	5.1	3.5	57,050
Not Booked	1,227	2.1	1,209	14.7	19.0	33.4	25.5	1,191
Not Stated	16	0.0	16	-	-	-	-	16
Total	59,343	100	59,120	3.8	2.0	5.7	4.0	58,257
Singleton Births								
Booked	56,009	97.9	55,809	3.6	1.5	5.0	3.3	56,009
Not Booked	1,159	2.0	1,146	11.2	14.0	25.0	18.2	1,159
Not Stated	16	0.0	16	-	-	-	-	16
Total	57,184	100	56,971	3.7	1.7	5.4	3.6	57,184
Multiple Births								
Booked	2,091	96.9	2,086	2.4	5.8	8.1	7.7	1,041
Not Booked	68	3.1	63	73.5	111.1	176.5	151.5	32
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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 193 in 2019, are excluded from this table. See Appendix H for detailed analysis.

MOTHER'S ANTENATAL LENGTH OF STAY

The average antenatal length of stay was less than one day (0.8 days) for singleton births and 2.0 days for multiple births.

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

- 88.2 per cent of singleton births and 76.8 per cent of multiple births were delivered within a day of mother's admission to hospital.
- For total births, 2.0 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
0-1 Days	52,113	87.8	51,940	3.3	1.6	4.9	3.3	51,280
2 Days	4,092	6.9	4,067	6.1	2.5	8.6	5.4	4,023
3-5 Days	1,939	3.3	1,923	8.3	4.2	12.4	10.3	1,854
6-8 Days	482	0.8	480	4.1	10.4	14.5	10.4	452
9-11 Days	189	0.3	188	5.3	10.6	15.9	15.9	170
12-14 Days	132	0.2	130	15.2	23.1	37.9	30.5	122
More than 2 Weeks	366	0.6	362	10.9	13.8	24.6	21.9	326
Not Stated	30	0.1	30	-	33.3	33.3	33.3	30
Total	59,343	100	59,120	3.8	2.0	5.7	4.0	58,257
Singleton Births								
0-1 Days	50,455	88.2	50,285	3.4	1.4	4.8	3.1	50,455
2 Days	3,956	6.9	3,933	5.8	2.3	8.1	4.8	3,956
3-5 Days	1,769	3.1	1,755	7.9	3.4	11.3	9.1	1,769
6-8 Days	422	0.7	421	2.4	9.5	11.8	7.1	422
9-11 Days	154	0.3	153	6.5	6.5	13.0	13.0	154
12-14 Days	*	^	*	-	26.8	26.8	18.0	*
More than 2 Weeks	287	0.5	283	13.9	14.1	27.9	27.9	287
Not Stated	*	^	*	-	-	-	-	*
Total	57,184	100	56,971	3.7	1.7	5.4	3.6	57,184
Multiple Births								
0-1 Days	1,658	76.8	1,655	1.8	7.3	9.0	7.9	825
2 Days	136	6.3	134	14.7	7.5	22.1	22.1	67
3-5 Days	170	7.9	168	11.8	11.9	23.5	23.5	85
6-8 Days	60	2.8	59	16.7	16.9	33.3	33.3	30
9-11 Days	35	1.6	35	-	28.6	28.6	28.6	16
12-14 Days	*	^	*	100.0	-	100.0	100.0	*
More than 2 Weeks	79	3.7	79	-	12.7	12.7	-	39
Not Stated	~	^	~	-	1,000.0	1,000.0	1,000.0	~
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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 193 in 2019, 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.

- 51.8 per cent of maternities delivering singleton births remained in hospital for up to 2 days following delivery, compared to 11.6 per cent of maternities delivering multiple births.
- For maternities, 45.7 per cent of singleton births and 74.1 per cent of multiple births were discharged 3 to 5 days post delivery.
- 2.7 per cent of total maternities had a postnatal length of stay of 6 or more days (2.5 per cent of singleton births and 14.3 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
0-1 Days	11,989	20.2	11,865	10.3	2.5	12.8	8.2	11,970
2 Days	17,886	30.1	17,833	3.0	1.5	4.5	3.0	17,782
3-5 Days	27,724	46.7	27,685	1.4	1.7	3.1	2.3	26,922
6-8 Days	1,463	2.5	1,458	3.4	7.5	10.9	10.3	1,326
9-11 Days	179	0.3	178	5.6	5.6	11.2	5.6	162
12-14 Days	53	0.1	53	-	18.9	18.9	18.9	48
More than 2 Weeks	33	0.1	32	30.3	-	30.3	30.3	31
Not Stated	16	0.0	16	-	-	-	-	16
Total	59,343	100	59,120	3.8	2.0	5.7	4.0	58,257
Singleton Births								
0-1 Days	11,951	20.9	11,831	10.0	2.2	12.2	7.6	11,951
2 Days	17,676	30.9	17,625	2.9	1.4	4.3	2.8	17,676
3-5 Days	26,127	45.7	26,091	1.4	1.4	2.8	2.1	26,127
6-8 Days	1,196	2.1	1,192	3.3	7.6	10.9	10.0	1,196
9-11 Days	146	0.3	145	6.8	6.9	13.7	6.9	146
12-14 Days	*	^	*	-	-	-	-	*
More than 2 Weeks	*	^	*	34.5	-	34.5	34.5	*
Not Stated	16	0.0	16	-	-	-	-	16
Total	57,184	100	56,971	3.7	1.7	5.4	3.6	57,184
Multiple Births								
0-1 Days	38	1.8	34	105.3	117.6	210.5	210.5	19
2 Days	210	9.7	208	9.5	9.6	19.0	19.0	106
3-5 Days	1,597	74.0	1,594	1.9	6.3	8.1	6.3	795
6-8 Days	267	12.4	266	3.7	7.5	11.2	11.2	130
9-11 Days	33	1.5	33	-	-	-	-	16
12-14 Days	*	^	*	-	100.0	100.0	100.0	~
More than 2 Weeks	~	^	~	-	-	-	-	~
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

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 193 in 2019, are excluded from this table. See Appendix H for detailed analysis.

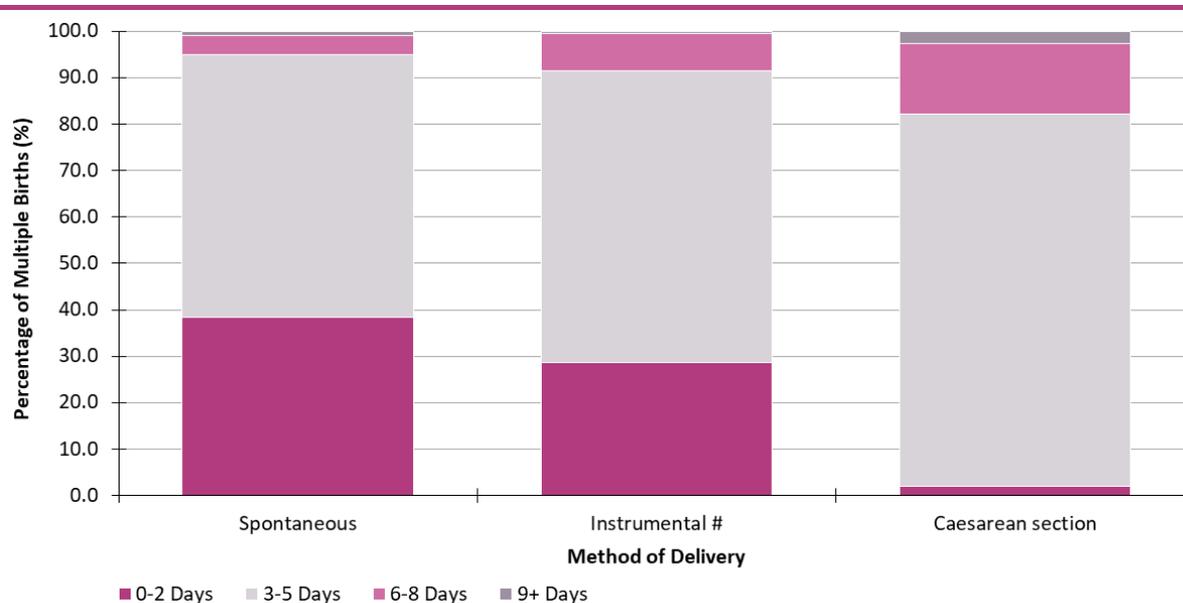
Figures 4.1 and 4.2 present data on mother's postnatal length of stay by method of delivery for singleton and multiple births.

- 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 78.8 per cent of singleton spontaneous deliveries compared to 38.5 per cent of multiple spontaneous deliveries.
- For Caesarean section deliveries, mother's postnatal length of stay was greater than 6 days for 5.3 per cent of singleton deliveries compared to 17.8 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, showing that 89.6 per cent of total maternities were rubella immune.²⁶

TABLE 4.6

Rubella: Immune Status of Mother, Numbers and Percentages

Rubella Immunity	Number of Maternities	Per Cent
Total Births		
Immune	52,350	89.6
Not Immune	4,868	8.3
Not known	1,232	2.1
Total	58,450	100
Singleton Births		
Immune	51,627	90.0
Not Immune	4,547	7.9
Not known	1,203	2.1
Total	57,377	100
Multiple Births		
Immune	723	67.4
Not Immune	321	29.9
Not known	29	2.7
Total	1,073	100

Note: Percentage column is subject to rounding.

METHOD OF DELIVERY²⁷

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 20,719 live births delivered by Caesarean section, representing 34.9 per cent of total live births (33.6 per cent of live singleton births, and 71.2 per cent of live multiple births).
- 51.2 per cent of total live births delivered spontaneously (52.4 per cent of live singleton births and 18.9 per cent of live multiple births).
- Almost 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 (14.0 per cent) compared with live multiple births (9.7 per cent).

²⁶ 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

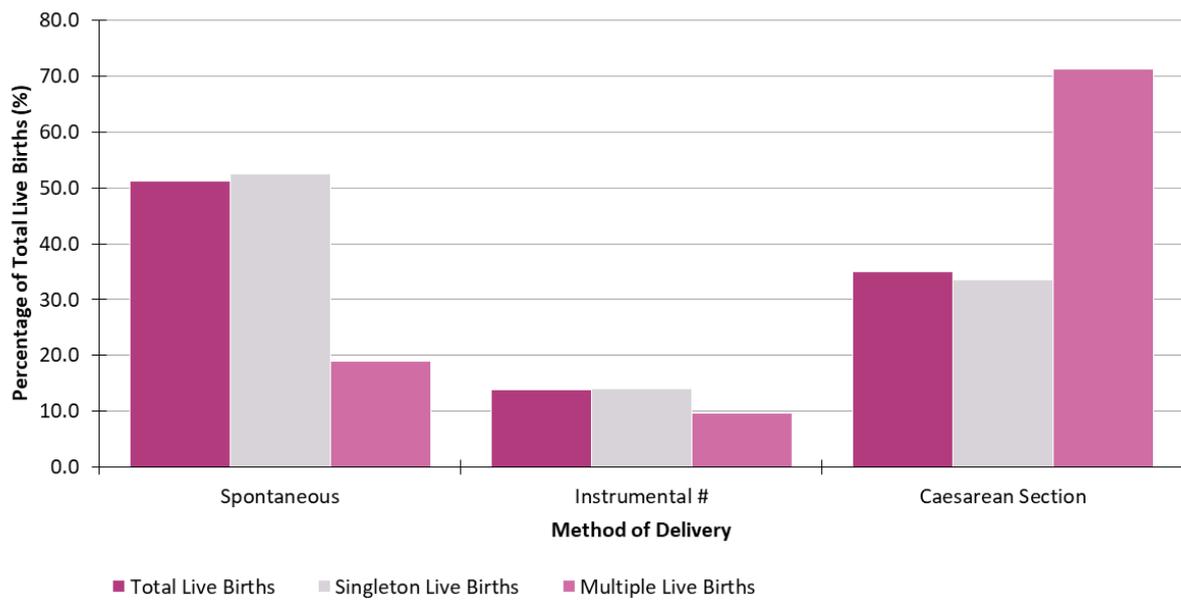
²⁷ Throughout this section, method of delivery recorded as 'other specified & combined' are not presented in the figures displaying data on method of delivery.

TABLE 4.7a
Method of Delivery: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Spontaneous	30,550	51.3	30,374	5.8	2.0	7.8	5.3	30,367
Breech / Forceps	*	^	*	79.9	15.1	93.8	61.2	*
Forceps	2,010	3.4	2,005	2.5	1.5	4.0	3.5	1,999
Vacuum extraction	5,949	10.0	5,948	0.2	0.7	0.8	0.7	5,907
Caesarean section	20,737	34.8	20,719	0.9	2.1	3.0	2.1	19,954
Other specified & combined ^b	~	^	~	-	-	-	-	~
Total	59,536	100	59,313	3.7	2.0	5.7	3.9	58,450
Singleton Births								
Spontaneous	30,137	52.5	29,967	5.6	1.7	7.4	5.0	30,137
Breech / Forceps	199	0.3	177	110.6	16.9	125.6	79.4	199
Forceps	1,984	3.5	1,979	2.5	1.5	4.0	3.5	1,984
Vacuum extraction	5,854	10.2	5,853	0.2	0.5	0.7	0.5	5,854
Caesarean section	19,203	33.5	19,188	0.8	1.9	2.7	1.8	19,203
Other specified & combined ^b	0	0.0	0	-	-	-	-	0
Total	57,377	100	57,164	3.7	1.7	5.4	3.6	57,377
Multiple Births								
Spontaneous	413	19.1	407	14.5	22.1	36.3	34.0	230
Breech / Forceps	*	^	*	11.2	11.4	22.5	22.5	*
Forceps	26	1.2	26	-	-	-	-	15
Vacuum extraction	95	4.4	95	-	10.5	10.5	10.5	53
Caesarean section	1,534	71.1	1,531	2.0	5.2	7.2	5.9	751
Other specified & combined ^b	~	^	~	-	-	-	-	~
Total	2,159	100	2,149	4.6	8.8	13.4	12.1	1,073

- 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.

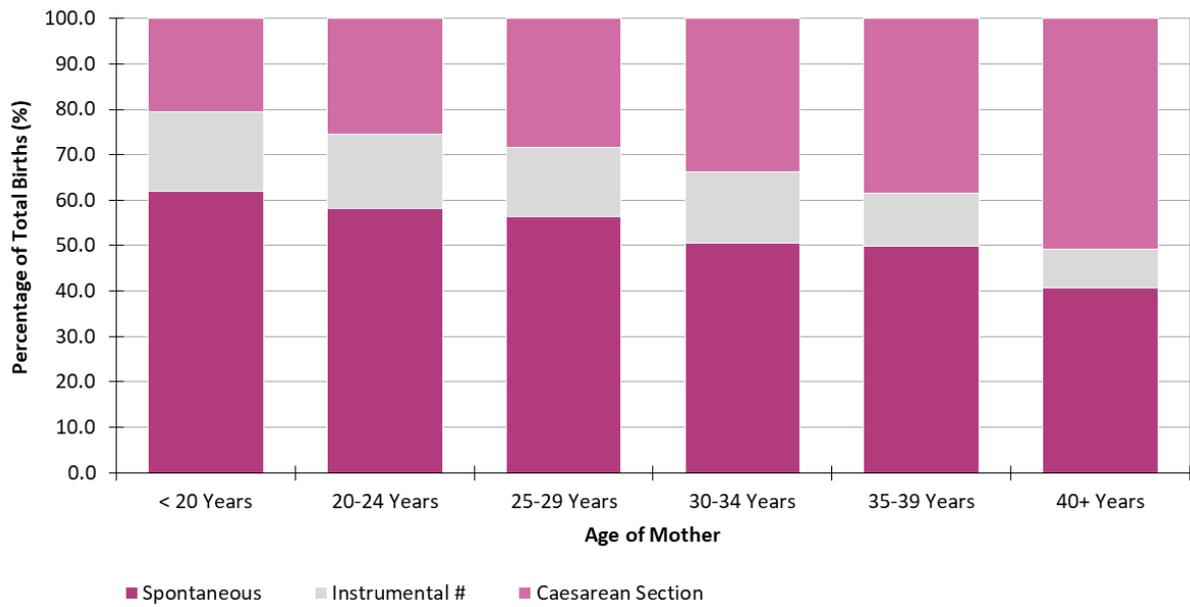
- The percentage of babies delivered spontaneously declined with maternal age and was reported at 61.9 per cent for mothers aged less than 20 years compared to 40.7 per cent to mothers aged 40 years and over.
- Caesarean section rates ranged from 20.4 per cent for mothers aged less than 20 years to 50.8 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	539 61.9	2,715 58.1	5,661 56.5	10,298 50.6	9,420 49.8	1,917 40.7	30,550 51.3
Breech/Forceps	~ ^	* ^	41 0.4	112 0.6	96 0.5	* ^	* ^
Forceps	* ^	172 3.7	371 3.7	775 3.8	559 3.0	* ^	2,010 3.4
Vacuum extraction	120 13.8	567 12.1	1,109 11.1	2,315 11.4	1,551 8.2	287 6.1	5,949 10.0
Caesarean section	178 20.4	1,191 25.5	2,843 28.4	6,861 33.7	7,274 38.5	2,390 50.8	20,737 34.8
Other specified & combined ^a	0 0.0	~ ^	0 0.0	0 0.0	0 0.0	0 0.0	~ ^
Total	871 100	4,671 100	10,025 100	20,361 100	18,900 100	4,708 100	59,536 100

- 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.
 - a 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 (28.6 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 27.7 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 [#]	Total Births	Total Births %	Live Births	Stillbirths	Stillbirth Rate ^a	Early Neonatal Deaths	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a
Less than 999	1	885	1.5	*	~	^	~	^	^	^
1000-1999	11	16,968	28.6	16,925	43	2.5	23	1.4	3.9	2.7
2000-2999	2	5,790	9.8	5,776	14	2.4	6	1.0	3.5	2.1
4000-4999	1	4,154	7.0	*	*	^	~	^	^	^
7000-7999	2	15,128	25.5	15,064	64	4.2	31	2.1	6.3	4.4
8000 and Over	2	16,418	27.7	16,334	84	5.1	52	3.2	8.3	5.6
Total	19	59,343	100	59,120	223	3.8	116	2.0	5.7	4.0

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.

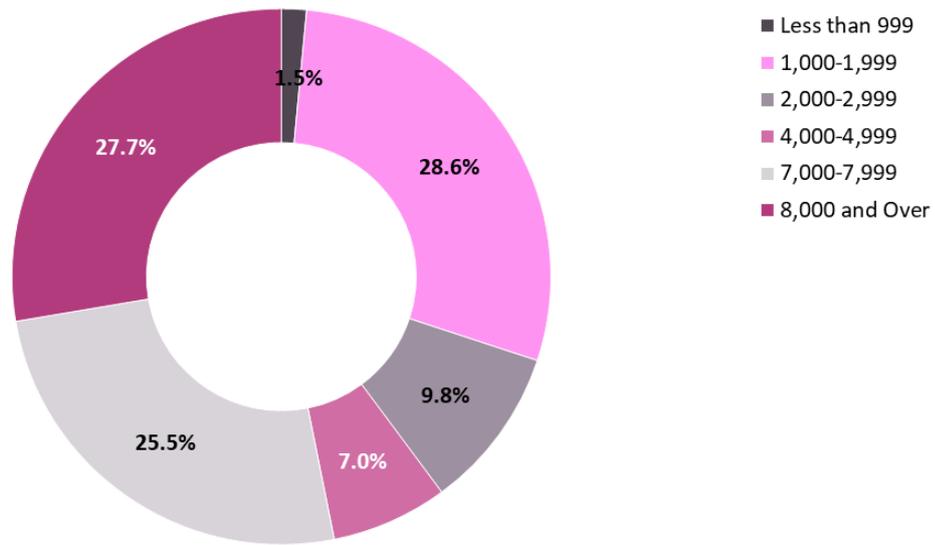
a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

This table is based on the 19 maternity units reporting to NPRS. No unit delivered between 3,000 and 3,999 births or between 5,000 and 6,999 births.

Domiciliary births, of which there were 193 in 2019, 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 2019.

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.
- 3.0 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
Total Births		
Transferred	494	0.8
Not Transferred	58,619	99.2
Not Stated	7	0.0
Total	59,120	100
Singleton Births		
Transferred	429	0.8
Not Transferred	56,535	99.2
Not Stated	7	0.0
Total	56,971	100
Multiple Births		
Transferred	65	3.0
Not Transferred	2,084	97.0
Not Stated	0	0.0
Total	2,149	100

Notes: Percentage column is subject to rounding.
Domiciliary births, of which there were 193 in 2019, 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 13.8 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 12.5 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 7th day of life).

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

- Over half (51.1 per cent) of singleton live births were discharged from hospital within 2 days, compared to just 9.7 per cent of multiple live births.
- Just over 95 per cent of singleton live births were discharged from hospital within 5 days of birth, compared to 66.1 per cent of multiple live births.
- 5.9 per cent of total live births had a length of stay of 6 or more days (4.9 per cent for singleton live births compared to 33.9 per cent for multiple births).

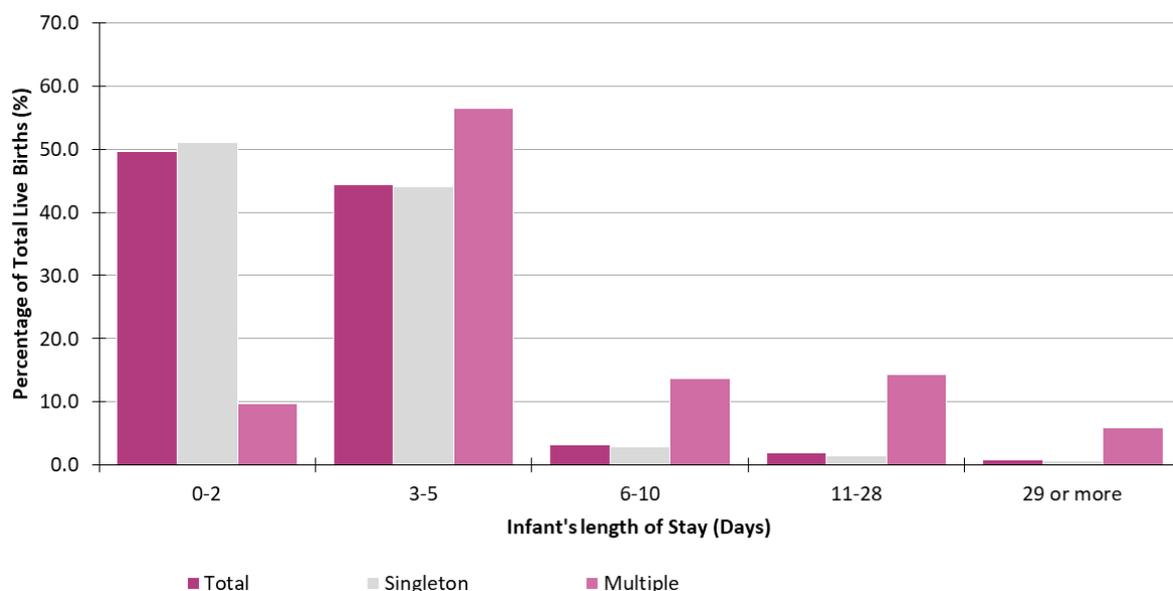
TABLE 4.10

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

	Live Births	Per Cent Live Births
Total Births		
0-2 Days	29,281	49.6
3-5 Days	26,227	44.4
6-10 Days	1,893	3.2
11-28 Days	1,124	1.9
29 Days or more	468	0.8
Not Stated	11	0.0
Total	59,004	100
Singleton Births		
0-2 Days	29,075	51.1
3-5 Days	25,025	44.0
6-10 Days	1,601	2.8
11-28 Days	818	1.4
29 Days or more	344	0.6
Not Stated	11	0.0
Total	56,874	100
Multiple Births		
0-2 Days	206	9.7
3-5 Days	1,202	56.4
6-10 Days	292	13.7
11-28 Days	306	14.4
29 Days or more	124	5.8
Not Stated	0	0.0
Total	2,130	100

Notes: Percentage column is subject to rounding.
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.²⁸

- At 45.5 per cent, a higher proportion of total births were breastfed compared to 38.8 per cent reporting artificial feeding.
- Artificial feeding was more common for multiple births (47.4 per cent) compared to singleton births (38.5 per cent), while breastfeeding was more common for singleton births (46.3 per cent for singleton births compared to 24.2 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 51.5 per cent.
- Just under one-fifth (19.2 per cent) of infants born to mothers aged under 20 years were exclusively breastfed.

²⁸ Throughout this section, discussion of breastfeeding refers to exclusive breastfeeding only.

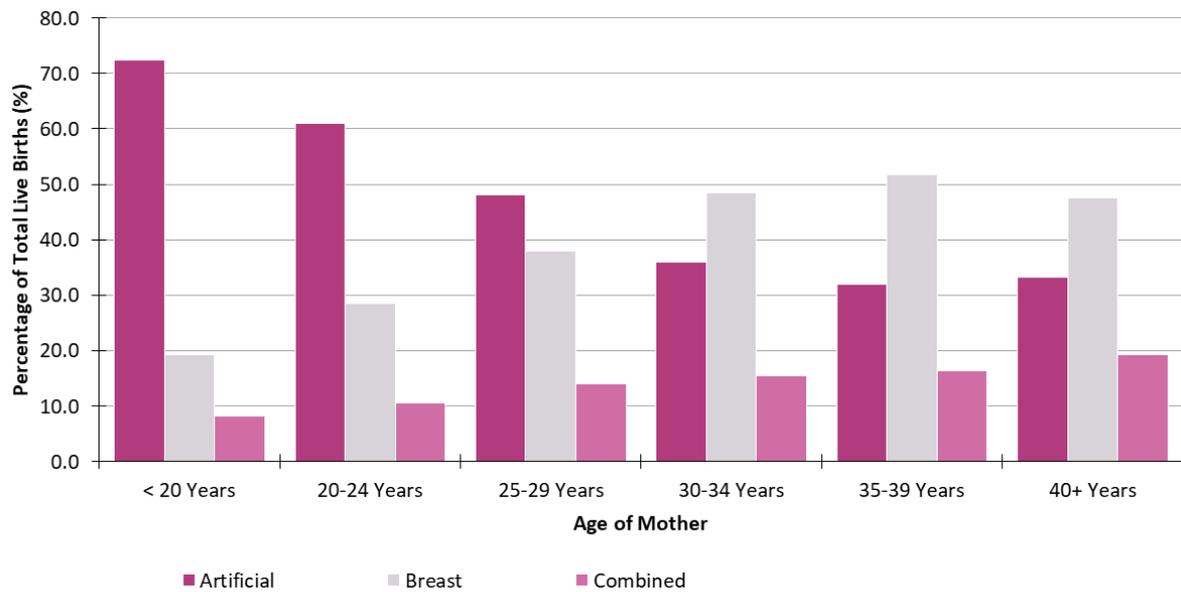
TABLE 4.11
Age of Mother by Infant's Type of Feeding, Numbers and Percentages, Total Live Births

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	622	166	*	~	864	*	*	*	~	854	~	~	~	~	10
	72.0	19.2	^	^	100.0	^	^	^	^	100.0	^	^	^	^	100.0
	2.7	0.6	^	^	1.5	^	^	^	^	1.5	^	^	^	^	0.5
20-24 Years	2,824	1,319	494	9	4,646	2,777	1,298	477	9	4,561	47	21	17	0	85
	60.8	28.4	10.6	0.2	100.0	60.9	28.5	10.5	0.2	100.0	55.3	24.7	20.0	0.0	100.0
	12.3	4.9	5.5	3.1	7.8	12.6	4.9	5.7	3.4	8.0	4.7	4.1	2.9	0.0	4.0
25-29 Years	4,783	3,766	1,385	28	9,962	4,622	*	1,321	*	9,688	161	*	64	~	274
	48.0	37.8	13.9	0.3	100.0	47.7	^	13.6	^	100.0	58.8	^	23.4	^	100.0
	20.8	14.0	15.4	9.6	16.8	21.0	^	15.7	^	17.0	15.9	^	11.1	^	12.9
30-34 Years	7,252	9,786	3,112	106	20,256	6,938	9,593	2,956	95	19,582	314	193	156	11	674
	35.8	48.3	15.4	0.5	100.0	35.4	49.0	15.1	0.5	100.0	46.6	28.6	23.1	1.6	100.0
	31.5	36.4	34.6	36.4	34.2	31.6	36.3	35.1	35.8	34.3	31.1	37.5	26.9	42.3	31.6
35-39 Years	5,962	9,674	3,047	118	18,801	5,605	9,485	2,801	110	18,001	357	189	246	8	800
	31.7	51.5	16.2	0.6	100.0	31.1	52.7	15.6	0.6	100.0	44.6	23.6	30.8	1.0	100.0
	25.9	35.9	33.8	40.5	31.8	25.5	35.9	33.2	41.5	31.5	35.3	36.7	42.5	30.8	37.6
40-44 Years	1,405	2,076	802	24	4,307	1,310	2,024	*	*	4,076	95	52	*	~	231
	32.6	48.2	18.6	0.6	100.0	32.1	49.7	^	^	100.0	41.1	22.5	^	^	100.0
	6.1	7.7	8.9	8.2	7.3	6.0	7.7	^	^	7.1	9.4	10.1	^	^	10.8
45 Years and Over	138	129	*	~	361	*	116	*	~	305	*	13	*	0	56
	38.2	35.7	^	^	100.0	^	38.0	^	^	100.0	^	23.2	^	0.0	100.0
	0.6	0.5	^	^	0.6	^	0.4	^	^	0.5	^	2.5	^	0.0	2.6
Total	22,986	26,916	9,004	291	59,197	21,976	26,401	8,425	265	57,067	1,010	515	579	26	2,130
	38.8	45.5	15.2	0.5	100.0	38.5	46.3	14.8	0.5	100.0	47.4	24.2	27.2	1.2	100.0
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

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.

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.

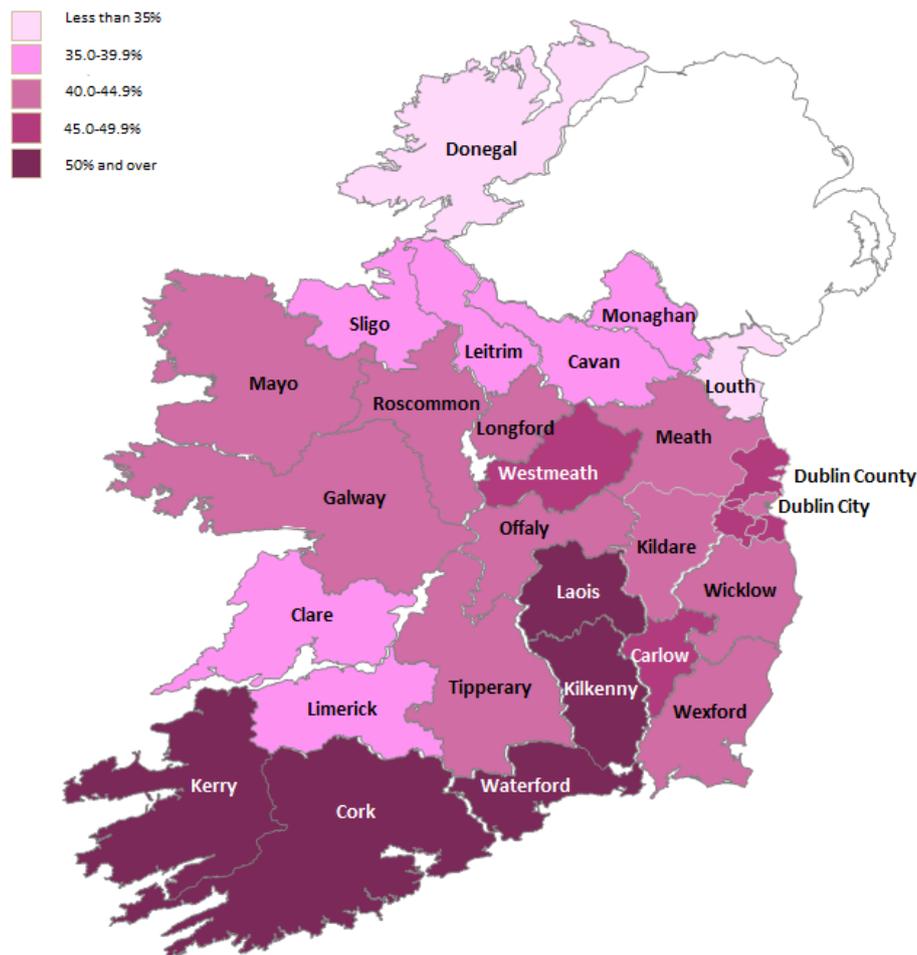
The percentages in this figure exclude 'Not Stated' and may differ slightly from the percentages in the corresponding table.

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 64.0 per cent, with Kilkenny and Kerry reporting rates at 60.6 per cent and 59.8 per cent respectively.
- Other counties reporting exclusive breastfeeding rates higher than the national rate of 45.7 per cent include Waterford, Laois, Westmeath, Dublin County and Carlow.

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, 48.9 per cent were breastfed.

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

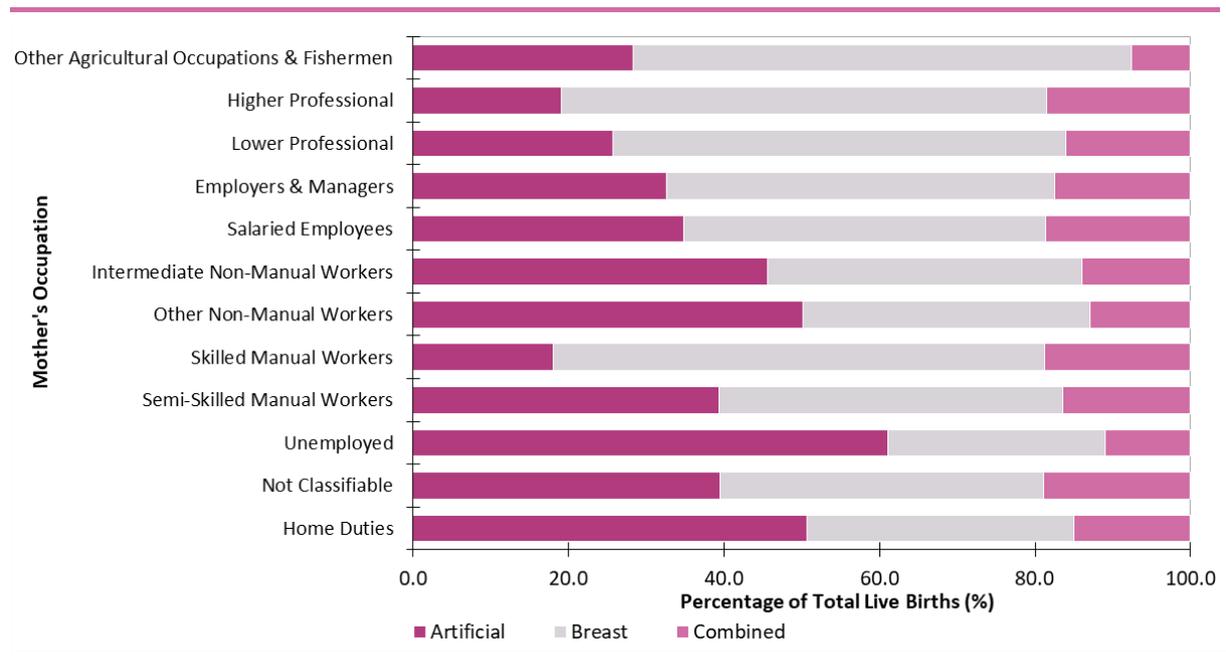
- Breastfeeding was most common among mothers in the 'unskilled manual workers' (66.7 per cent) socio-economic group. Breastfeeding was least common among 'unemployed' mothers (27.9 per cent).
- Artificial feeding was most common among 'unemployed' mothers with a rate of 61.1 per cent, and mothers whose 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	20 27.4	42 57.5	11 15.1	0 0.0	73 100
Other Agricultural Occupations & Fisherwomen	37 28.2	84 64.1	10 7.6	0 0.0	131 100
Higher Professional	911 19.0	2,973 62.0	885 18.4	30 0.6	4,799 100
Lower Professional	3,259 25.6	7,397 58.1	2,037 16.0	47 0.4	12,740 100
Employers & Managers	1,461 32.5	2,236 49.7	782 17.4	23 0.5	4,502 100
Salaried Employees	181 34.7	242 46.4	* ^	~ ^	521 100
Intermediate Non-Manual Workers	4,714 45.5	4,178 40.3	1,448 14.0	26 0.3	10,366 100
Other Non-Manual Workers	4,195 50.0	3,090 36.8	1,087 13.0	14 0.2	8,386 100
Skilled Manual Workers	* ^	430 63.0	128 18.8	~ ^	682 100
Semi-Skilled Manual Workers	543 39.3	609 44.1	* ^	~ ^	1,382 100
Unskilled Manual Workers	~ ^	8 66.7	~ ^	0 0.0	12 100
Unemployed	1,555 61.1	711 27.9	278 10.9	0 0.0	2,544 100
Not Classifiable	717 39.3	755 41.4	343 18.8	8 0.4	1,823 100
Home Duties	4,473 50.5	3,027 34.2	1,326 15.0	24 0.3	8,850 100
Not Stated	794 33.3	1,134 47.5	345 14.5	113 4.7	2,386 100
Total	22,986 38.8	26,916 45.5	9,004 15.2	291 0.5	59,197 100

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



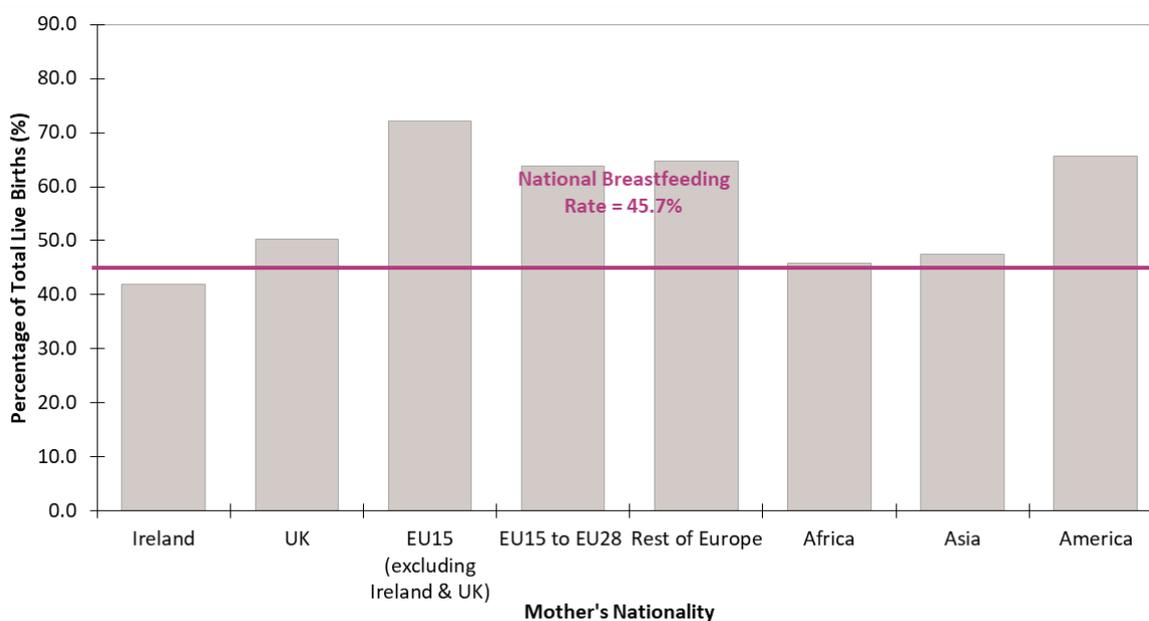
Notes: See Table 4.12 for data.
 Categories where percentages would be based on <100 births are not included.
 The percentages in this figure exclude 'Not Stated' and may differ slightly from the percentages in the corresponding table.

Figure 4.10 presents the rate of exclusive breastfeeding by mother's nationality.²⁹

- At 41.8 per cent, births to mothers from Ireland recorded the lowest proportion of breastfeeding.
- Births to mothers from the EU15 (excluding Ireland and UK) reported the highest proportion of breastfeeding at 72.2 per cent.

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.

²⁹ 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.

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).³⁰ A detailed description of the cause of death classification and the coding rules applied is available in Appendix D.

Of the 59,536 births recorded by the NPRS in 2019, 223 were stillbirths and 116 were early neonatal deaths, giving a total of 339 perinatal deaths and a perinatal mortality rate of 5.7 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.^{31,32}

- Almost 72 per cent of total perinatal deaths weighed less than 2,500 grams, 75.0 per cent for primiparous women and 69.2 per cent for multiparous women (see Figure 5.1).
- The perinatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 70.0 per 1,000 live births and stillbirths (65.2 per 1,000 for primiparous women and 74.4 per 1,000 for multiparous women).
- The early neonatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 25.4 per 1,000 live births (20.3 per 1,000 for primiparous women and 30.0 per 1,000 for multiparous women).
- The stillbirth rate for low birthweight babies (weighing less than 2,500 grams) was 45.8 per 1,000 live births and stillbirths (45.9 per 1,000 for primiparous women and 45.8 per 1,000 for multiparous women).
- For births weighing 2,500 grams or more, the perinatal mortality rate was 1.7 per 1,000 live births and stillbirths (1.7 for both primiparous women and multiparous women).
- Higher perinatal mortality rates for all births were recorded for births less than 1,500 grams at 279.1 per 1,000 live births and stillbirths and an adjusted perinatal mortality rate of 205.1 per 1,000 live births and stillbirths (see Figure 5.2).

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

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

³² 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

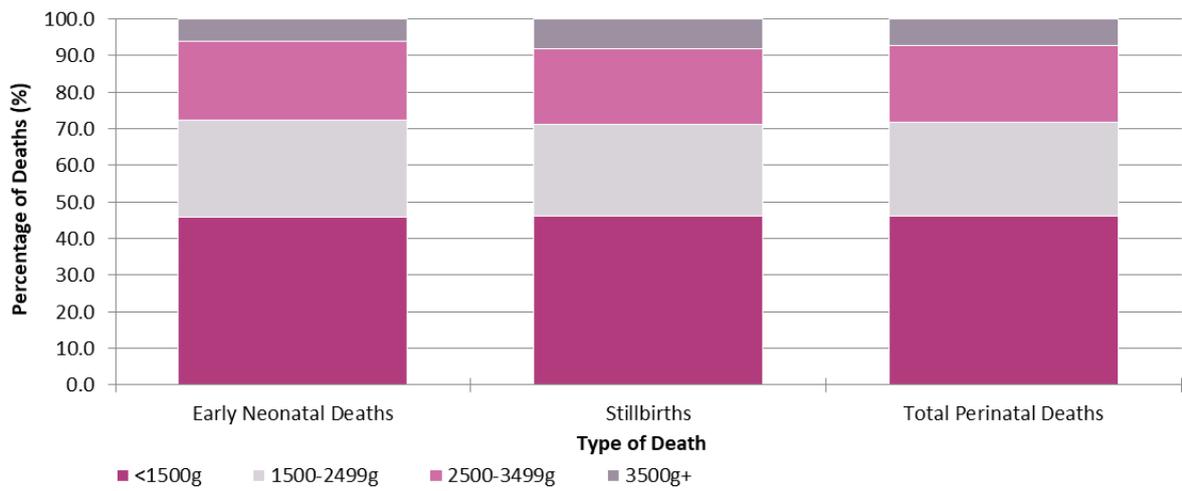
	Total Perinatal Deaths	Total Perinatal Deaths %	Antepartum Stillbirths	Intrapartum Stillbirths	Not Stated	Stillbirth Rate ^a	Early Neonatal Deaths	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adj. PMR ^a
Total										
500-749	75	22.1	44	~	~	340.6	28	307.7	543.5	479.3
750-999	36	10.6	25	0	0	221.2	11	125.0	318.6	214.3
1000-1249	27	8.0	16	~	0	119.7	10	80.0	190.1	101.6
1250-1499	*	^	*	~	0	84.3	~	26.3	108.4	75.0
1500-1999	54	15.9	31	~	~	50.7	20	31.4	80.5	44.9
2000-2499	33	9.7	17	~	~	9.8	11	5.0	14.7	9.4
2500-2999	39	11.5	26	0	~	3.6	12	1.6	5.2	4.2
3000-3499	32	9.4	18	~	0	1.0	13	0.7	1.6	1.4
3500-3999	20	5.9	12	~	0	0.7	6	0.3	1.0	0.8
4000-4499	~	^	~	0	0	0.5	~	0.1	0.7	0.7
Total	339	100	205	14	~	3.7	116	2.0	5.7	3.9
Primiparous Women										
500-749	39	27.1	24	~	0	316.5	14	259.3	493.7	452.1
750-999	17	11.8	13	0	0	200.0	~	76.9	261.5	142.9
1000-1249	9	6.3	~	~	0	87.0	~	47.6	130.4	90.9
1250-1499	*	^	~	0	0	54.9	~	11.6	65.9	34.1
1500-1999	23	16.0	15	~	0	53.0	7	24.5	76.2	44.5
2000-2499	14	9.7	9	~	~	10.5	~	2.9	13.3	10.5
2500-2999	14	9.7	10	0	0	3.1	~	1.2	4.3	4.0
3000-3499	10	6.9	~	0	0	0.6	~	0.6	1.2	1.0
3500-3999	10	6.9	*	~	0	0.9	~	0.4	1.3	1.1
4000-4499	~	^	~	0	0	0.8	0	-	0.8	0.8
Total	144	100	94	~	~	4.3	44	1.9	6.2	4.5
Multiparous Women										
500-749	36	18.5	20	~	~	372.9	14	378.4	610.2	520.8
750-999	19	9.7	12	0	0	250.0	7	194.4	395.8	309.5
1000-1249	18	9.2	*	0	0	150.7	7	112.9	246.6	112.9
1250-1499	*	^	*	~	0	120.0	~	45.5	160.0	125.0
1500-1999	31	15.9	16	~	~	48.8	13	37.0	84.0	45.2
2000-2499	19	9.7	8	~	0	9.2	8	6.8	16.0	8.5
2500-2999	25	12.8	16	0	~	4.0	8	1.9	6.0	4.3
3000-3499	22	11.3	*	~	0	1.2	8	0.7	1.9	1.7
3500-3999	10	5.1	*	~	0	0.5	~	0.2	0.8	0.6
4000-4499	~	^	~	0	0	0.4	~	0.2	0.6	0.6
Total	195	100	111	*	~	3.4	72	2.0	5.4	3.6

Notes:

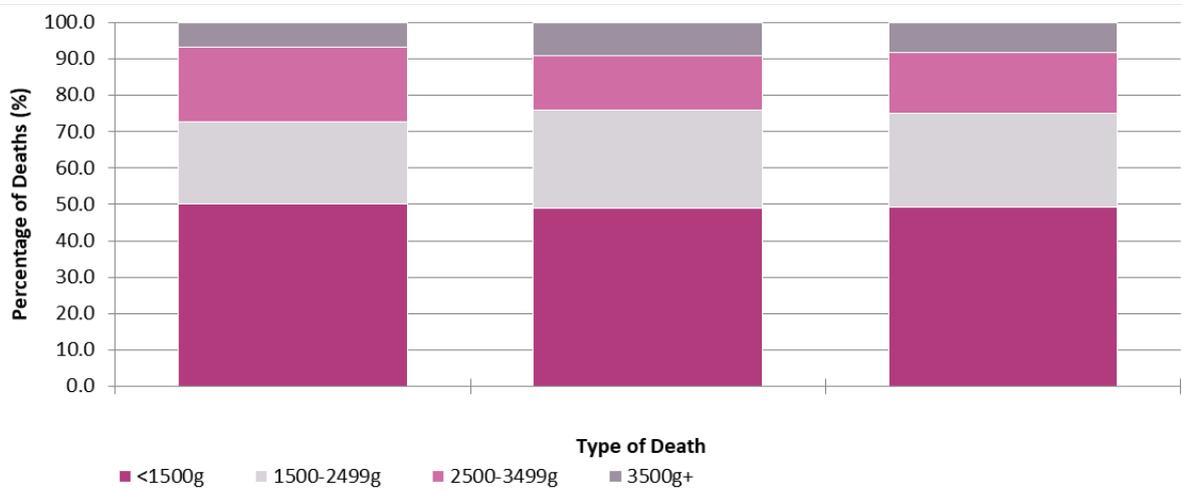
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated 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 5.1
Perinatal Deaths by Birthweight Groups and Parity

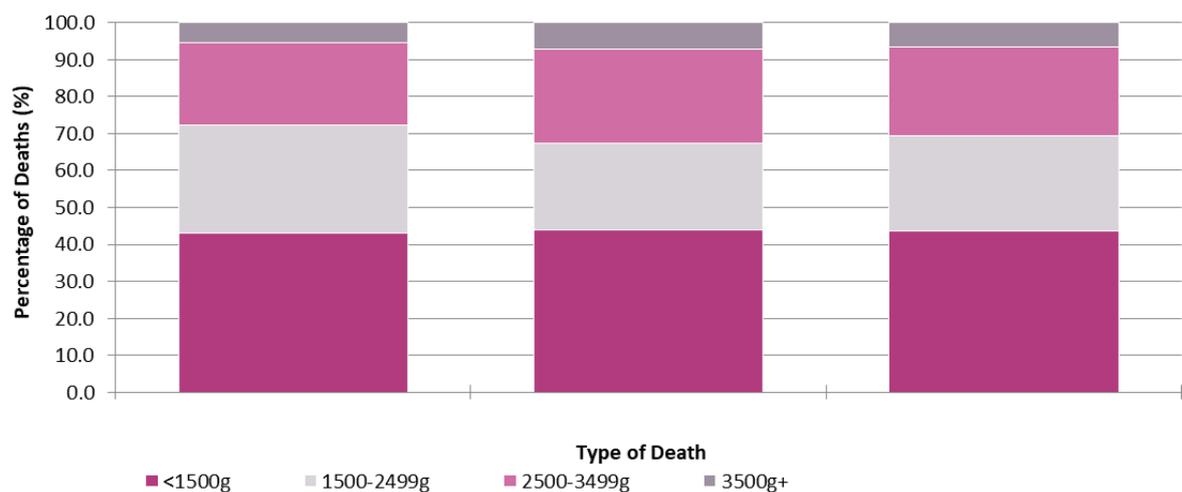
Total Perinatal Deaths



Perinatal Deaths: Primiparous Women

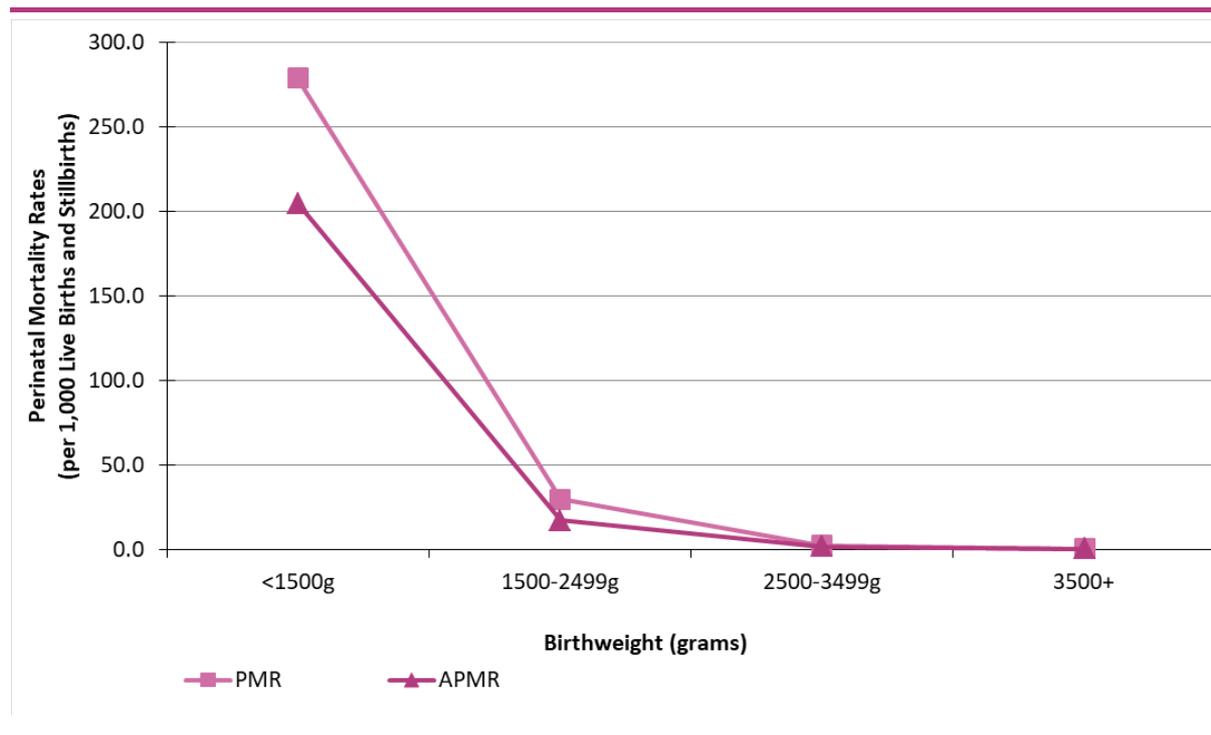


Perinatal Deaths: Multiparous Women



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.³³ 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.³⁴

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 (31.0 per cent) followed by maternal factors (P00-P04), which accounted for 28.3 per cent.
- Approximately 72 per cent of perinatal deaths weighed <2,500 grams, and of these 36.6 per cent were due to congenital malformations (Q00-Q99), followed by maternal factors (P00-P04) which accounted for 24.7 per cent (see Figure 5.3).
- Approximately 28 per cent of perinatal deaths weighed \geq 2,500 grams, and of these maternal factors (P00-P04) accounted for 37.5 per cent (see Figure 5.4).

³³ World Health Organisation, *op. cit.*

³⁴ See Appendix D for more detail.

TABLE 5.2

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

ICD-10 Code	Birthweight (grams)												Total	PMR ^a
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	N			
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	123.2	61.9	42.3	24.1	19.4	5.8	2.3	0.6	0.3	0.3	0.3	0.3	96	1.6
Disorders related to length of gestation and foetal growth	173.9	44.2	14.1	6.0	4.5	0.4	-	-	-	-	-	-	36	0.6
Birth Trauma	7.2	-	-	-	-	-	-	-	-	-	-	-	~	0.0
Respiratory and cardiovascular disorders specific to the perinatal period	36.2	8.8	14.1	12.0	10.4	0.9	-	0.3	0.1	0.1	0.1	0.1	28	0.5
Infections specific to the perinatal period	-	8.8	7.0	-	-	-	0.1	0.1	0.0	-	-	-	6	0.1
Haemorrhagic and haematological disorders of foetus and newborn	7.2	-	7.0	6.0	-	0.4	0.1	-	0.1	-	-	-	7	0.1
Transitory endocrine and metabolic disorders specific to foetus and newborn	-	8.8	-	-	-	0.4	-	-	-	-	0.1	-	~	0.1
Digestive system disorders of foetus and newborn	7.2	-	-	6.0	-	-	-	-	-	-	-	-	~	0.0
Conditions involving the integument and temperature regulation of foetus and newborn	-	8.8	7.0	6.0	-	0.9	0.1	0.1	-	-	-	-	8	0.1
Other disorders originating in the perinatal period	7.2	-	-	-	1.5	-	-	-	-	0.1	-	-	~	0.1
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	58.0	44.2	0	12.0	7.5	0.4	1.5	0.3	0.2	0.1	0.1	0.1	44	0.7
Congenital malformations of the nervous system	7.2	8.8	7.0	-	7.5	1.3	0.1	-	-	-	-	-	12	0.2
Congenital malformations of the circulatory system	14.5	26.5	14.1	12.0	-	-	0.3	-	0.0	-	-	-	12	0.2
Congenital malformations of the respiratory system	-	-	-	-	1.5	0.4	-	-	0.1	-	-	-	~	0.1
Congenital malformations of the urinary system	0	17.7	28.2	-	4.5	0.4	-	0.1	-	-	-	-	11	0.2
Congenital malformations and deformations of the musculoskeletal system	7.2	8.8	21.1	-	1.5	0.4	0.1	-	-	-	-	-	8	0.1
Other congenital malformations	7.2	26.5	-	-	6.0	1.3	0.3	0.1	0.0	-	-	-	15	0.3
Chromosomal abnormalities, not elsewhere classified	87.0	44.2	28.2	24.1	16.4	1.3	0.3	0.1	-	-	-	-	43	0.7
Total	75	36	27	*	54	33	39	32	20	~	339	-	339	-
PMR	543.5	318.6	190.1	108.4	80.5	14.7	5.2	1.6	1.0	0.7	5.7	-	5.7	5.7

TABLE 5.2
Singleton Perinatal Deaths: Cause of Death by ICD-10 Chapter by Birthweight, Perinatal Mortality Rate^a and Numbers (Total)

ICD-10 Code	Birthweight (grams)												Total	PMR ^a	
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	N				
P00-P04 Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	109.1	61.0	58.8	34.8	30.4	7.4	2.6	0.6	0.3	0.3	88	0.3	0.3	88	1.5
P05-P08 Disorders related to length of gestation and foetal growth	154.5	24.4	9.8	8.7	7.0	0.6	-	-	-	-	25	-	-	25	0.4
P10-P15 Birth Trauma	9.1	-	-	-	-	-	-	-	-	-	~	-	-	~	0.0
P20-P29 Respiratory and cardiovascular disorders specific to the perinatal period	45.5	12.2	9.8	17.4	14.0	1.2	-	0.3	0.1	0.1	26	0.1	0.1	26	0.5
P35-P39 Infections specific to the perinatal period	-	12.2	9.8	-	-	-	0.2	0.1	0.0	-	6	-	-	6	0.1
P50-P61 Haemorrhagic and haematological disorders of foetus and newborn	9.1	-	9.8	8.7	-	0.6	0.2	-	0.1	-	7	-	-	7	0.1
P70-P74 Transitory endocrine and metabolic disorders specific to foetus and newborn	-	-	-	-	-	0.6	-	-	-	0.1	~	-	-	~	0.0
P75-P78 Digestive system disorders of foetus and newborn	9.1	-	-	8.7	-	-	-	-	-	-	~	-	-	~	0.0
P80-P83 Conditions involving the integument and temperature regulation of foetus and newborn	-	12.2	9.8	8.7	-	1.2	0.2	0.1	-	-	8	-	-	8	0.1
P900-P949 P960-P968 P95, P96.9 Other disorders originating in the perinatal period	9.1	-	-	-	2.3	-	-	0.1	-	-	~	-	-	~	0.1
Q00-Q07 Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	54.5	61.0	-	17.4	9.3	0.6	1.5	0.3	0.2	0.1	40	0.2	0.1	40	0.7
Q08-Q09 Congenital malformations of the nervous system	-	12.2	-	0.0	9.3	1.9	0.2	-	-	-	9	-	-	9	0.2
Q20-Q28 Congenital malformations of the circulatory system	18.2	36.6	19.6	17.4	0.0	0.0	0.3	0.0	0.0	0.0	12	0.0	0.0	12	0.2
Q30-Q34 Congenital malformations of the respiratory system	-	-	-	-	2.3	0.6	-	-	-	0.1	~	-	-	~	0.1
Q60-Q64 Congenital malformations of the urinary system	-	24.4	39.2	-	7.0	0.6	-	0.1	-	-	11	-	-	11	0.2
Q65-Q79 Congenital malformations and deformations of the musculoskeletal system	9.1	12.2	29.4	-	2.3	0.6	0.2	-	-	-	8	-	-	8	0.1
Q80-Q89 Other congenital malformations	9.1	36.6	-	-	9.3	1.9	0.3	0.1	0.0	-	15	-	-	15	0.3
Q90-Q99 Chromosomal abnormalities, not elsewhere classified	109.1	61.0	39.2	34.8	25.7	1.9	0.3	0.1	-	-	43	-	-	43	0.7
Total	60	30	24	*	51	32	38	32	20	~	310	~	~	310	-
PMIR	545.5	365.9	235.3	156.5	119.2	19.9	5.7	1.7	1.0	0.7	-	0.7	0.7	-	5.4

TABLE 5.2

Multiple Perinatal Deaths: Cause of Death by ICD-10 Chapter by Birthweight, Perinatal Mortality Rate^a and Numbers (Total)

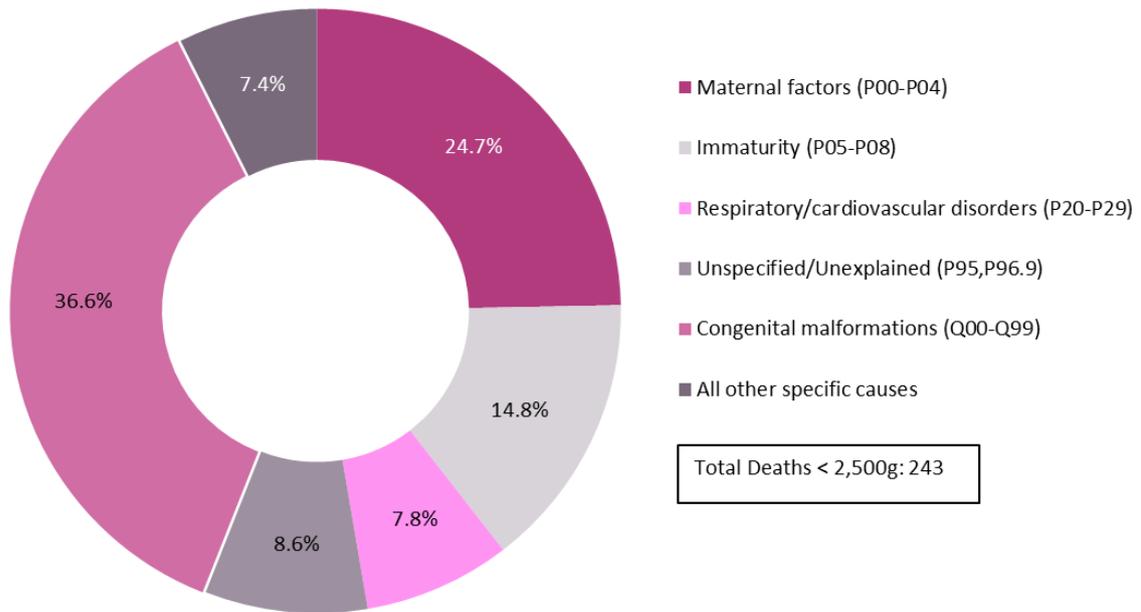
ICD-10 Code	Birthweight (grams)														Total	PMR ^a
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	N					
P00-P04 Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	178.6	64.5	-	-	-	1.6	-	-	-	-	-	-	-	-	8	3.7
P05-P08 Disorders related to length of gestation and foetal growth	250.0	96.8	25.0	-	-	-	-	-	-	-	-	-	-	-	11	5.1
P20-P29 Respiratory and cardiovascular disorders specific to the perinatal period	-	-	25.0	-	4.1	-	-	-	-	-	-	-	-	-	~	0.9
P70-P74 Transitory endocrine and metabolic disorders specific to foetus and newborn	-	32.3	-	-	-	-	-	-	-	-	-	-	-	-	~	0.5
P95, P96.9 Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	71.4	-	-	-	4.1	-	1.2	-	-	-	-	-	-	-	~	1.9
Q00-Q07 Congenital malformations of the nervous system	35.7	-	25.0	-	4.1	-	-	-	-	-	-	-	-	-	~	1.4
Total	15	6	~	0	~	~	~	~	~	~	~	~	~	~	29	-
PMR	535.7	193.5	75.0	-	12.3	1.6	1.2	-	-	0	-	-	-	-	-	13.4

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

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

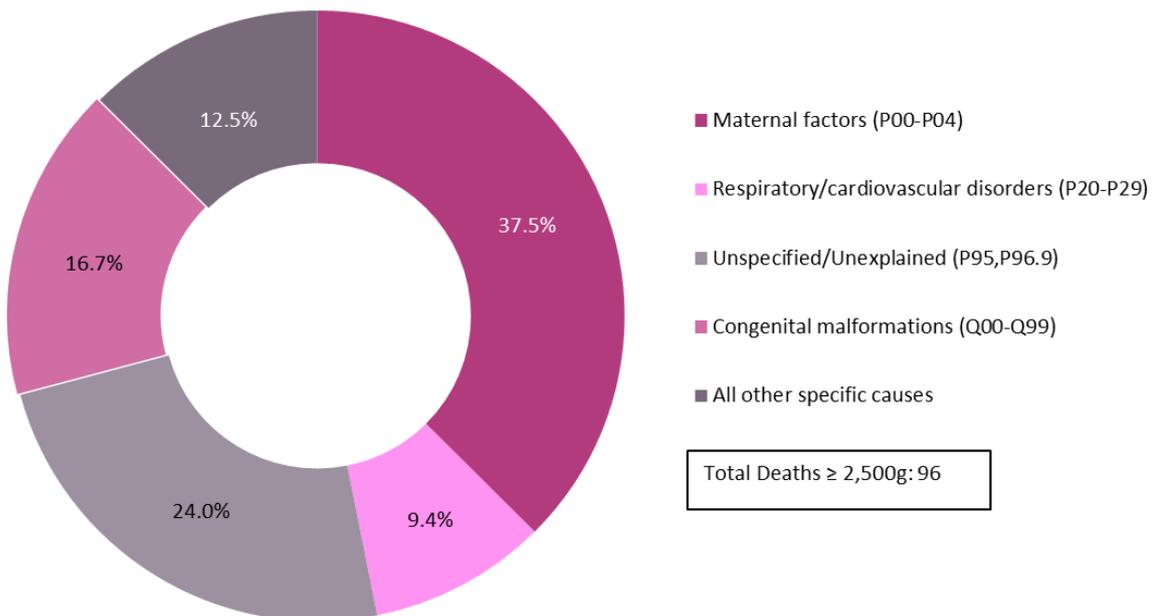
a Rates are calculated per 1,000 births. For perinatal deaths, rates are calculated on total live births and stillbirths.

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.^{35,36}
- Over 67 per cent of singleton perinatal deaths and 100 per cent of multiple perinatal deaths were preterm.
- Almost 33 per cent of early neonatal deaths recorded a gestational age of less than 28 completed weeks compared to 28.4 per cent of stillbirths (see Figure 5.5).
- The perinatal mortality rate for babies born before 37 completed weeks of gestation was 57.2 per 1,000 live births and stillbirths (71.3 per 1,000 singleton births and 23.6 per 1,000 multiple births).
- For babies born at 37 or more completed weeks of gestation, the perinatal mortality rate was 1.8 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 ^a	Early Neonatal Deaths	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adj. PMR ^a
Total Births										
Less than 28	101	29.9	59	~	~	254.0	38	205.4	407.3	343.8
28-31	*	^	37	~	~	97.0	*	57.9	149.3	92.8
32-36	77	22.8	52	~	0	16.2	20	5.8	21.9	15.2
37-41	99	29.3	56	~	~	1.2	36	0.7	1.8	1.2
42 and Over	~	^	0	0	0	0.0	~	1.5	1.5	1.5
Total	338	100	204	14	~	3.7	116	2.0	5.7	3.9
Singleton Births										
Less than 28	81	26.2	*	~	~	296.3	25	188.0	428.6	345.5
28-31	*	^	37	~	~	136.8	17	69.1	196.5	126.0
32-36	*	^	*	~	0	22.0	*	7.5	29.3	20.1
37-41	99	32.0	56	~	~	1.2	36	0.7	1.8	1.2
42 and Over	~	^	0	0	0	0.0	~	1.5	1.5	1.5
Total	309	100	194	14	~	3.7	97	1.7	5.4	3.6
Multiple Births										
Less than 28	20	69.0	*	0	0	118.6	*	250.0	339.0	339.0
28-31	~	^	0	0	0	-	~	34.2	34.2	17.4
32-36	~	^	~	0	0	2.9	~	1.9	4.8	3.8
37-41	0	0.0	0	0	0	-	0	-	-	-
42 and Over	0	0.0	0	0	0	-	0	-	-	-
Total	29	100	10	0	0	4.6	19	8.8	13.4	12.1

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.

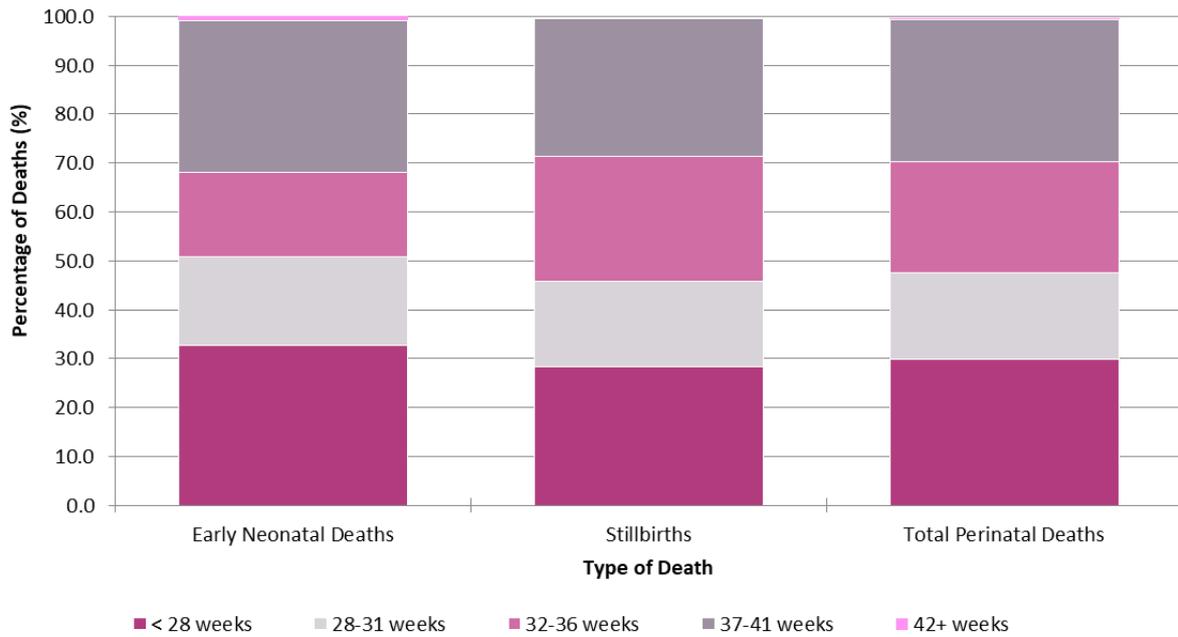
a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

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.

³⁵ Preterm is defined as less than 37 completed weeks of gestation.

³⁶ In 2019, 7.0 per cent of total births were preterm.

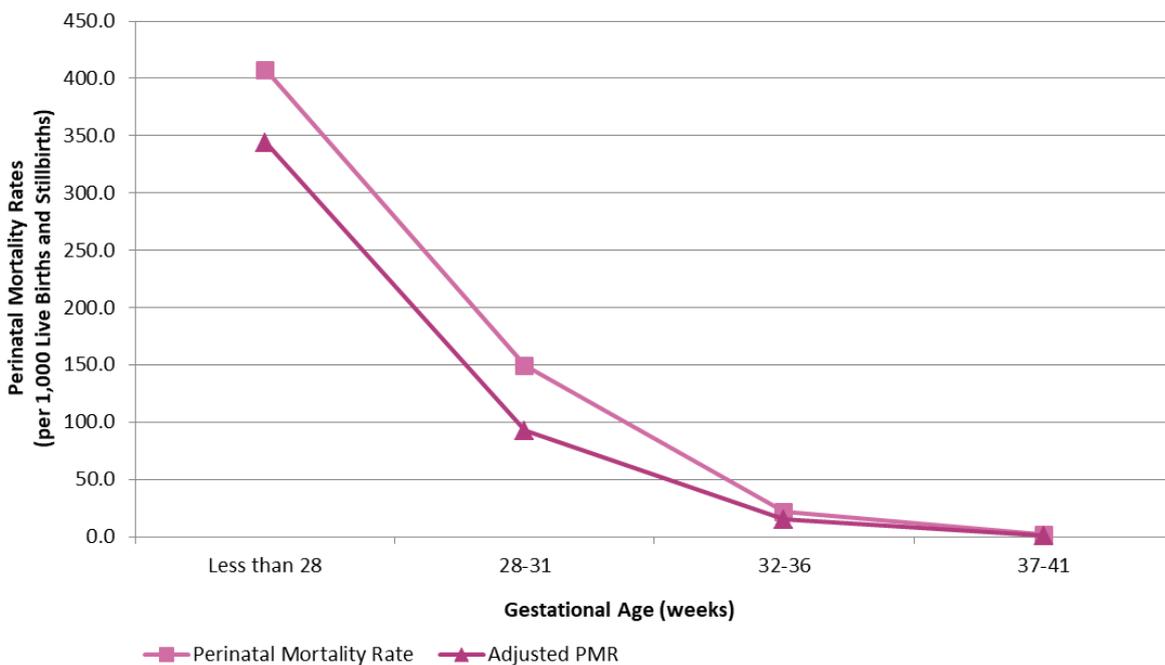
FIGURE 5.5
Total Perinatal Deaths by Gestational Age (weeks)



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 13.0 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^a 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	N	Rate	Rate	N
P00-P04	1.5	0.1	96	1.5	0.1	88	1.5	0.9	8
P000-P009	0.0	-	~	-	-	0	-	0.5	~
P010-P019	0.0	-	~	0.0	-	~	0.0	-	0
P020-P029	1.5	0.1	93	1.4	0.1	86	1.5	2.3	7
P030-P039	-	0.0	~	-	0.0	~	0.0	-	0
P05-P08	0.2	0.4	36	0.2	0.2	25	0.4	0.9	11
P050-P059	0.1	0.0	7	0.1	0.0	7	0.1	-	0
P070-P073	0.1	0.4	29	0.1	0.2	18	0.3	0.9	11
P10-P15	0.0	-	~	0.0	-	~	0.0	-	0
P150-P159	0.0	-	~	0.0	-	~	0.0	-	0
P20-P29	0.1	0.3	28	0.1	0.3	*	0.5	0.9	~ 0.9
P200-P209	0.1	-	6	0.1	-	6	0.1	-	0
P220-P229	-	0.0	~	-	0.0	~	0.0	-	0
P240-P249	-	0.1	~	-	0.1	~	0.1	-	0
P250-P258	-	0.0	~	-	0.0	~	0.0	-	0
P260-P269	-	0.0	~	-	0.0	~	0.0	-	0
P280-P289	-	0.2	9	0.2	0.1	*	0.1	0.9	~ 0.9
P290-P299	0.0	0.1	6	0.0	0.1	6	0.1	-	0
P35-P39	0.1	0.0	6	0.1	0.0	6	0.1	-	0
P390-P399	0.1	0.0	6	0.1	0.0	6	0.1	-	0
P50-P61	0.1	0.0	7	0.1	0.0	7	0.1	0.1	0
P500-P509	0.1	-	6	0.1	-	6	0.1	-	0
P540-P549	-	0.0	~	-	0.0	~	0.0	-	0

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

Other birth injuries

Respiratory and cardiovascular disorders specific to the perinatal period

Intrauterine hypoxia

Respiratory distress of newborn

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

Other infections specific to the perinatal period

Haemorrhagic and haematological disorders of foetus and newborn

Foetal blood loss

Other neonatal haemorrhage

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

ICD-10 Code	Total Deaths				Singleton Deaths				Multiple Deaths							
	Stillbirths		Total Perinatal Deaths		Stillbirths		Early Neonatal Deaths		Total Perinatal Deaths		Stillbirths		Early Neonatal Deaths		Total Perinatal Deaths	
	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N
Transitory endocrine and metabolic disorders specific to foetus and newborn	0.0	0.0	0.1	~ 0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	~ 0.5	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	0.0	0.0	0.0	0	0.0	0.0
Other transitory neonatal electrolyte and metabolic disturbances	-	0.0	0.0	~	-	0.0	0.0	~	0.0	0.0	0.0	0.0	0.5	~	0.5	0.5
Digestive system disorders of foetus and newborn	-	0.0	0.0	~ 0.0	-	0.0	0.0	~ 0.0	0.0	0.0	-	0.0	-	0	-	-
Necrotizing enterocolitis of foetus and newborn	-	0.0	0.0	~ 0.0	-	0.0	0.0	~ 0.0	0.0	0.0	-	0.0	-	0	-	-
Other perinatal digestive system disorders	-	0.0	0.0	~	-	0.0	0.0	~	0.0	0.0	-	0.0	-	0	-	-
Conditions involving the integument and temperature regulation of foetus and newborn	0.1	0.1	0.1	8 0.1	0.1	0.1	0.1	8 0.1	0.1	0.1	-	0.1	-	0	-	-
Other conditions of integument specific to foetus and newborn	0.1	0.1	0.1	8	0.1	0.1	0.1	8	0.1	0.1	-	0.1	-	0	-	-
Other disorders originating in the perinatal period	0.6	0.2	0.8	47 0.8	0.6	0.2	0.6	* 0.2	0.7	0.9	0.9	0.9	0.9	~ 1.9	0.9	1.9
Other disturbances of cerebral status of newborn	-	0.0	0.0	~	-	0.0	0.0	~	0.0	0.0	-	0.0	-	0	-	-
Other conditions originating in the perinatal period	-	0.0	0.0	~	-	0.0	0.0	~	0.0	0.0	-	0.0	-	0	-	-
Foetal death of unspecified cause, Condition origination in the perinatal period, unspecified	0.6	0.1	0.7	44	0.6	0.1	0.7	44	0.6	0.1	0.7	0.9	0.9	~	1.9	1.9
Congenital malformations of the nervous system	0.1	0.1	0.2	12 0.2	0.1	0.1	0.1	* 0.1	0.2	0.0	0.0	0.0	1.4	~ 1.4	0.9	1.4
Anencephaly and similar malformations	0.0	0.1	0.1	8	0.0	0.1	0.1	*	0.1	0.1	0.1	0.0	0.9	~	0.9	0.9
Microcephaly	0.0	-	0.0	~ 0.0	0.0	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	~	0.0	0.0	-	0.0	-	0	-	-
Other congenital malformations of nervous system	-	0.0	0.0	~	-	0.0	0.0	~	0	0.0	0.0	0.5	0.5	~	0.5	0.5
Congenital malformations of the circulatory system	0.1	0.1	0.2	12 0.2	0.1	0.1	0.1	12 0.1	0.2	0.2	-	0.0	-	0	-	-
Congenital malformations of cardiac septa	0.0	-	0.0	~	0.0	0.0	0.0	~	0.0	0.0	-	0.0	-	0	-	-
Congenital malformations of pulmonary and tricuspid valves	0.0	-	0.0	~	0.0	0.0	0.0	~	0.0	0.0	-	0.0	-	0	-	-
Congenital malformations of aortic and mitral valves	0.0	0.0	0.1	~	0.0	0.0	0.1	~	0.1	0.1	-	0.1	-	0	-	-
Other congenital malformations of heart	0.1	0.0	0.1	~	0.1	0.0	0.1	~	0.1	0.1	-	0.1	-	0	-	-
Congenital malformations of great veins	-	0.0	0.0	~	-	0.0	0.0	~	0.0	0.0	-	0.0	-	0	-	-
Congenital malformations of the respiratory system	0.0	0.1	0.1	~ 0.1	0.0	0.1	0.1	~ 0.1	0.1	0.1	-	0.1	-	0	-	-
Congenital malformations of lung	-	0.1	0.1	~	-	0.1	0.1	~	0.1	0.1	-	0.1	-	0	-	-
Other congenital malformations of respiratory system	0.0	-	0.0	~	0.0	0.0	0.0	~	0.0	0.0	-	0.0	-	0	-	-

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

ICD-10 Code	Stillbirths			Total Deaths			Singleton Deaths			Multiple Deaths				
	Rate	N	Rate	Early Neonatal Deaths Rate	Perinatal Deaths N	Rate	Stillbirths Rate	Early Neonatal Deaths Rate	Total Perinatal Deaths N	Rate	Stillbirths Rate	Early Neonatal Deaths Rate	Total Perinatal Deaths N	Rate
Congenital malformations of the urinary system	0.1	11	0.2	0.1	11	0.2	0.1	0.1	11	0.2	-	-	0	-
Renal agenesis and other reduction defects of kidney	0.1	8	0.1	0.1	8	0.1	0.1	0.1	8	0.1	-	-	0	-
Cystic kidney disease	-	~	0.0	-	~	0.0	-	0.0	~	0.0	-	-	0	-
Other congenital malformations of urinary system	-	~	0.0	-	~	0.0	-	0.0	~	0.0	-	-	0	-
Congenital malformations and deformations of the musculoskeletal system	0.1	8	0.1	0.1	8	0.1	0.1	0.1	8	0.1	-	-	0	-
Other congenital malformations of limbs	0.0	~	0.0	0.0	~	0.0	0.0	0.0	~	0.0	-	-	0	-
Osteochondrodysplasia with defects of growth of tubular bones and spine	0.0	~	0.0	0.0	~	0.0	0.0	0.0	~	0.0	-	-	0	-
Congenital malformations of musculoskeletal system, not elsewhere classified	0.0	~	0.1	0.0	~	0.1	0.0	0.1	~	0.1	-	-	0	-
Other congenital malformations	0.1	15	0.3	0.1	15	0.3	0.1	0.2	15	0.3	-	-	0	-
Other specified congenital malformation syndromes affecting multiple systems	0.0	~	0.1	0.0	~	0.1	0.0	0.1	~	0.1	-	-	0	-
Other congenital malformations, not elsewhere classified	0.1	10	0.2	0.1	10	0.2	0.1	0.1	10	0.2	-	-	0	-
Chromosomal abnormalities, not elsewhere classified	0.5	43	0.7	0.6	43	0.7	0.6	0.2	43	0.7	-	-	0	-
Downs syndrome	0.1	9	0.2	0.1	9	0.2	0.1	0.0	9	0.2	-	-	0	-
Edwards syndrome and Patau syndrome	0.4	33	0.6	0.4	33	0.6	0.4	0.2	33	0.6	-	-	0	-
Other trisomies and partial trisomies of the autosomes, not elsewhere classified	0.0	~	0.0	0.0	~	0.0	0.0	-	~	0.0	-	-	0	-
Total	3.7	339	5.7	3.7	310	5.4	4.6	1.7	310	5.4	4.6	8.8	29	13.4

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.

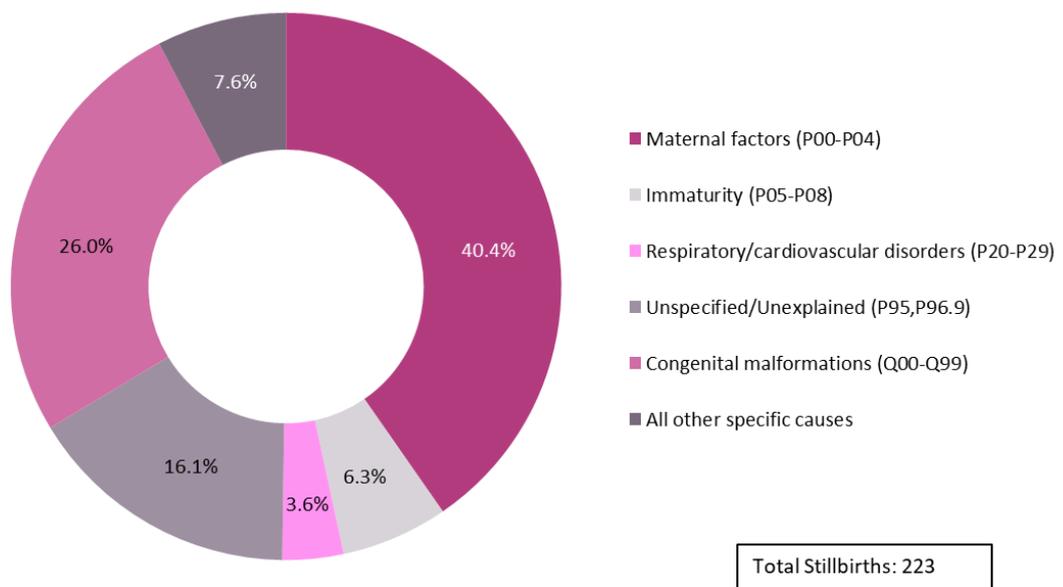
STILLBIRTHS

Figure 5.7 presents the main cause of death for stillbirths.

- Maternal factors (P00-P04) were the leading cause of death for total stillbirths (40.4 per cent).
- The cause of death was congenital malformations (Q00-Q99) for 26.0 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.

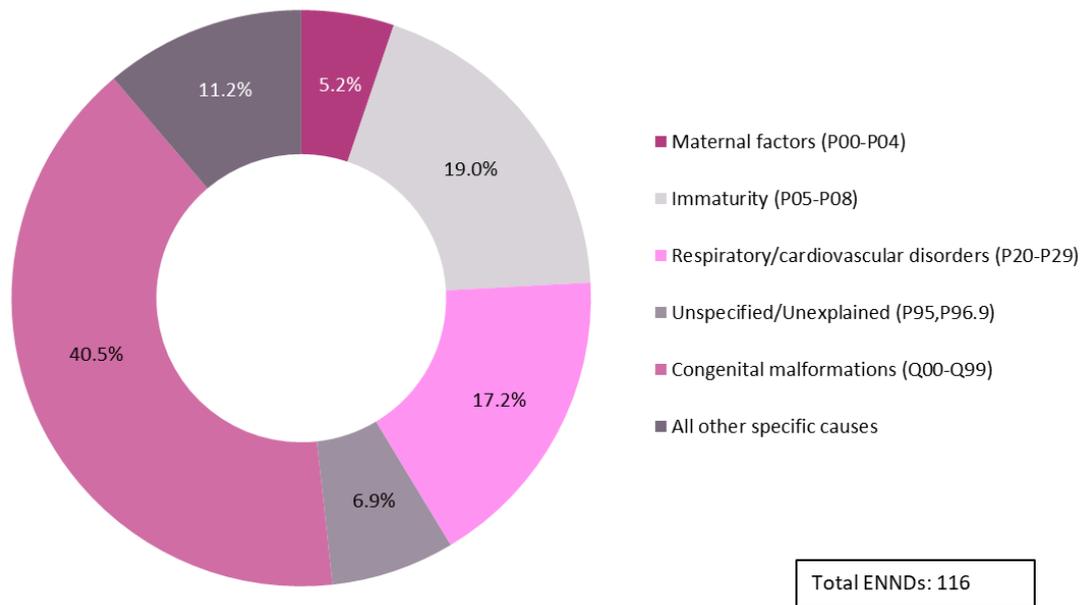
EARLY NEONATAL DEATHS

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 (40.5 per cent).
- The cause of death was immaturity (P05-P08) for 19.0 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.

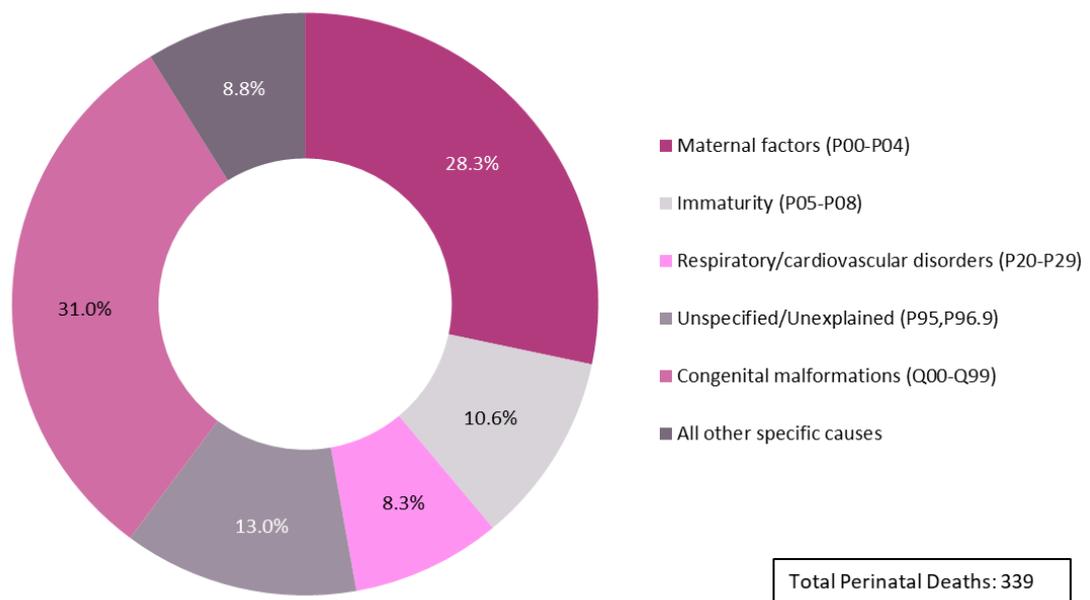
TOTAL PERINATAL DEATHS

Figure 5.9 presents data on all perinatal deaths.

- Congenital malformations (Q00-Q99) accounted for almost 1 in 3 total perinatal deaths (31.0 per cent).
- Maternal factors (P00-P04) was reported for cause of death for 28.3 per cent of total perinatal deaths.
- The cause of death was unspecified/unexplained (P95, P96.9) for 13.0 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.

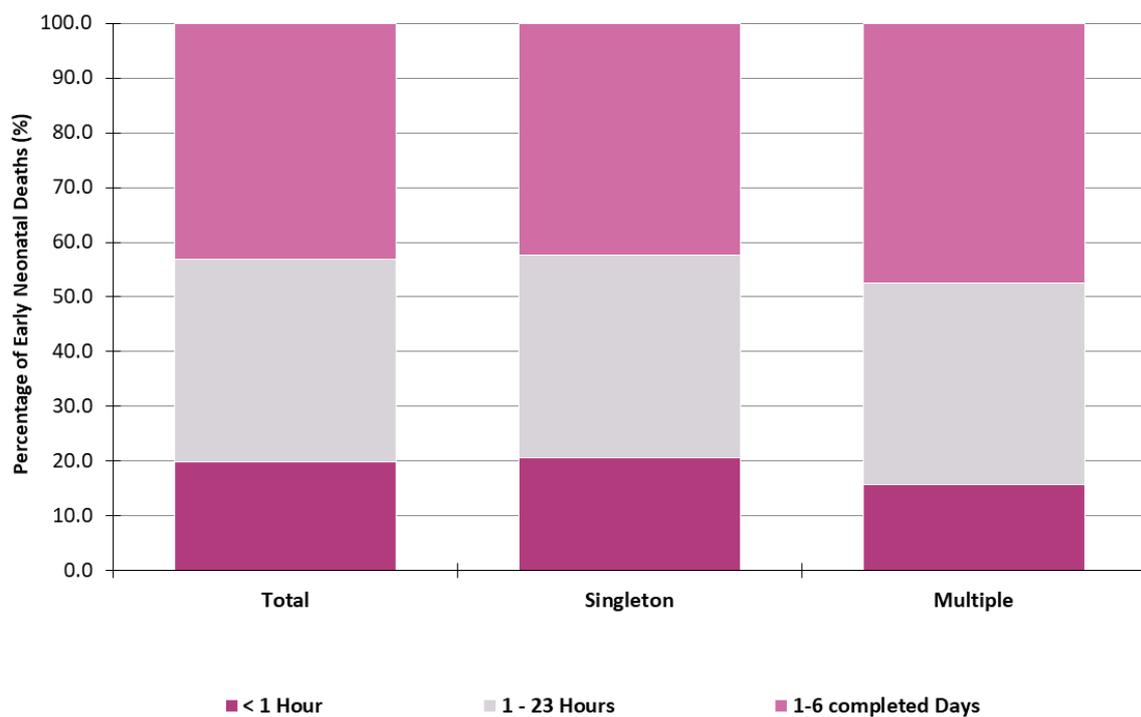
AGE AT DEATH

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

- Almost 20 per cent of total early neonatal deaths occurred within the first hour of life (20.6 per cent for singleton early neonatal deaths and 15.8 per cent for multiple early neonatal deaths).
- Almost 57 per cent of total early neonatal deaths occurred within the first day of life (57.7 per cent for singleton early neonatal deaths and 52.6 per cent for multiple early neonatal deaths).
- Over 43 per cent of total early neonatal deaths occurred between 1 and 6 completed days of life (42.3 per cent for singleton early neonatal deaths and 47.4 per cent for multiple early neonatal deaths).

FIGURE 5.10

Early Neonatal Deaths by Age at Death and Plurality

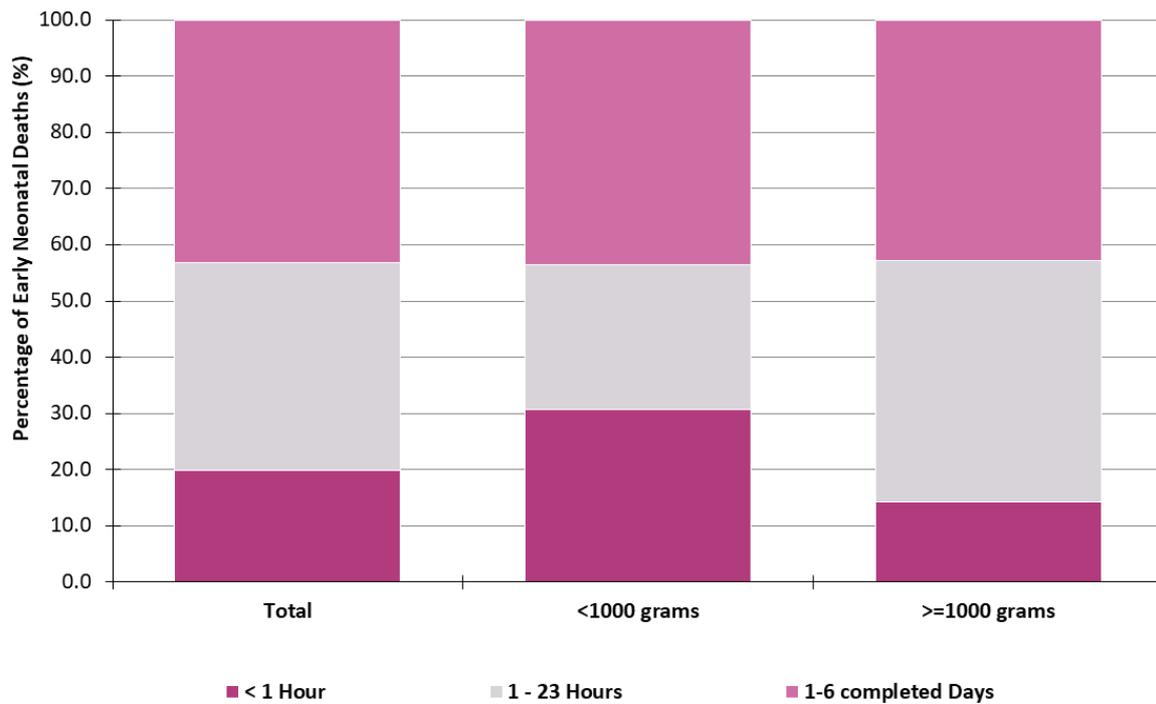


Notes: Percentages are subject to rounding
See Appendix G, Table G14 for data.

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, 56.4 per cent died within the first day of life compared to 57.1 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.³⁷ Table 5.5 presents data on post-mortem examinations.

- A post-mortem examination was undertaken for 47.5 per cent of total perinatal deaths in 2019.
- Over 53 per cent of stillbirths underwent a post-mortem examination compared to 36.2 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	119 53.4	42 36.2	161 47.5
No Post-Mortem	104 46.6	68 58.6	172 50.7
Not Stated	0.0 0.0	6 5.2	6 1.8
Total	223 100	116 100	339 100

Note: Percentage column is subject to rounding.

³⁷ Previous reports in this series can be downloaded from 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, 10th 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 2019, there were 32 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:³⁷

1. Spontaneous cephalic delivery
2. Breech delivery, spontaneous, with or without forceps to after-coming head, breech extraction
3. Forceps delivery
4. Vacuum extraction³⁸
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.

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

³⁸ Also known as Ventouse Deliveries (Source: World Health Organization, 2005, *International Statistical Classification of Diseases and Related Health Problems*, 10th 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 2019.

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

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

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.³⁹ 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).

³⁹ World Health Organization, 2005, *International Statistical Classification of Diseases and Related Health Problems, 10th 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	Maternal condition entered (P00-P04)	Maternal condition entered (P00-P04)	Infant condition entered	Infant condition entered	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. Code maternal conditions in sections C and D respectively. Code infant conditions in sections A and B respectively. Code maternal condition to section A.
Additional Rule	No entry	No entry	Maternal condition (P00-P04)	No entry	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.

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.

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	

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
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- G6 Birthweight (grams) by Sex, Total Live Births
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- 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	776	1.3
Cavan	978	1.6
Clare	1,310	2.2
Cork	6,596	11.1
Donegal	1,807	3.0
Dublin City	13,070	22.0
Dublin County	4,366	7.4
Galway	3,236	5.5
Kerry	1,561	2.6
Kildare	2,994	5.1
Kilkenny	1,063	1.8
Laois	1,095	1.8
Leitrim	417	0.7
Limerick	2,391	4.0
Longford	583	1.0
Louth	1,663	2.8
Mayo	1,505	2.5
Meath	2,698	4.6
Monaghan	749	1.3
Offaly	936	1.6
Roscommon	811	1.4
Sligo	762	1.3
Tipperary	1,836	3.1
Waterford	1,371	2.3
Westmeath	1,167	2.0
Wexford	1,791	3.0
Wicklow	1,748	2.9
Total	59,280	100

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	32.8
UK	32.1
EU15 (excluding Ireland & UK)	33.8
EU15 to EU28	31.0
Rest of Europe	30.6
Africa	32.0
Asia	31.7
America	32.6
Total	32.5

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	740 85.5	108 12.5	17 2.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	865 100.0
20-24 Years	2,940 63.6	1,276 27.6	318 6.9	70 1.5	17 0.4	~ ^	~ ^	~ ^	4,625 100.0
25-29 Years	4,643 47.0	3,297 33.4	1,296 13.1	447 4.5	130 1.3	* ^	* ^	* ^	9,886 100.0
30-34 Years	8,333 41.6	7,182 35.9	2,953 14.8	978 4.9	337 1.7	149 0.7	50 0.2	37 0.2	20,019 100.0
35-39 Years	4,862 26.3	7,016 37.9	4,460 24.1	1,457 7.9	400 2.2	151 0.8	68 0.4	78 0.4	18,492 100.0
40 Years and Over	1,157 25.4	1,496 32.8	1,113 24.4	470 10.3	170 3.7	69 1.5	44 1.0	44 1.0	4,563 100.0
Total	22,675 38.8	20,375 34.9	10,157 17.4	3,422 5.9	1,054 1.8	424 0.7	176 0.3	167 0.3	58,450 100

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.

TABLE G4

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
500-749	79	0.3	54	316.5	259.3	493.7	452.1	70
750-999	65	0.3	52	200.0	76.9	261.5	142.9	56
1000-1249	69	0.3	63	87.0	47.6	130.4	90.9	56
1250-1499	91	0.4	86	54.9	11.6	65.9	34.1	71
1500-1999	302	1.3	286	53.0	24.5	76.2	44.5	243
2000-2499	1,050	4.5	1,039	10.5	2.9	13.3	10.5	901
2500-2999	3,273	14.1	3,263	3.1	1.2	4.3	4.0	3,110
3000-3499	8,059	34.8	8,054	0.6	0.6	1.2	1.0	8,019
3500-3999	7,458	32.2	7,451	0.9	0.4	1.3	1.1	7,455
4000-4499	2,359	10.2	2,357	0.8	-	0.8	0.8	2,359
4500 and Over	335	1.4	335	-	-	-	-	335
Total	23,140	100	23,040	4.3	1.9	6.2	4.5	22,675
Singleton Births								
500-749	62	0.3	41	338.7	219.5	483.9	438.6	62
750-999	*	^	40	215.7	75.0	274.5	119.0	*
1000-1249	48	0.2	42	125.0	71.4	187.5	133.3	48
1250-1499	55	0.2	50	90.9	20.0	109.1	57.7	55
1500-1999	187	0.8	172	80.2	29.1	107.0	61.8	187
2000-2499	759	3.4	749	13.2	4.0	17.1	13.2	759
2500-2999	2,933	13.2	2,923	3.4	1.4	4.8	4.4	2,933
3000-3499	7,976	35.9	7,971	0.6	0.6	1.3	1.0	7,976
3500-3999	*	^	7,443	0.9	0.4	1.3	1.1	*
4000-4499	2,359	10.6	2,357	0.8	-	0.8	0.8	2,359
4500 and Over	335	1.5	335	-	-	-	-	335
Total	22,215	100	22,123	4.1	1.6	5.8	4.1	22,215
Multiple Births								
500-749	17	1.8	13	235.3	384.6	529.4	500.0	8
750-999	14	1.5	12	142.9	83.3	214.3	214.3	~
1000-1249	21	2.3	21	-	-	-	-	8
1250-1499	36	3.9	36	-	-	-	-	16
1500-1999	115	12.4	114	8.7	17.5	26.1	17.5	56
2000-2499	291	31.5	290	3.4	-	3.4	3.4	142
2500-2999	340	36.8	340	-	-	-	-	177
3000-3499	83	9.0	83	-	-	-	-	43
3500-3999	8	0.9	8	-	-	-	-	~
4000-4499	0	0.0	0	-	-	-	-	0
4500 and Over	0	0.0	0	-	-	-	-	0
Total	925	100	917	8.6	8.7	17.3	15.2	460

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 G5

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
500-749	59	0.2	37	372.9	378.4	610.2	520.8	53
750-999	48	0.1	36	250.0	194.4	395.8	309.5	39
1000-1249	73	0.2	62	150.7	112.9	246.6	112.9	65
1250-1499	75	0.2	66	120.0	45.5	160.0	125.0	65
1500-1999	369	1.0	351	48.8	37.0	84.0	45.2	298
2000-2499	1,190	3.3	1,179	9.2	6.8	16.0	8.5	1,024
2500-2999	4,201	11.5	4,184	4.0	1.9	6.0	4.3	3,959
3000-3499	11,503	31.6	11,489	1.2	0.7	1.9	1.7	11,403
3500-3999	12,887	35.4	12,880	0.5	0.2	0.8	0.6	12,879
4000-4499	5,142	14.1	5,140	0.4	0.2	0.6	0.6	5,141
4500 and Over	849	2.3	849	-	-	-	-	849
Total	36,396	100	36,273	3.4	2.0	5.4	3.6	35,775
Singleton Births								
500-749	*	^	*	437.5	333.3	625.0	513.5	*
750-999	31	0.1	19	387.1	210.5	516.1	400.0	31
1000-1249	54	0.2	43	203.7	93.0	277.8	113.6	54
1250-1499	*	^	51	150.0	58.8	200.0	157.9	*
1500-1999	241	0.7	223	74.7	58.3	128.6	70.8	241
2000-2499	853	2.4	842	12.9	9.5	22.3	11.8	853
2500-2999	3,717	10.6	3,701	4.3	2.2	6.5	4.6	3,717
3000-3499	11,295	32.1	11,281	1.2	0.7	1.9	1.8	11,295
3500-3999	12,873	36.6	12,866	0.5	0.2	0.8	0.6	12,873
4000-4499	*	^	*	0.4	0.2	0.6	0.6	*
4500 and Over	849	2.4	849	-	-	-	-	849
Total	35,162	100	35,041	3.4	1.7	5.2	3.3	35,162
Multiple Births								
500-749	*	^	*	90.9	500.0	545.5	545.5	~
750-999	17	1.4	17	-	176.5	176.5	176.5	8
1000-1249	19	1.5	19	-	157.9	157.9	111.1	11
1250-1499	15	1.2	15	-	-	-	-	~
1500-1999	128	10.4	128	-	-	-	-	57
2000-2499	337	27.3	337	-	-	-	-	171
2500-2999	484	39.2	483	2.1	-	2.1	2.1	242
3000-3499	208	16.9	208	-	-	-	-	108
3500-3999	14	1.1	14	-	-	-	-	6
4000-4499	~	^	~	-	-	-	-	0
4500 and Over	0	0.0	0	-	-	-	-	0
Total	1,234	100	1,232	1.6	8.9	10.5	9.7	613

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	50	0.2	41	0.1	91	0.2
750-999	48	0.2	40	0.1	88	0.1
1000-1249	62	0.2	63	0.2	125	0.2
1250-1499	85	0.3	67	0.2	152	0.3
1500-1999	326	1.1	310	1.1	636	1.1
2000-2499	1,022	3.4	1,195	4.1	2,217	3.7
2500-2999	3,273	10.8	4,174	14.4	7,447	12.6
3000-3499	9,155	30.1	10,388	35.9	19,543	33.0
3500-3999	10,958	36.1	9,371	32.4	20,329	34.3
4000-4499	4,585	15.1	2,912	10.1	7,497	12.6
4500 and Over	802	2.6	382	1.3	1,184	2.0
Total	30,366	100	28,943	100	59,309	100

Notes: Percentage columns are subject to rounding.
Births where sex was recorded as indeterminate 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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Less than 28	*	^	*	226.3	188.7	372.3	317.5	*
28-31	189	0.8	172	89.9	40.7	127.0	73.0	158
32-36	1,491	6.4	1466	16.8	6.1	22.8	16.2	1,247
37-41	20,856	90.1	20830	1.2	0.4	1.6	1.3	20,683
42 and Over	462	2.0	462	-	-	-	-	462
Not Stated	~	^	~	200.0	-	200.0	200.0	~
Total	23,140	100	23040	4.3	1.9	6.2	4.5	22,675
Singleton Births								
Less than 28	*	^	*	235.8	185.2	377.4	305.3	*
28-31	131	0.6	114	129.8	52.6	175.6	107.4	131
32-36	1,005	4.5	982	22.9	7.1	29.9	21.1	1,005
37-41	20,506	92.3	20,480	1.3	0.4	1.7	1.3	20,506
42 and Over	462	2.1	462	-	-	-	-	462
Not Stated	~	^	~	200.0	-	200.0	200.0	~
Total	22,215	100	22,123	4.1	1.6	5.8	4.1	22,215
Multiple Births								
Less than 28	31	3.4	25	193.5	200.0	354.8	354.8	14
28-31	58	6.3	58	-	17.2	17.2	-	27
32-36	486	52.5	484	4.1	4.1	8.2	6.2	242
37-41	350	37.8	350	-	-	-	-	177
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
Total	925	100	917	8.6	8.7	17.3	15.2	460

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 ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Less than 28	*	^	*	288.3	227.8	450.5	377.6	*
28-31	213	0.6	191	103.3	73.3	169.0	110.6	182
32-36	2,019	5.5	1,987	15.8	5.5	21.3	14.5	1,731
37-41	33,832	93.0	33,795	1.1	0.8	1.9	1.2	33,544
42 and Over	217	0.6	217	-	4.6	4.6	4.6	216
Not Stated	~	^	~	-	-	-	-	~
Total	36,396	100	36,273	3.4	2.0	5.4	3.6	35,775
Singleton Births								
Less than 28	*	^	*	373.5	192.3	494.0	400.0	*
28-31	154	0.4	132	142.9	83.3	214.3	141.8	154
32-36	1,453	4.1	1,422	21.3	7.7	28.9	19.5	1,453
37-41	33,253	94.6	33,216	1.1	0.8	2.0	1.2	33,253
42 and Over	*	^	*	-	4.7	4.7	4.7	*
Not Stated	~	^	~	-	-	-	-	~
Total	35,162	100	35,041	3.4	1.7	5.2	3.3	35,162
Multiple Births								
Less than 28	*	^	*	35.7	296.3	321.4	321.4	*
28-31	59	4.8	59	-	50.8	50.8	34.5	28
32-36	566	45.9	565	1.8	-	1.8	1.8	278
37-41	579	46.9	579	-	-	-	-	291
42 and Over	~	^	~	-	-	-	-	~
Not Stated	0	0.0	0	-	-	-	-	0
Total	1,234	100	1,232	1.6	8.9	10.5	9.7	613

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
Singleton Births				
Spontaneous	78.8	20.3	0.7	0.2
Instrumental [#]	58.7	39.6	1.4	0.3
Caesarean section	6.8	87.9	4.5	0.8
Multiple Births				
Spontaneous	38.5	56.4	4.1	1.0
Instrumental [#]	28.6	62.9	8.1	0.5
Caesarean section	1.9	80.3	15.1	2.7

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	353 45.6 1.5	363 46.9 1.4	58 7.5 0.6	774 100.0 1.3
Cavan	452 46.5 2.0	384 39.5 1.4	137 14.1 1.5	973 100.0 1.7
Clare	581 44.6 2.5	490 37.6 1.8	232 17.8 2.6	1,303 100.0 2.2
Cork	2,229 34.0 9.7	4,199 64.0 15.7	131 2.0 1.5	6,559 100.0 11.2
Donegal	1,000 55.7 4.4	572 31.9 2.1	223 12.4 2.5	1,795 100.0 3.1
Dublin City	4,453 34.6 19.5	5,605 43.6 20.9	2,798 21.8 31.3	12,856 100.0 21.9
Dublin County	1,230 28.7 5.4	2,062 48.2 7.7	989 23.1 11.0	4,281 100.0 7.3
Galway	1,228 38.1 5.4	1,325 41.1 4.9	667 20.7 7.5	3,220 100.0 5.5
Kerry	545 35.1 2.4	928 59.8 3.5	79 5.1 0.9	1,552 100.0 2.6
Kildare	1,046 35.3 4.6	1,272 42.9 4.7	648 21.8 7.2	2,966 100.0 5.1
Kilkenny	389 36.7 1.7	643 60.6 2.4	29 2.7 0.3	1,061 100.0 1.8
Laois	421 38.7 1.8	594 54.6 2.2	72 6.6 0.8	1,087 100.0 1.9
Leitrim	197 47.5 0.9	160 38.6 0.6	58 14.0 0.6	415 100.0 0.7
Limerick	1,138 47.8 5.0	848 35.6 3.2	396 16.6 4.4	2,382 100.0 4.1
Longford	280 48.4 1.2	258 44.6 1.0	40 6.9 0.4	578 100.0 1.0
Louth	814 49.4 3.6	506 30.7 1.9	329 20.0 3.7	1,649 100.0 2.8
Mayo	645 43.2 2.8	620 41.5 2.3	228 15.3 2.5	1,493 100.0 2.5

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	1,004 37.8 4.4	1,127 42.4 4.2	528 19.9 5.9	2,659 100.0 4.5
Monaghan	370 49.7 1.6	272 36.6 1.0	102 13.7 1.1	744 100.0 1.3
Offaly	468 50.6 2.0	387 41.8 1.4	70 7.6 0.8	925 100.0 1.6
Roscommon	349 43.2 1.5	331 41.0 1.2	128 15.8 1.4	808 100.0 1.4
Sligo	327 43.1 1.4	295 38.9 1.1	137 18.1 1.5	759 100.0 1.3
Tipperary	887 48.6 3.9	731 40.1 2.7	207 11.3 2.3	1,825 100.0 3.1
Waterford	562 41.4 2.5	747 55.0 2.8	50 3.7 0.6	1,359 100.0 2.3
Westmeath	477 41.2 2.1	567 48.9 2.1	115 9.9 1.3	1,159 100.0 2.0
Wexford	801 45.1 3.5	779 43.8 2.9	198 11.1 2.2	1,778 100.0 3.0
Wicklow	635 37.4 2.8	758 44.7 2.8	304 17.9 3.4	1,697 100.0 2.9
Total	22,881 39.0 100	26,823 45.7 100	8,953 15.3 100	58,657 100 100

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	41.8
UK	50.3
EU15 (excluding Ireland & UK)	72.2
EU15 to EU28	63.7
Rest of Europe	64.8
Africa	45.8
Asia	47.6
America	65.8

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 ^a	Early Neonatal Deaths	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adj. PMR ^a
Total Births										
500-749	75	22.1	44	~	~	340.6	28	307.7	543.5	479.3
750-999	36	10.6	25	0	0	221.2	11	125.0	318.6	214.3
1000-1249	27	8.0	16	~	0	119.7	*	80.0	190.1	101.6
1250-1499	18	5.3	12	~	0	84.3	~	26.3	108.4	75.0
1500-1999	54	15.9	31	~	~	50.7	20	31.4	80.5	44.9
2000-2499	33	9.7	17	~	~	9.8	11	5.0	14.7	9.4
2500-2999	39	11.5	26	0	~	3.6	*	1.6	5.2	4.2
3000-3499	32	9.4	18	~	0	1.0	*	0.7	1.6	1.4
3500-3999	*	^	*	~	0	0.7	*	0.3	1.0	0.8
4000-4499	~	^	~	0	0	0.5	~	0.1	0.7	0.7
4500 and over	0	0.0	0	0	0	-	0	-	-	-
Total	339	100	205	14	~	3.7	116	2.0	5.7	3.9
Singleton Births										
500-749	60	19.4	*	~	~	381.8	18	264.7	545.5	468.1
750-999	30	9.7	*	0	0	280.5	7	118.6	365.9	223.9
1000-1249	*	^	16	~	0	166.7	7	82.4	235.3	123.6
1250-1499	18	5.8	12	~	0	121.7	4	39.6	156.5	110.1
1500-1999	*	^	30	~	~	77.1	18	45.6	119.2	66.8
2000-2499	*	^	16	~	~	13.0	11	6.9	19.9	12.5
2500-2999	*	^	25	0	~	3.9	12	1.8	5.7	4.5
3000-3499	32	10.3	18	~	0	1.0	13	0.7	1.7	1.5
3500-3999	*	^	*	~	0	0.7	6	0.3	1.0	0.8
4000-4499	~	^	~	0	0	0.5	1	0.1	0.7	0.7
4500 and over	0	0.0	0	0	0	-	0	-	-	-
Total	310	100	195	14	4	3.7	97	1.7	5.4	3.6
Multiple Births										
500-749	15	51.7	~	0	0	178.6	10	434.8	535.7	518.5
750-999	6	20.7	~	0	0	64.5	4	137.9	193.5	193.5
1000-1249	~	^	~	0	0	-	3	75.0	75.0	51.3
1250-1499	0	0.0	0	0	0	-	0	-	-	-
1500-1999	~	^	~	0	0	4.1	2	8.3	12.3	8.3
2000-2499	~	^	~	0	0	1.6	0	-	1.6	1.6
2500-2999	~	^	~	0	0	1.2	0	-	1.2	1.2
3000-3499	0	0.0	0	0	0	-	0	-	-	-
3500-3999	0	0.0	0	0	0	-	0	-	-	-
4000-4499	0	0.0	0	0	0	-	0	-	-	-
4500 and over	0	0.0	0	0	0	-	0	-	-	-
Total	29	100	10	0	0	4.6	19	8.8	13.4	12.1

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.

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)	90	40.4	6	5.2	96	28.3
Immaturity (P05-P08)	14	6.3	22	19.0	36	10.6
Respiratory/cardiovascular disorders (P20-P29)	8	3.6	20	17.2	28	8.3
Unspecified/Unexplained (P95,P96.9)	36	16.1	8	6.9	44	13.0
Congenital malformations (Q00-Q99)	58	26.0	47	40.5	105	31.0
All other specific causes	17	7.6	13	11.2	30	8.8
Total	223	100	116	100	339	100

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
Completed Hours			
<1 hour	19.8	20.6	15.8
1-23 hours	37.1	37.1	36.8
Total under 1 day	56.9	57.7	52.6
1-6 completed days	43.1	42.3	47.4
Total	100	100	100

Note: Percentages are subject to rounding.

TABLE G15

Age at Death by Birthweight (<1,000g and >=1,000g), Early Neonatal Deaths

	Total Births	Birthweight < 1,000g	Birthweight >= 1,000g
	Per Cent	Per Cent	Per Cent
Completed Hours			
<1 hour	19.8	30.8	14.3
1-23 hours	37.1	25.6	42.9
Total under 1 day	56.9	56.4	57.1
1-6 completed days	43.1	43.6	42.9
Total	100	100	100

Note: Percentages are subject to rounding.

APPENDIX H

DOMICILIARY BIRTHS, 2010–2019

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 2010–2019.

- There were 193 domiciliary births in 2019 representing 0.3 per cent of all births.
- The number of domiciliary births has increased by 9.0 per cent over the decade and has increased by 2.1 per cent from 2018 to 2019. The lowest number of domiciliary births over the 10-year period was reported for 2013 at 162 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 2019.
- Women choosing a domiciliary delivery in 2019 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 2019.
- Exclusive breastfeeding was reported for 94.8 per cent of domiciliary births in 2019, a decrease of 2.1 per cent since 2018.
- The average birthweight for domiciliary births in 2019 was 3,682.1 grams.

TABLE H1

Trends in Domiciliary Births—Selected Statistics, 2010–2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% Change	
											2010-2019	2018-2019
Total Domiciliary Births	N	177	168	176	162	186	168	168	189	193	9.0	2.1
Age of mother (years) ¹	Avg	33.4	33.2	33.8	33.3	34.1	33.7	34.0	34.2	34.5	3.3	0.9
Maternal parity ¹	Avg	1.4	1.5	1.5	1.5	1.6	1.5	1.4	1.5	1.5	7.1	0.0
Gestational age at delivery in weeks ¹	Avg	40	40	39.9	39.8	40.0	39.9	39.8	39.9	39.8	-0.5	-0.3
Interval since last birth (years) ²	Avg	2.9	2.7	2.9	2.6	2.5	2.9	2.6	2.8	2.7	-6.9	-3.6
Immunity to Rubella ¹	%	97.2	97.0	96.6	95.1	96.2	92.7	92.9	95.2	92.7	-4.6	-2.6
Any Breastfeeding ^{3,4}	%	97.2	99.4	98.3	96.3	93.5	96.1	95.2	97.4	97.4	0.2	0.0
Exclusive Breastfeeding ³	%	96.6	98.2	96.6	93.8	91.4	95.1	94.0	96.8	94.8	-1.9	-2.1
Combined Antenatal Care – Midwife and G.P./Hospital ⁵	%	98.9	93.5	86.9	96.9	93.0	99.5	97.6	98.9	99.5	0.6	0.6
Birthweight (grams) ⁶	Avg	3,833.9	3,679.6	3,713.1	3,720.1	3,767.7	3,712.8	3,753.1	3,739.8	3,682.1	-4.0	-1.5

Notes:

Percentages are subject to rounding.

¹ There were no domiciliary multiple births in the years 2010–2019.

² Based on maternities.

³ Based on multiparous maternities.

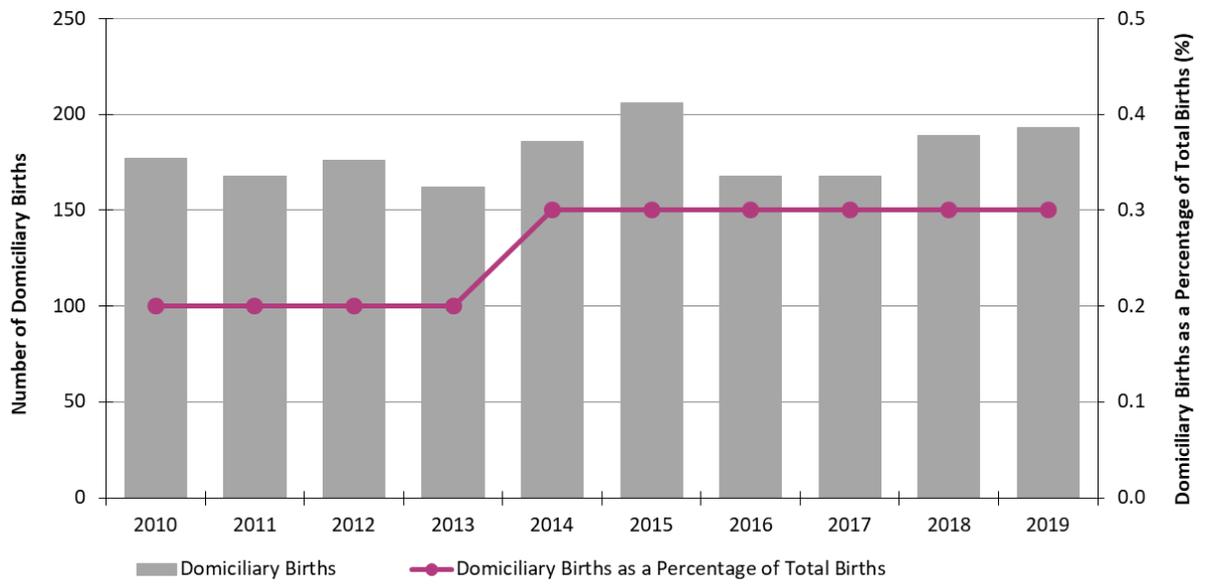
⁴ Based on maternities with live births. Excludes early neonatal deaths.

⁵ Any breastfeeding includes type of feeding recorded as either breast or combined.

⁶ Based on maternities. This figure applies to the percentage of home births where antenatal care is stated as 'combined', rather than 'midwife only'.

⁶ Based on live births.

FIGURE H1
 Number and Percentage of Domiciliary Births Reported, 2010–2019



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 2010 to 2019.

- The proportion of women having a spontaneous delivery has fallen from 57.2 per cent in 2010 to 52.0 per cent in 2019, with the rate of decrease higher for primiparous than multiparous women.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 26.3 per cent in 2010 to 34.1 per cent in 2019.
- 36.3 per cent of primiparous women delivered by Caesarean section in 2019 compared to 27.6 per cent in 2010, with a similar rate of increase for Caesarean section delivery for multiparous women, increasing from 25.4 per cent in 2010 to 32.8 per cent in 2019 (see Figure I1).

TABLE I1

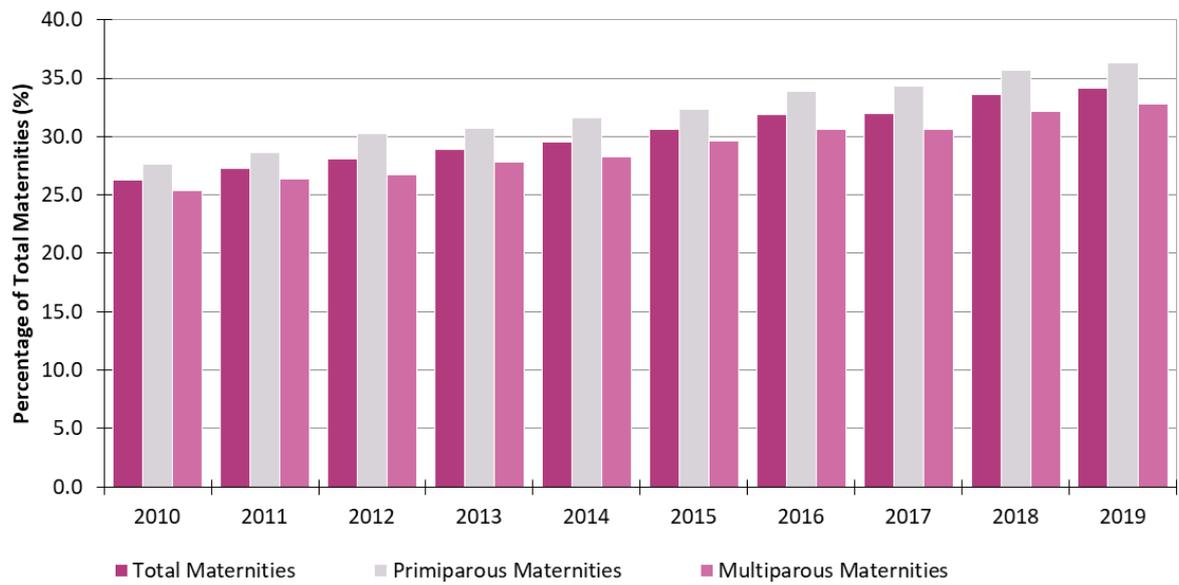
Percentage Distribution of Maternities by Method of Delivery, Primiparous and Multiparous Women, 2010–2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% Change	
											2010–2019	2018–2019
Total Maternities												
Spontaneous	57.2	56.6	56.3	55.9	55.0	54.2	52.9	53.2	52.0	52.0	-9.1	0.0
Breech/forceps	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	-20.0	0.0
Forceps	4.0	4.1	3.9	3.9	3.8	3.5	3.6	3.6	3.1	3.4	-15.0	9.7
Vacuum extraction	11.9	11.5	11.3	10.9	11.3	11.3	11.2	10.7	10.8	10.1	-15.1	-6.5
Caesarean section	26.3	27.3	28.1	28.9	29.5	30.6	31.9	32.0	33.6	34.1	29.7	1.5
Other specified & combined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	-100.0
Total	100	-	-									
Primiparous												
Spontaneous	42.7	41.2	40.5	40.2	39.0	38.4	36.6	37.4	36.8	37.2	-12.9	1.1
Breech/forceps	0.7	0.6	0.4	0.4	0.4	0.4	0.6	0.6	0.5	0.6	-14.3	20.0
Forceps	8.0	8.6	8.3	8.4	8.2	7.9	7.9	7.8	6.6	7.3	-8.8	10.6
Vacuum extraction	21.0	21.0	20.5	20.3	20.8	21.0	21.0	19.9	19.9	18.7	-11.0	-6.0
Caesarean section	27.6	28.6	30.3	30.7	31.6	32.3	33.9	34.3	35.7	36.3	31.5	1.7
Other specified & combined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	-100.0
Total	100	-	-									
Multiparous												
Spontaneous	67.5	66.8	66.4	65.7	65.0	64.1	62.9	63.2	61.6	61.3	-9.2	-0.5
Breech/forceps	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	-25.0	0.0
Forceps	1.2	1.1	1.1	1.0	1.0	0.8	1.0	0.9	0.8	1.0	-16.7	25.0
Vacuum extraction	5.4	5.2	5.4	5.1	5.4	5.3	5.2	4.9	5.0	4.7	-13.0	-6.0
Caesarean section	25.4	26.4	26.7	27.8	28.3	29.6	30.6	30.6	32.2	32.8	29.1	1.9
Other specified & combined	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	-100.0	0.0
Total	100	-	-									

Note: Percentage columns are subject to rounding.

FIGURE I1

Percentage Distribution of Maternities Delivering by Caesarean Section for Total, Primiparous and Multiparous Women, 2010–2019



Note: See Table I1 for data.

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