

Perinatal Statistics Report

2016

Healthcare Pricing Office
October 2018



Building a
Better Health
Service

Seirbhís Sláinte
Níos Fearr
á Forbairt

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This is a report on national data on Perinatal events in 2016. Information on every birth in the Republic of Ireland is submitted to the National Perinatal Reporting System (NPRS). All births are notified and registered on a standard four part birth notification form (BNF01) which is completed where the birth takes place. Part 3 of this form is sent to the HPO for data entry and validation. The information collected includes data on pregnancy outcomes (with particular reference to perinatal mortality and important aspects of perinatal care), as well as descriptive social and biological characteristics of mothers giving birth. The time frame to which the information relates is from pregnancy, delivery and ends at seven completed days after birth.

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Please check online at www.hpo.ie for information on updates.

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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 Catherine Glennon, Anna Lewandowska, and Izabela Sikora. The IT Department of the HPO supports the development of the NPRS software system for data entry and validation and this is gratefully acknowledged.

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Inevitably, a number of individuals have to carry most of the responsibility for producing a report of this type. In this case Sheelagh Bonham, Karen Kearns, Laura Metcalfe, and Sinead O'Hara 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 2016 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 2016.

SUMMARY STATISTICS, 2016

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	61,655	61,440	215	3.5	108	1.8	323	5.2	213	3.5
Multiple	2,442	2,430	12	4.9	16	6.6	28	11.5	21	8.6
Total	64,097	63,870	227	3.5	124	1.9	351	5.5	234	3.7

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, 2016

- 64,097 births were reported to NPRS in 2016, representing a 2.7 per cent decrease between 2015 and 2016
- 7% of total births were preterm (less than 37 weeks gestation)
- 6% of live births were low birthweight (less than 2,500 grams)
- 2% of live births were high birthweight (4,500 grams or more)
- 60% of babies recorded any breastfeeding in 2016, compared to 55% in 2012 and 51% in 2007
- 49% of babies were exclusively breastfed in 2016 compared to 47% in 2012 and 45% in 2007
- 33% of total live births were delivered by Caesarean section, with 31% of singleton and 68% of multiple live births delivered by this method. In 2007, 26% of total live births were delivered by Caesarean section
- 95% of singleton births and 62% of multiple births were discharged from hospital within 5 days of birth
- Average total infant's length of stay was 3.3 days in 2016, compared to 3.5 days in 2007
- The perinatal mortality rate was 5.5 per 1,000 live births and stillbirths (5.2 per 1,000 singleton births and 11.5 per 1,000 multiple births). This rate has fallen by 24.7% since 2007, when it was 7.3 per 1,000 live births and stillbirths.

Mothers, 2016

- 62,871 maternities were reported to NPRS in 2016, representing a 2.7 per cent decrease between 2015 and 2016
- The average age of mothers has increased from 30.6 years in 2007 to 32.2 years in 2016
- 36% of mothers were aged 35 years or older, up from 26% in 2007
- 23% of first births were to women aged 35 years or older, compared to 14% in 2007
- 2% of total mothers giving birth were aged under 20 years, compared to 4% in 2007
- 38% of mothers gave birth for the first time, with an average age for first time mothers of 30.4 years
- 2% of mothers had a multiple pregnancy
- 60% of mothers recorded any breastfeeding, compared to 55% in 2012 and 51% in 2007
- 50% of mothers exclusively breastfed, compared to 47% in 2012 and 45% in 2007
- 53% of women having a singleton live birth delivered spontaneously, while deliveries by Caesarean section accounted for 31%, 4% were delivered using forceps and 11% via vacuum extractions
- 24% of women having a multiple live birth delivered spontaneously, while deliveries by Caesarean section accounted for 67%, 2% were delivered using forceps and 6% via vacuum extractions
- For women having a singleton live birth 53% had a postnatal length of stay of 2 days or less and 45% had a postnatal length of stay of 3-5 days
- For women having a multiple live birth 11% had a postnatal length of stay of 2 days or less and 75% had a postnatal length of stay of 3-5 days
- 23% of births in 2016 were to mothers born outside Ireland compared to 24% in 2012 and 21% in 2007.

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 2016.² 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. As European comparisons on perinatal mortality rates were not available for 2016 for the majority of EU countries at time of publication of this report, we are not in a position to present comparisons on perinatal mortality rates for Ireland for 2016 data.

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 2007 to 2016. Appendix I includes data on method of delivery for primiparous and multiparous women for 2007 to 2016.

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 5 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 5 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 ≥500g birthweight, irrespective of gestation. See <https://www.ucc.ie/en/npec/> for further details.

- In contrast to reports prior to 2012, 'Not Stated' values are included in the calculation of percentages used in discussion or in compilation of figures. As a result, caution should be exercised when comparing data used in discussion in this report with data used in discussion in Perinatal Statistics Reports prior to 2012. 'Not Stated' values are also presented in data tables. 'Not Stated' values are reported by hospitals when information is not available.
- 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) used to notify local registrars of all live births and stillbirths occurring in Ireland. The third part of this form has all identifying information removed and is sent to the HPO (see Appendix B). Figure 1.1 provides a diagrammatic representation of the information system around the registration of births and data collection by the NPRS. All the tables and rates in this report are based on data contained in the third part of the standard form submitted to NPRS at the HPO.

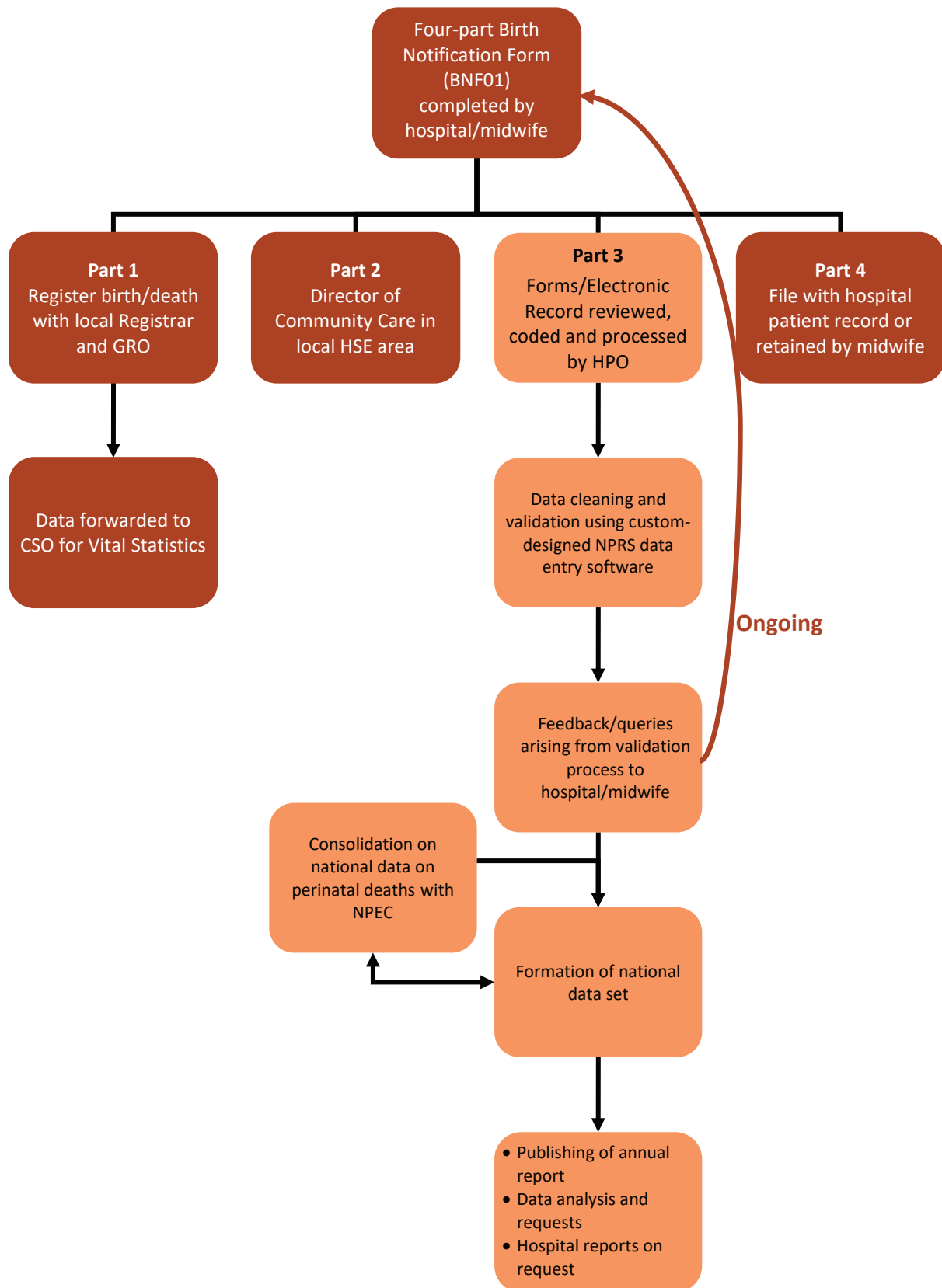
The link between the Birth Notification Form and the birth registration process for the General Register Office (GRO) ensures complete coverage of all births for the NPRS. The number of total births included in the NPRS are based on the data collected by the NPRS via part 3 of the Birth Notification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

It should be noted that notification of birth differs to registration of birth. While the *Civil Registrations Act 2004* outlines the duty of persons attending each birth to notify the local registrar of a stillbirth or live birth, it is not a legal requirement of the parents/guardians to register stillbirths. Therefore, the GRO, and subsequently the Central Statistics Office, publish data on registered births and perinatal deaths only. This may result in differences in the number of births and perinatal deaths reported here compared to official CSO publications.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 2014, a Birth Notification System Advisory Group was established, this group consists of all involved with BNF01, including the GRO, CSO, Department of Public Health, HSE, Department of Health and HPO. The terms of reference for this group include development of the BNF01, communication, collaboration and support between data collectors on variables and collection of data via the birth notification process.

FIGURE 1.1
National Perinatal Reporting System, Data Collection



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

NATIONAL MINIMUM DATA SET

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

DEMOGRAPHIC DATA

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

CLINICAL DATA

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

ADMINISTRATIVE DATA

- Hospital number, case number (unique to hospital of birth)
- Type of birth indicator, place of birth
- Date of last birth (live birth or stillbirth)
- Type of death indicator, place of death
- Type of antenatal care received, dates of first visits to doctor and hospital during pregnancy
- Type of feeding, pre-booked admission indicator, dates of mother's admission and discharge, date of infant's discharge
- Infant transfer indicator for medical reasons, number 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 IT Department at the HPO has developed a custom-designed data entry and validation software system for NPRS data. 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 2016 to both reporting systems. As a result of this data reconciliation exercise, the data reported on perinatal deaths for 2016 (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 (\geq 500 grams only), NPRS and NPEC, 2016

	NPRS		NPEC	
	Number	Rate ^a	Number	Rate
Total births	64,097	-	-	-
Stillbirths	227	3.5	227	3.5
Early neonatal deaths	124	1.9	124	1.9
Perinatal deaths	351	5.5	351	5.5
Adjusted perinatal deaths ^b	234	3.7	212	3.3

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 117 deaths due to congenital anomalies while the NPEC clinical audit classified a greater number of deaths due to congenital anomalies.

FUTURE DEVELOPMENTS

The Maternal and Newborn Clinical Management System (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.

The planned development of export data files for all parts of the BNF01 generated from the MN-CMS 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. Further development of this development is on-going.

Four maternity units have gone live since December 2016. Further phases of the project, which will include all 19 maternity units, are planned over the next number of years.

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 2007 to 2016.¹¹

TRENDS IN SELECTED STATISTICS

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

- While there was an increase in total births between 2007 and 2009, the trend in total births over the past seven years has been downward.
- Mothers giving birth in Ireland in 2016 with an average age of 32.2 years were on average 1.6 years older than those who gave birth in 2007 (30.6 years) and just slightly older than those giving birth in 2015 (average age 31.9 years).
- Over the decade 2007 to 2016, the proportion of mothers giving birth for the first time 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 almost halved over the decade, accounting for 7.7 per cent of births in 2007 compared with 4.1 per cent in 2016. Births to primiparous women aged 40 years and older increased from 2.1 per cent of births in 2007 to 4.3 per cent in 2016.
- Births to multiparous women aged less than 20 years accounted for 0.5 per cent of births in 2007 compared with 0.3 per cent in 2016.
- Mother's immunity to rubella is recorded at 91.5 per cent in 2016.
- The percentage of women recording any breastfeeding was 50.6 per cent in 2007, increasing to 59.9 per cent in 2016.
- The percentage of women exclusively breastfeeding has increased from 45.2 per cent in 2007 to 49.8 per cent in 2016. This represents a rate of increase of 10.2 per cent in exclusive breastfeeding over the decade.
- Irish mothers record a 12.2 per cent increase in the proportion of mothers recording exclusive breastfeeding over the decade. Mothers from the UK, EU, Asia and Africa all record a decrease in the proportion of women recording exclusive breastfeeding at discharge over the decade.

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

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 was recorded at 3.6 days in 2007 and has decreased to 3.4 days in 2016 representing a decrease of 5.6 per cent over the decade.

Data on parents' nationality show the following:¹²

- Births to mothers born in Ireland have declined from 79.1 per cent of births in 2007 to 76.3 per cent of births in 2016, a decrease of 3.5 per cent over the time period.
- A decline of 36.1 per cent was recorded in births to mothers from Africa from 3.6 per cent in 2007 to 2.3 per cent in 2016.

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

- For total live births the percentage of spontaneous deliveries fell from 57.3 per cent in 2007 to 52.2 per cent in 2016. The upward trend in delivery by Caesarean section continues with a rate of 26.2 per cent reported in 2007 compared with 32.7 per cent for 2016.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 30.6 per cent to 31.9 per cent between 2015 and 2016, an increase of 4.2 per cent in the proportion of women delivering by Caesarean section.

Regarding infant characteristics trends have been largely consistent over the decade 2007 to 2016.

- The average birthweight for total live births was 3,444.5 grams in 2016, which is broadly consistent with the preceding decade.
- The average birthweight for both singleton (3,485.2 grams) and multiple (2,415.3 grams) births has remained consistent over the decade.
- The percentage of total live births recording low birthweight (<2,500 grams) was 5.3 per cent in 2007 compared with 5.7 per cent in 2016.
- The percentage of total live births classified as high birthweight (4,500 grams or more) has decreased from 2.8 per cent in 2007 to 2.2 per cent in 2016.
- For total births, the infant's average length of stay in hospital declined from 3.5 days in 2007 to 3.3 days in 2016.

¹² Based on EU27 for 2007-2013 and EU28 for 2014-2016. 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, 2007–2016

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change		
													2007–2016	2015–2016
Total Births	N	71,963	75,587	76,023	75,600	74,377	71,986	69,267	67,610	65,869	64,097		-10.9	-2.7
Total Maternities	N	70,816	74,242	74,810	74,318	73,008	70,709	67,952	66,338	64,624	62,871		-11.2	-2.7
Birth Rate ¹	Per 1,000 population	16.4	16.8	16.7	16.5	16.2	15.6	15.0	14.6	14.2	13.5		-17.7	-4.9
Maternal Characteristics														
Age of mother (years) ^{2,3}	Avg	30.6	30.6	30.8	31.0	31.2	31.4	31.6	31.8	31.9	32.2		5.2	0.9
Age of single mother (years) ^{2,3}	Avg	26.6	26.8	27.0	27.5	27.8	28.3	28.5	28.9	29.1	29.5		10.9	1.4
Mother's Civil Status	Married	66.4	66.0	66.0	65.6	65.2	64.0	63.8	62.6	62.2	62.2		-6.3	0.0
	Single	31.7	32.2	32.2	32.8	33.2	34.3	34.7	35.8	36.4	36.4		14.8	0.0
	All other	1.9	1.7	1.8	1.6	1.6	1.7	1.5	1.5	1.4	1.4		-26.3	0.0
Maternal parity ²	Avg	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		0.0	0.0
Births to Primiparous Women by Maternal Age ²	Under 20 Years	7.7	6.9	6.5	5.9	5.2	5.1	4.7	4.3	4.3	4.1		-46.8	-4.7
	20–24 Years	19.8	19.5	18.4	16.8	15.5	15.3	14.8	14.1	14.1	13.5		-31.8	-4.3
	25–29 Years	27.4	28.5	29.5	29.2	27.5	26.1	24.5	23.5	22.6	21.8		-20.4	-3.5
	30–34 Years	30.9	30.8	31.1	32.6	34.7	35.6	36.3	36.9	36.8	37.3		20.7	1.4
	35–39 Years	12.2	12.1	12.4	12.9	14.1	14.8	16.2	17.4	18.1	19.1		56.6	5.5
40 Years and Older	2.1	2.1	2.2	2.6	3.0	3.2	3.5	3.8	4.0	4.3		104.8	7.5	
Births to Multiparous Women by Maternal Age ²	Under 20 Years	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3		-40.0	0.0
	20–24 Years	7.4	7.2	7.1	6.7	6.4	6.1	6.0	5.6	5.5	5.0		-32.4	-9.1
	25–29 Years	20.4	20.4	20.3	19.9	19.4	18.5	17.7	17.3	16.7	15.6		-23.5	-6.6
	30–34 Years	36.5	36.1	35.4	36.2	37.0	36.8	37.0	36.5	35.7	35.3		-3.3	-1.1
	35–39 Years	29.2	29.8	30.4	30.4	30.2	31.1	31.8	32.7	34.1	35.5		21.6	4.1
40 Years and Older	5.9	5.9	6.3	6.3	6.5	7.0	7.2	7.6	7.7	8.3		40.7	7.8	
Number of previous stillbirths per 1,000 maternities ²	Avg	10.8	10.9	11.7	11.5	11.9	9.7	10.9	10.8	9.5	10.2		-5.6	7.4
Gestational age at delivery (weeks) ²	Avg	39.4	39.4	39.4	39.4	39.3	39.3	39.3	39.2	39.2	39.2		-0.5	0.0
Interval since last birth (years) ^{3,4}	Avg	3.4	3.4	3.3	3.4	3.3	3.3	3.4	3.4	3.4	3.5		2.9	2.9
Immunity to rubella ²	%	92.4	90.0	90.5	92.3	94.3	94.3	94.2	93.4	92.9	91.5		-1.0	-1.5
Any breastfeeding ^{1,2,5,6}	%	50.6	51.1	52.8	54.1	55.3	55.4	55.9	57.0	58.0	59.9		18.4	3.3
Exclusive breastfeeding ^{1,2,5}	%	45.2	44.6	45.5	46.2	47.0	46.9	46.6	46.6	48.0	49.8		10.2	3.7
Exclusive breastfeeding by Mother's Nationality ^{1,2,5}	Irish	39.4	38.0	38.9	39.1	40.1	40.0	40.5	41.1	42.6	44.2		12.2	3.8
	UK	54.5	51.7	52.4	54.4	51.2	51.0	54.2	50.9	53.4	51.7		-5.1	-3.2
	EU ⁷	77.7	76.6	75.6	76.2	76.9	77.5	75.3	74.4	73.7	74.2		-4.5	0.7
	Africa	53.6	52.6	48.4	51.2	51.3	51.6	47.4	45.3	45.8	50.6		-5.6	10.5
	Asia	62.1	59.3	59.7	57.9	60.2	58.5	54.5	53.3	55.7	58.9		-5.2	5.7
Mother's length of stay (days) ^{1,2,8}	Avg	3.6	3.5	3.5	3.4	3.3	3.4	3.4	3.4	3.4	3.4		-5.6	0.0

TABLE 2.1
Trends in Selected Statistics, 2007–2016 (contd.)

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change			
													2007–2016	2015-2016	
Parents Nationality															
Mother's Nationality	Irish	%	79.1	77.3	76.1	75.4	76.1	76.0	77.1	77.8	77.5	76.3	-3.5	-1.5	
	UK	%	2.9	2.7	2.6	2.7	2.3	2.4	2.3	2.2	2.4	2.3	-20.7	-4.2	
	EU ⁷	%	8.5	10.6	11.7	12.9	13.0	12.9	12.7	12.4	12.5	12.7	49.4	1.6	
	Africa	%	3.6	3.4	3.4	3.0	2.6	2.7	2.4	2.4	2.3	2.1	2.3	-36.1	9.5
	Asia	%	3.6	3.7	4.0	3.8	4.0	4.0	3.4	3.2	3.2	3.7	2.8	15.6	
Father's Nationality ⁹	Irish	%	60.5	58.4	58.0	59.1	59.4	57.5	57.1	56.0	58.2	58.8	-2.8	1.0	
	UK	%	2.6	2.5	2.3	2.4	2.2	2.0	2.0	1.9	1.9	1.6	-38.5	-15.8	
	EU ⁷	%	5.3	6.8	7.8	8.6	8.8	8.4	8.1	7.9	7.9	7.9	49.1	0.0	
	Africa	%	3.0	2.7	2.7	2.4	2.1	1.9	1.6	1.5	1.4	1.5	-50.0	7.1	
	Asia	%	2.8	2.9	3.3	3.1	3.3	3.1	2.4	2.2	2.4	2.8	0.0	16.7	
Perinatal Care															
Hospital & G.P. combined antenatal care ^{2,10}															
Booked hospital admissions ^{2,8}															
Method of delivery ¹¹	Total live births ¹²														
	Spontaneous	%	57.3	56.6	56.4	56.5	55.8	55.6	55.1	54.2	53.5	52.2	-8.9	-2.4	
	Caesarean section	%	26.2	26.7	26.9	27.1	28.1	28.9	29.7	30.4	31.4	32.7	24.8	4.1	
Method of delivery ¹¹	Forceps ¹³														
	Spontaneous	%	3.7	3.7	4.1	4.0	4.1	3.9	3.8	3.8	3.5	3.6	-2.7	2.9	
	Caesarean section	%	58.0	57.4	57.0	57.2	56.6	56.3	55.9	55.0	54.2	52.9	-8.8	-2.4	
Total maternities	Forceps ¹³														
	Spontaneous	%	25.5	25.9	26.2	26.3	27.3	28.1	28.9	29.5	30.6	31.9	25.1	4.2	
	Forceps ¹³	%	3.7	3.7	4.1	4.0	4.1	3.9	3.9	3.8	3.5	3.6	-2.7	2.9	
Infant Characteristics															
Birthweight (grams) ¹															
Low birthweight (<2500 grams) ¹	Total births														
	Singletons														
	Multiple births														
High birthweight (≥4500 grams) ¹	Total births														
	Singletons														
	Multiple births														
Infant's length of stay (days) ^{15,8}															
Post-mortems for early neonatal deaths	Total births														
	Singletons														
	Multiple births														

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. ³ Excludes early neonatal deaths. ⁴ Any breastfeeding includes type of feeding recorded as either breast or combined. ⁵ Based on EU27 for 2007-2013 and EU28 for 2014-2016. As the EU expanded over this period caution should be exercised when interpreting these data. See also Appendix F. ⁶ Excludes domiciliary births. ⁷ 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. ⁸ 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. ⁹ See also Appendix I 'Method of Delivery for Primiparous and Multiparous Women'. ¹⁰ These figures were based on total live births, as each infant in a multiple pregnancy can have a different method of delivery. ¹¹ Excludes breech deliveries.

SINGLETON AND MULTIPLE BIRTHS

Table 2.2 shows the numbers of singleton and multiple births each year for the period 2007 to 2016.

- Of the 64,097 births presented in this report for 2016, 61,655 were singleton births, 2,363 were twin births and 79 were higher-order multiple births.¹³
- The twinning rate was 18.8 per 1,000 maternities in 2016; this represents an increase of 22.1 per cent over the decade and 1.6 per cent between 2015 and 2016.

TABLE 2.2
Singleton and Multiple Births, 2007–2016

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change	
											2007-2016	2015-2016
Singleton births	69,692	72,916	73,603	73,046	71,651	69,452	66,650	65,070	63,384	61,655	-11.5	-2.7
Twin births	2,185	2,575	2,373	2,480	2,638	2,435	2,526	2,461	2,390	2,363	8.1	-1.1
Higher-order multiple births	86	96	43	74	88	99	91	79	95	79	-8.1	-16.8
Twinning rate (per 1,000 maternities)	15.4	17.4	15.9	16.7	18.1	17.2	18.6	18.5	18.5	18.8	22.1	1.6

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 2007 and 2016 are presented in Table 2.3.¹⁴

- Higher mortality rates were observed for multiple births when compared to singleton births.
- The total perinatal mortality rate for singleton births was recorded at 5.2 in 2016, compared to 7.1 per 1,000 live births and stillbirths in 2007.
- The total perinatal mortality rate for multiple births was recorded at 11.5 in 2016, down from 14.5 per 1,000 live births and stillbirths in 2007.
- For 2016 the stillbirth mortality rate was recorded at 3.5 per 1,000 live births and stillbirths.
- The early neonatal mortality rate for 2016 was recorded at 1.9 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 2016, there were 61,706 singleton births, 2,387 twin births, 72 triplets and 8 quadruplets reported to the NPRS; of these, 76 births weighed less than 500 grams (including 51 singleton births and 25 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 Registrations Act 2004* outlines the duty of persons attending each birth to notify the local registrar of a stillbirth or live birth, it is not a legal requirement of the parents/guardians to register stillbirths. The NPRS carry out extensive validation directly with each maternity unit and self employed community midwives (SECMs) to confirm the total number of births, including Perinatal deaths, occurring in each maternity unit/SECM each year. Therefore, the GRO, and subsequently the CSO, publish data on registered births and Perinatal deaths only. This may result in differences in the number of Perinatal deaths reported here compared to official CSO publications. Caution should be exercised when analysing data on Perinatal deaths reported or collected from other data systems as these may not be comparable with data reported here.

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

TABLE 2.3

Live Births, Stillbirths, Early Neonatal Deaths and Perinatal Deaths, Numbers and Rates, Singleton and Multiple Births, 2007–2016

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change	
	Number of Births and Perinatal Deaths										2007-2016	2015-2016
Total Births	71,963	75,587	76,023	75,600	74,377	71,986	69,267	67,610	65,869	64,097	-10.9	-2.7
Singleton	69,692	72,916	73,603	73,046	71,651	69,452	66,650	65,070	63,384	61,655	-11.5	-2.7
Multiple	2,271	2,671	2,420	2,554	2,726	2,534	2,617	2,540	2,485	2,442	7.5	-1.7
Live Births	71,570	75,229	75,651	75,245	74,080	71,705	68,990	67,324	65,607	63,870	-10.8	-2.6
Singleton	69,318	72,582	73,247	72,709	71,375	69,188	66,386	64,803	63,151	61,440	-11.4	-2.7
Multiple	2,252	2,647	2,404	2,536	2,705	2,517	2,604	2,521	2,456	2,430	7.9	-1.1
Stillbirths	393	358	372	355	297	281	277	286	262	227	-42.2	-13.4
Singleton	374	334	356	337	276	264	264	267	233	215	-42.5	-7.7
Multiple	19	24	16	18	21	17	13	19	29	12	-36.8	-58.6
Early Neonatal Deaths	132	159	155	161	153	143	159	136	164	124	-6.1	-24.4
Singleton	118	138	142	135	126	122	133	117	137	108	-8.5	-21.2
Multiple	14	21	13	26	27	21	26	19	27	16	14.3	-40.7
Perinatal Deaths	525	517	527	516	450	424	436	422	426	351	-33.1	-17.6
Singleton	492	472	498	472	402	386	397	384	370	323	-34.3	-12.7
Multiple	33	45	29	44	48	38	39	38	56	28	-15.2	-50.0
	Rates ^a											
Stillbirths	5.5	4.7	4.9	4.7	4.0	3.9	4.0	4.2	4.0	3.5	-36.4	-12.5
Singleton	5.4	4.6	4.8	4.6	3.9	3.8	4.0	4.1	3.7	3.5	-35.2	-5.4
Multiple	8.4	9.0	6.6	7.0	7.7	6.7	5.0	7.5	11.7	4.9	-41.7	-58.1
Early Neonatal Deaths	1.8	2.1	2.0	2.1	2.1	2.0	2.3	2.0	2.5	1.9	5.6	-24.0
Singleton	1.7	1.9	1.9	1.9	1.8	1.8	2.0	1.8	2.2	1.8	5.9	-18.2
Multiple	6.2	7.9	5.4	10.3	10.0	8.3	10.0	7.5	11.0	6.6	6.5	-40.0
Perinatal Deaths	7.3	6.8	6.9	6.8	6.1	5.9	6.3	6.2	6.5	5.5	-24.7	-15.4
Singleton	7.1	6.5	6.8	6.5	5.6	5.6	6.0	5.9	5.8	5.2	-26.8	-10.3
Multiple	14.5	16.8	12.0	17.2	17.6	15.0	14.9	15.0	22.5	11.5	-20.7	-48.9

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 account for 64.7 per cent of perinatal deaths in 2016.^{16,17}

Table 2.4 presents the numbers and rates for total births and perinatal deaths for Ireland from 2007 to 2016.

- In 2016 approximately 1 in every 280 births was stillborn and 1 in every 500 live births died in the first week of life.
- Over the decade 2007 to 2016, the perinatal mortality rate has fallen from 7.3 per 1,000 live births and stillbirths to 5.5 per 1,000 live births and stillbirths. This represents a 24.7 per cent decrease over the decade.
- The perinatal mortality rate was reported at 6.5 per 1,000 live births and stillbirths in 2015; this has decreased in 2016 and is reported at 5.5 per 1,000 live births and stillbirths (see Figure 2.1).

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.

TABLE 2.4

Live Births, Stillbirths, Early Neonatal Deaths, and Perinatal Deaths, 2007–2016

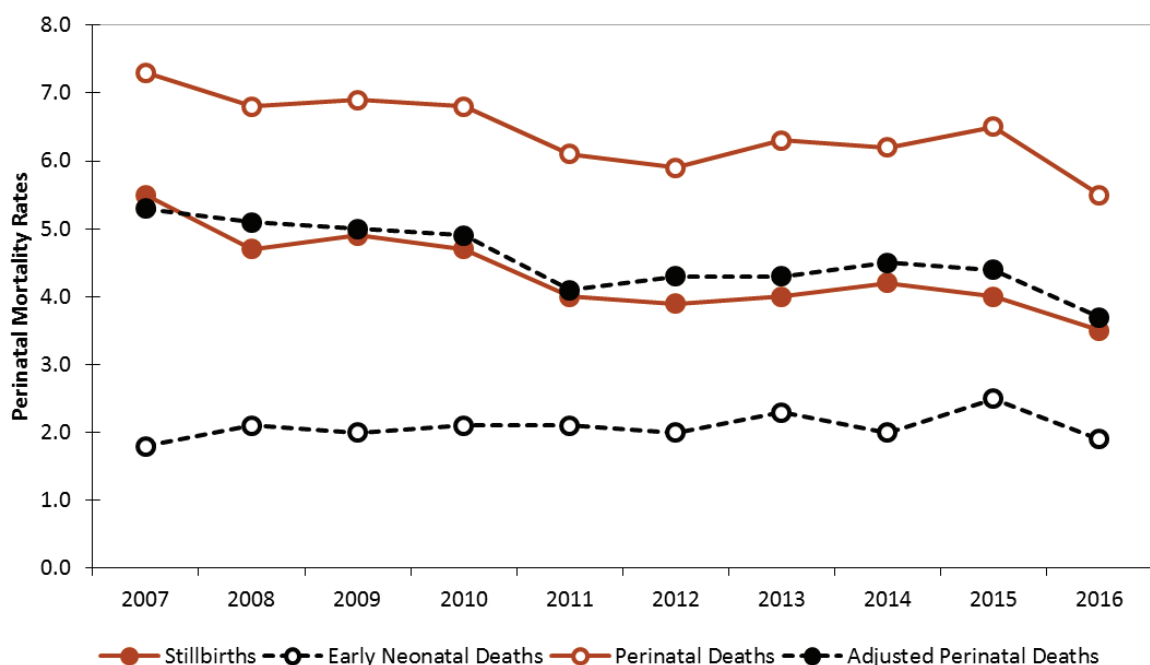
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change	
	Number of Births and Perinatal Deaths										2007–2016	2015–2016
Total Births	71,963	75,587	76,023	75,600	74,377	71,986	69,267	67,610	65,869	64,097	-10.9	-2.7
Live Births	71,570	75,229	75,651	75,245	74,080	71,705	68,990	67,324	65,607	63,870	-10.8	-2.6
Stillbirths	393	358	372	355	297	281	277	286	262	227	-42.2	-13.4
Early Neonatal Deaths	132	159	155	161	153	143	159	136	164	124	-6.1	-24.4
Perinatal Deaths	525	517	527	516	450	424	436	422	426	351	-33.1	-17.6
Adjusted Perinatal Deaths	383	384	381	368	308	309	297	304	287	234	-38.9	-18.5
Rates^a												
Stillbirth	5.5	4.7	4.9	4.7	4.0	3.9	4.0	4.2	4.0	3.5	-36.4	-12.5
Early Neonatal Deaths	1.8	2.1	2.0	2.1	2.1	2.0	2.3	2.0	2.5	1.9	5.6	-24.0
Perinatal Mortality	7.3	6.8	6.9	6.8	6.1	5.9	6.3	6.2	6.5	5.5	-24.7	-15.4
Adjusted Perinatal Mortality	5.3	5.1	5.0	4.9	4.1	4.3	4.3	4.5	4.4	3.7	-30.2	-15.9

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'.

FIGURE 2.1

Stillbirth, Early Neonatal and Perinatal Mortality Rates, Ireland, 2007–2016



Note: See Table 2.4 for data.

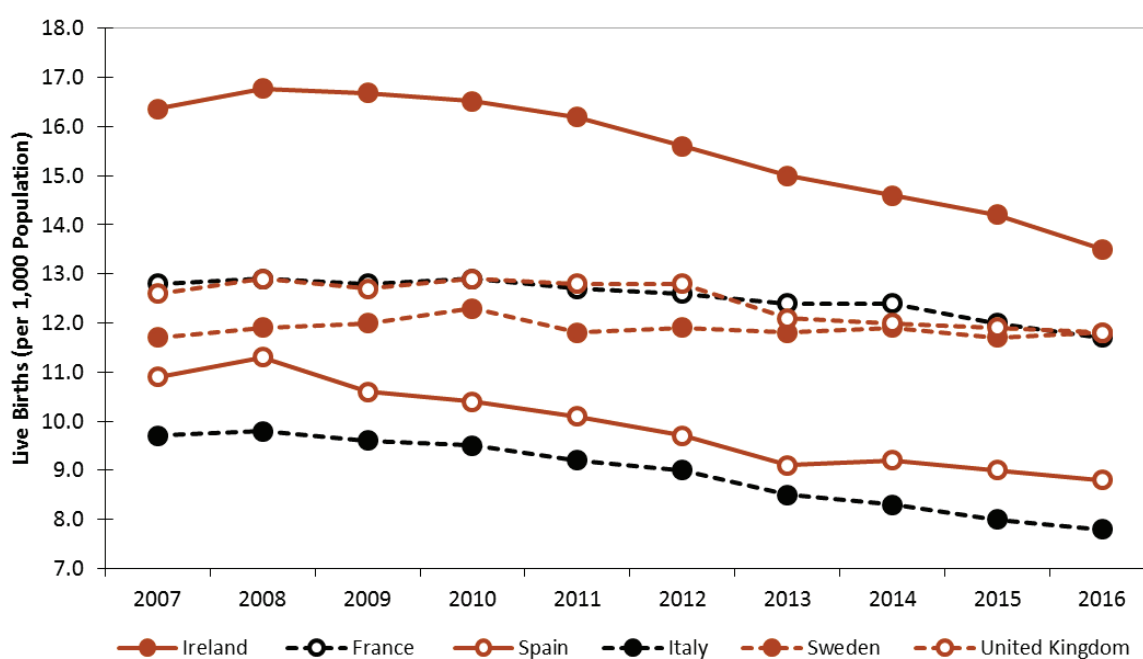
As European comparisons on perinatal mortality rates were not available for 2016 for the majority of EU countries at time of publication of this report, we are not in a position to present comparisons on perinatal mortality rates for Ireland for 2016 data.

BIRTH RATES¹⁸

The birth rate is based on the total number of live births per 1,000 population.¹⁹ Figure 2.2 presents trends in birth rates for selected EU countries over the decade 2007 to 2016. Figure 2.3 presents birth rates in the 28 EU countries for 2016.

- Of the countries reviewed, Ireland has consistently had the highest birth rate over the period, and is recorded at 13.5 per 1,000 population in 2016 (see Figure 2.2).²⁰
- The birth rate for Ireland has declined from a high of 16.8 per 1,000 population in 2008 to 13.5 per 1,000 population in 2016.
- After Ireland, the countries with the next highest birth rates in 2016 are Sweden and the United Kingdom (both recording 11.8) followed by France (11.7). In 2016, Italy had the lowest birth rate (7.8), followed by Portugal and Greece, each having a birth rate of 8.4 and 8.6 respectively (see Figure 2.3).

FIGURE 2.2
Trends in Birth Rates for Selected EU Countries, 2007–2016



Sources: 'Population and social conditions', Eurostat, Data Navigation Tree, date consulted September 2018.

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

Data for Ireland are based on NPRS data on live births from 2007 onwards. The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted September 2018.

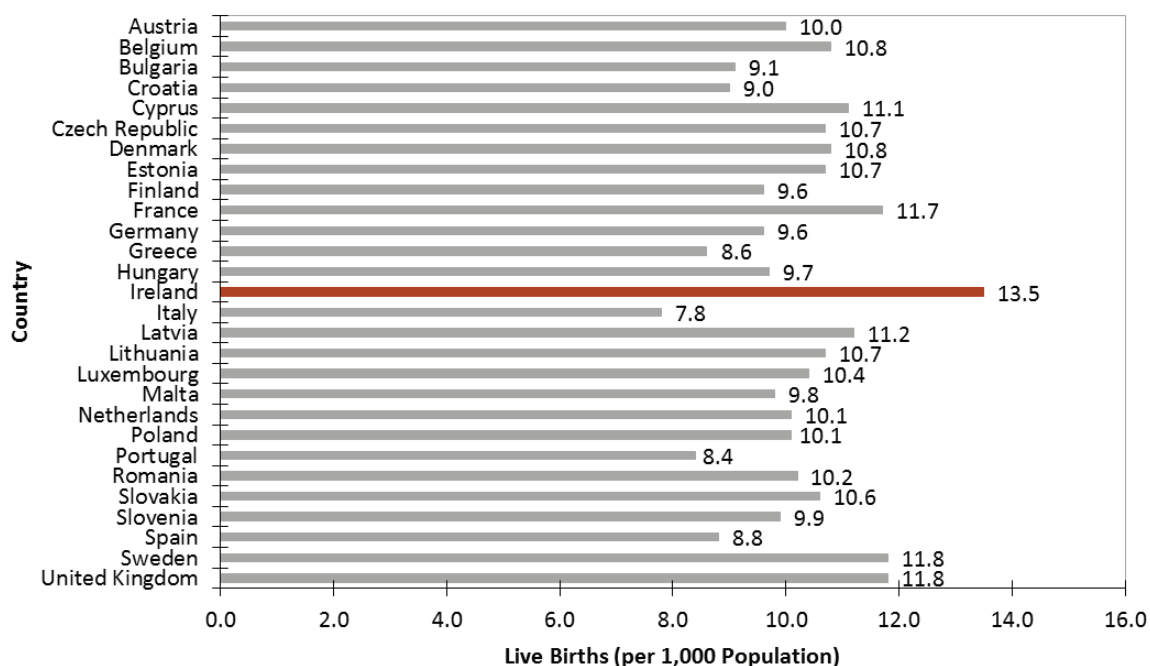
www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0

¹⁸ It should be noted that the crude birth rate could rise or fall depending on the numbers of women in the age cohorts from 15 to 49 years old. Changes in the crude birth rate often mask underlying trends in fertility.

¹⁹ The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted September 2018. www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0

²⁰ The CSO also estimates the Irish birth rate at 13.7 per 1,000 population for 2016. See Vital Statistics, Fourth Quarter and Yearly Summary 2016, May 2017. CSO 2016 data are provisional and are based on the number of births registered within the year as opposed to births occurring in the year.

FIGURE 2.3
Birth Rates per 1,000 Population for EU Countries, 2016



Sources: 'Population and social conditions', Eurostat, Data Navigation Tree, date consulted September 2018.

<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 September 2018.

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

FERTILITY

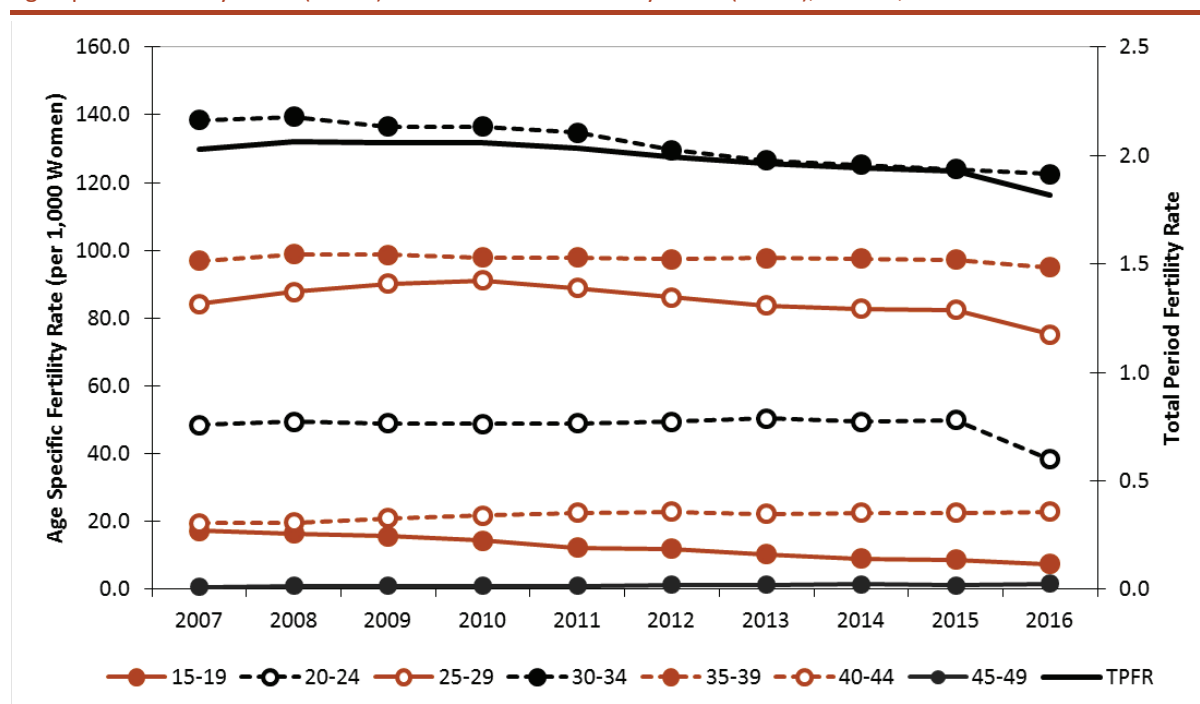
The Total Period Fertility Rate (TPFR) for a given year indicates the number of children a woman could expect to have if the Age-Specific Fertility Rates (ASFR) for that year applied throughout her fertile years.²¹ The ASFR refers to the number of live births to women in a particular age group per 1,000 women. Figure 2.4 displays the trend in the ASFR and TPFR in Ireland from 2007–2016.

- The Irish TPFR was recorded at a high of 2.1 in 2008–2010 and is estimated at 1.8 in 2016, the lowest rate reported of the decade.²²
- The ASFRs for the 40 years and over age groups increased slightly for 2016. All other age groups recorded decreasing ASFR rates for 2016.
- Similarly, over the decade 2007–2016, the ASFRs for all age groups under 40 years has declined, while the 40 years and over age groups recorded higher ASFR rates over the decade.
- The ASFRs show women in the 15-19 year age group recorded annual decreases in fertility over the decade 2007–2016.
- In all years the 30–34 year age group recorded the highest ASFR when compared to other age groups, but has been declining since 2008.

²¹ See Appendix A, definitions for calculation of TPFR and ASFR.

²² The CSO estimates the TPFR at 1.9 for 2016. See Vital Statistics, Fourth Quarter and Yearly Summary 2016, May 2017. CSO 2016 data are provisional and are based on the number of births registered within the year as opposed to births occurring in the year.

FIGURE 2.4
Age-Specific Fertility Rates (ASFRs) and Total Period Fertility Rates (TPFRs), Ireland, 2007–2016



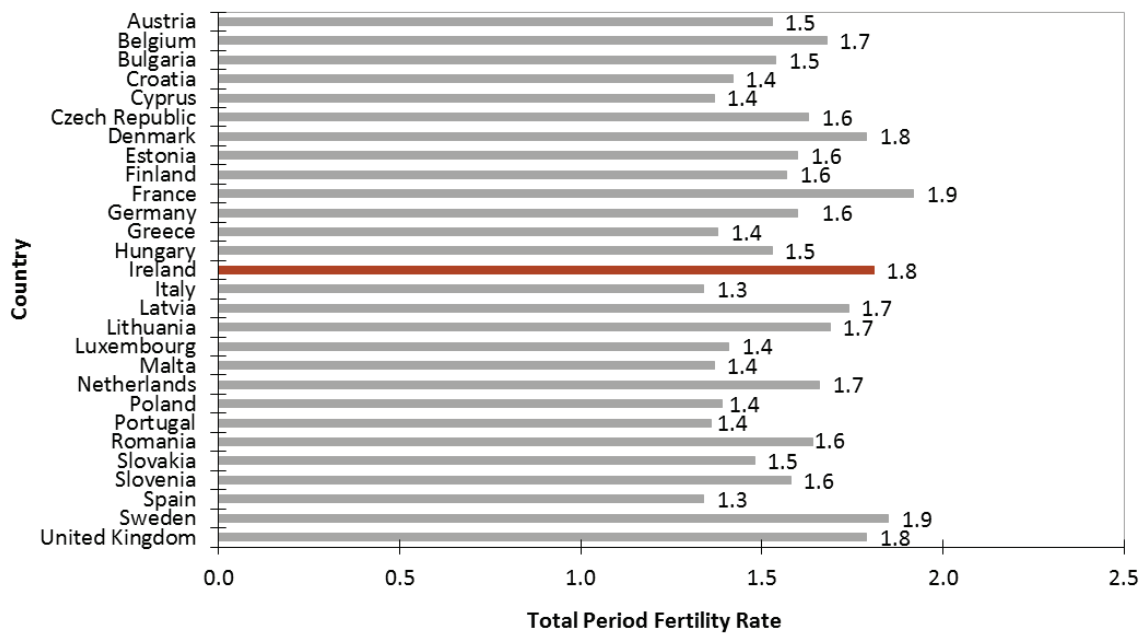
Sources: Total period fertility rates (TPFRs) and age-specific fertility rates (ASFRs) are calculated using NPRS data from 2007 onwards. Female population estimates from 2007 onwards were obtained from the CSO Statistical Databases, date consulted September 2018. <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0>

The TPFR for Ireland is based on population data for 2016, and at 1.8 is below the level required for the long-term replacement of the population in the absence of any net inward migration (2.1).²³ Figure 2.5 presents data on TPFRs for 2016 using data from Eurostat and the NPRS.

- At 1.9, France and Sweden had the highest TPFRs in the 28 EU countries, followed by Ireland, United Kingdom and Denmark, all reporting a TPFR of 1.8.
- Latvia, Lithuania, Belgium and The Netherlands were just behind Ireland with a TPFR of 1.7, while Italy and Spain recorded the lowest TPFR of 1.3 in 2016.

²³ See Vital Statistics, Fourth Quarter and Yearly Summary 2016, May 2017.

FIGURE 2.5
Total Period Fertility Rates for EU Countries, 2016



Sources: 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted September 2018.
<http://epp.eurostat.ec.europa.eu>

*Data for Ireland are based on NPRS data on live births. Female population estimates for 2016 were obtained from the CSO Statistical Databases, date consulted September 2018.
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 2016.

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 2016, the highest percentage of births were to women aged 30 to 34 years.
- Over 35 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	1,112	1.7	1,105	6.3	2.7	9.0	6.3	1,098
20-24 Years	5,215	8.1	5,192	4.4	2.7	7.1	4.4	5,161
25-29 Years	11,431	17.8	11,403	2.4	1.0	3.4	2.9	11,280
30-34 Years	23,078	36.0	23,003	3.2	2.4	5.6	4.0	22,670
35-39 Years	18,829	29.4	18,758	3.8	1.5	5.3	3.1	18,397
40-44 Years	4,133	6.4	4,114	4.6	3.2	7.7	4.1	4,006
45 Years and Over	*	^	*	13.5	-	13.5	6.8	*
Not Stated	~	^	~	-	-	-	-	~
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Under 20 Years	1,083	1.8	1,076	6.5	2.8	9.2	6.5	1,083
20-24 Years	5,106	8.3	5,086	3.9	2.4	6.3	3.5	5,106
25-29 Years	11,129	18.1	11,103	2.3	0.8	3.1	2.6	11,129
30-34 Years	22,263	36.1	22,191	3.2	2.3	5.5	4.0	22,263
35-39 Years	17,973	29.2	17,904	3.8	1.2	5.1	3.0	17,973
40-44 Years	3,881	6.3	3,863	4.6	3.1	7.7	4.1	3,881
45 Years and Over	*	^	*	13.8	-	13.8	4.6	*
Not Stated	~	^	~	-	-	-	-	~
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Under 20 Years	29	1.2	29	-	-	-	-	15
20-24 Years	109	4.5	106	27.5	18.9	45.9	45.9	55
25-29 Years	302	12.4	300	6.6	6.7	13.2	13.2	151
30-34 Years	815	33.4	812	3.7	6.2	9.8	6.2	407
35-39 Years	856	35.1	854	2.3	7.0	9.3	5.9	424
40-44 Years	252	10.3	251	4.0	4.0	7.9	4.0	125
45 Years and Over	*	^	*	12.7	-	12.7	12.7	*
Not Stated	*	^	*	-	-	-	-	*
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

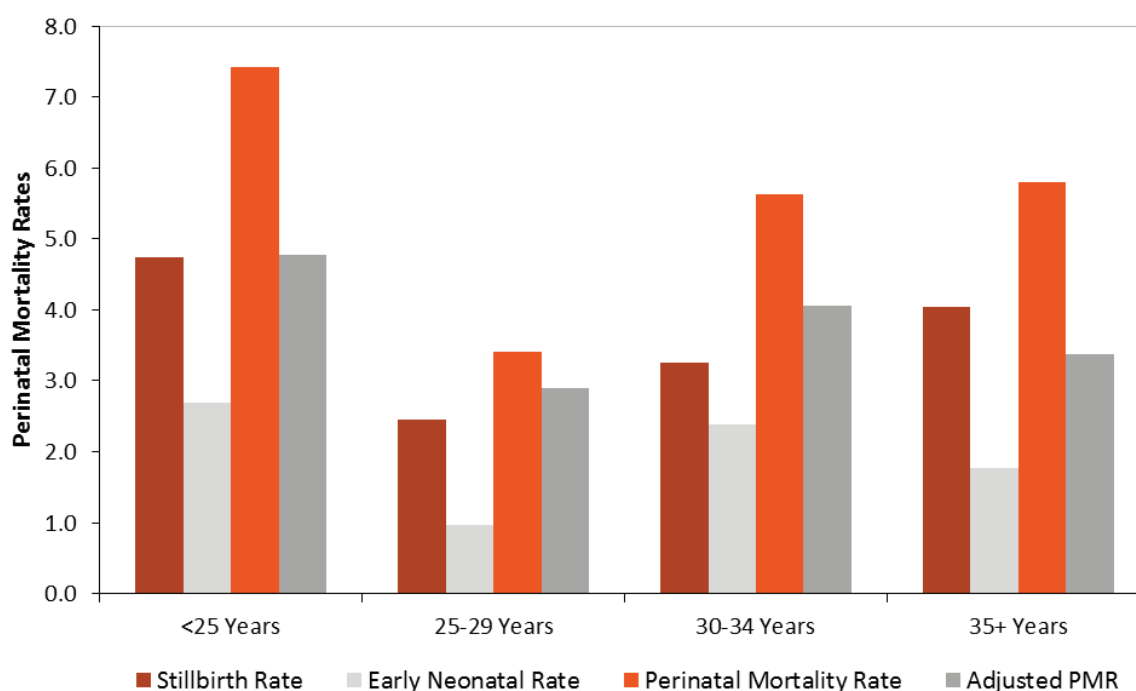
Notes:

- ~ 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 3.1 presents perinatal mortality rates.

- At 3.4 and 2.9 per 1,000 live births and stillbirths, the perinatal and adjusted perinatal mortality rates were lowest for mothers aged in the 25 to 29 year age group, whilst the highest perinatal and adjusted perinatal mortality rates were recorded for mothers aged less than 25 years.
- The highest stillbirth rate was recorded for mothers aged less than 25 years (at 4.7 per 1,000 live births and stillbirths), while the lowest stillbirth rate was recorded for the 25 to 29 year age group (2.4 per 1,000 live births and stillbirths).
- The highest and lowest early neonatal rates were recorded for the less than 25 years age group and the 25 to 29 year age group respectively. These rates are based on 20 or fewer observations and should be interpreted with caution.

FIGURE 3.1
Age-Specific Stillbirth, Early Neonatal and Perinatal Mortality Rates



Notes: See Table 3.1 for data.
Early Neonatal Rates for mothers aged less than 30 years are based on 20 or fewer observations. Caution should be exercised when interpreting rates based on small numbers.

MOTHER'S CIVIL STATUS

Table 3.2 presents data on mother's civil status and shows that married women accounted for over 62 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	39,882	62.2	39,752	3.3	1.9	5.2	3.2	39,015
Single	23,301	36.4	23,206	4.1	1.9	6.0	4.4	22,953
Widowed	64	0.1	64	-	-	-	-	62
Separated	430	0.7	428	4.7	4.7	9.3	7.0	427
Divorced	383	0.6	383	-	2.6	2.6	-	377
Civil Partner	21	0.0	21	-	-	-	-	21
Not Stated	16	0.0	16	-	-	-	-	16
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Married	38,156	61.9	38,031	3.3	1.7	4.9	3.1	38,156
Single	22,604	36.7	22,516	3.9	1.9	5.8	4.1	22,604
Widowed	*	^	*	-	-	-	-	*
Separated	*	^	*	4.7	4.7	9.4	7.1	*
Divorced	373	0.6	373	-	2.7	2.7	-	*
Civil Partner	21	0.0	21	-	-	-	-	21
Not Stated	16	0.0	16	-	-	-	-	16
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Married	1,726	70.7	1,721	2.9	8.1	11.0	7.0	859
Single	697	28.5	690	10.0	2.9	12.9	12.9	349
Widowed	~	^	~	-	-	-	-	~
Separated	*	^	*	-	-	-	-	~
Divorced	10	0.4	10	-	-	-	-	~
Civil Partner	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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.

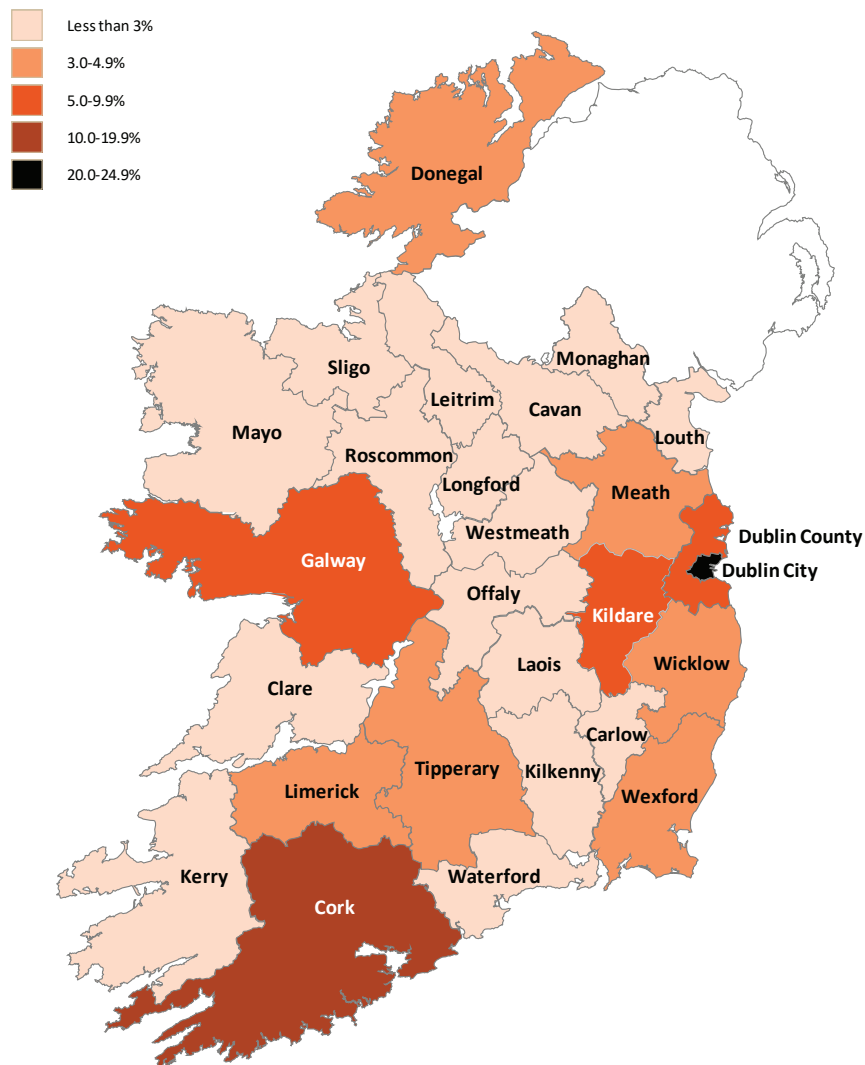
a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

MOTHER'S COUNTY OF RESIDENCE

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

- Over 22 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: 1.2 per cent of all births were to mothers resident in Carlow.
See Appendix E for details of county of residence classification.

SOCIO-ECONOMIC GROUP

MOTHER'S SOCIO-ECONOMIC GROUP

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

- The highest proportions of total births were to mothers whose socio-economic group was classified as either 'intermediate non-manual workers' (19.2 per cent) or 'home duties' (19.0 per cent) and 'lower-professional' (19.0 per cent).
- Mothers classified as 'other non-manual workers' group accounted for a further 14.6 per cent of total births.
- Where rates are calculated on more than 20 perinatal deaths, the highest perinatal mortality rate of 9.4 per 1,000 live births and stillbirths was reported for mothers in the socio-economic group 'home duties' followed by 'employers & managers' (5.6 per 1,000 live births and stillbirths) - see Figure 3.3.
- The lowest perinatal mortality rates were recorded for mothers in the 'lower professional' socio-economic group (3.7 per 1,000 live births and stillbirths).

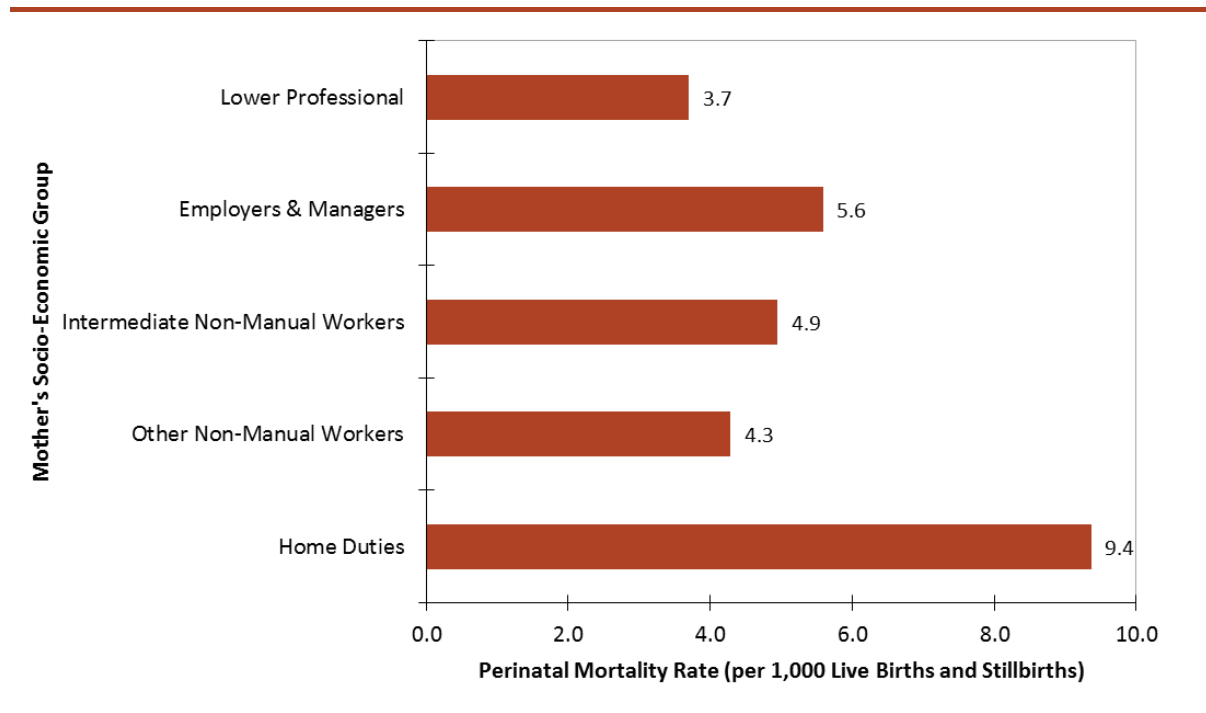
TABLE 3.3
Mother's Socio-economic Group: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Farmers & Farm Managers	66	0.1	66	-	-	-	-	61
Other Agricultural Occupations & Fishermen	81	0.1	81	-	-	-	-	79
Higher Professional	4,480	7.0	4,470	2.2	1.1	3.3	2.7	4,371
Lower Professional	12,167	19.0	12,143	2.0	1.7	3.7	1.9	11,877
Employers & Managers	4,828	7.5	4,811	3.5	2.1	5.6	3.9	4,725
Salaried Employees	715	1.1	712	4.2	-	4.2	4.2	704
Intermediate Non-Manual Workers	12,327	19.2	12,283	3.6	1.4	4.9	2.9	12,103
Other Non-Manual Workers	9,331	14.6	9,301	3.2	1.1	4.3	2.8	9,184
Skilled Manual Workers	847	1.3	846	1.2	-	1.2	-	831
Semi-Skilled Manual Workers	1,991	3.1	1,985	3.0	3.5	6.5	4.5	1,960
Unskilled Manual Workers	24	0.0	24	-	-	-	-	24
Unemployed	2,872	4.5	2,860	4.2	1.7	5.9	3.8	2,833
Not Classifiable	1,892	3.0	1,883	4.8	1.6	6.3	3.7	1,854
Home Duties	12,173	19.0	12,104	5.7	3.7	9.4	7.2	11,970
Not Stated	303	0.5	301	6.6	3.3	9.9	3.3	295
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Farmers & Farm Managers	*	^	*	-	-	-	-	*
Other Agricultural Occupations & Fishermen	*	^	*	-	-	-	-	*
Higher Professional	4,265	6.9	4,256	2.1	0.9	3.0	2.6	4,265
Lower Professional	11,588	18.8	11,567	1.8	1.7	3.5	1.8	11,588
Employers & Managers	4,623	7.5	4,606	3.7	2.0	5.6	3.9	4,623
Salaried Employees	692	1.1	689	4.3	-	4.3	4.3	692
Intermediate Non-Manual Workers	11,880	19.3	11,838	3.5	1.4	4.9	2.9	11,880
Other Non-Manual Workers	9,037	14.7	9,008	3.2	1.0	4.2	2.8	9,037
Skilled Manual Workers	815	1.3	814	1.2	-	1.2	-	815
Semi-Skilled Manual Workers	1,929	3.1	1,923	3.1	2.1	5.2	3.1	1,929
Unskilled Manual Workers	24	0.0	24	-	-	-	-	24
Unemployed	2,793	4.5	2,781	4.3	1.8	6.1	3.9	2,793
Not Classifiable	1,818	2.9	1,811	3.9	1.7	5.5	2.8	1,818
Home Duties	11,771	19.1	11,705	5.6	3.2	8.8	6.6	11,771
Not Stated	*	^	*	7.0	-	7.0	3.5	287
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Farmers & Farm Managers	10	0.4	10	-	-	-	-	~
Other Agricultural Occupations & Fishermen	~	^	~	-	-	-	-	~
Higher Professional	215	8.8	214	4.7	4.7	9.3	4.7	106
Lower Professional	579	23.7	576	5.2	1.7	6.9	3.5	289
Employers & Managers	205	8.4	205	-	4.9	4.9	4.9	102
Salaried Employees	23	0.9	23	-	-	-	-	12
Intermediate Non-Manual Workers	447	18.3	445	4.5	2.2	6.7	4.5	223
Other Non-Manual Workers	294	12.0	293	3.4	3.4	6.8	3.4	147
Skilled Manual Workers	32	1.3	32	-	-	-	-	16
Semi-Skilled Manual Workers	62	2.5	62	-	48.4	48.4	48.4	31
Unskilled Manual Workers	0	0.0	0	-	-	-	-	0
Unemployed	79	3.2	79	-	-	-	-	40
Not Classifiable	74	3.0	72	27.0	-	27.0	27.0	36
Home Duties	402	16.5	399	7.5	17.5	24.9	22.4	199
Not Stated	*	^	*	-	62.5	62.5	-	8
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

Notes:

- ~ 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 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.
Adjusted Perinatal Mortality Rates are not presented due to small numbers associated with the majority of categories.

FATHER'S SOCIO-ECONOMIC GROUP

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

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

- Over 18 per cent of total births were to fathers whose socio-economic group was classified as 'skilled manual workers'.
- Fathers classified as 'intermediate non-manual workers' and 'other non-manual workers' both accounted for 9.0 per cent of total births.

TABLE 3.4

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Farmers & Farm Managers	1,762	2.7	1,753	5.1	2.3	7.4	3.4	1,719
Other Agricultural Occupations & Fishermen	574	0.9	571	5.2	1.8	7.0	3.5	568
Higher Professional	4,104	6.4	4,092	2.9	1.2	4.1	2.7	4,004
Lower Professional	4,470	7.0	4,461	2.0	1.3	3.4	1.1	4,373
Employers & Managers	4,555	7.1	4,544	2.4	1.8	4.2	2.4	4,445
Salaried Employees	733	1.1	733	-	-	-	-	718
Intermediate Non-Manual Workers	5,761	9.0	5,749	2.1	1.7	3.8	2.6	5,644
Other Non-Manual Workers	5,742	9.0	5,726	2.8	2.1	4.9	3.7	5,615
Skilled Manual Workers	11,575	18.1	11,531	3.8	1.8	5.6	3.7	11,366
Semi-Skilled Manual Workers	3,042	4.7	3,031	3.6	1.0	4.6	3.0	3,001
Unskilled Manual Workers	362	0.6	362	-	2.8	2.8	-	357
Unemployed	2,377	3.7	2,361	6.7	4.2	10.9	8.0	2,338
Not Classifiable	1,901	3.0	1,892	4.7	2.1	6.8	3.7	1,855
Home Duties	145	0.2	145	-	-	-	-	145
Not Stated/Not Applicable	16,994	26.5	16,919	4.4	2.3	6.7	5.0	16,723
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Farmers & Farm Managers	1,676	2.7	1,669	4.2	2.4	6.6	3.0	1,676
Other Agricultural Occupations & Fishermen	*	^	*	5.3	1.8	7.1	3.6	*
Higher Professional	3,910	6.3	3,900	2.6	1.3	3.8	2.6	3,910
Lower Professional	4,274	6.9	4,265	2.1	0.9	3.0	0.9	4,274
Employers & Managers	4,335	7.0	4,324	2.5	1.9	4.4	2.5	4,335
Salaried Employees	703	1.1	703	-	-	-	-	703
Intermediate Non-Manual Workers	5,527	9.0	5,515	2.2	0.9	3.1	2.0	5,527
Other Non-Manual Workers	5,491	8.9	5,475	2.9	2.2	5.1	3.8	5,491
Skilled Manual Workers	11,158	18.1	11,115	3.9	1.7	5.6	3.7	11,158
Semi-Skilled Manual Workers	2,960	4.8	2,949	3.7	1.0	4.7	3.0	2,960
Unskilled Manual Workers	*	^	*	-	2.8	2.8	-	*
Unemployed	2,300	3.7	2,284	7.0	3.9	10.9	7.8	2,300
Not Classifiable	1,807	2.9	1,798	5.0	2.2	7.2	3.9	1,807
Home Duties	145	0.2	145	-	-	-	-	145
Not Stated/Not Applicable	16,455	26.7	16,387	4.1	2.0	6.1	4.5	16,455
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Farmers & Farm Managers	86	3.5	84	23.3	-	23.3	11.8	43
Other Agricultural Occupations & Fishermen	*	^	*	-	-	-	-	*
Higher Professional	194	7.9	192	10.3	-	10.3	5.2	94
Lower Professional	196	8.0	196	-	10.2	10.2	5.1	99
Employers & Managers	220	9.0	220	-	-	-	-	110
Salaried Employees	30	1.2	30	-	-	-	-	15
Intermediate Non-Manual Workers	234	9.6	234	-	21.4	21.4	17.2	117
Other Non-Manual Workers	251	10.3	251	-	-	-	-	124
Skilled Manual Workers	417	17.1	416	2.4	4.8	7.2	4.8	208
Semi-Skilled Manual Workers	82	3.4	82	-	-	-	-	41
Unskilled Manual Workers	*	^	*	-	-	-	-	~
Unemployed	77	3.2	77	-	13.0	13.0	13.0	38
Not Classifiable	94	3.8	94	-	-	-	-	48
Home Duties	0	0.0	0	-	-	-	-	0
Not Stated/Not Applicable	539	22.1	532	13.0	11.3	24.1	20.5	268
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

Notes:

Percentage column is subject to rounding.

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

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 from Ireland.
- The next highest proportion of total births were to mothers from the European Union (excluding Ireland and United Kingdom) at 12.6 per cent.²⁴
- Births to mothers from Asia accounted for 3.7 per cent of total births, followed by 2.3 per cent to mothers from both the UK and from Africa.
- The remainder of births were to mothers from the Rest of Europe, America, Australia, New Zealand and Other Oceania and Other Nationality.

²⁴ 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	48,937	76.3	48,757	3.7	1.9	5.6	3.6	47,950
UK	1,463	2.3	1,460	2.1	2.1	4.1	2.7	1,432
EU15 (excluding Ireland & UK)	992	1.5	989	3.0	3.0	6.0	5.0	979
EU15 to EU28	7,127	11.1	7,107	2.8	1.5	4.3	3.2	7,024
Rest of Europe	642	1.0	640	3.1	1.6	4.7	4.7	629
Africa	1,445	2.3	1,436	6.2	2.8	9.0	6.9	1,416
Asia	2,344	3.7	2,338	2.6	2.6	5.1	3.4	2,312
America	773	1.2	773	-	-	-	-	760
Australia	81	0.1	81	-	-	-	-	79
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Other Nationality	~	^	~	-	-	-	-	~
Not Stated	269	0.4	265	14.9	7.5	22.3	22.3	266
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Ireland	46,970	76.2	46,798	3.7	1.8	5.4	3.5	46,970
UK	1,401	2.3	1,398	2.1	1.4	3.6	2.1	1,401
EU15 (excluding Ireland & UK)	965	1.6	962	3.1	3.1	6.2	5.2	965
EU15 to EU28	6,924	11.2	6,904	2.9	1.3	4.2	3.0	6,924
Rest of Europe	616	1.0	614	3.2	1.6	4.9	4.9	616
Africa	1,386	2.2	1,378	5.8	2.2	7.9	5.8	1,386
Asia	2,281	3.7	2,275	2.6	2.6	5.3	3.5	2,281
America	748	1.2	748	-	-	-	-	748
Australia	*	^	*	-	-	-	-	*
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Other Nationality	~	^	~	-	-	-	-	~
Not Stated	*	^	*	3.8	7.6	11.4	11.4	*
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Ireland	1,967	80.5	1,959	4.1	6.1	10.2	6.6	980
UK	62	2.5	62	-	16.1	16.1	16.1	31
EU15 (excluding Ireland & UK)	27	1.1	27	-	-	-	-	14
EU15 to EU28	203	8.3	203	-	9.9	9.9	9.9	100
Rest of Europe	26	1.1	26	-	-	-	-	13
Africa	59	2.4	58	16.9	17.2	33.9	33.9	30
Asia	63	2.6	63	-	-	-	-	31
America	25	1.0	25	-	-	-	-	12
Australia	~	^	~	-	-	-	-	~
New Zealand and Other Oceania	0	0.0	0	-	-	-	-	0
Other Nationality	0	0.0	0	-	-	-	-	0
Not Stated	*	^	*	500.0	-	500.0	500.0	~
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

Notes:

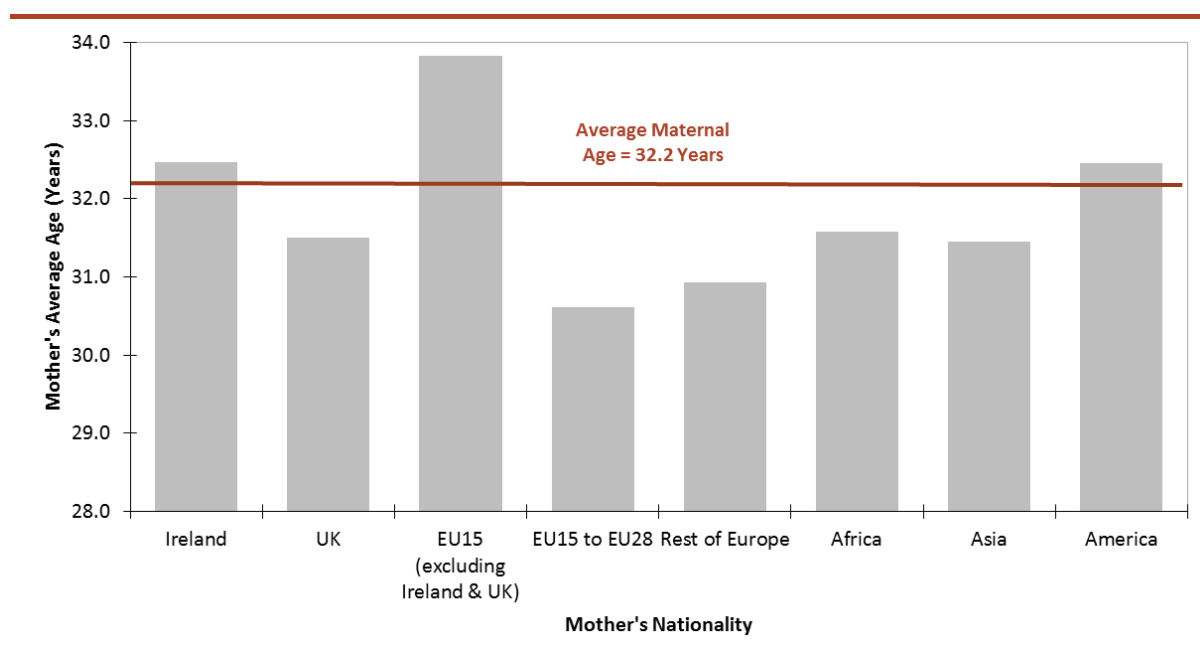
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated 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 2016.

- The average age of all mothers giving birth was 32.2 years and the average age of mothers from Ireland giving birth was slightly higher at 32.5 years.
- Mothers giving birth from the EU15 to EU28 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'. 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.

- Births to Irish fathers accounted for 58.8 per cent of total births.
- Births to fathers from the EU15 to EU28 and Asia accounted for 6.8 per cent and 2.8 per cent of total births respectively.

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Ireland	37,708	58.8	37,581	3.4	1.8	5.2	3.2	36,901
UK	1,048	1.6	1,045	2.9	2.9	5.7	3.8	1,026
EU15 (excluding Ireland & UK)	676	1.1	674	3.0	-	3.0	3.0	660
EU15 to EU28	4,385	6.8	4,374	2.5	1.4	3.9	2.7	4,320
Rest of Europe	416	0.6	415	2.4	2.4	4.8	2.4	410
Africa	969	1.5	964	5.2	4.1	9.3	7.2	950
Asia	1,763	2.8	1,757	3.4	1.7	5.1	3.4	1,737
America	408	0.6	407	2.5	2.5	4.9	-	401
Australia	70	0.1	70	-	-	-	-	69
New Zealand and Other Oceania	*	^	*	23.3	-	23.3	23.3	*
Other Nationality	~	^	~	-	-	-	-	~
Not Stated/ Not Applicable	16,609	25.9	16,539	4.2	2.2	6.4	4.9	16,352
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Ireland	36,099	58.5	35,977	3.4	1.7	5.1	3.1	36,099
UK	1,005	1.6	1,002	3.0	2.0	5.0	3.0	1,005
EU15 (excluding Ireland & UK)	645	1.0	643	3.1	-	3.1	3.1	645
EU15 to EU28	4,255	6.9	4,244	2.6	1.2	3.8	2.6	4,255
Rest of Europe	404	0.7	403	2.5	2.5	5.0	2.5	404
Africa	930	1.5	925	5.4	3.2	8.6	6.5	930
Asia	1,712	2.8	1,706	3.5	1.8	5.3	3.5	1,712
America	*	^	*	2.5	2.5	5.1	-	*
Australia	*	^	*	-	-	-	-	*
New Zealand and Other Oceania	*	^	*	23.3	-	23.3	23.3	*
Other Nationality	~	^	~	-	-	-	-	~
Not Stated/ Not Applicable	16,098	26.1	16,035	3.9	2.0	5.9	4.4	16,098
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Ireland	1,609	65.9	1,604	3.1	5.0	8.1	4.4	802
UK	43	1.8	43	-	23.3	23.3	23.3	21
EU15 (excluding Ireland & UK)	31	1.3	31	-	-	-	-	15
EU15 to EU28	130	5.3	130	-	7.7	7.7	7.7	65
Rest of Europe	12	0.5	12	-	-	-	-	6
Africa	39	1.6	39	-	25.6	25.6	25.6	20
Asia	51	2.1	51	-	-	-	-	25
America	*	^	*	-	-	-	-	*
Australia	~	^	~	-	-	-	-	~
New Zealand and Other Oceania	0	0.0	0	-	-	-	-	0
Other Nationality	0	0.0	0	-	-	-	-	0
Not Stated/ Not Applicable	511	20.9	504	13.7	9.9	23.5	21.6	254
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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 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 38.0 per cent of all maternities, with 9.1 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	24,454	38.2	24,364	3.7	1.7	5.4	3.6	23,891
1	22,369	34.9	22,300	3.1	1.9	5.0	3.4	21,980
2	11,476	17.9	11,439	3.2	2.2	5.4	3.1	11,300
3	3,825	6.0	3,809	4.2	3.4	7.6	4.7	3,753
4	1,210	1.9	1,202	6.6	0.8	7.4	6.6	1,191
5	*	^	*	2.3	2.3	4.7	2.3	*
6	*	^	*	5.9	-	5.9	5.9	*
More than 6	*	^	*	30.3	-	30.3	24.4	*
Not stated	~	^	~	-	-	-	-	~
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
0	23,334	37.8	23,250	3.6	1.4	5.0	3.3	23,334
1	21,590	35.0	21,526	3.0	1.8	4.7	3.2	21,590
2	11,127	18.0	11,090	3.3	2.2	5.5	3.2	11,127
3	3,683	6.0	3,668	4.1	3.0	7.1	4.1	3,683
4	1,171	1.9	1,163	6.8	0.9	7.7	6.8	1,171
5	*	^	*	2.3	2.4	4.7	2.4	*
6	*	^	*	6.2	-	6.2	6.2	*
More than 6	*	^	*	31.1	-	31.1	25.0	*
Not stated	~	^	~	-	-	-	-	~
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
0	1,120	45.9	1,114	5.4	7.2	12.5	9.8	557
1	779	31.9	774	6.4	6.5	12.8	9.0	390
2	349	14.3	349	-	2.9	2.9	-	173
3	142	5.8	141	7.0	14.2	21.1	21.1	70
4	39	1.6	39	-	-	-	-	20
5	~	^	~	-	-	-	-	~
6	7	0.3	7	-	-	-	-	~
More than 6	~	^	~	-	-	-	-	~
Not stated	0	0.0	0	-	-	-	-	0
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

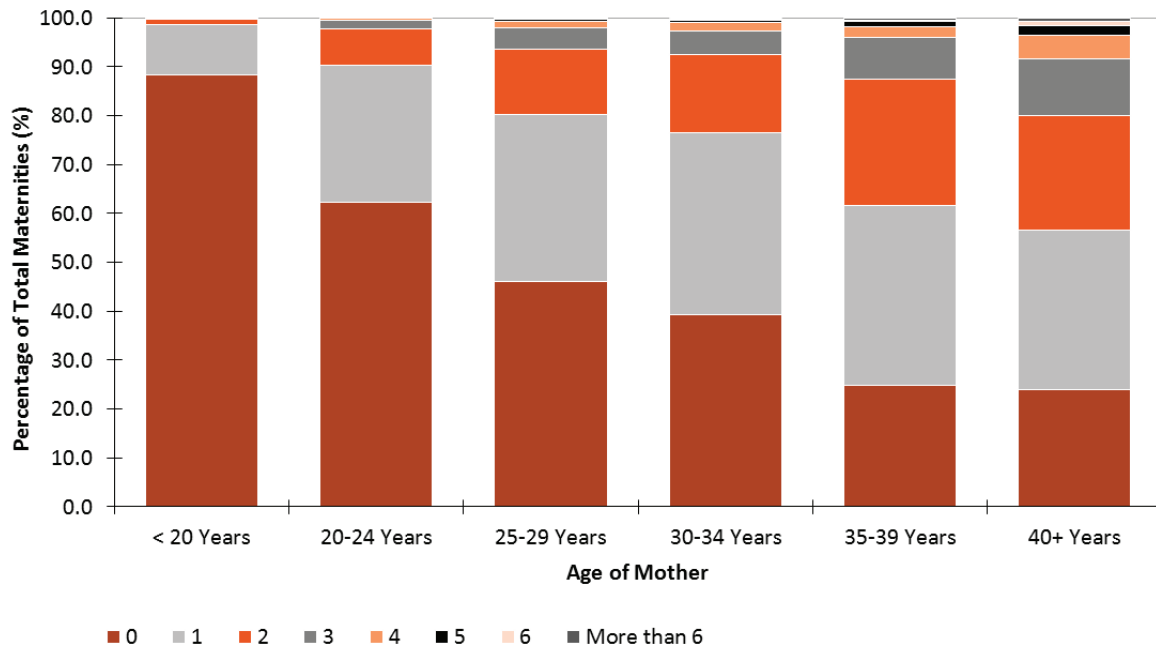
Notes:

- ~ 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, 88.3 per cent gave birth for the first time (see Figure 3.5).
- Almost 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

In 2016, 98.5 per cent of multiparous women giving birth recorded no previous stillbirths while 1.5 per cent recorded one or more previous stillbirths (see Table 3.8).

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	39,061	98.5	38,932	3.3	2.1	5.4	3.5	38,406
1	527	1.3	520	13.3	5.8	19.0	11.5	519
2	41	0.1	40	24.4	-	24.4	24.4	41
3 and over	13	0.0	13	-	-	-	-	13
Total	39,642	100	39,505	3.5	2.1	5.5	3.7	38,979
Singleton Births								
0	37,755	98.5	37,632	3.3	1.9	5.2	3.4	37,755
1	511	1.3	504	13.7	6.0	19.6	11.8	511
2	41	0.1	40	24.4	-	24.4	24.4	41
3 and over	13	0.0	13	-	-	-	-	13
Total	38,320	100	38,189	3.4	2.0	5.4	3.5	38,320
Multiple Births								
0	1,306	98.8	1,300	4.6	6.2	10.7	7.7	651
1	16	1.2	16	-	-	-	-	8
2	0	0.0	0	-	-	-	-	0
3 and over	0	0.0	0	-	-	-	-	0
Total	1,322	100	1,316	4.5	6.1	10.6	7.6	659

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.

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 1.1 per cent of all multiparous mothers.
- Over 25 per cent recorded an interval of between two and three years since the last birth.
- 16.7 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	440	1.1	436	9.1	6.9	15.9	13.7	428
>1 year to 2 years	8,834	22.3	8,793	4.6	2.5	7.1	4.7	8,696
>2 years to 3 years	10,219	25.8	10,187	3.1	1.7	4.8	2.7	10,044
>3 years to 4 years	6,409	16.2	6,393	2.5	1.7	4.2	2.5	6,300
>4 years to 5 years	4,140	10.4	4,132	1.9	1.9	3.9	2.7	4,063
>5 years to 6 years	2,774	7.0	2,766	2.9	1.4	4.3	4.0	2,733
More than 6 years	6,629	16.7	6,604	3.8	2.6	6.3	4.4	6,525
Not Stated	197	0.5	194	15.2	5.2	20.3	15.3	190
Total	39,642	100	39,505	3.5	2.1	5.5	3.7	38,979
Singleton Births								
1 year or less	416	1.1	412	9.6	7.3	16.8	14.5	416
>1 year to 2 years	8,555	22.3	8,515	4.7	1.9	6.5	4.3	8,555
>2 years to 3 years	9,870	25.8	9,841	2.9	1.7	4.7	2.6	9,870
>3 years to 4 years	6,188	16.1	6,172	2.6	1.8	4.4	2.6	6,188
>4 years to 5 years	3,991	10.4	3,984	1.8	2.0	3.8	2.5	3,991
>5 years to 6 years	2,692	7.0	2,684	3.0	1.1	4.1	3.7	2,692
More than 6 years	6,425	16.8	6,400	3.9	2.5	6.4	4.4	6,425
Not Stated	183	0.5	181	10.9	5.5	16.4	11.0	183
Total	38,320	100	38,189	3.4	2.0	5.4	3.5	38,320
Multiple Births								
1 year or less	24	1.8	24	-	-	-	-	12
>1 year to 2 years	279	21.1	278	3.6	21.6	25.1	14.5	141
>2 years to 3 years	349	26.4	346	8.6	-	8.6	5.7	174
>3 years to 4 years	221	16.7	221	-	-	-	-	112
>4 years to 5 years	149	11.3	148	6.7	-	6.7	6.7	72
>5 years to 6 years	82	6.2	82	-	12.2	12.2	12.2	41
More than 6 years	204	15.4	204	-	4.9	4.9	4.9	100
Not Stated	14	1.1	13	71.4	-	71.4	71.4	7
Total	1,322	100	1,316	4.5	6.1	10.6	7.6	659

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.²⁵

- The average birthweight for live births was 3,485.2 grams for singletons, 2,415.3 grams for multiples, and 3,444.5 grams for total live births.
- The average birthweight for live births was 3,502.1 grams for males compared to 3,383.8 grams for females.

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

- The percentage of total live births classified as low birthweight was 5.7 per cent (3.9 per cent of singletons and 49.6 per cent of multiples).
- There was considerable variation in very low birthweight rates between singleton and multiple live births with 0.6 per cent of singleton live births weighing less than 1,500 grams compared to 8.1 per cent for multiple births (see Figure 3.6).
- 92.2 per cent of total live births were in the healthy birthweight category weighing between 2,500 and 4,499 grams (see Figure 3.7).
- A smaller proportion of male live births were low birthweight (5.2 per cent) compared with female live births (6.1 per cent).
- The percentage of total live births weighing 4,500 grams and over was 2.2 per cent (2.9 per cent of males compared to 1.4 per cent of females) (see Figure 3.8).

²⁵ 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

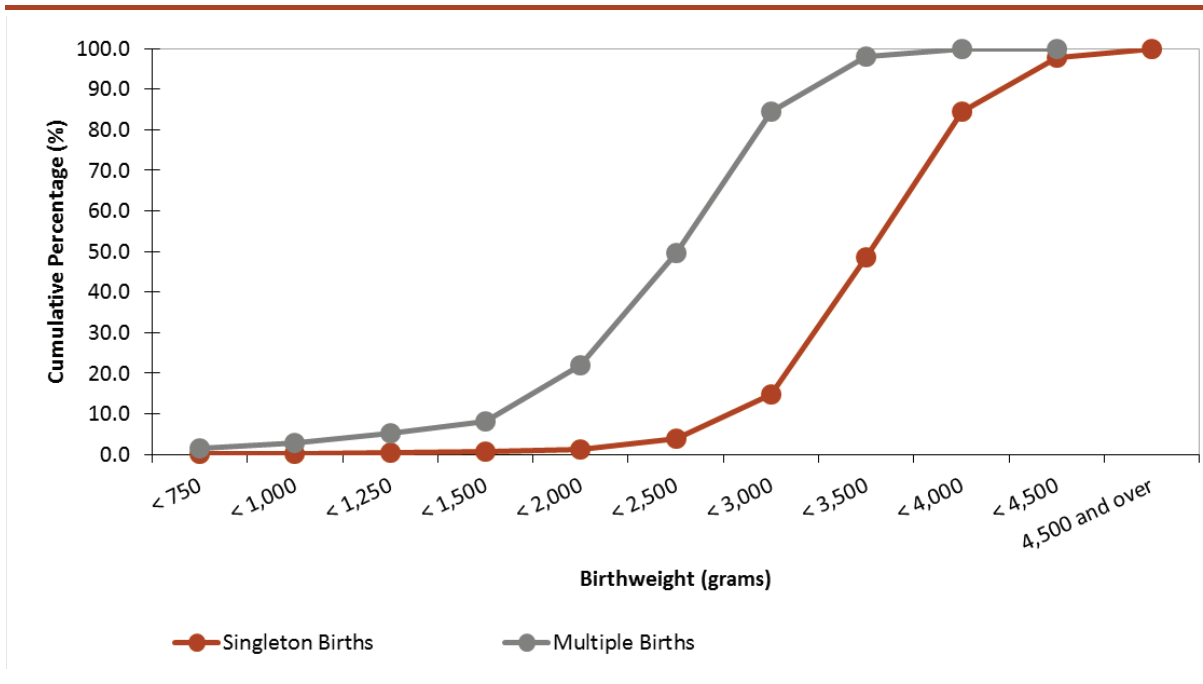
Birthweight (grams): Total Births, Live Births, Mortality Rates, and Maternities

	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	144	0.2	106	263.9	301.9	486.1	430.8	126
750-999	148	0.2	129	128.4	93.0	209.5	176.1	129
1000-1249	166	0.3	152	84.3	46.1	126.5	64.5	135
1250-1499	200	0.3	184	80.0	38.0	115.0	68.4	158
1500-1999	803	1.3	772	38.6	22.0	59.8	30.8	634
2000-2499	2,307	3.6	2,271	15.6	7.9	23.4	13.1	1,948
2500-2999	7,634	11.9	7,599	4.6	1.8	6.4	4.5	7,225
3000-3499	21,026	32.8	21,010	0.8	0.5	1.2	0.8	20,874
3500-3999	22,066	34.4	22,048	0.8	0.2	1.0	0.9	22,039
4000-4499	8,225	12.8	8,221	0.5	0.2	0.7	0.6	8,225
4500 and Over	1,378	2.1	1,378	-	0.7	0.7	-	1,378
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
500-749	108	0.2	72	333.3	319.4	546.3	478.7	108
750-999	*	^	*	150.4	93.8	230.1	194.4	*
1000-1249	105	0.2	93	114.3	64.5	171.4	93.8	105
1250-1499	129	0.2	114	116.3	52.6	162.8	107.4	129
1500-1999	466	0.8	437	62.2	38.9	98.7	51.9	466
2000-2499	1,630	2.6	1,596	20.9	10.0	30.7	16.8	1,630
2500-2999	6,790	11.0	6,755	5.2	2.1	7.2	5.0	6,790
3000-3499	20,695	33.6	20,680	0.7	0.5	1.2	0.8	20,695
3500-3999	22,017	35.7	21,999	0.8	0.2	1.0	0.9	22,017
4000-4499	*	^	*	0.5	0.2	0.7	0.6	*
4500 and Over	1,378	2.2	1,378	-	0.7	0.7	-	1,378
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
500-749	36	1.5	34	55.6	264.7	305.6	305.6	18
750-999	*	^	*	57.1	90.9	142.9	117.6	*
1000-1249	61	2.5	59	32.8	16.9	49.2	16.9	30
1250-1499	71	2.9	70	14.1	14.3	28.2	-	29
1500-1999	337	13.8	335	5.9	-	5.9	3.0	168
2000-2499	677	27.7	675	3.0	3.0	5.9	4.4	318
2500-2999	844	34.6	844	-	-	-	-	435
3000-3499	331	13.6	330	3.0	-	3.0	3.0	179
3500-3999	49	2.0	49	-	-	-	-	22
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	0	0.0	0	-	-	-	-	0
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

Notes:

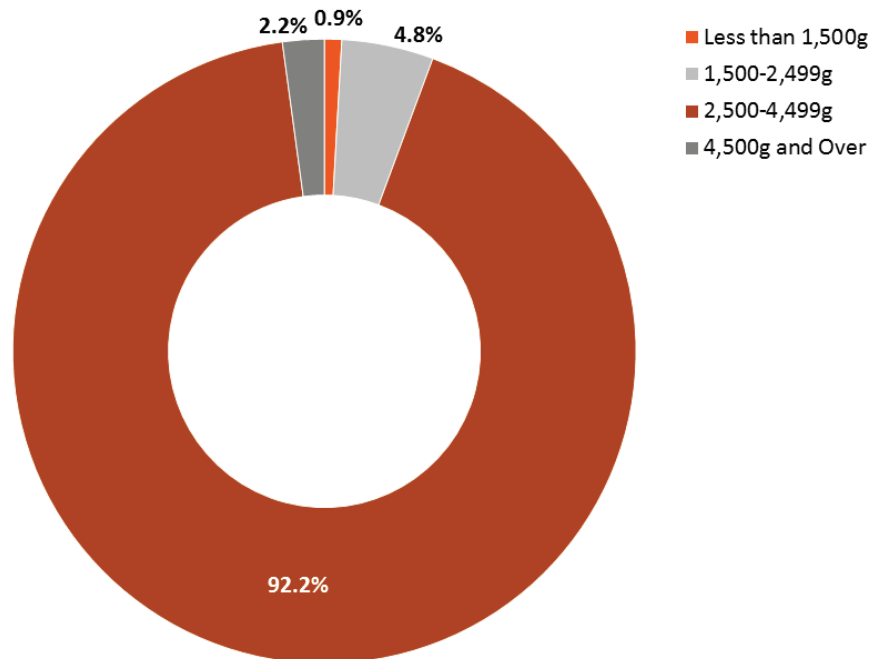
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated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

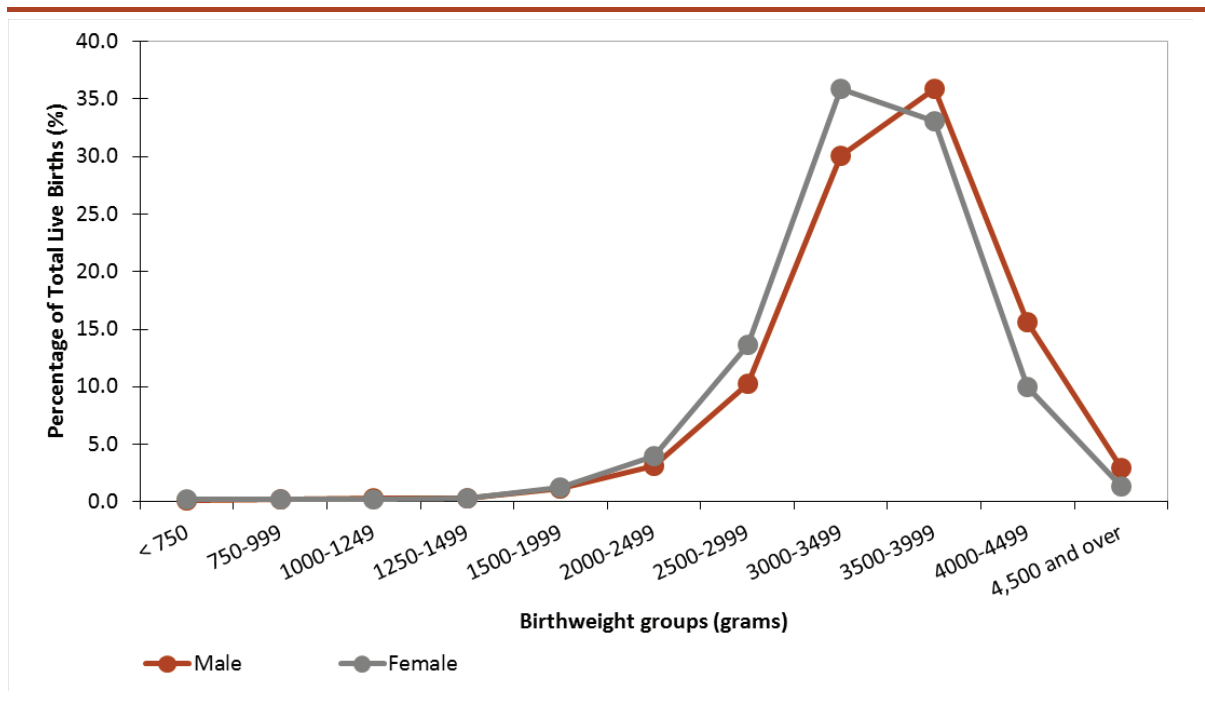
FIGURE 3.7
Percentage of Births by Birthweight Groups, Total Live Births



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 39.2 weeks. Live births reported an average gestational age of 39.1 weeks and stillbirths reported an average gestational age of 33.3 weeks. The average gestational age for singleton live births was 39.2 weeks compared with 35.5 weeks for live twin births and 31.9 weeks for higher-order multiple live births.

Table 3.11 presents data on gestational age.

- Over 91 per cent of all babies were born at term (37 to 41 weeks).
- Preterm birth (born before 37 weeks) occurred in 6.5 per cent of live births (4.6 per cent for singleton births and 54.9 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	*	^	*	170.5	219.6	352.7	307.1	*
28-31	457	0.7	424	72.2	28.3	98.5	78.3	374
32-36	3,612	5.6	3,544	18.8	8.7	27.4	15.7	3,046
37-41	58,596	91.4	58,515	1.4	0.6	1.9	1.2	58,048
42 and Over	1,171	1.8	1,170	0.9	0.9	1.7	0.9	1,171
Not Stated	~	^	~	-	-	-	-	~
Total	64,097	100.0	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Less than 28	*	^	*	221.6	225.2	396.9	346.4	*
28-31	303	0.5	273	99.0	44.0	138.6	112.2	303
32-36	2,487	4.0	2,425	24.9	11.5	36.2	20.0	2,487
37-41	57,497	93.3	57,418	1.4	0.6	1.9	1.2	57,497
42 and Over	1,171	1.9	1,170	0.9	0.9	1.7	0.9	1,171
Not Stated	~	^	~	-	-	-	-	~
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Less than 28	64	2.6	63	15.6	206.3	218.8	193.5	35
28-31	154	6.3	151	19.5	-	19.5	13.1	71
32-36	1,125	46.1	1,119	5.3	2.7	8.0	6.2	559
37-41	1,099	45.0	1,097	1.8	-	1.8	-	551
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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.

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 number of births occurring in February (7.8 per cent) and the highest occurring in September (8.9 per cent).
- September recorded the highest number of singleton births (8.9 per cent), while June recorded the highest number of multiple births (10.2 per cent) (see Figure 3.9).

TABLE 3.12

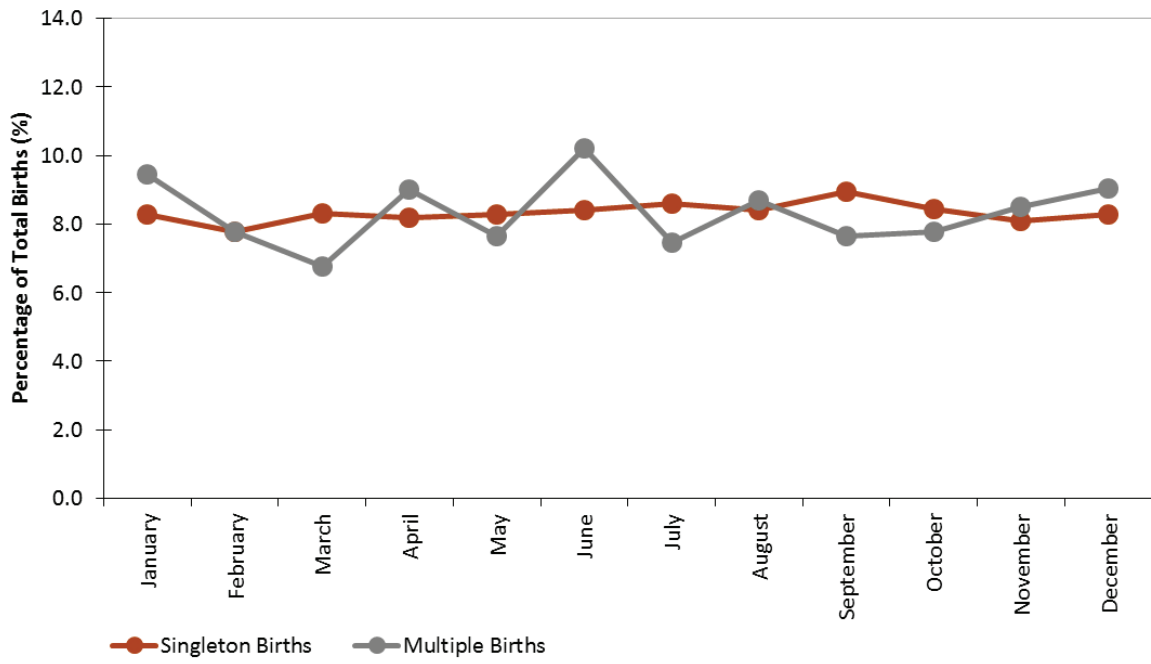
Month of Birth: Total Births, Live Births, Mortality Rates, and Maternities

	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	5,336	8.3	5,320	3.0	1.5	4.5	2.8	5,221
February	4,978	7.8	4,957	4.2	1.2	5.4	3.6	4,884
March	5,300	8.3	5,284	3.0	0.6	3.6	2.8	5,217
April	5,272	8.2	5,245	5.1	1.3	6.4	4.9	5,160
May	5,285	8.2	5,265	3.8	3.2	7.0	4.0	5,191
June	5,436	8.5	5,415	3.9	2.0	5.9	4.2	5,312
July	5,476	8.5	5,454	4.0	1.8	5.8	3.5	5,385
August	5,390	8.4	5,372	3.3	1.3	4.6	3.5	5,285
September	5,703	8.9	5,685	3.2	3.2	6.3	4.2	5,608
October	5,402	8.4	5,384	3.3	2.6	5.9	3.5	5,305
November	5,194	8.1	5,180	2.7	1.5	4.2	2.3	5,089
December	5,325	8.3	5,309	3.0	2.8	5.8	4.3	5,214
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
January	5,105	8.3	5,090	2.9	1.4	4.3	2.6	5,105
February	4,788	7.8	4,768	4.2	1.0	5.2	3.3	4,788
March	5,135	8.3	5,120	2.9	0.6	3.5	2.9	5,135
April	5,052	8.2	5,029	4.6	1.0	5.5	4.6	5,052
May	5,098	8.3	5,078	3.9	3.0	6.9	3.9	5,098
June	5,187	8.4	5,166	4.0	2.1	6.2	4.4	5,187
July	5,294	8.6	5,273	4.0	1.7	5.7	3.2	5,294
August	5,178	8.4	5,160	3.5	1.0	4.4	3.3	5,178
September	5,516	8.9	5,498	3.3	2.7	6.0	4.0	5,516
October	5,212	8.5	5,194	3.5	2.5	5.9	3.5	5,212
November	4,986	8.1	4,972	2.8	1.4	4.2	2.4	4,986
December	5,104	8.3	5,092	2.4	2.6	4.9	3.3	5,104
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
January	231	9.5	230	4.3	4.3	8.7	8.7	116
February	190	7.8	189	5.3	5.3	10.5	10.5	96
March	165	6.8	164	6.1	-	6.1	-	82
April	220	9.0	216	18.2	9.3	27.3	13.8	108
May	187	7.7	187	-	10.7	10.7	5.4	93
June	249	10.2	249	-	-	-	-	125
July	182	7.5	181	5.5	5.5	11.0	11.0	91
August	212	8.7	212	-	9.4	9.4	9.4	107
September	187	7.7	187	-	16.0	16.0	10.8	92
October	190	7.8	190	-	5.3	5.3	5.3	93
November	208	8.5	208	-	4.8	4.8	-	103
December	221	9.0	217	18.1	9.2	27.1	27.1	110
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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 81.9 per cent of total maternities.
- Hospital/Obstetrician care was more common for maternities delivering multiple births (32.2 per cent) than those delivering singleton births (17.6 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	11,628	18.1	11,578	4.3	3.1	7.4	4.2	11,238
General Practitioner only	84	0.1	83	11.9	24.1	35.7	24.1	81
Hospital & G.P. combined	52,307	81.6	52,134	3.3	1.6	4.9	3.4	51,476
None	69	0.1	66	43.5	15.2	58.0	58.0	68
Not Stated	9	0.0	9	-	-	-	-	8
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Hospital/Obstetrician	10,846	17.6	10,801	4.1	2.8	6.9	4.0	10,846
General Practitioner only	*	^	*	13.0	13.2	26.0	13.2	*
Hospital & G.P. combined	50,658	82.2	50,492	3.3	1.5	4.8	3.3	50,658
None	*	^	*	44.8	15.6	59.7	59.7	*
Not Stated	*	^	*	-	-	-	-	*
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Hospital/Obstetrician	782	32.0	777	6.4	7.7	14.1	7.7	392
General Practitioner only	*	^	*	-	142.9	142.9	142.9	~
Hospital & G.P. combined	1,649	67.5	1,642	4.2	5.5	9.7	8.5	818
None	~	^	~	-	-	-	-	~
Not Stated	~	^	~	-	-	-	-	~
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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

DURATION OF PREGNANCY AT FIRST ANTENATAL VISIT

Table 4.2 presents the time of first antenatal visit.

- Almost 70 per cent of total maternities recorded their first antenatal visit within the first 12 weeks of pregnancy.
- Maternities recording a first antenatal visit at 20 weeks and over accounted for 4.7 per cent of total maternities.

TABLE 4.2

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
0-12	44,615	69.6	44,467	3.3	1.7	5.0	3.3	43,740
13-19	16,342	25.5	16,287	3.4	1.6	5.0	3.2	16,078
20 and over	3,021	4.7	3,002	6.3	6.7	12.9	8.6	2,938
Not Stated	119	0.2	114	42.0	26.3	67.2	59.3	115
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
0-12	42,866	69.5	42,725	3.3	1.5	4.8	3.2	42,866
13-19	15,820	25.7	15,768	3.3	1.5	4.8	3.0	15,820
20 and over	*	^	2,841	5.9	5.6	11.5	7.7	*
Not Stated	*	^	106	45.0	18.9	63.1	63.1	*
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
0-12	1,749	71.6	1,742	4.0	5.2	9.1	6.9	874
13-19	522	21.4	519	5.7	3.9	9.6	9.6	258
20 and over	*	^	161	12.3	24.8	36.8	24.8	*
Not Stated	*	^	8	-	125.0	125.0	-	~
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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. Although 81.6 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 34.8 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

- 99 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	63,262	99.0	63,043	3.5	1.7	5.2	3.4	62,063
Not Booked	*	^	*	12.0	24.4	36.1	27.3	*
Not Stated	~	^	~	-	-	-	-	~
Total	63,929	100	63,702	3.6	1.9	5.5	3.7	62,703
Singleton Births								
Booked	60,873	99.0	60,666	3.4	1.6	5.0	3.3	60,873
Not Booked	*	^	*	13.1	18.2	31.0	24.7	*
Not Stated	~	^	~	-	-	-	-	~
Total	61,487	100	61,272	3.5	1.8	5.3	3.5	61,487
Multiple Births								
Booked	2,389	97.8	2,377	5.0	4.6	9.6	7.6	1,190
Not Booked	53	2.2	53	-	94.3	94.3	58.8	26
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

- 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 168, 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 (0.7 days) for singleton births and 2.7 days for multiple births.

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

- Just under 90 per cent of singleton births and 74.2 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	56,835	88.9	56,640	3.4	1.7	5.1	3.3	55,930
2 Days	3,807	6.0	3,793	3.7	1.8	5.5	3.7	3,739
3-5 Days	1,968	3.1	1,958	5.1	4.6	9.7	5.6	1,869
6-8 Days	508	0.8	506	3.9	7.9	11.8	9.9	454
9-11 Days	230	0.4	230	-	13.0	13.0	13.0	207
12-14 Days	123	0.2	121	16.3	-	16.3	16.3	113
More than 2 Weeks	405	0.6	403	4.9	12.4	17.3	17.3	339
Not Stated	53	0.1	51	37.7	19.6	56.6	56.6	52
Total	63,929	100	63,702	3.6	1.9	5.5	3.7	62,703
Singleton Births								
0-1 Days	55,023	89.5	54,836	3.4	1.5	4.9	3.2	55,023
2 Days	3,676	6.0	3,662	3.8	1.9	5.7	3.8	3,676
3-5 Days	1,772	2.9	1,764	4.5	4.5	9.0	5.1	1,772
6-8 Days	404	0.7	402	5.0	7.5	12.4	9.9	404
9-11 Days	183	0.3	183	-	10.9	10.9	10.9	183
12-14 Days	*	^	*	19.4	-	19.4	19.4	*
More than 2 Weeks	276	0.4	276	-	18.1	18.1	18.1	276
Not Stated	*	^	*	40.0	20.8	60.0	60.0	*
Total	61,487	100	61,272	3.5	1.8	5.3	3.5	61,487
Multiple Births								
0-1 Days	1,812	74.2	1,804	4.4	7.2	11.6	8.3	907
2 Days	131	5.4	131	-	-	-	-	63
3-5 Days	196	8.0	194	10.2	5.2	15.3	10.3	97
6-8 Days	104	4.3	104	-	9.6	9.6	9.6	50
9-11 Days	47	1.9	47	-	21.3	21.3	21.3	24
12-14 Days	*	^	*	-	-	-	-	*
More than 2 Weeks	129	5.3	127	15.5	-	15.5	15.5	63
Not Stated	~	^	~	-	-	-	-	~
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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 168, 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 4.3 days respectively.

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

- 53 per cent of maternities delivering singleton births remained in hospital for up to 2 days following delivery, compared to 11.1 per cent of maternities delivering multiple births.
- For total maternities 44.6 per cent of singleton births and 75.0 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 (2.4 per cent of singleton births and 13.9 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	13,954	21.8	13,846	7.7	2.2	10.0	6.8	13,929
2 Days	18,902	29.6	18,856	2.4	1.7	4.1	2.7	18,791
3-5 Days	29,228	45.7	29,164	2.2	1.9	4.0	2.7	28,311
6-8 Days	1,546	2.4	1,540	3.9	4.5	8.4	5.2	1,399
9-11 Days	209	0.3	207	9.6	-	9.6	9.6	191
12-14 Days	*	^	*	-	-	-	-	*
More than 2 Weeks	44	0.1	43	22.7	-	22.7	22.7	39
Not Stated	~	^	~	-	-	-	-	~
Total	63,929	100	63,702	3.6	1.9	5.5	3.7	62,703
Singleton Births								
0-1 Days	13,902	22.6	13,794	7.8	2.1	9.9	6.6	13,902
2 Days	18,683	30.4	18,639	2.4	1.7	4.0	2.6	18,683
3-5 Days	27,399	44.6	27,343	2.0	1.6	3.6	2.3	27,399
6-8 Days	1,258	2.0	1,254	3.2	4.0	7.2	4.8	1,258
9-11 Days	172	0.3	170	11.6	-	11.6	11.6	172
12-14 Days	*	^	*	-	-	-	-	*
More than 2 Weeks	*	^	*	29.4	-	29.4	29.4	*
Not Stated	~	^	~	-	-	-	-	~
Total	61,487	100	61,272	3.5	1.8	5.3	3.5	61,487
Multiple Births								
0-1 Days	52	2.1	52	-	38.5	38.5	38.5	27
2 Days	219	9.0	217	9.1	4.6	13.7	9.2	108
3-5 Days	1,829	74.9	1,821	4.4	6.0	10.4	8.2	912
6-8 Days	288	11.8	286	6.9	7.0	13.9	7.0	141
9-11 Days	37	1.5	37	-	-	-	-	19
12-14 Days	*	^	*	-	-	-	-	~
More than 2 Weeks	*	^	*	-	-	-	-	~
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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 168, 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 35.8 per cent of multiple spontaneous deliveries.
- For Caesarean section deliveries, mother's postnatal length of stay was greater than 6 days for 5.6 per cent of singleton deliveries compared to 17.5 per cent for multiple deliveries.

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

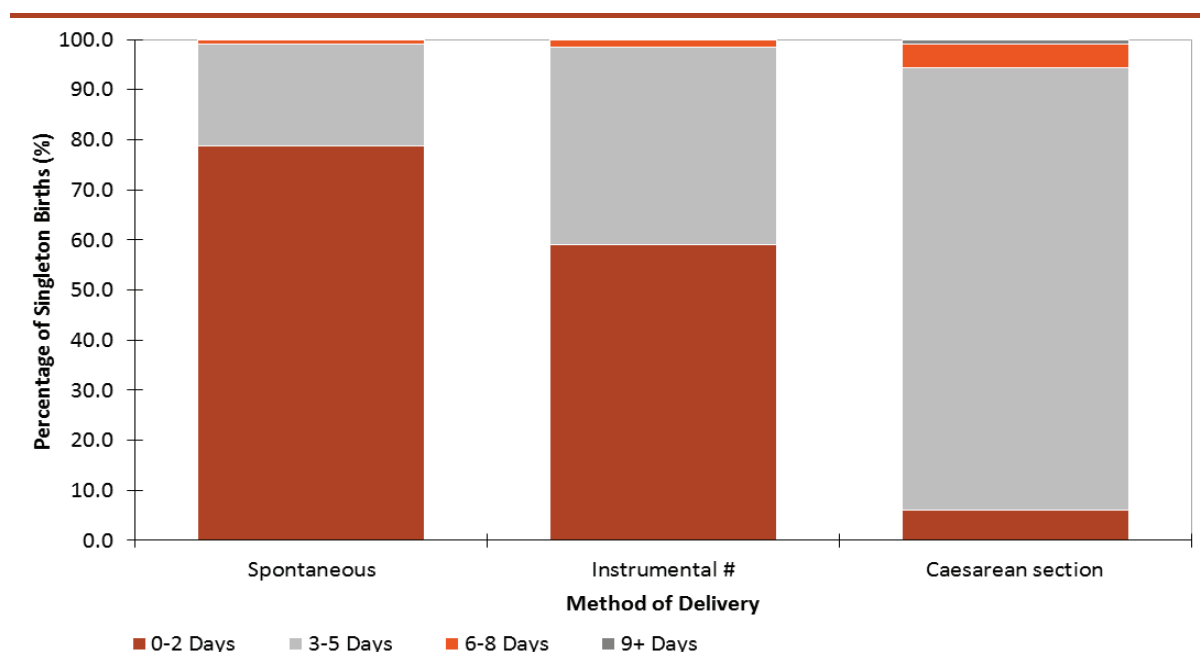
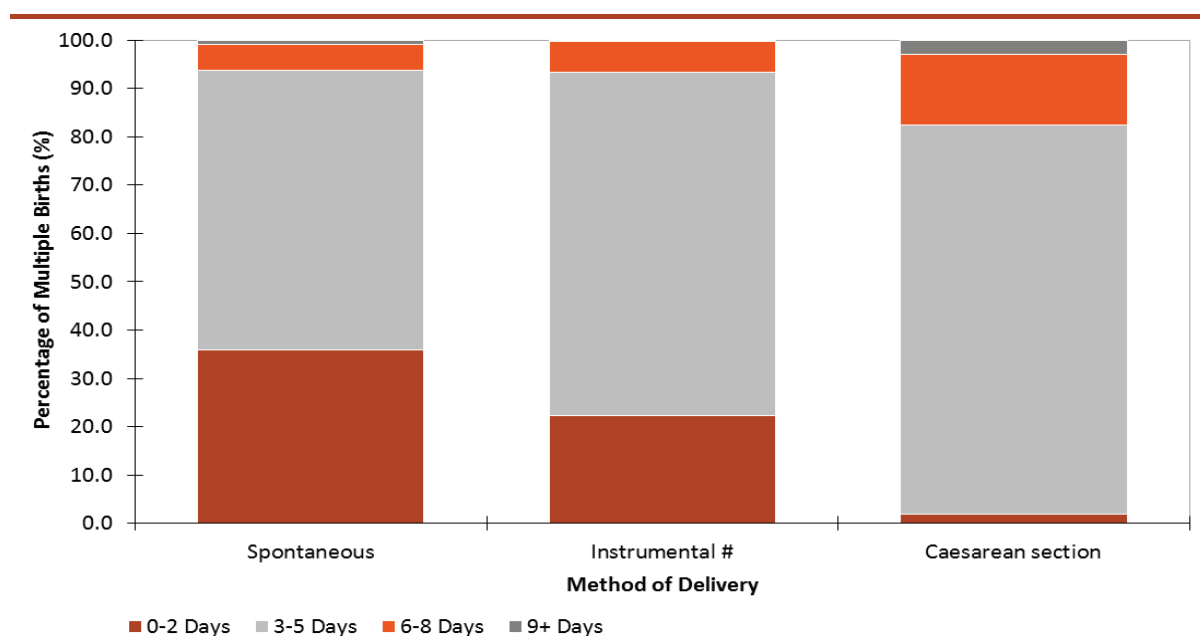


FIGURE 4.2
Mother's Postnatal Length of Stay by Method of Delivery, Multiple Births



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, 91.5 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	57,522	91.5
Not Immune	3,698	5.9
Not known	1,651	2.6
Total	62,871	100
Singleton Births		
Immune	56,390	91.5
Not Immune	3,639	5.9
Not known	1,626	2.6
Total	61,655	100
Multiple Births		
Immune	1,132	93.1
Not Immune	59	4.9
Not known	25	2.1
Total	1,216	100

Note: Percentage column is subject to rounding.

METHOD OF DELIVERY²⁷

METHOD OF DELIVERY BY BIRTHS AND PLURALITY

Table 4.7a presents data on method of delivery for total births.

- There were 20,854 live births delivered by Caesarean section, representing 32.7 per cent of total live births (31.2 per cent of live singleton births, and 68.1 per cent of live multiple births).
- 52.2 per cent of total live births delivered spontaneously (53.4 per cent of live singleton births and 20.2 per cent of live multiple births) (see Figure 4.3).
- Over 15 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 (15.3 per cent) compared with live multiple births (11.7 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

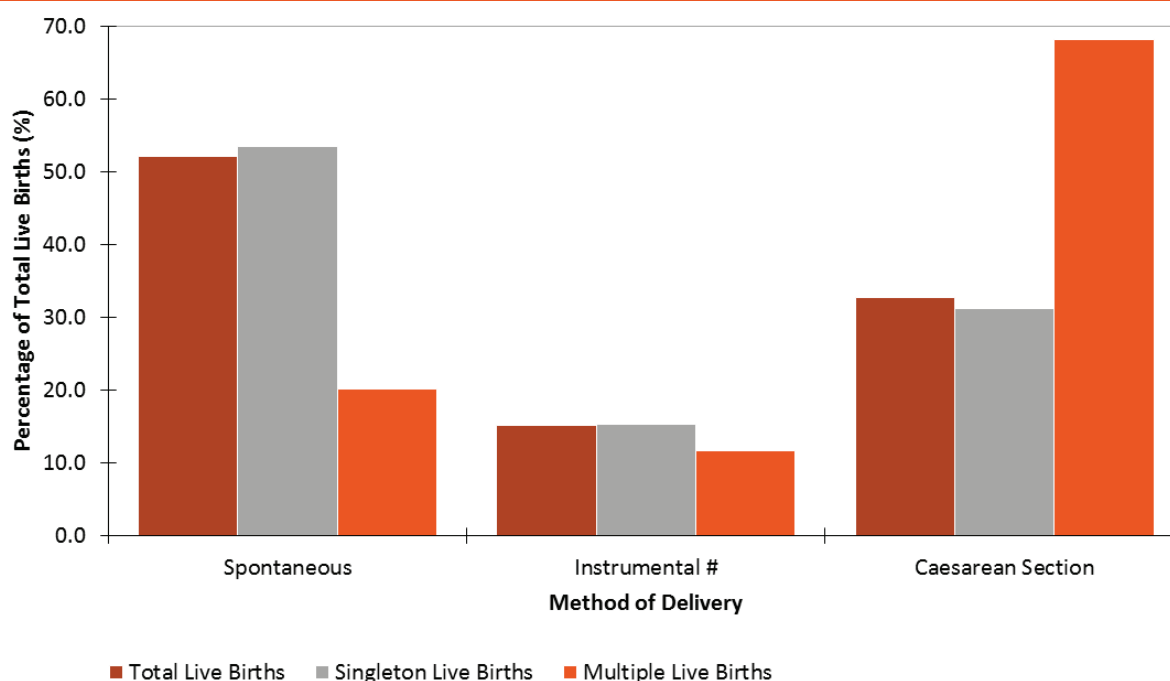
	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Spontaneous	33,470	52.2	33,309	4.8	1.7	6.5	4.4	33,272
Breech / Forceps	314	0.5	296	57.3	43.9	98.7	75.2	233
Forceps	2,289	3.6	2,286	1.3	0.9	2.2	1.7	2,268
Vacuum extraction	7,128	11.1	7,125	0.4	0.3	0.7	0.6	7,050
Caesarean section	20,896	32.6	20,854	2.0	2.4	4.5	2.7	20,048
Total	64,097	100	63,870	3.5	1.9	5.5	3.7	62,871
Singleton Births								
Spontaneous	32,978	53.5	32,819	4.8	1.5	6.3	4.2	32,978
Breech / Forceps	226	0.4	209	75.2	52.6	123.9	91.7	226
Forceps	2,238	3.6	2,235	1.3	0.9	2.2	1.8	2,238
Vacuum extraction	6,981	11.3	6,978	0.4	0.3	0.7	0.6	6,981
Caesarean section	19,232	31.2	19,199	1.7	2.3	4.0	2.4	19,232
Total	61,655	100	61,440	3.5	1.8	5.2	3.5	61,655
Multiple Births								
Spontaneous	492	20.1	490	4.1	14.3	18.3	16.3	294
Breech / Forceps	88	3.6	87	11.4	23.0	34.1	34.1	7
Forceps	51	2.1	51	-	-	-	-	30
Vacuum extraction	147	6.0	147	-	-	-	-	69
Caesarean section	1,664	68.1	1,655	5.4	4.2	9.6	6.0	816
Total	2,442	100	2,430	4.9	6.6	11.5	8.6	1,216

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 4.3

Percentage Distribution of Total Live Births by Method of Delivery



Notes: See Table 4.7a for data.

- # Instrumental delivery includes breech/forceps, forceps or vacuum extraction.

METHOD OF DELIVERY BY MATERNAL AGE

Table 4.7b presents method of delivery by maternal age.

- The percentage of babies delivered spontaneously declined with maternal age and was reported at 60.6 per cent for mothers aged less than 20 years compared to 40.9 per cent to mothers aged 40 years and over.
- Caesarean section rates ranged from 19.0 per cent for mothers aged less than 20 years to 48.9 per cent for mothers aged 40 years and over (see Figure 4.4).

TABLE 4.7b

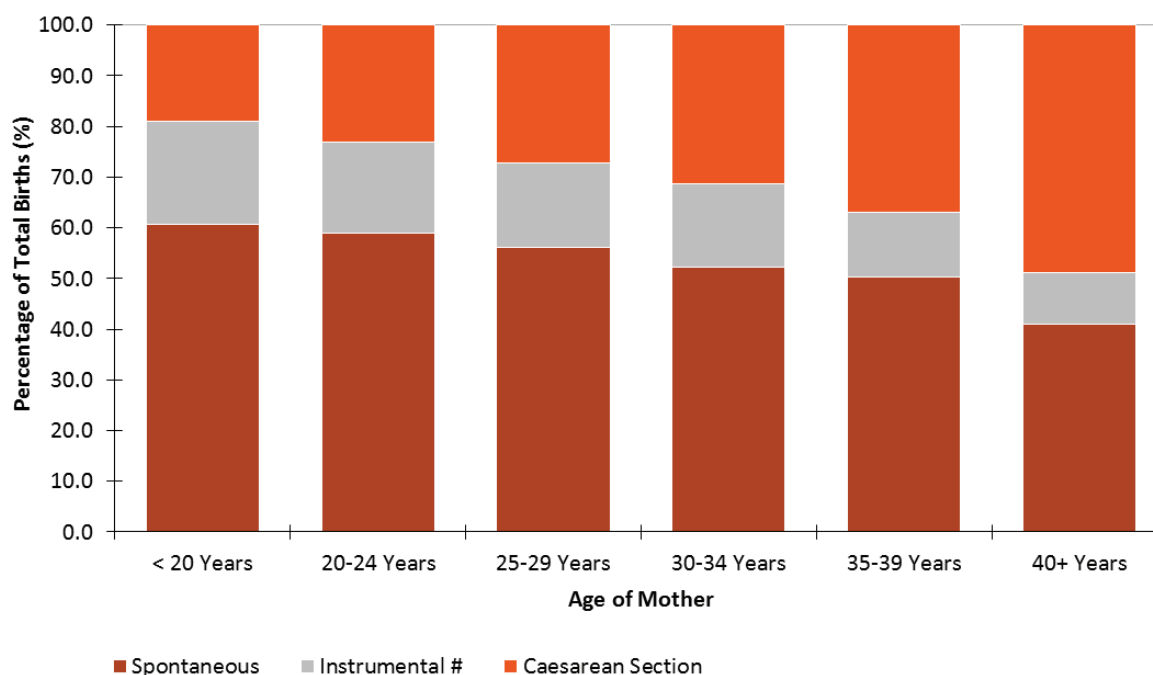
Method of Delivery by Maternal Age

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	674	3,073	6,411	12,045	9,456	1,811	33,470
	60.6	58.9	56.1	52.2	50.2	40.9	52.2
Breech/Forceps	6	27	56	128	76	21	314
	0.5	0.5	0.5	0.6	0.4	0.5	0.5
Forceps	40	219	462	919	543	106	2,289
	3.6	4.2	4.0	4.0	2.9	2.4	3.6
Vacuum extraction	181	695	1,388	2,745	1,791	327	7,127
	16.3	13.3	12.1	11.9	9.5	7.4	11.1
Caesarean section	211	1,201	3,114	7,241	6,963	2,165	20,895
	19.0	23.0	27.2	31.4	37.0	48.9	32.6
Total	1,112	5,215	11,431	23,078	18,829	4,430	64,095
	100	100	100	100	100	100	100

Notes: Percentage columns are subject to rounding.
There were 2 births to mothers with unknown maternal age; these were excluded from this table.

FIGURE 4.4

Percentage of Total Births by Method of Delivery and Age of Mother



Notes: See Table 4.7b for data.
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 one quarter (27.4 per cent) of total births took place in 11 maternity units accommodating between 1,000 and 1,999 births each annually.
- Three maternity units each accommodated 8,000 or more births, accounting for 40.7 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

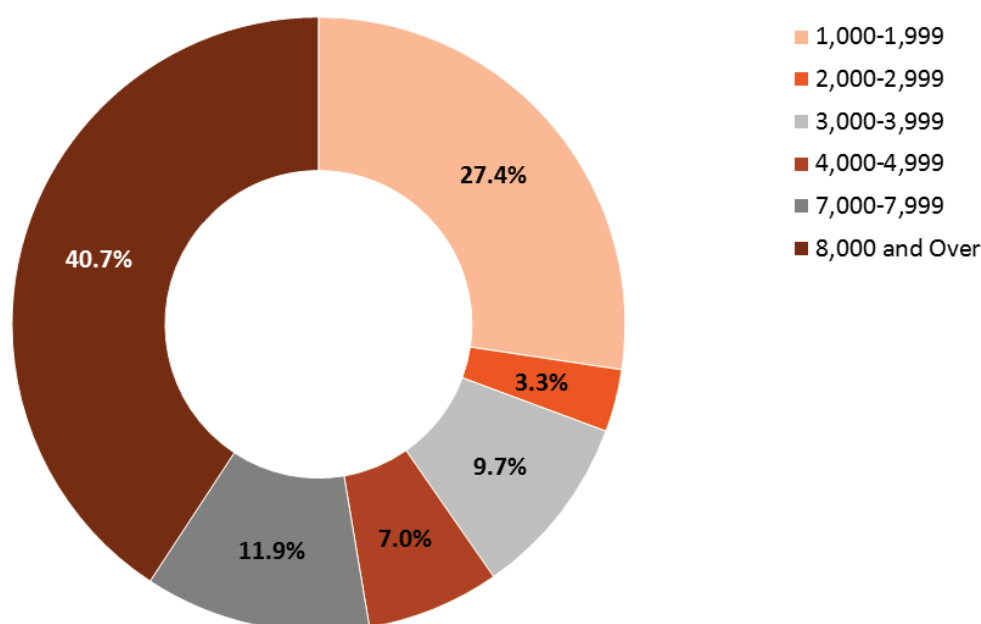
	Number of Units [#]	Total Births	Total Births %	Live Births	Stillbirths	Stillbirth Rate ^a	Early Neonatal Deaths	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a
1000-1999	11	17,492	27.4	17,420	72	4.1	25	1.4	5.5	3.7
2000-2999	1	2,106	3.3	2,099	7	3.3	~	^	4.3	3.8
3000-3999	2	6,184	9.7	6,159	25	4.0	14	2.3	6.3	4.7
4000-4999	1	4,484	7.0	4,468	16	3.6	*	^	4.9	2.9
7000-7999	1	7,617	11.9	7,597	20	2.6	12	1.6	4.2	2.2
8000 and Over	3	26,046	40.7	25,959	87	3.3	65	2.5	5.8	4.0
Total	19	63,929	100	63,702	227	3.6	124	1.9	5.5	3.7

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 168, are excluded from this table. See Appendix H for detailed analysis.
- # This table is based on the 19 maternity units reporting to NPRS. No unit delivered between 5,000 and 6,999 births. Domiciliary births, of which there were 168, 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 2016.

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.
- 3.3 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	*	^
Not Transferred	63,219	99.2
Not Stated	~	^
Total	63,702	100
Singleton Births		
Transferred	*	^
Not Transferred	60,870	99.3
Not Stated	~	^
Total	61,272	100
Multiple Births		
Transferred	81	3.3
Not Transferred	2,349	96.7
Not Stated	0	0.0
Total	2,430	100

- 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 168, 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 12.9 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 presents data relating to infant's length of stay in hospital.

- Over 52 per cent of singleton live births were discharged from hospital within 2 days, compared to just 9.1 per cent of multiple live births (see Figure 4.6).
- Over 95 per cent of singleton live births were discharged from hospital within 5 days of birth, compared to 62.3 per cent of multiple live births.
- 6.2 per cent of total live births had a length of stay of 6 or more days (5.0 per cent for singleton live births compared to 37.4 per cent for multiple births).

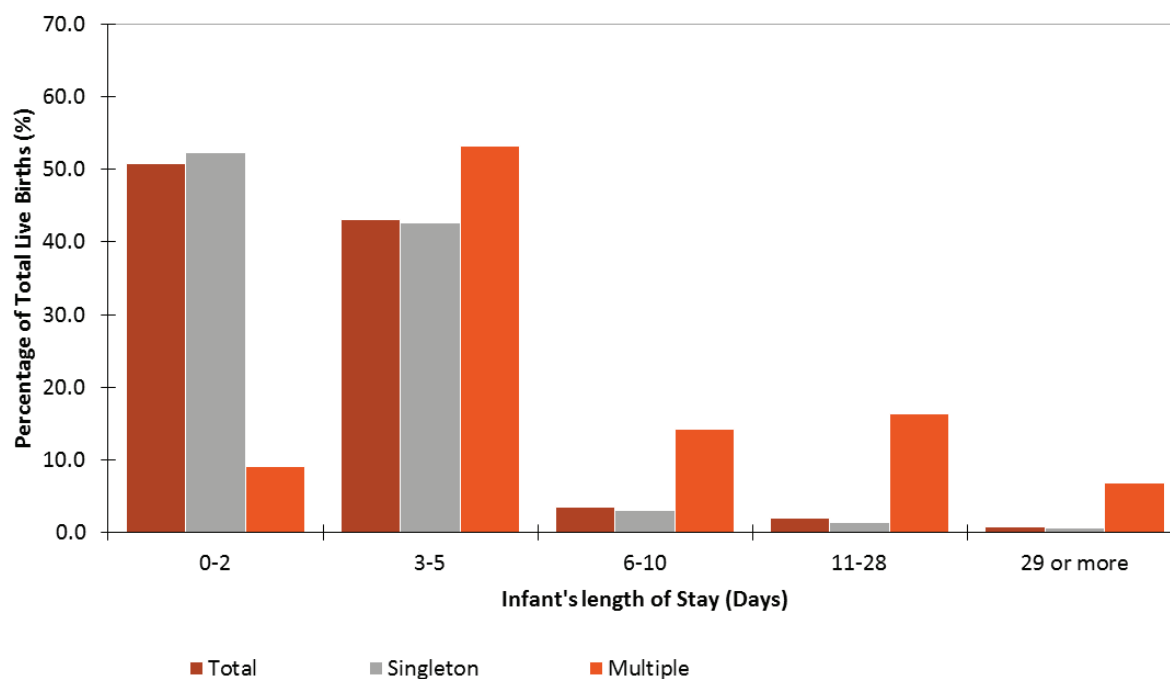
TABLE 4.10

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

	Live Births	Per Cent Live Births
Total Births		
0-2 Days	32,251	50.7
3-5 Days	27,370	43.0
6-10 Days	2,201	3.5
11-28 Days	1,227	1.9
29 Days or more	506	0.8
Not Stated	23	0.0
Total	63,578	100
Singleton Births		
0-2 Days	32,031	52.4
3-5 Days	26,087	42.7
6-10 Days	1,857	3.0
11-28 Days	832	1.4
29 Days or more	341	0.6
Not Stated	16	0.0
Total	61,164	100
Multiple Births		
0-2 Days	220	9.1
3-5 Days	1,283	53.1
6-10 Days	344	14.3
11-28 Days	395	16.4
29 Days or more	165	6.8
Not Stated	7	0.3
Total	2,414	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.

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 presents type of feeding by age of mother.²⁸

- At 49.5 per cent, a higher proportion of total births were breastfed compared to 40.1 per cent reporting artificial feeding.
- Artificial and combined feeding was more common for multiple births (41.9 per cent and 23.4 per cent respectively) compared to singleton births (40.0 per cent and 9.9 per cent respectively), while breastfeeding was more common for singleton births (50.1 per cent for singleton births compared to 34.7 per cent for multiple births).
- Breastfeeding rates increased with mothers age; Mothers in the 30 to 34 year age group reported a breastfeeding rate of 53.1 per cent, while mothers in the 35 to 39 year age group reported the highest breastfeeding rate at 54.8 per cent (see Figure 4.7).
- More than one-fifth (22.7 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

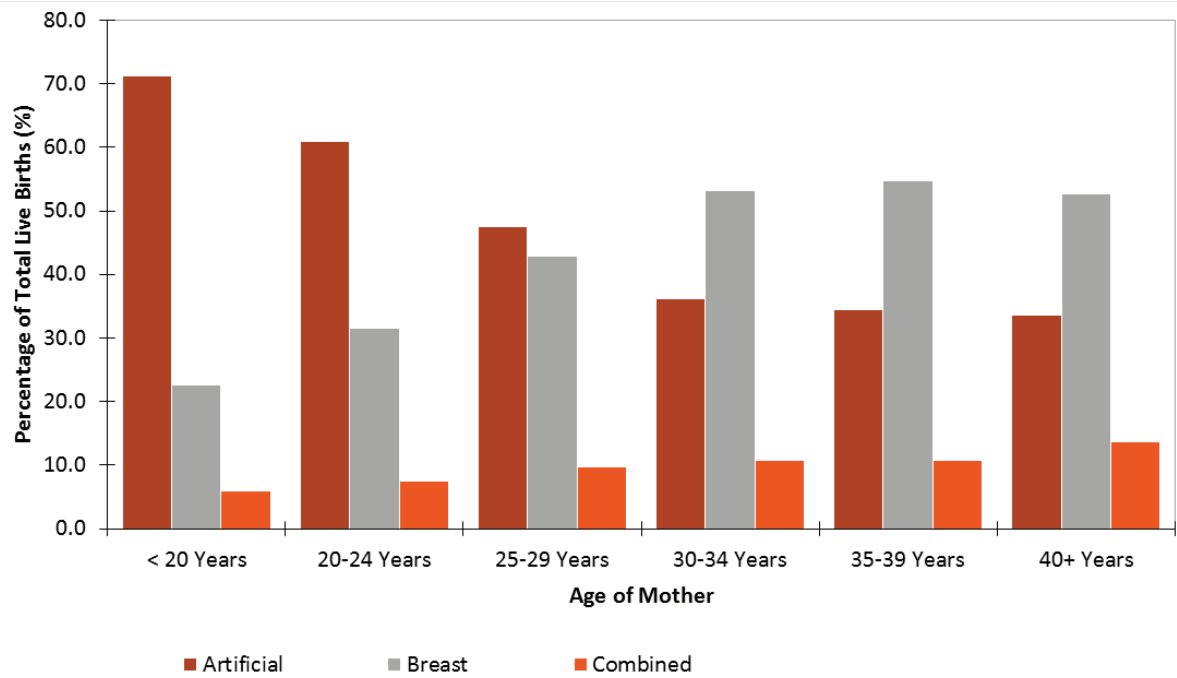
Frequency Row Per Cent Col. Per Cent	Total Births						Type of Feeding					
	Total Births			Singleton Births			Multiple Births			Multiple Births		
	Artificial	Breast	Combined	Total	Artificial	Breast	Combined	Total	Artificial	Breast	Combined	Total
Under 20 Years	786	250	66	1,102	772	*	*	1,073	14	*	~	29
	71.3	22.7	6.0	100.0	71.9	^	^	100.0	48.3	^	^	100.0
	3.1	0.8	1.0	1.7	3.1	^	^	1.7	1.4	^	^	1.2
20-24 Years	3,158	1,632	388	5,178	3,091	*	*	5,074	67	*	*	104
	61.0	31.5	7.5	100.0	60.9	^	^	100.0	64.4	^	^	100.0
	12.4	5.2	5.9	8.1	12.6	^	^	8.3	6.6	^	^	4.3
25-29 Years	5,409	4,883	1,099	11,391	5,241	4,813	1,040	11,094	168	70	59	297
	47.5	42.9	9.6	100.0	47.2	43.4	9.4	100.0	56.6	23.6	19.9	100.0
	21.2	15.5	16.6	17.9	21.3	15.7	17.1	18.1	16.6	8.4	10.5	12.3
30-34 Years	8,284	12,193	2,470	22,947	7,982	11,893	2,265	22,140	302	300	205	807
	36.1	53.1	10.8	100.0	36.1	53.7	10.2	100.0	37.4	37.2	25.4	100.0
	32.4	38.7	37.3	36.0	32.5	38.7	37.3	36.1	29.8	35.8	36.3	33.4
35-39 Years	6,458	10,266	2,004	18,728	6,112	9,950	1,818	17,880	346	316	186	848
	34.5	54.8	10.7	100.0	34.2	55.6	10.2	100.0	40.8	37.3	21.9	100.0
	25.3	32.5	30.2	29.4	24.9	32.4	30.0	29.2	34.2	37.8	33.0	35.1
40-44 Years	1,380	2,173	548	4,101	1,296	2,082	473	3,851	84	91	75	250
	33.7	53.0	13.4	100.0	33.7	54.1	12.3	100.0	33.6	36.4	30.0	100.0
	5.4	6.9	8.3	6.4	5.3	6.8	7.8	6.3	8.3	10.9	13.3	10.4
45 Years and Over	94	144	54	292	63	120	31	214	31	24	23	78
	32.2	49.3	18.5	100.0	29.4	56.1	14.5	100.0	39.7	30.8	29.5	100.0
	0.4	0.5	0.8	0.5	0.3	0.4	0.5	0.3	3.1	2.9	4.1	3.2
Total	25,569	31,541	6,629	63,739	24,557	30,704	6,065	61,326	1,012	837	564	2,413
	40.1	49.5	10.4	100.0	40.0	50.1	9.9	100.0	41.9	34.7	23.4	100.0
	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.
- There were 7 births to mothers with unknown maternal age or unknown type of feeding; these were excluded from this table.

FIGURE 4.7

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

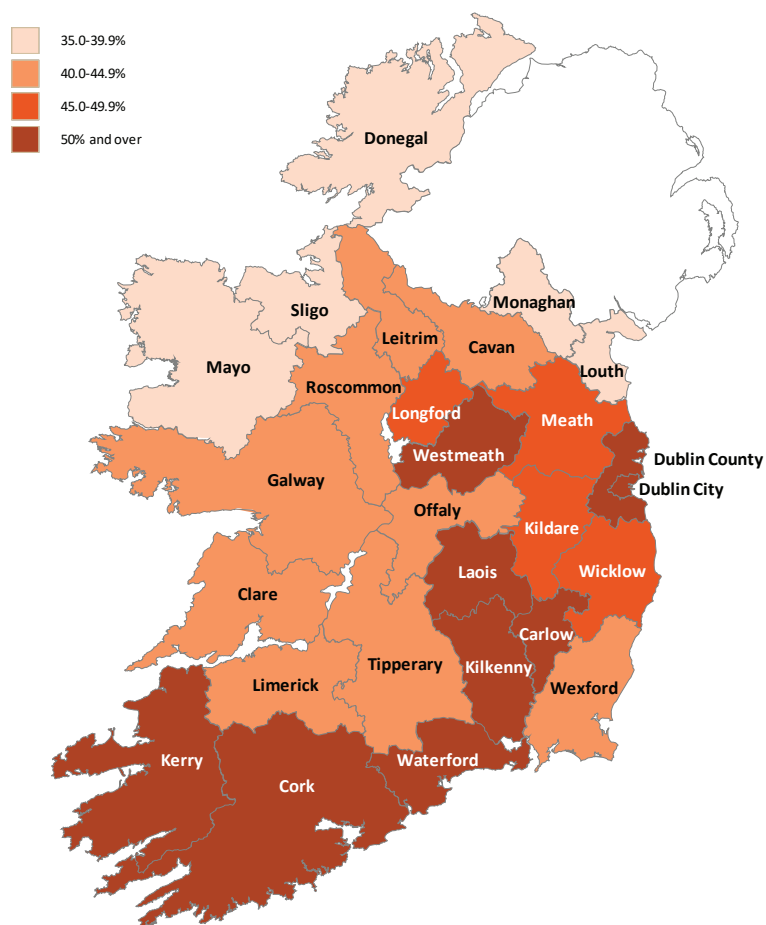


Note: See Table 4.11 for data.

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

- Infants born to mothers resident in Cork and Kilkenny recorded the highest rate of breastfeeding at 59.4 per cent, with Waterford and Dublin County reporting rates at 58.2 per cent and 56.5 per cent respectively.
- Other counties reporting exclusive breastfeeding rates higher than the national rate of 49.5 per cent include Carlow, Westmeath, Dublin City, Laois and Kerry.

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, 52.0 per cent were breastfed.

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

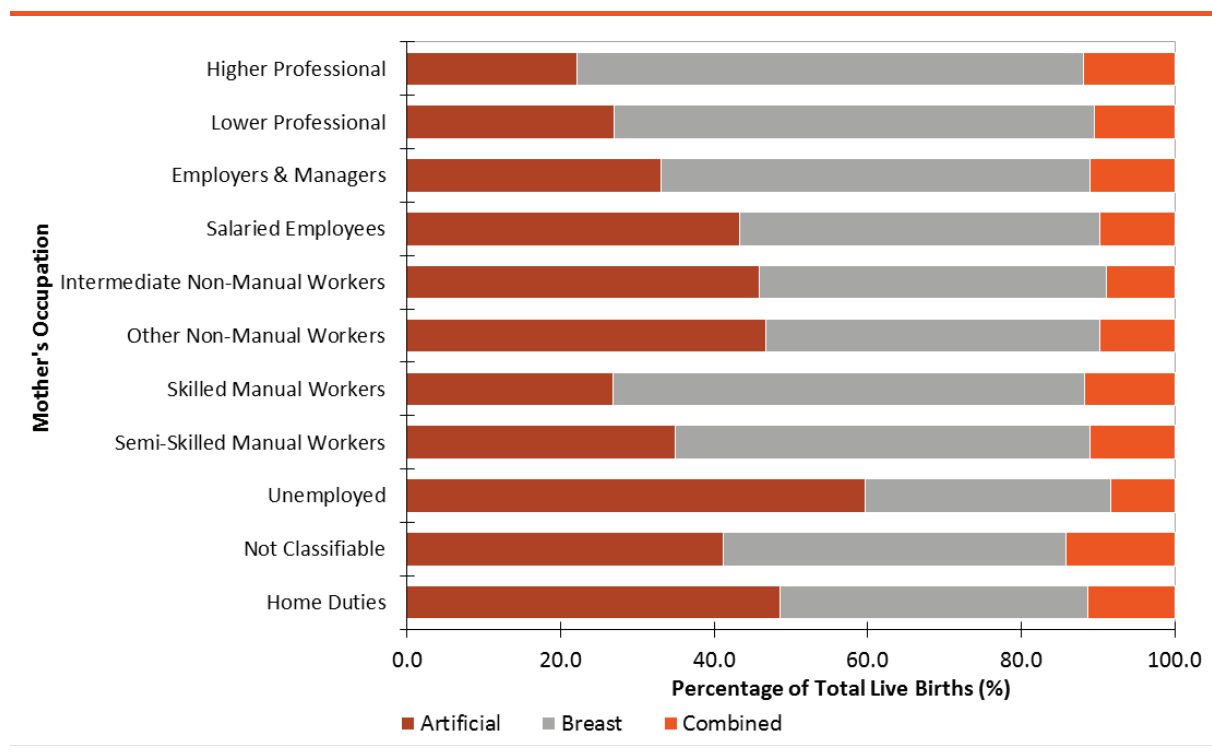
- Breastfeeding was most common among mothers in 'higher professional' (65.9 per cent) and 'lower professional' (62.6 per cent) socio-economic groups. Breastfeeding was least common among 'unemployed' mothers (31.9 per cent) (see Figure 4.9).
- Artificial feeding was most common among 'unemployed' mothers with a rate of 59.6 per cent, and mothers whose socio-economic group was recorded as 'home duties' (48.5 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			
	Artificial	Breast	Combined	Total
Farmers & Farm Managers	* ^	33 50.0	~ ^	66 100
Other Agricultural Occupations & Fishermen	22 27.2	49 60.5	10 12.3	81 100
Higher Professional	990 22.2	2,943 65.9	532 11.9	4,465 100
Lower Professional	3,271 27.0	7,585 62.6	1,266 10.4	12,122 100
Employers & Managers	1,588 33.1	2,681 55.9	531 11.1	4,800 100
Salaried Employees	308 43.3	334 46.9	70 9.8	712 100
Intermediate Non-Manual Workers	5,629 45.9	5,540 45.2	1,097 8.9	12,266 100
Other Non-Manual Workers	4,334 46.7	4,047 43.6	908 9.8	9,289 100
Skilled Manual Workers	227 26.8	520 61.5	99 11.7	846 100
Semi-Skilled Manual Workers	692 35.0	1,066 53.9	220 11.1	1,978 100
Unskilled Manual Workers	* ^	12 50.0	~ ^	24 100
Unemployed	1,703 59.6	912 31.9	240 8.4	2,855 100
Not Classifiable	775 41.2	838 44.6	267 14.2	1,880 100
Home Duties	5,849 48.5	4,846 40.2	1,362 11.3	12,057 100
Not Stated	142 47.3	135 45.0	23 7.7	300 100
Total	25,569 40.1	31,541 49.5	6,631 10.4	63,741 100

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.
There were 5 births with unknown type of feeding; these were excluded from this table.

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.

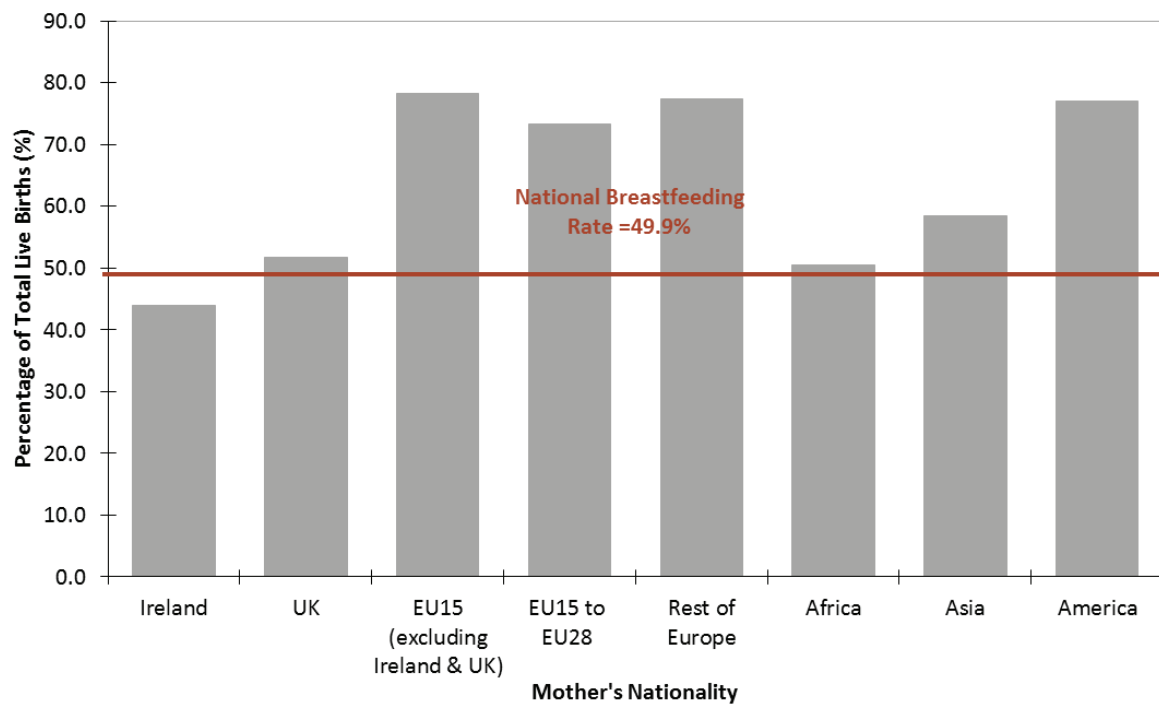
Figure 4.10 presents the rate of exclusive breastfeeding by mother's nationality.²⁹

- At 43.9 per cent, births to mothers from Ireland recorded the lowest proportion of breastfeeding, while births to mothers from the EU15 (excluding Ireland and UK) reported the highest proportion of breastfeeding at 78.2 per cent.
- Births to mothers from America, EU15 to EU28 and the Rest of Europe each record breastfeeding percentages of more than 70 per cent.
- Breastfeeding rates are reported at 51.8 per cent for mothers from the UK and 58.5 per cent for mothers from Asia, while mothers from Africa reported a breastfeeding rate of 50.4 per cent.

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.

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 would be based on <100 live births are not included.

SECTION FIVE

PERINATAL OUTCOMES

INTRODUCTION

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

Of the 64,097 births recorded by the NPRS in 2016, 227 were stillbirths and 124 were early neonatal deaths, giving a total of 351 perinatal deaths and a perinatal mortality rate of 5.5 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

- Just over 70 per cent of total perinatal deaths weighed less than 2,500 grams, 80.92 per cent for primiparous women and 64.1 per cent for multiparous women (see Figure 5.1).
- The perinatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 65.6 per 1,000 live births and stillbirths (57.3 per 1,000 for primiparous women and 73.5 per 1,000 for multiparous women).
- The early neonatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 25.7 per 1,000 live births (20.8 per 1,000 for primiparous women and 30.5 per 1,000 for multiparous women).
- The stillbirth rate for low birthweight babies (weighing less than 2,500 grams) was 40.9 per 1,000 live births and stillbirths (37.3 per 1,000 for primiparous women and 44.3 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 (1.1 for primiparous women and 2.1 for multiparous women).
- Higher perinatal mortality rates for all births were recorded for births less than 1,500 grams at 220.4 per 1,000 live births and stillbirths and an adjusted perinatal mortality rate of 168.6 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.

TABLE 5.1

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

	Total Perinatal Deaths	Total Perinatal Deaths %	Ante-partum Stillbirths	Intra-Partum Stillbirths	Not Stated	Stillbirth Rate ^a	Early Neonatal Deaths	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adj. PMR ^a
Total										
500-749	70	19.9	34	~	0	263.9	*	301.9	486.1	430.8
750-999	31	8.8	18	~	0	128.4	*	93.0	209.5	176.1
1000-1249	21	6.0	*	~	0	84.3	*	46.1	126.5	64.5
1250-1499	23	6.6	15	0	~	80.0	*	38.0	115.0	68.4
1500-1999	48	13.7	30	~	0	38.6	*	22.0	59.8	30.8
2000-2499	54	15.4	31	0	~	15.6	*	7.9	23.4	13.1
2500-2999	49	14.0	33	0	~	4.6	*	1.8	6.4	4.5
3000-3499	26	7.4	14	~	0	0.8	*	0.5	1.2	0.8
3500-3999	22	6.3	17	~	0	0.8	~	0.2	1.0	0.9
4000-4499	*	^	~	~	0	0.5	~	0.2	0.7	0.6
4500 and over	~	^	0	0	0	-	~	0.7	0.7	-
Total	351	100	208	11	8	3.5	124	1.9	5.5	3.7
Primiparous Women										
500-749	31	23.7	*	~	0	256.8	*	218.2	418.9	338.5
750-999	16	12.2	10	~	0	142.9	~	75.8	207.8	175.7
1000-1249	9	6.9	~	0	0	58.1	~	49.4	104.7	72.3
1250-1499	14	10.7	*	0	0	88.5	~	38.8	123.9	91.7
1500-1999	15	11.5	*	0	0	25.3	~	13.0	38.0	18.1
2000-2499	21	16.0	11	0	~	12.7	*	6.4	19.0	10.1
2500-2999	13	9.9	*	0	0	3.0	~	0.9	3.9	3.0
3000-3499	6	4.6	~	~	0	0.6	~	0.1	0.7	0.5
3500-3999	6	4.6	6	0	0	0.8	0	-	0.8	0.8
4000-4499	0	0.0	0	0	0	-	0	-	-	-
4500 and over	0	0.0	0	0	0	-	0	-	-	-
Total	131	100	83	~	~	3.7	41	1.7	5.4	3.6
Multiparous Women										
500-749	39	17.7	*	~	0	271.4	20	392.2	557.1	523.1
750-999	15	6.8	8	0	0	112.7	7	111.1	211.3	176.5
1000-1249	12	5.5	8	~	0	112.5	~	42.3	150.0	55.6
1250-1499	9	4.1	~	0	~	69.0	~	37.0	103.4	37.0
1500-1999	33	15.0	*	~	0	51.5	*	31.0	80.9	43.4
2000-2499	33	15.0	20	0	~	18.3	*	9.3	27.4	16.0
2500-2999	36	16.4	*	0	~	5.9	*	2.6	8.4	5.6
3000-3499	20	9.1	*	~	0	0.9	*	0.7	1.6	1.0
3500-3999	16	7.3	11	~	0	0.8	~	0.3	1.1	1.0
4000-4499	*	^	~	~	0	0.7	~	0.3	1.0	0.9
4500 and over	~	^	0	0	0	-	~	1.0	1.0	-
Total	220	100	125	*	~	3.5	83	2.1	5.5	3.7

Notes:

Percentage column is subject to rounding.

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

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

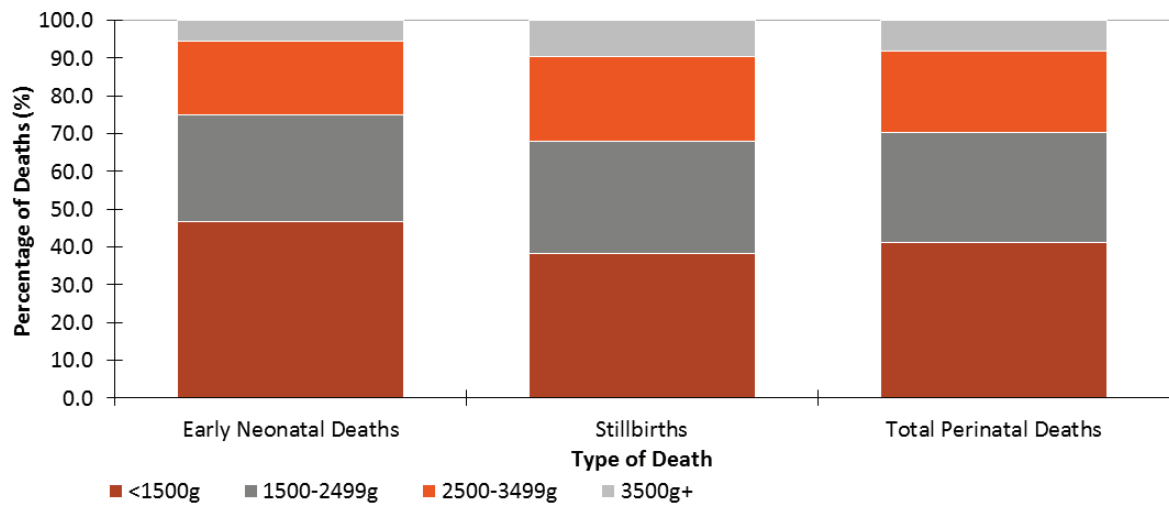
^ Percentage not provided to prevent disclosure of small numbers.

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

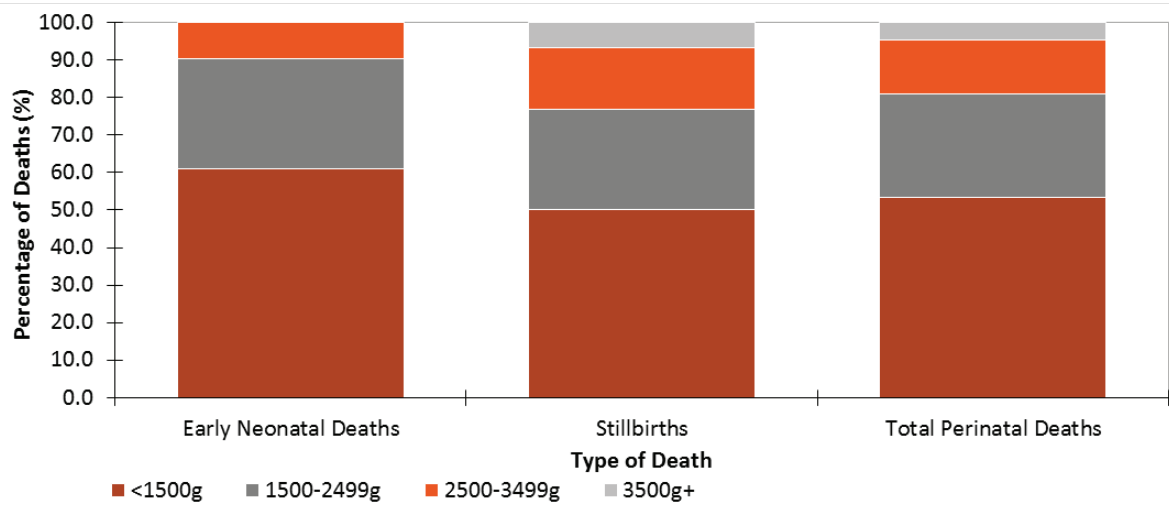
There was 1 maternity with unknown parity; this was excluded from this table.

FIGURE 5.1
Perinatal Deaths by Birthweight Groups and Parity

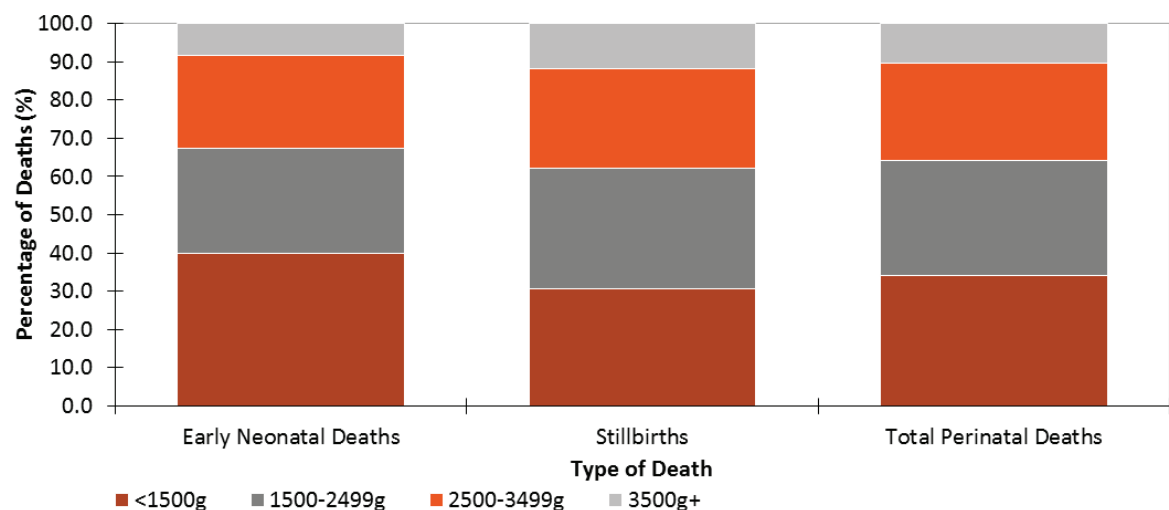
Total Perinatal Deaths



Perinatal Deaths: Primiparous Women

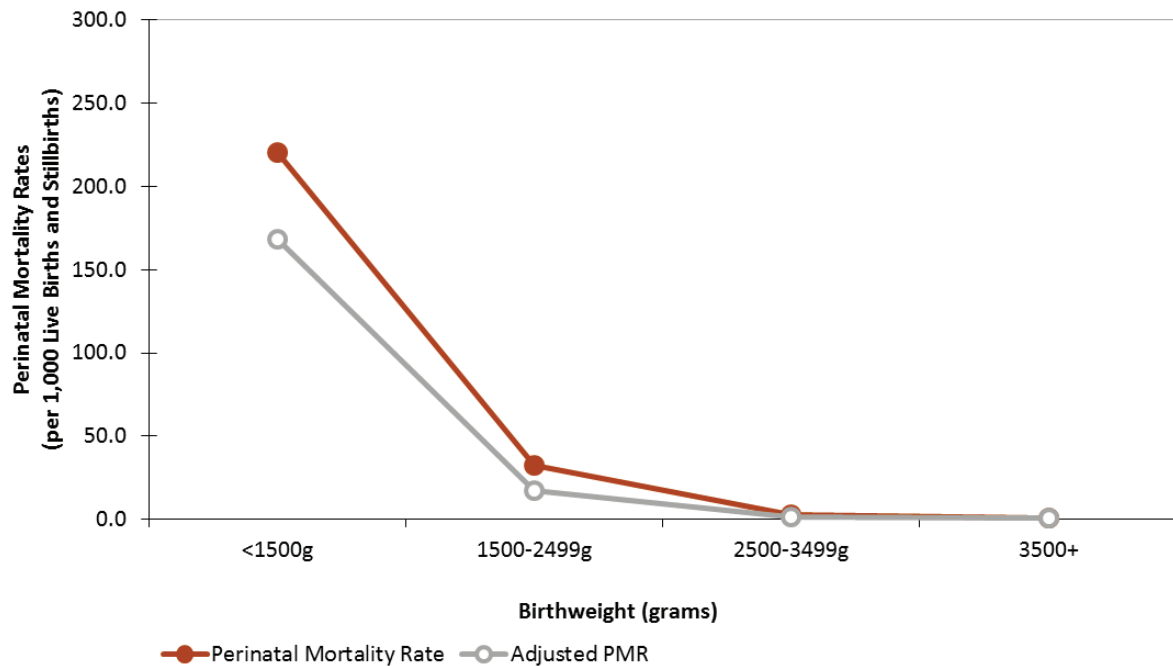


Perinatal Deaths: Multiparous Women



Note: See Table 5.1 for data.

FIGURE 5.2
Perinatal Mortality Rates by Birthweight Groups



Notes: See Table 5.1 for data.

CAUSE OF DEATH BY BIRTHWEIGHT

Cause of death data are recorded using the WHO ICD-10 classification.³² 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.³³

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 (33.3 per cent) followed by unspecified/unexplained (P95, P96.9), which accounted for 18.5 per cent.
- Just over 70 per cent of perinatal deaths weighed <2,500 grams, and of these 36.0 per cent were due to congenital malformations (Q00-Q99), followed by unspecified/unexplained (P95, P96.9) which accounted for 15.0 per cent (see Figure 5.3).
- Almost 30 per cent of perinatal deaths weighed $\geq 2,500$ grams. Cause of death due to congenital malformations (Q00-Q99) and unspecified/unexplained (P95, P96.9) both accounted for 26.9 per cent of deaths and 25.0 per cent were due to maternal factors (P00-P04) (see Figure 5.4).

³² World Health Organisation, *op. cit.*

³³ 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 ^b
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	4500 and over	N		
P00-P04	97.2	13.5	18.1	5.0	8.7	3.5	1.8	0.3	0.2	0.2	-	61	1.0	
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery														
P05-P08	152.8	40.5	-	10.0	3.7	0.9	0.3	-	-	-	-	37	0.6	
Disorders related to length of gestation and foetal growth														
P20-P29	34.7	20.3	12.0	35.0	2.5	3.0	0.3	0.1	0.2	0.1	-	35	0.5	
Respiratory and cardiovascular disorders specific to the perinatal period														
P35-P39	55.6	6.8	6.0	-	3.7	0.9	-	-	0.0	-	-	16	0.2	
Infections specific to the perinatal period														
P50-P61	6.9	13.5	12.0	-	-	-	0.1	0.0	0.2	-	-	11	0.2	
Haemorrhagic and haematological disorders of foetus and newborn														
P75-P78	-	6.8	-	-	-	-	0.1	-	-	-	-	~	0.0	
Digestive system disorders of foetus and newborn														
P80-P83	-	6.8	-	5.0	1.2	-	0.1	-	-	-	-	~	0.1	
Conditions involving the integument and temperature regulation of foetus and newborn														
P95, P96.9	41.7	60.8	12.0	10.0	10.0	4.3	1.7	0.3	0.3	0.1	-	65	1.0	
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified														
Q00-Q07	6.9	-	12.0	-	1.2	1.7	0.1	-	-	-	0.7	10	0.2	
Congenital malformations of the nervous system														
Q20-Q28	13.9	6.8	18.1	-	-	1.3	0.1	0.1	-	-	-	13	0.2	
Congenital malformations of the circulatory system														
Q30-Q34	-	-	-	-	1.2	-	0.1	-	-	0.1	-	~	0.0	
Congenital malformations of the respiratory system														
Q60-Q64	-	-	-	5.0	3.7	1.3	0.7	0.0	-	-	-	13	0.2	
Congenital malformations of the urinary system														
Q65-Q79	6.9	20.3	6.0	-	3.7	1.7	0.1	0.1	0.0	-	-	16	0.2	
Congenital malformations and deformations of the musculoskeletal system														
Q80-Q89	-	-	-	5.0	6.2	1.3	0.1	-	0.0	-	-	11	0.2	
Other congenital malformations														
Q90-Q99	69.4	13.5	30.1	40.0	13.7	3.0	0.7	0.1	-	-	-	51	0.8	
Chromosomal abnormalities, not elsewhere classified														
A00.0-Q99.9, R00.0-Z99.9	-	-	-	-	-	0.4	-	0.0	-	0.1	-	~	0.0	
All other causes														
Total	70	31	21	23	48	54	49	26	22	*	~	351	5.5	
PMR	486.1	209.5	126.5	115.0	59.8	23.4	6.4	1.2	1.0	0.7	0.7			

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	4500 and over		
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	120.4	8.8	28.6	7.8	12.9	4.3	2.1	0.3	0.2	0.2	-	57	0.9
P00-P04													
Disorders related to length of gestation and foetal growth	157.4	44.2	-	15.5	6.4	1.2	0.3	-	-	-	-	31	0.5
P05-P08													
Respiratory and cardiovascular disorders specific to the perinatal period	9.3	26.5	19.0	54.3	4.3	3.7	0.3	0.1	0.2	0.1	-	30	0.5
P20-P29													
Infections specific to the perinatal period	64.8	8.8	9.5	-	6.4	1.2	-	-	0.0	-	-	15	0.2
P35-P39													
Haemorrhagic and haematological disorders of foetus and newborn	9.3	17.7	19.0	-	-	-	0.1	-	0.2	-	-	10	0.2
P50-P61													
Digestive system disorders of foetus and newborn	-	-	-	-	-	-	0.1	-	-	-	-	~	0.0
P75-P78													
Conditions involving the integument and temperature regulation of foetus and newborn	-	8.8	-	7.8	2.1	-	0.1	-	-	-	-	~	0.1
P80-P83													
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	55.6	70.8	9.5	15.5	17.2	5.5	1.9	0.3	0.3	0.1	-	62	1.0
P95, P96.9													
Congenital malformations of the nervous system	9.3	-	19.0	-	2.1	2.5	0.1	-	-	-	0.7	10	0.2
Q00-Q07													
Congenital malformations of the circulatory system	18.5	-	9.5	-	-	1.8	0.1	0.1	-	-	-	10	0.2
Q20-Q28													
Congenital malformations of the respiratory system	-	-	-	-	2.1	-	0.1	-	-	0.1	-	~	0.0
Q30-Q34													
Congenital malformations of the urinary system	-	-	-	7.8	6.4	1.8	0.7	0.0	-	-	-	13	0.2
Q60-Q64													
Congenital malformations and deformations of the musculoskeletal system	9.3	26.5	9.5	-	6.4	2.5	0.1	0.1	0.0	-	-	16	0.3
Q65-Q79													
Other congenital malformations	-	-	-	7.8	10.7	1.8	0.1	-	0.0	-	-	11	0.2
Q80-Q89													
Chromosomal abnormalities, not elsewhere classified	92.6	17.7	47.6	46.5	21.5	3.7	0.7	0.1	-	-	-	47	0.8
Q90-Q99													
All other causes	-	-	-	-	-	0.6	-	0.0	-	0.1	-	~	0.0
A00.0-099.9, R00.0-Z99.9													
Total	59	230.1	171.4	162.8	98.7	30.7	49	*	22	*	~	323	5.2
N	546.3	230.1	171.4	162.8	98.7	30.7	49	*	22	*	~	323	5.2
PMR							7.2	1.2	1.0	0.7	0.7	323	5.2

TABLE 5.2

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

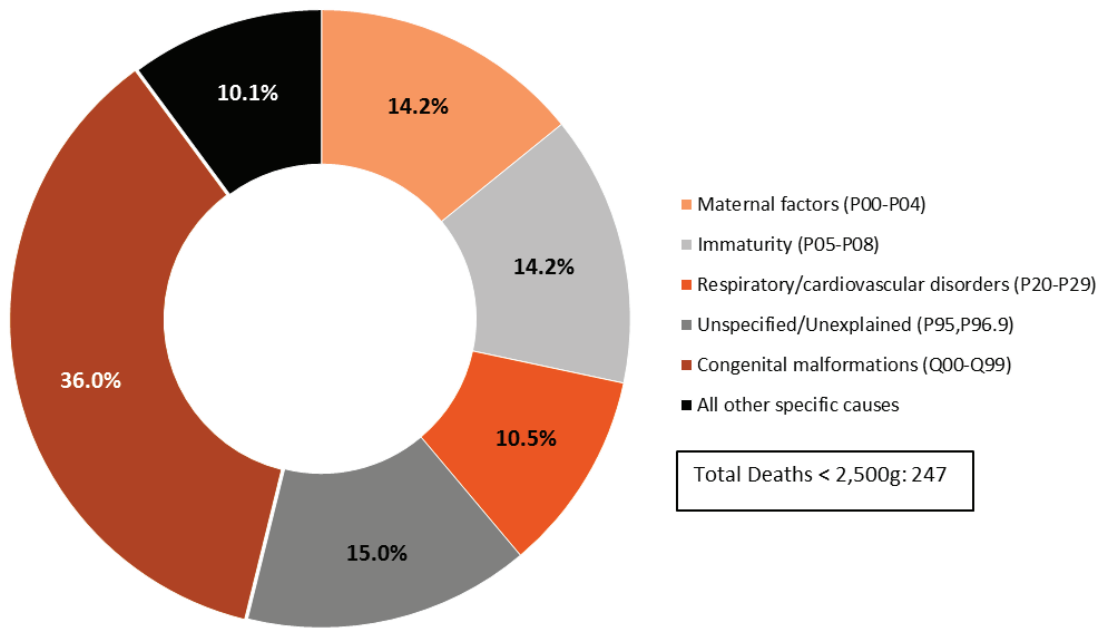
ICD-10 Code	Birthweight (grams)														Total	PMIR ^a
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	4500 and over	N				
P00-P04 Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	27.8	28.6	-	-	3.0	1.5	-	-	-	-	-	-	-	-	~	1.6
P05-P08 Disorders related to length of gestation and foetal growth	138.9	28.6	-	-	-	-	-	-	-	-	-	-	-	-	6	2.5
P20-P29 Respiratory and cardiovascular disorders specific to the perinatal period	111.1	-	-	-	-	1.5	-	-	-	-	-	-	-	-	~	2.0
P35-P39 Infections specific to the perinatal period	27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	~	0.4
P50-P61 Haemorrhagic and haematological disorders of foetus and newborn	-	-	-	-	-	-	-	-	-	3.0	-	-	-	-	~	0.4
P75-P78 Digestive system disorders of foetus and newborn	-	28.6	-	-	-	-	-	-	-	-	-	-	-	-	~	0.4
P95, P96.9 Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	-	28.6	16.4	-	-	1.5	-	-	-	-	-	-	-	-	~	1.2
Q20-Q28 Congenital malformations of the circulatory system	-	28.6	32.8	-	-	-	-	-	-	-	-	-	-	-	~	1.2
Q90-Q99 Chromosomal abnormalities, not elsewhere classified	-	-	-	28.2	3.0	1.5	-	-	-	-	-	-	-	-	~	1.6
Total	11	~	~	~	~	~	0	~	0	0	0	0	0	0	28	11.5
PMR	305.6	142.9	49.2	28.2	5.9	5.9	-	3.0	-	-	-	-	-	-	28	11.5

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

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

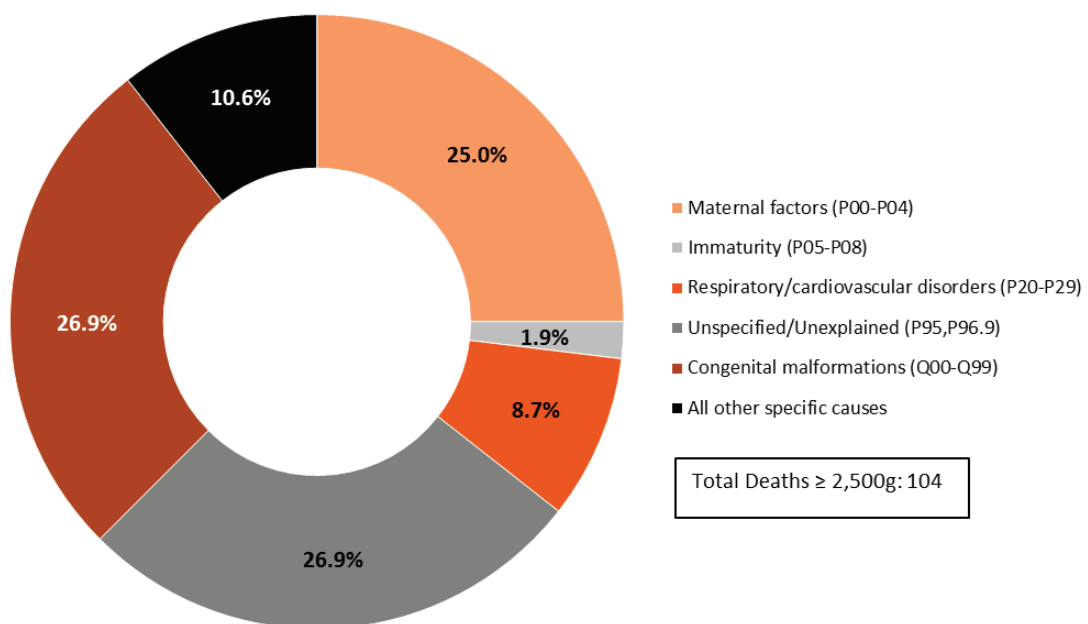
a Rates are calculated per 1,000 births. For perinatal deaths, rates are calculated on total live births and stillbirths.

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.^{34,35}
- 64.7 per cent of singleton perinatal deaths and 92.9 per cent of multiple perinatal deaths were preterm.
- 37.9 per cent of early neonatal deaths recorded a gestational age of less than 28 completed weeks compared to 19.4 per cent of stillbirths (see Figure 5.5).
- The perinatal mortality rate for babies born before 37 completed weeks of gestation was 54.3 per 1,000 live births and stillbirths (70.0 per 1,000 singleton births and 19.4 per 1,000 multiple births).
- For babies born at 37 or more completed weeks of gestation, the perinatal mortality rate was 1.9 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	91	25.9	*	*	0	170.5	47	219.6	352.7	307.1
28-31	*	^	*	0	0	72.2	*	28.3	98.5	78.3
32-36	99	28.2	*	0	*	18.8	31	8.7	27.4	15.7
37-41	114	32.5	74	~	~	1.4	33	0.6	1.9	1.2
42 and Over	~	^	~	0	0	0.9	~	0.9	1.7	0.9
Total	351	100	208	11	8	3.5	124	1.9	5.5	3.7
Singleton Births										
Less than 28	77	23.8	38	~	0	221.6	*	225.2	396.9	346.4
28-31	42	13.0	*	0	0	99.0	*	44.0	138.6	112.2
32-36	90	27.9	56	0	*	24.9	*	11.5	36.2	20.0
37-41	*	^	*	~	~	1.4	33	0.6	1.9	1.2
42 and Over	~	^	~	0	0	0.9	~	0.9	1.7	0.9
Total	323	100	197	10	8	3.5	108	1.8	5.2	3.5
Multiple Births										
Less than 28	14	50.0	0	~	0	15.6	*	206.3	218.8	193.5
28-31	~	^	~	0	0	19.5	0	-	19.5	13.1
32-36	9	32.1	*	0	0	5.3	~	2.7	8.0	6.2
37-41	~	^	~	0	0	1.8	0	0.0	1.8	-
42 and Over	0	0.0	0	0	0	-	0	-	-	-
Total	28	100	*	~	0	4.9	16	6.6	11.5	8.6

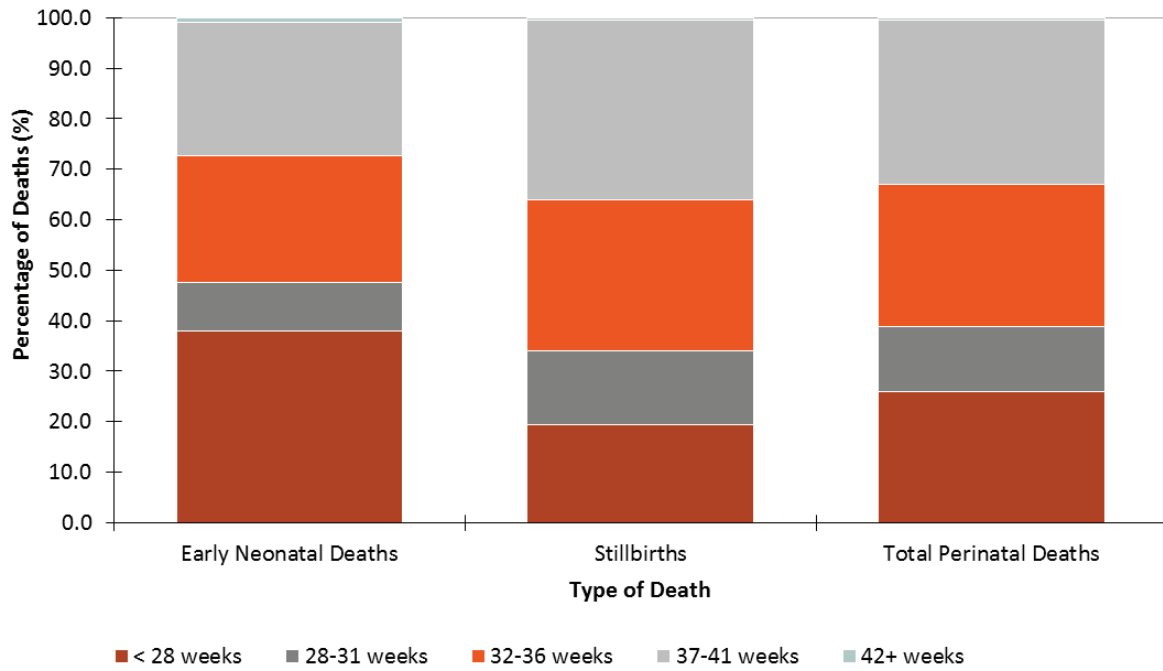
Notes:

- ~ 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.

³⁴ Preterm is defined as less than 37 completed weeks of gestation.

³⁵ In 2016, 6.8 per cent of total births were preterm.

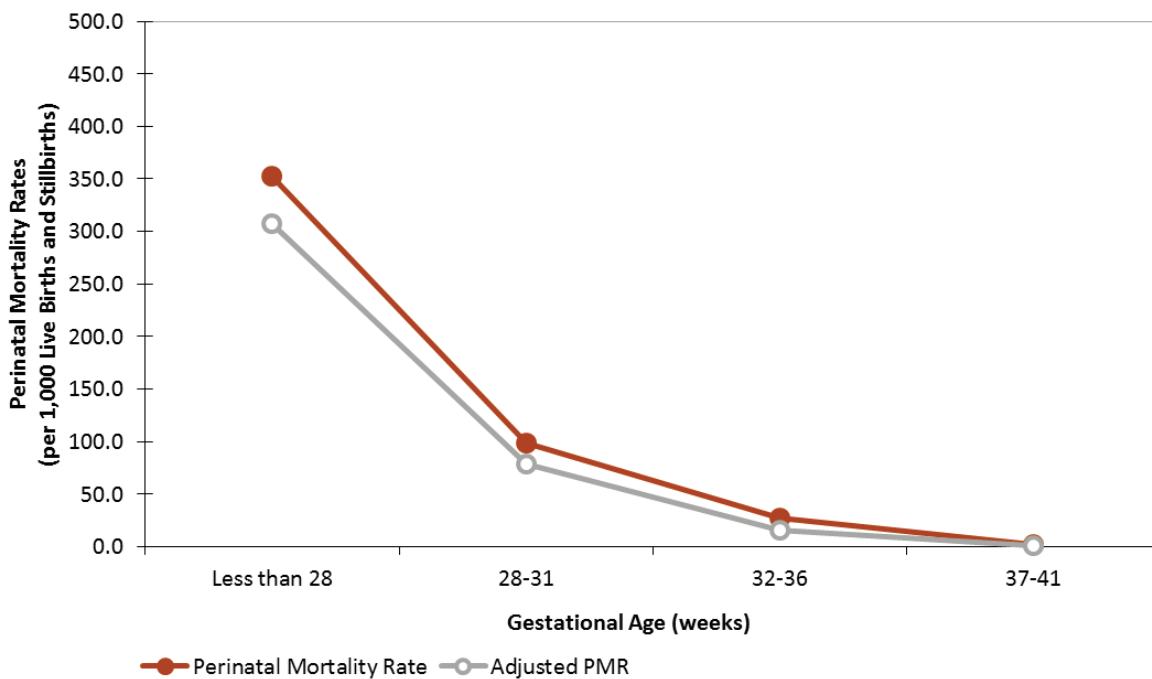
FIGURE 5.5
Total Perinatal Deaths by Gestational Age (weeks)



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 18.5 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	
	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N
P00-P04	0.8	61	0.1	1.0	0.8	57	0.1	0.9	1.6	-	-	1.6
Footus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery												
P000 - P009	0.1	~	~	0.1	0.1	~	0.1	-	-	-	-	0
P010 - P019	0.0	~	0.0	0.0	0.0	~	0.0	0.0	-	-	-	0
P020 - P029	0.7	54	0.1	0.8	0.7	50	0.1	0.8	1.6	-	-	~
Disorders related to length of gestation and foetal growth												
P05-P08	0.2	37	0.3	0.6	0.2	31	0.3	0.5	0.4	2.1	6	2.5
P050 - P059	0.2	11	0.0	0.2	0.2	11	-	0.2	-	-	0	-
P070 - P073	0.1	26	0.3	0.4	0.1	20	0.3	0.3	0.4	2.1	6	2.5
Respiratory and cardiovascular disorders specific to the perinatal period	0.3	35	0.2	0.5	0.3	30	0.1	0.5	0.4	1.6	~	2.0
P200 - P209	0.3	18	-	0.3	0.3	17	-	0.3	0.4	-	~	0.4
P220 - P229	-	~	0.1	~	0.1	~	0.0	~	0.0	0.8	~	0.8
P230 - P239	-	~	0.0	~	0.0	~	0.0	~	0.0	-	0	-
P250 - P258	-	~	0.0	~	0.0	~	0.0	~	0.0	-	0	-
P260 - P269	-	~	0.0	~	0.0	~	0.0	~	0.0	0.4	~	0.4
P280 - P289	0.0	~	0.0	~	0.0	~	0.0	~	0.0	-	0	-
P290 - P299	0.0	~	0.1	~	0.1	6	0.0	0.1	-	0.4	~	0.4
Infections specific to the perinatal period	0.1	16	0.1	0.2	0.1	15	0.1	0.2	0.4	0.4	~	0.4
P35-P39	-	~	0.1	~	0.1	~	0.1	~	0.1	0.4	~	0.4
P360 - P369	0.1	*	0.1	0.2	0.1	*	0.1	0.2	-	-	0	-
P390 - P399	0.1	11	0.1	0.2	0.1	10	0.1	0.2	0.4	-	~	0.4
Haemorrhagic and haematological disorders of foetus and newborn												
P500 - P509	0.0	~	0.0	~	0.1	~	0.0	~	0.1	-	0	-
P520 - P529	-	~	0.0	~	0.0	~	0.0	~	0.0	-	0	-
P540 - P549	0.0	~	-	~	0.0	~	-	~	0.0	-	0	-
P560 - P569	0.0	~	-	~	0.0	~	-	~	0.0	-	0	-
P610 - P619	0.0	~	0.0	~	0.0	~	0.0	~	0.0	0.4	~	0.4

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		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
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	0.0	0.4	0.4
Other intestinal obstruction of newborn	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	-	0.4	-	0.4
Conditions involving the integument and temperature regulation of foetus and newborn	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0
Other conditions of integument specific to foetus and newborn	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	-	0
Other disorders originating in the perinatal period	0.8	0.2	0.2	1.0	0.8	0.2	0.8	1.0	0.2	0.8	0.4	~ 1.2
Foetal death of unspecified cause, Condition origination in the perinatal period, unspecified	0.8	0.2	0.2	1.0	0.8	0.2	0.8	1.0	0.2	0.8	0.4	~ 1.2
Congenital malformations of the nervous system	0.0	0.1	0.1	10	0.0	0.1	0.0	0.2	0.1	0.0	0.0	0
Anencephaly and similar malformations	0.0	0.1	0.1	10	0.0	0.1	0.0	0.2	0.1	0.0	0.0	0
Microcephaly	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0
Congenital hydrocephalus	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	0.0	-	0
Congenital malformations of the circulatory system	0.1	0.1	0.1	13	0.2	0.2	0.0	0.2	0.1	0.1	0.8	~ 1.2
Congenital malformations of cardiac chambers and connections	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0
Congenital malformations of cardiac septa	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.4	-	0.4
Congenital malformations of aortic and mitral valves	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0
Other congenital malformations of heart	0.0	0.1	0.1	8	0.0	0.1	0.0	0.1	0.1	0.1	0.8	~ 0.8
Congenital malformations of the respiratory system	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	0
Congenital malformations of lung	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0
Congenital malformations of the urinary system	0.1	0.1	0.1	13	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0
Renal agenesis and other reduction defects of kidney	0.0	0.1	0.1	7	0.0	0.1	0.0	0.1	0.1	0.1	-	0
Cystic kidney disease	0.0	0.1	0.1	~	0.0	0.1	0.0	0.1	0.1	0.1	-	0
Other congenital malformations of kidney	-	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	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
Congenital malformations and deformations of the musculoskeletal system	Q65-Q79	0.1	0.1	0.2	0.1	0.1	0.3	-	0	-
Congenital deformities of hip	Q650 - Q659	-	0.0	0.0	-	0.0	0.0	-	0	-
Other congenital musculoskeletal deformities	Q680 - Q688	-	0.0	0.0	-	0.0	0.0	-	0	-
Osteochondrodysplasia with defects of growth of tubular bones and spine	Q770 - Q779	0.0	0.0	0.0	0.0	0.0	0.0	-	0	-
Other osteochondrodysplasias	Q780 - Q789	0.0	0.0	0.0	0.0	0.0	0.0	-	0	-
Congenital malformations of musculoskeletal system, not elsewhere classified	Q790 - Q799	0.1	0.1	0.1	0.1	0.1	0.1	-	0	-
Other congenital malformations	Q80-Q89	0.1	0.1	0.2	0.1	0.1	0.2	-	0	-
Other specified congenital malformation syndromes affecting multiple systems	Q870 - Q878	-	0.0	0.0	0.0	0.0	0.0	-	0	-
Other congenital malformations, not elsewhere classified	Q890 - Q899	0.1	0.0	0.2	0.1	0.0	0.2	-	0	-
Chromosomal abnormalities, not elsewhere classified	Q90-Q99	0.6	0.2	0.8	0.6	0.2	0.8	0.8	0.8	1.6
Downs syndrome	Q900 - Q909	0.2	0.0	0.2	0.1	0.0	0.2	0.4	-	0.4
Edwards syndrome and Patau syndrome	Q910 - Q917	0.3	0.2	0.5	0.3	0.1	0.5	0.4	0.8	1.2
Other trisomies and partial trisomies of the autosomes, not elsewhere classified	Q920 - Q929	0.0	-	0.0	0.0	-	0.0	-	-	-
Monosomies and deletions from the autosomes, not elsewhere classified	Q930 - Q939	-	0.0	0.0	-	0.0	0.0	-	-	-
Turners syndrome	Q960 - Q969	0.0	-	0.0	0.0	-	0.0	-	-	-
All other causes	A00.0-O99.9, R00.0-Z99.9	0.0	0.0	0.0	0.0	0.0	0.0	-	0	-
Total		3.5	1.9	5.5	3.5	1.8	5.2	4.9	6.6	11.5

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

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

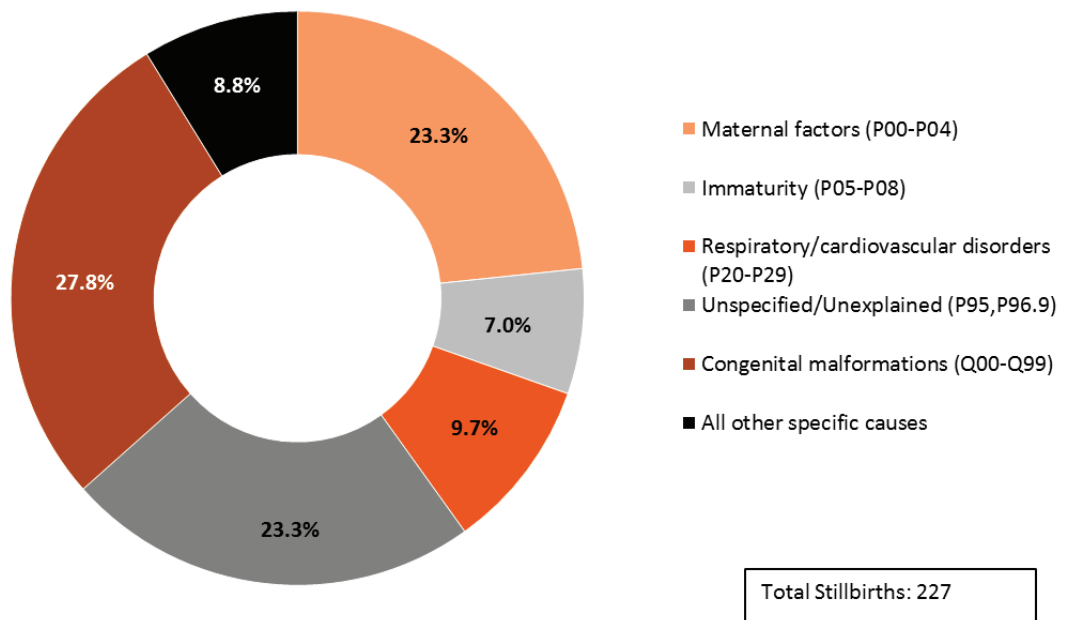
a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

STILLBIRTHS

Figure 5.7 presents the main cause of death for stillbirths.

- Congenital malformations (Q00-Q99) were the leading cause of death for total stillbirths (27.8 per cent).
- Cause of deaths was 23.3 per cent for both maternal factors (P00-P04) and unspecified/unexplained (P95, P96.9).

FIGURE 5.7
Total Stillbirths by Cause of Death



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

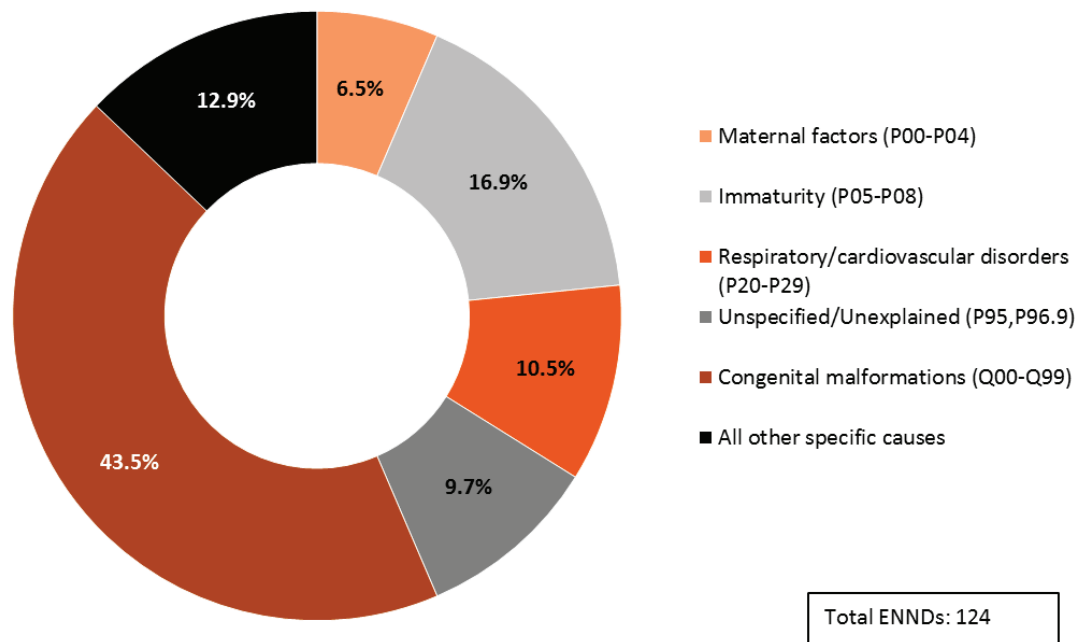
EARLY NEONATAL DEATHS

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 (43.5 per cent).
- The cause of death was unspecified/unexplained (P95, P96.9) for 9.7 per cent of total early neonatal deaths.

FIGURE 5.8

Total Early Neonatal Deaths by Cause of Death



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

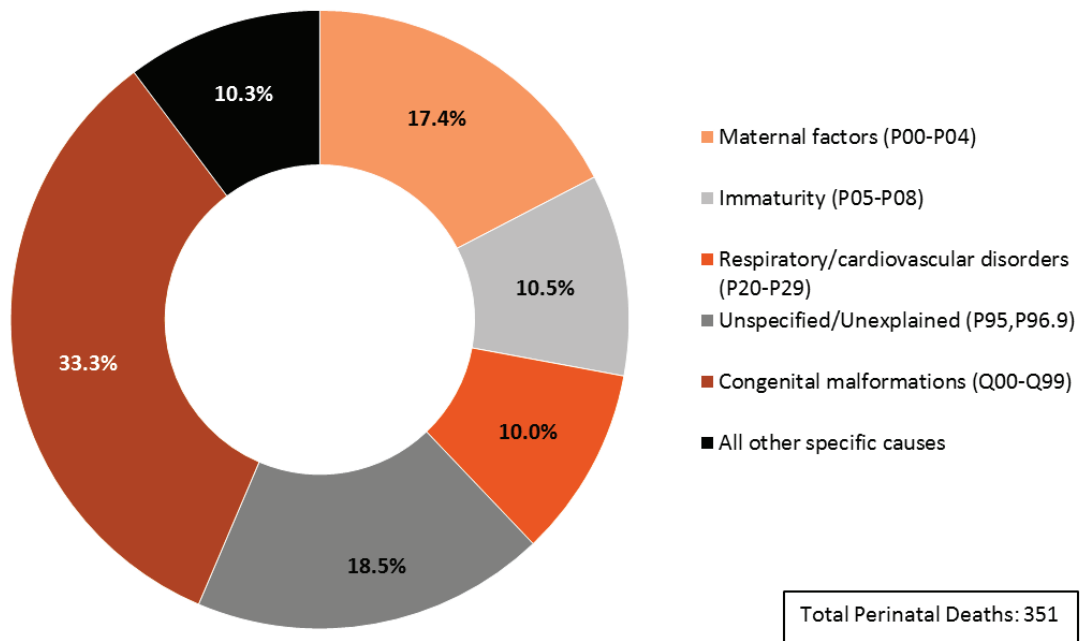
TOTAL PERINATAL DEATHS

Figure 5.9 presents data on all perinatal deaths.

- Congenital malformations (Q00-Q99) accounted for approximately 1 in 3 total perinatal deaths (33.3 per cent).
- The cause of death was unspecified/unexplained (P95, P96.9) for 18.5 per cent of total perinatal deaths.
- Maternal factors (P00-P04) was reported for cause of death for 17.4 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.

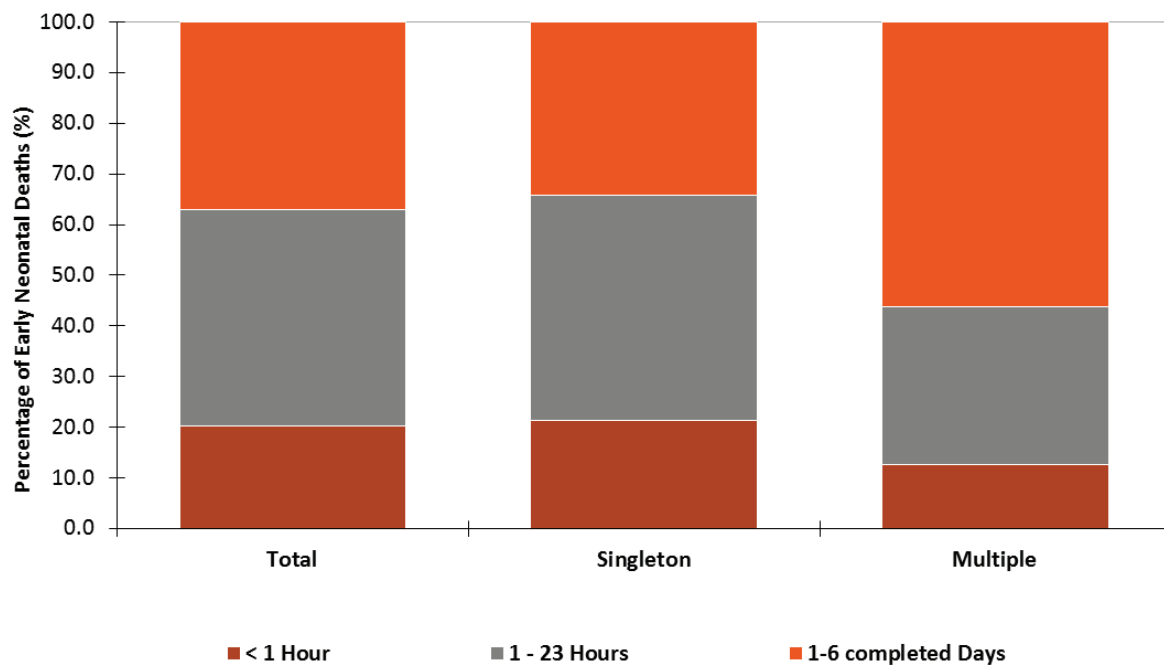
AGE AT DEATH

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

- Approximately 1 in 5 total early neonatal deaths occurred within the first hour of life (21.3 per cent for singleton early neonatal deaths and 12.5 per cent for multiple early neonatal deaths).
- 62.9 per cent of total early neonatal deaths occurred within the first day of life (65.7 per cent for singleton early neonatal deaths and 43.8 per cent for multiple early neonatal deaths).
- Just over 37 per cent of total early neonatal deaths occurred between 1 and 6 completed days of life (34.3 per cent for singleton early neonatal deaths and 56.3 per cent for multiple early neonatal deaths).

FIGURE 5.10

Early Neonatal Deaths by Age at Death and Plurality

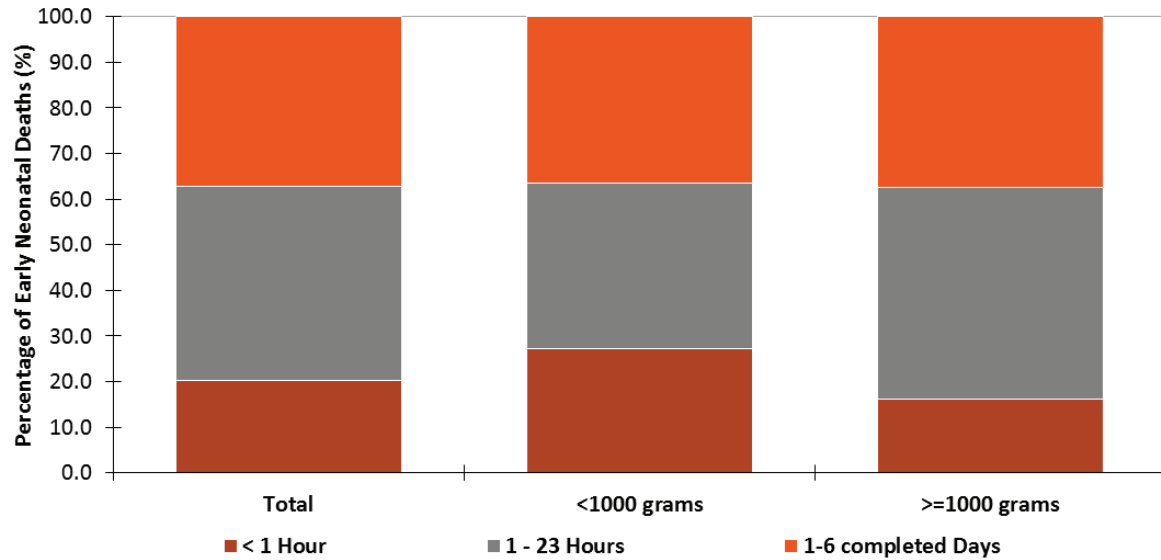


Notes: Percentages are subject to rounding
See Appendix G, Table G14 for data.

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, 27.3 per cent died within the first hour of life compared to 16.3 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.³⁶ Table 5.5 presents data on post-mortem examinations.

- A post-mortem examination was undertaken for less than half of total perinatal deaths in 2016.
- 65.3 per cent of early neonatal deaths did not undergo a post-mortem examinations compared to 46.7 per cent of stillbirths.

TABLE 5.5

Post-Mortem Examinations, Total Perinatal Deaths

Frequency Col. Per Cent	Type of Death		
	Stillbirths	Early Neonatal Deaths	Total
Post-Mortem	121 53.3	* ^	* ^
No Post-Mortem	106 46.7	81 65.3	187 53.3
Not Stated	0 0.0	~ ^	~ ^
Total	227 100	124 100	351 100

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.

³⁶ 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: Eight 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
7. Former civil partner
8. 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 2016, there were 44 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.

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.

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).

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 2016.

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

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

<p>INFANT'S DETAILS</p> <p>DATE OF BIRTH (DDMM/YYYY) 14 _____</p> <p>TIME OF BIRTH _____</p> <p>IF MULTIPLE BIRTH ORDER OF BIRTH No. _____ of _____</p> <p>SEX (Male = 1, Female = 2, Indeterminate = 3) 24 <input type="checkbox"/></p> <p>BIRTHWEIGHT 25 _____ GRAMMBS</p> <p>PERIOD OF GESTATION 29 _____ WEEKS</p> <p>FATHER'S DETAILS</p> <p>COUNTRY _____ 31 _____</p> <p>COUNTRY _____ 34 _____</p> <p>NATIONALITY _____ 38 _____</p> <p>OCCUPATION _____ 42 _____</p> <p>DATE OF BIRTH (DDMM/YYYY) 44 _____</p> <p>MOTHER'S DETAILS</p> <p>COUNTRY _____ 52 _____</p> <p>COUNTRY _____ 55 _____</p> <p>NATIONALITY _____ 59 _____</p> <p>OCCUPATION _____ 63 _____</p> <p>DATE OF BIRTH (DDMM/YYYY) 65 _____</p> <p>CIVIL STATUS (Married = 1, Single = 2, Widowed = 3, Separated = 4, Divorced = 5, Civil Partner = 6, Former Civil Partner = 7, Surviving Civil Partner = 8) 73 <input type="checkbox"/></p> <p>DATE OF PRESENT MARRIAGE/CIVIL PARTNERSHIP (DDMMYYYY) 74 _____</p> <p>DATE OF LAST BIRTH (live or still) (DDMMYYYY) 82 _____</p> <p>NO. OF PREVIOUS LIVE BIRTHS 90 _____</p> <p>CHILDREN STILL LIVING 92 _____</p> <p>STILLBIRTHS 94 _____</p> <p>SPONTANEOUS ABORTIONS 96 _____</p> <p>PERINATAL DEATH</p> <p>TYPE OF DEATH (Early Neonatal = 1, Stillbirth = 2) 98 <input type="checkbox"/></p> <p>WAS AUTOPSY PERFORMED (Yes = 1, No = 2) 99 <input type="checkbox"/></p> <p>AGE AT DEATH 100 _____ DAYS 101 _____ HOURS</p> <p>PLACE OF DEATH _____ 103 _____</p> <p>IF STILLBIRTH, DID DEATH OCCUR BEFORE LABOUR (1) DURING LABOUR (2) NOT KNOWN (3) 106 _____</p> <p>CAUSE OF DEATH</p> <p>MAIN DISEASE OR CONDITION IN FETUS OR INFANT _____ 107 _____</p> <p>OTHER DISEASES OR CONDITIONS IN FETUS OR INFANT _____ 112 _____</p>	<p>MOTHER'S HEALTH</p> <p>ANTENATAL CARE THIS PREGNANCY (Hospital / Obstetrician = 1, O.P. Only = 2, Combined = 3, None = 4, Midwife Only=5) 117 <input type="checkbox"/></p> <p>DATE OF FIRST VISIT TO DOCTOR DURING PREGNANCY (DDMMYYYY) 118 _____</p> <p>DATE OF FIRST VISIT TO HOSPITAL DURING PREGNANCY (DDMMYYYY) 126 _____</p> <p>WAS MOTHER IMMUNE TO RUBELLA (Yes = 1, No = 2, Not Known = 3) 134 <input type="checkbox"/></p> <p>METHOD OF DELIVERY (Spontaneous = 1, Breech = Forceps = 2, Forceps = 3, Vac. Extraction = 4, Caesarean Sec. = 5, Other = 6) 135 <input type="checkbox"/></p> <p>MAIN MATERNAL DISEASE OR CONDITION AFFECTING FETUS OR INFANT _____ 136 _____</p> <p>OTHER MATERNAL DISEASES OR CONDITIONS AFFECTING FETUS OR INFANT _____ 141 _____</p> <p>INFANT'S HEALTH</p> <p>TYPE OF FEEDING (Artificial = 1, Breast = 2, Combined = 3) 146 <input type="checkbox"/></p> <p>WAS BCG ADMINISTERED (Yes = 1, No = 2) 147 <input type="checkbox"/></p> <p>MAIN DISEASE OR CONGENITAL MALFORMATION AFFECTING INFANT _____ 148 _____</p> <p>OTHER DISEASES OR CONGENITAL MALFORMATIONS AFFECTING INFANT _____ 153 _____</p> <p>HOSPITAL</p> <p>WAS ADMISSION BOOKED (Yes = 1, No = 2) 158 <input type="checkbox"/></p> <p>DATE OF MOTHER'S ADMISSION (DDMMYYYY) 159 _____</p> <p>DATE OF MOTHER'S DISCHARGE (DDMMYYYY) 167 _____</p> <p>DATE OF INFANT'S DISCHARGE (DDMMYYYY) 175 _____</p> <p>WAS INFANT TRANSFERRED TO OTHER HOSPITAL FOR MEDICAL REASONS (Yes = 1, No = 2) 183 <input type="checkbox"/></p> <p>IF 'YES', NAME OF HOSPITAL _____ 184 _____</p> <p>GENERAL PRACTITIONER ATTENDED BY MOTHER</p>
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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	No entry	No entry	No entry	No entry	Code 'Foetal death of unspecified cause' (P95) for stillbirths or 'Conditions originating in the perinatal period, unspecified' (P96.9) for early neonatal deaths in section A.
Additional Rule	Maternal condition entered (P00-P04)	Maternal condition entered (P00-P04)	Infant condition entered	Infant condition entered	Code maternal conditions in sections C and D respectively. Code infant conditions in sections A and B respectively. Code maternal condition to section A.

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

TABLE D2

ICD 10, Cause of Death Codes

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

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

APPENDIX E

CLASSIFICATION OF COUNTY OF RESIDENCE

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

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

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

TABLE G1

Mother's County of Residence, Total Births

Mother's County of Residence	Number	Per Cent
Carlow	778	1.2
Cavan	1,064	1.7
Clare	1,402	2.2
Cork	7,107	11.1
Donegal	1,924	3.0
Dublin City	14,381	22.4
Dublin County	4,785	7.5
Galway	3,532	5.5
Kerry	1,701	2.7
Kildare	3,254	5.1
Kilkenny	1,170	1.8
Laois	1,111	1.7
Leitrim	421	0.7
Limerick	2,678	4.2
Longford	619	1.0
Louth	1,839	2.9
Mayo	1,569	2.4
Meath	2,754	4.3
Monaghan	795	1.2
Offaly	993	1.5
Roscommon	722	1.1
Sligo	785	1.2
Tipperary	2,038	3.2
Waterford	1,508	2.4
Westmeath	1,277	2.0
Wexford	1,934	3.0
Wicklow	1,924	3.0
Other	32	0.0
Total	64,097	100

Notes: Percentage column is subject to rounding.
See Appendix E for details of county of residence classification.

TABLE G2
Mother’s Average Age by Mother’s Nationality, Total Maternities

Mother's Nationality	Average Age in Years
Ireland	32.5
UK	31.5
EU15 (excluding Ireland & UK)	33.8
EU15 to EU28	30.6
Rest of Europe	30.9
Africa	31.6
Asia	31.5
America	32.5
Total	32.2

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	969 88.3	113 10.3	14 1.3	~ ^	~ ^	0 0.0	0 0.0	0 0.0	1,098 100
20-24 Years	3,215 62.3	1,449 28.1	382 7.4	* ^	* ^	~ ^	~ ^	0 0.0	5,160 100
25-29 Years	5,202 46.1	3,845 34.1	1,508 13.4	501 4.4	154 1.4	* ^	* ^	11 0.1	11,280 100
30-34 Years	8,910 39.3	8,426 37.2	3,648 16.1	1,082 4.8	390 1.7	127 0.6	46 0.2	41 0.2	22,670 100
35-39 Years	4,572 24.9	6,757 36.7	4,746 25.8	1,580 8.6	431 2.3	164 0.9	68 0.4	79 0.4	18,397 100
40 Years and Over	1,022 24.0	1,390 32.6	1,001 23.5	498 11.7	198 4.6	86 2.0	36 0.8	32 0.8	4,263 100
Total	23,890 38.0	21,980 35.0	11,299 18.0	3,753 6.0	1,191 1.9	427 0.7	165 0.3	163 0.3	62,868 100

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.
 There were 3 births to mothers with unknown maternal age or parity unknown; these were excluded from this table.

TABLE G4

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
500-749	74	0.3	55	256.8	218.2	418.9	338.5	61
750-999	77	0.3	66	142.9	75.8	207.8	175.7	69
1000-1249	86	0.4	81	58.1	49.4	104.7	72.3	65
1250-1499	113	0.5	103	88.5	38.8	123.9	91.7	83
1500-1999	395	1.6	385	25.3	13.0	38.0	18.1	302
2000-2499	1,104	4.5	1,090	12.7	6.4	19.0	10.1	925
2500-2999	3,370	13.8	3,360	3.0	0.9	3.9	3.0	3,202
3000-3499	8,536	34.9	8,531	0.6	0.1	0.7	0.5	8,489
3500-3999	7,890	32.3	7,884	0.8	-	0.8	0.8	7,886
4000-4499	2,446	10.0	2,446	-	-	-	-	2,446
4500 and Over	363	1.5	363	-	-	-	-	363
Total	24,454	100	24,364	3.7	1.7	5.4	3.6	23,891
Singleton Births								
500-749	51	0.2	34	333.3	235.3	490.2	381.0	51
750-999	61	0.3	51	163.9	39.2	196.7	169.5	61
1000-1249	45	0.2	41	88.9	73.2	155.6	116.3	45
1250-1499	69	0.3	60	130.4	66.7	188.4	151.5	69
1500-1999	201	0.9	191	49.8	26.2	74.6	36.3	201
2000-2499	783	3.4	770	16.6	9.1	25.5	12.9	783
2500-2999	3,006	12.9	2,996	3.3	1.0	4.3	3.3	3,006
3000-3499	8,432	36.1	8,427	0.6	0.1	0.7	0.5	8,432
3500-3999	*	^	*	0.8	-	0.8	0.8	*
4000-4499	*	^	*	-	-	-	-	*
4500 and Over	363	1.6	363	-	-	-	-	363
Total	23,334	100	23,250	3.6	1.4	5.0	3.3	23,334
Multiple Births								
500-749	23	2.1	21	87.0	190.5	260.9	260.9	10
750-999	16	1.4	15	62.5	200.0	250.0	200.0	8
1000-1249	41	3.7	40	24.4	25.0	48.8	25.0	20
1250-1499	44	3.9	43	22.7	-	22.7	-	14
1500-1999	194	17.3	194	-	-	-	-	101
2000-2499	321	28.7	320	3.1	-	3.1	3.1	142
2500-2999	364	32.5	364	-	-	-	-	196
3000-3499	104	9.3	104	-	-	-	-	57
3500-3999	*	^	*	-	-	-	-	*
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	0	-	0	-	-	-	-	0
Total	1,120	100	1,114	5.4	7.2	12.5	9.8	557

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	70	0.2	51	271.4	392.2	557.1	523.1	65
750-999	71	0.2	63	112.7	111.1	211.3	176.5	60
1000-1249	80	0.2	71	112.5	42.3	150.0	55.6	70
1250-1499	87	0.2	81	69.0	37.0	103.4	37.0	75
1500-1999	408	1.0	387	51.5	31.0	80.9	43.4	332
2000-2499	1,203	3.0	1,181	18.3	9.3	27.4	16.0	1,023
2500-2999	4,264	10.8	4,239	5.9	2.6	8.4	5.6	4,023
3000-3499	12,490	31.5	12,479	0.9	0.7	1.6	1.0	12,385
3500-3999	14,175	35.8	14,163	0.8	0.3	1.1	1.0	14,152
4000-4499	5,779	14.6	5,775	0.7	0.3	1.0	0.9	5,779
4500 and Over	1,015	2.6	1,015	-	1.0	1.0	-	1,015
Total	39,642	100	39,505	3.5	2.1	5.5	3.7	38,979
Singleton Births								
500-749	57	0.1	38	333.3	394.7	596.5	557.7	57
750-999	52	0.1	45	134.6	155.6	269.2	224.5	52
1000-1249	60	0.2	52	133.3	57.7	183.3	75.5	60
1250-1499	60	0.2	54	100.0	37.0	133.3	54.5	60
1500-1999	265	0.7	246	71.7	48.8	117.0	64.0	265
2000-2499	847	2.2	826	24.8	10.9	35.4	20.4	847
2500-2999	3,784	9.9	3,759	6.6	2.9	9.5	6.4	3,784
3000-3499	12,263	32.0	12,253	0.8	0.7	1.5	1.0	12,263
3500-3999	14,138	36.9	14,126	0.8	0.3	1.1	1.0	14,138
4000-4499	5,779	15.1	5,775	0.7	0.3	1.0	0.9	5,779
4500 and Over	1,015	2.6	1,015	-	1.0	1.0	-	1,015
Total	38,320	100	38,189	3.4	2.0	5.4	3.5	38,320
Multiple Births								
500-749	13	1.0	13	-	384.6	384.6	384.6	8
750-999	19	1.4	18	52.6	-	52.6	52.6	8
1000-1249	20	1.5	19	50.0	-	50.0	-	10
1250-1499	27	2.0	27	-	37.0	37.0	-	15
1500-1999	143	10.8	141	14.0	-	14.0	7.0	67
2000-2499	356	26.9	355	2.8	5.6	8.4	5.6	176
2500-2999	480	36.3	480	-	-	-	-	239
3000-3499	227	17.2	226	4.4	-	4.4	4.4	122
3500-3999	37	2.8	37	-	-	-	-	14
4000-4499	0	0.0	0	-	-	-	-	0
4500 and Over	0	0.0	0	-	-	-	-	0
Total	1,322	100	1,316	4.5	6.1	10.6	7.6	659

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.

TABLE G6

Birthweight (grams) by Sex, Total Live Births

	Male		Female		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
500-749	47	0.1	59	0.2	106	0.2
750-999	70	0.2	59	0.2	129	0.2
1000-1249	88	0.3	64	0.2	152	0.2
1250-1499	93	0.3	91	0.3	184	0.3
1500-1999	389	1.2	382	1.2	771	1.2
2000-2499	1,033	3.2	1,238	4.0	2,271	3.6
2500-2999	3,357	10.2	4,242	13.6	7,599	11.9
3000-3499	9,865	30.1	11,145	35.9	21,010	32.9
3500-3999	11,766	35.9	10,280	33.1	22,046	34.5
4000-4499	5,123	15.6	3,098	10.0	8,221	12.9
4500 and Over	950	2.9	428	1.4	1,378	2.2
Total	32,781	100	31,086	100	63,867	100

Notes: Percentage columns are subject to rounding.

There were 3 births where sex was recorded as indeterminate; these 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	*	^	*	136.4	175.4	287.9	248.0	*
28-31	233	1.0	215	77.3	23.3	98.7	87.0	181
32-36	1,530	6.3	1505	16.3	6.6	22.9	13.2	1,264
37-41	21,842	89.3	21814	1.3	0.3	1.6	0.8	21,614
42 and Over	715	2.9	714	1.4	-	1.4	1.4	715
Not Stated	~	^	~	-	-	-	-	~
Total	24,454	100	24364	3.7	1.7	5.4	3.6	23,891
Singleton Births								
Less than 28	*	^	*	178.9	153.8	305.3	266.7	*
28-31	137	0.6	121	116.8	41.3	153.3	134.3	137
32-36	1,002	4.3	979	23.0	10.2	32.9	18.2	1,002
37-41	21,383	91.6	21,356	1.3	0.3	1.5	0.8	21,383
42 and Over	715	3.1	714	1.4	-	1.4	1.4	715
Not Stated	~	^	~	-	-	-	-	~
Total	23,334	100	23,250	3.6	1.4	5.0	3.3	23,334
Multiple Births								
Less than 28	37	3.3	36	27.0	222.2	243.2	200.0	20
28-31	96	8.6	94	20.8	-	20.8	20.8	44
32-36	528	47.1	526	3.8	-	3.8	3.8	262
37-41	459	41.0	458	2.2	-	2.2	-	231
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
Total	1,120	100	1114	5.4	7.2	12.5	9.8	557

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	*	^	*	206.3	270.0	420.6	370.7	*
28-31	224	0.6	209	67.0	33.5	98.2	69.1	193
32-36	2,082	5.3	2,039	20.7	10.3	30.7	17.5	1,782
37-41	36,753	92.7	36,700	1.4	0.7	2.2	1.4	36,433
42 and Over	456	1.2	456	-	2.2	2.2	-	456
Not Stated	~	^	~	-	-	-	-	~
Total	39,642	100	39,505	3.5	2.1	5.5	3.7	38,979
Singleton Births								
Less than 28	*	^	*	262.6	301.4	484.8	427.0	*
28-31	166	0.4	152	84.3	46.1	126.5	93.8	166
32-36	1,485	3.9	1,446	26.3	12.4	38.4	21.2	1,485
37-41	36,113	94.2	36,061	1.4	0.7	2.2	1.4	36,113
42 and Over	456	1.2	456	-	2.2	2.2	-	456
Not Stated	~	^	~	-	-	-	-	~
Total	38,320	100	38,189	3.4	2.0	5.4	3.5	38,320
Multiple Births								
Less than 28	27	2.0	27	-	185.2	185.2	185.2	15
28-31	58	4.4	57	17.2	-	17.2	-	27
32-36	597	45.2	593	6.7	5.1	11.7	8.4	297
37-41	640	48.4	639	1.6	-	1.6	-	320
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
Total	1,322	100	1,316	4.5	6.1	10.6	7.6	659

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	20.4	0.7	0.1
Instrumental [#]	59.0	39.3	1.4	0.2
Caesarean section	6.0	88.4	4.6	1.0
Multiple Births				
Spontaneous	35.8	57.9	5.3	1.0
Instrumental [#]	22.4	71.0	6.3	0.3
Caesarean section	1.9	80.6	14.7	2.9

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	Type of Feeding			
	Artificial	Breast	Combined	Total
Carlow	347 44.9 1.4	398 51.6 1.3	27 3.5 0.4	772 100.0 1.2
Cavan	495 47.0 1.9	467 44.3 1.5	91 8.6 1.4	1,053 100.0 1.7
Clare	719 51.7 2.8	605 43.5 1.9	68 4.9 1.0	1,392 100.0 2.2
Cork	2,588 36.6 10.1	4,203 59.4 13.3	287 4.1 4.3	7,078 100.0 11.1
Donegal	1,053 55.1 4.1	716 37.5 2.3	142 7.4 2.1	1,911 100.0 3.0
Dublin City	4,744 33.2 18.6	7,479 52.3 23.7	2,085 14.6 31.4	14,308 100.0 22.4
Dublin County	1,363 28.6 5.3	2,690 56.5 8.5	711 14.9 10.7	4,764 100.0 7.5
Galway	1,373 39.1 5.4	1,572 44.8 5.0	564 16.1 8.5	3,509 100.0 5.5
Kerry	685 40.5 2.7	905 53.5 2.9	103 6.1 1.6	1,693 100.0 2.7
Kildare	1,247 38.5 4.9	1,475 45.5 4.7	519 16.0 7.8	3,241 100.0 5.1
Kilkenny	463 39.6 1.8	694 59.4 2.2	12 1.0 0.2	1,169 100.0 1.8
Laois	467 42.3 1.8	578 52.3 1.8	60 5.4 0.9	1,105 100.0 1.7
Leitrim	* ^ ^	183 43.8 0.6	* ^ ^	418 100.0 0.7
Limerick	1,390 52.2 5.4	1,123 42.1 3.6	152 5.7 2.3	2,665 100.0 4.2
Longford	297 48.4 1.2	288 46.9 0.9	29 4.7 0.4	614 100.0 1.0
Louth	942 51.6 3.7	668 36.6 2.1	214 11.7 3.2	1,824 100.0 2.9
Mayo	658 42.1 2.6	618 39.6 2.0	286 18.3 4.3	1,562 100.0 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	Type of Feeding			
	Artificial	Breast	Combined	Total
Meath	1,087 39.7 4.3	1,347 49.2 4.3	306 11.2 4.6	2,740 100.0 4.3
Monaghan	412 52.3 1.6	309 39.2 1.0	67 8.5 1.0	788 100.0 1.2
Offaly	511 51.9 2.0	437 44.4 1.4	37 3.8 0.6	985 100.0 1.5
Roscommon	334 46.7 1.3	307 42.9 1.0	74 10.3 1.1	715 100.0 1.1
Sligo	355 45.6 1.4	296 38.0 0.9	127 16.3 1.9	778 100.0 1.2
Tipperary	1,017 50.1 4.0	866 42.7 2.7	145 7.1 2.2	2,028 100.0 3.2
Waterford	596 39.8 2.3	872 58.2 2.8	29 1.9 0.4	1,497 100.0 2.3
Westmeath	538 42.4 2.1	659 52.0 2.1	71 5.6 1.1	1,268 100.0 2.0
Wexford	943 49.1 3.7	828 43.1 2.6	148 7.7 2.2	1,919 100.0 3.0
Wicklow	754 39.4 2.9	940 49.1 3.0	221 11.5 3.3	1,915 100.0 3.0
Other	* ^ ^	18 60.0 0.1	~ ^ ^	30 100.0 0.0
Total	25,569 40.1 100	31,541 49.5 100	6,631 10.4 100	63,741 100 100

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.
 See Appendix E for details of county of residence classification.
 This table excludes early neonatal deaths.
 There were 5 births with unknown type of feeding; these were excluded from this table.

TABLE G11
 Mother's Nationality by Exclusively Breastfed Infants, Total Live Births

Mother's Nationality	Breastfeeding (%)
Ireland	43.9
UK	51.8
EU15 (excluding Ireland & UK)	78.2
EU15 to EU28	73.3
Rest of Europe	77.5
Africa	50.4
Asia	58.5
America	77.0

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.
 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	70	19.9	*	~	0	263.9	32	301.9	486.1	430.8
750-999	31	8.8	18	~	0	128.4	*	93.0	209.5	176.1
1000-1249	21	6.0	13	~	0	84.3	*	46.1	126.5	64.5
1250-1499	23	6.6	15	0	~	80.0	*	38.0	115.0	68.4
1500-1999	48	13.7	30	~	0	38.6	*	22.0	59.8	30.8
2000-2499	54	15.4	31	0	~	15.6	*	7.9	23.4	13.1
2500-2999	49	14.0	33	0	~	4.6	*	1.8	6.4	4.5
3000-3499	26	7.4	14	~	0	0.8	*	0.5	1.2	0.8
3500-3999	22	6.3	17	~	0	0.8	~	0.2	1.0	0.9
4000-4499	*	^	~	~	0	0.5	~	0.2	0.7	0.6
4500 and over	~	^	0	0	0	-	~	0.7	0.7	-
Total	351	100	208	11	8	3.5	124	1.9	5.5	3.7
Singleton Births										
500-749	59	18.3	*	~	0	333.3	23	319.4	546.3	478.7
750-999	*	^	*	~	0	150.4	*	93.8	230.1	194.4
1000-1249	*	^	*	~	0	114.3	*	64.5	171.4	93.8
1250-1499	*	^	*	0	~	116.3	*	52.6	162.8	107.4
1500-1999	*	^	*	~	0	62.2	*	38.9	98.7	51.9
2000-2499	*	^	*	0	~	20.9	*	10.0	30.7	16.8
2500-2999	49	15.2	33	0	~	5.2	*	2.1	7.2	5.0
3000-3499	*	^	*	~	0	0.7	*	0.5	1.2	0.8
3500-3999	22	6.8	17	~	0	0.8	~	0.2	1.0	0.9
4000-4499	*	^	~	~	0	0.5	~	0.2	0.7	0.6
4500 and over	~	^	0	0	0	-	~	0.7	0.7	-
Total	323	100	*	*	8	3.5	108	1.8	5.2	3.5
Multiple Births										
500-749	11	39.3	~	~	0	55.6	9	264.7	305.6	305.6
750-999	~	^	~	0	0	57.1	~	90.9	142.9	117.6
1000-1249	~	^	~	0	0	32.8	~	16.9	49.2	16.9
1250-1499	~	^	~	0	0	14.1	~	14.3	28.2	-
1500-1999	~	^	~	0	0	5.9	0	-	5.9	3.0
2000-2499	~	^	~	0	0	3.0	~	3.0	5.9	4.4
2500-2999	0	0.0	0	0	0	-	0	-	-	-
3000-3499	~	^	~	0	0	3.0	0	-	3.0	3.0
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	28	100	*	~	0	4.9	16	6.6	11.5	8.6

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)	53	23.3	8	6.5	61	17.4
Immaturity (P05-P08)	16	7.0	21	16.9	37	10.5
Respiratory/cardiovascular disorders (P20-P29)	22	9.7	13	10.5	35	10.0
Unspecified/Unexplained (P95,P96.9)	53	23.3	12	9.7	65	18.5
Congenital malformations (Q00-Q99)	63	27.8	54	43.5	117	33.3
All other specific causes	20	8.8	16	12.9	36	10.3
Total	227	100	124	100	351	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	20.2	21.3	12.5
1-23 hours	42.7	44.4	31.3
Total under 1 day	62.9	65.7	43.8
1-6 completed days	37.1	34.3	56.3
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	20.2	27.3	16.3
1-23 hours	42.7	36.4	46.3
Total under 1 day	62.9	63.6	62.5
1-6 completed days	37.1	36.4	37.5
Total	100	100	100

Note: Percentages are subject to rounding.

APPENDIX H

DOMICILIARY BIRTHS, 2007–2016

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 2007–2016.

- There were 168 domiciliary births in 2016 representing 0.3 per cent of all births.
- The number of domiciliary births has decreased by 9.7 per cent over the decade while the decrease from 206 births in 2015 to 168 births in 2016 is estimated at 18.4 per cent. The lowest number of domiciliary births over the 10-year period was reported for 2009 at 148 and the highest number was reported in 2015 at 206 (see Figure H1).
- The average age of mothers having domiciliary births has remained stable, ranging from 33.2 years in 2011 to 34.5 years in 2009 and is recorded as 34.0 years in 2016.
- Women choosing a domiciliary delivery in 2016 had an average maternal parity of 1.4 previous births.
- The percentage of women recording any breastfeeding was 96.2 per cent in 2007; this increased to 99.4 per cent in 2011 and is reported at 95.2 per cent in 2016.
- Exclusive breastfeeding was reported for 94.0 per cent of domiciliary births in 2016.
- The average birthweight for domiciliary births in 2016 was 3,753.1 grams.

TABLE H1

Trends in Domiciliary Births—Selected Statistics, 2007–2016

General Characteristics	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change	
											2007-2016	2015-2016
Total Domiciliary Births	186	158	148	177	168	176	162	186	206	168	-9.7	-18.4
Age of mother (years) ^{1,2}	Avg 33.6	33.7	34.5	33.4	33.2	33.8	33.3	34.1	33.7	34.0	1.2	0.9
Single mothers ¹	% 16.1	25.3	22.3	24.3	29.2	27.3	24.1	24.7	28.2	29.2	81.4	3.5
Maternal parity ¹	Avg 1.6	1.5	1.7	1.4	1.5	1.5	1.5	1.6	1.5	1.4	-12.5	-6.7
Gestational age at delivery in weeks ¹	Avg 40	40.1	40	40	40	39.9	39.8	40.0	39.9	39.8	-0.5	-0.3
Interval since last birth (years) ^{2,3}	Avg 2.9	3.1	3.2	2.9	2.7	2.9	2.6	2.5	2.9	2.6	-10.3	-10.3
Immunity to Rubella ¹	% 100.0	96.2	98.0	97.2	97.0	96.6	95.1	96.2	92.7	92.9	-7.1	0.2
Any Breastfeeding ^{4,5}	% 96.2	95.6	96.6	97.2	99.4	98.3	96.3	93.5	96.1	95.2	-1.0	-0.9
Exclusive Breastfeeding ⁴	% 95.7	95.6	96.6	96.6	98.2	96.6	93.8	91.4	95.1	94.0	-1.8	-1.2
Combined Antenatal Care – Midwife and G.P./Hospital ⁶	% 60.8	77.8	99.3	98.9	93.5	86.9	96.9	93.0	99.5	97.6	60.5	-1.9
Birthweight (grams) ⁷	Avg 3,699.2	3,667.1	3,764.9	3,833.9	3,679.6	3,713.1	3,720.1	3,767.7	3,712.8	3,753.1	1.5	1.1

Notes:

Percentages are subject to rounding.

There were no domiciliary multiple births in the years 2007–2016.

¹ Based on maternities.

² The calculation of average number of years has been revised in this report, therefore, caution should be exercised when comparing this with data reported in previous publications.

³ Based on multiparous maternities.

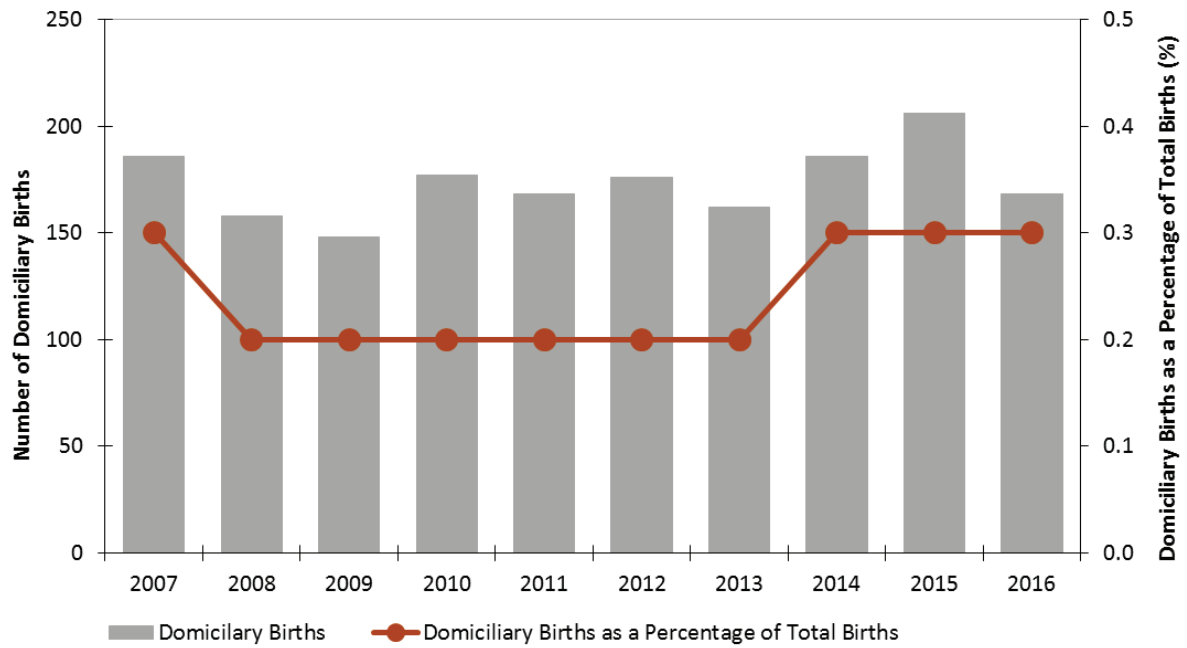
⁴ Based on maternities with live births. Excludes early neonatal deaths.

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'.

⁷ Based on live births.

FIGURE H1
 Number and Percentage of Domiciliary Births Reported, 2007–2016



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 2007 to 2016.

- The proportion of women having a spontaneous delivery has fallen from 58.0 per cent in 2007 to 52.9 per cent in 2016, with the rate of decrease higher for primiparous than multiparous women.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 25.5 per cent in 2007 to 31.9 per cent in 2016.
- 33.9 per cent of primiparous women delivered by Caesarean section in 2016 compared to 27.1 per cent in 2007, with a similar rate of increase for Caesarean section delivery for multiparous women, increasing from 24.4 per cent in 2007 to 30.6 per cent in 2016 (see Figure I1).

TABLE I1

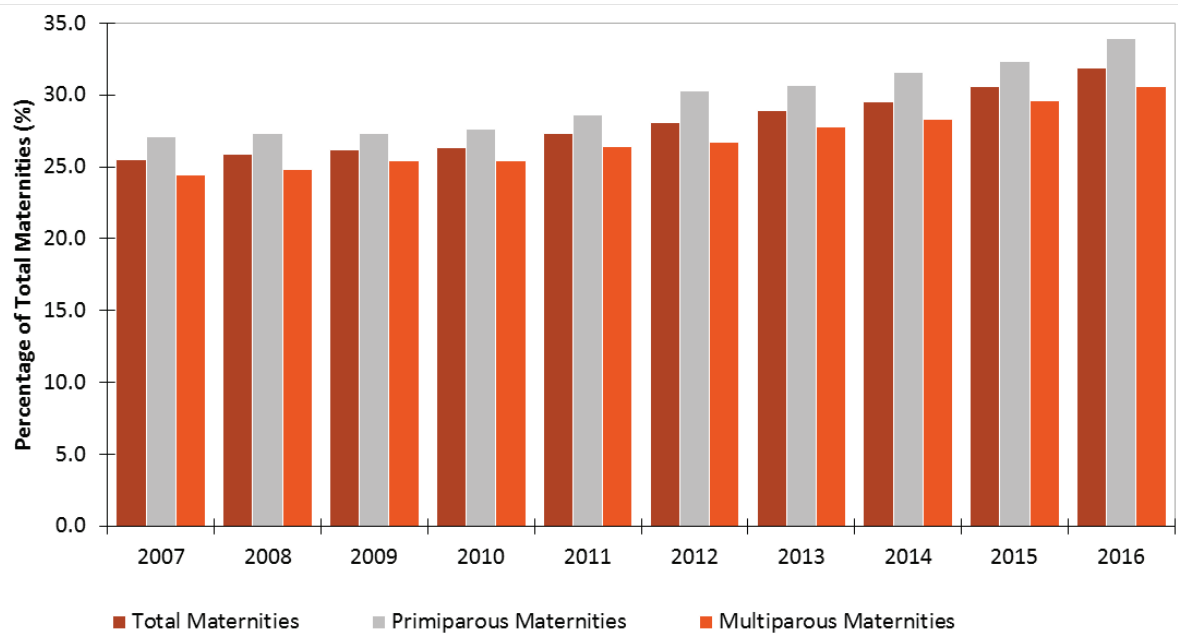
Percentage Distribution of Maternities by Method of Delivery, Primiparous and Multiparous Women, 2007–2016

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change	
											2007–2016	2015–2016
Total Maternities												
Spontaneous	58.0	57.4	57.0	57.2	56.6	56.3	55.9	55.0	54.2	52.9	-8.8	-2.4
Breech/forceps	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.0	33.3
Forceps	3.7	3.7	4.1	4.0	4.1	3.9	3.9	3.8	3.5	3.6	-2.7	2.9
Vacuum extraction	12.2	12.6	12.2	11.9	11.5	11.3	10.9	11.3	11.3	11.2	-8.2	-0.9
Caesarean section	25.5	25.9	26.2	26.3	27.3	28.1	28.9	29.5	30.6	31.9	25.1	4.2
Other specified & combined	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-100.0	0.0
Total	100	100	100	100	100	100	100	100	100	100		
Primiparous												
Spontaneous	44.1	43.5	42.7	42.7	41.2	40.5	40.2	39.0	38.4	36.6	-17.0	-4.7
Breech/forceps	0.6	0.5	0.5	0.7	0.6	0.4	0.4	0.4	0.4	0.6	0.0	50.0
Forceps	7.2	7.2	8.2	8.0	8.6	8.3	8.4	8.2	7.9	7.9	9.7	0.0
Vacuum extraction	21.0	21.4	21.2	21.0	21.0	20.5	20.3	20.8	21.0	21.0	0.0	0.0
Caesarean section	27.1	27.3	27.3	27.6	28.6	30.3	30.7	31.6	32.3	33.9	25.1	5.0
Other specified & combined	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-100.0	0.0
Total	100	100	100	100	100	100	100	100	100	100		
Multiparous												
Spontaneous	68.0	67.6	67.4	67.5	66.8	66.4	65.7	65.0	64.1	62.9	-7.5	-1.9
Breech/forceps	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.0	50.0
Forceps	1.2	1.1	1.1	1.2	1.1	1.1	1.0	1.0	0.8	1.0	-16.7	25.0
Vacuum extraction	5.8	6.0	5.7	5.4	5.2	5.4	5.1	5.4	5.3	5.2	-10.3	-1.9
Caesarean section	24.4	24.8	25.4	25.4	26.4	26.7	27.8	28.3	29.6	30.6	25.4	3.4
Other specified & combined	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	-100.0	0.0
Total	100	100	100	100	100	100	100	100	100	100		

Note: Percentage columns are subject to rounding.

FIGURE I1

Percentage Distribution of Maternities Delivering by Caesarean Section for Total, Primiparous and Multiparous Women, 2007–2016



Note: See Table I1 for data.

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