

Perinatal Statistics Report

2015

Healthcare Pricing Office
March 2017



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This is a report on national data on Perinatal events in 2015. 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 2015 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 2015.

SUMMARY STATISTICS, 2015

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	63,384	63,151	233	3.7	137	2.2	370	5.8	243	3.8
Multiple	2,485	2,456	29	11.7	27	11.0	56	22.5	44	17.8
Total	65,869	65,607	262	4.0	164	2.5	426	6.5	287	4.4

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, 2015

- 65,869 births were reported to NPRS in 2015, representing a 2.6 per cent decrease between 2014 and 2015
- 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)
- 58% of babies recorded any breastfeeding in 2015, compared to 55% in 2011 and 49% in 2006
- 48% of babies were exclusively breastfed in 2015 compared to 47% in 2011 and 44% in 2006
- 31% of total live births were delivered by Caesarean section, with 30% of singleton and 67% of multiple live births delivered by this method. In 2006, 25% of total live births were delivered by Caesarean section
- 95% of singleton births and 61% of multiple births were discharged from hospital within 5 days of birth
- Average total infant's length of stay was 3.3 days in 2015, compared to 3.7 days in 2006
- The perinatal mortality rate was 6.5 per 1,000 live births and stillbirths (5.8 per 1,000 singleton births and 22.5 per 1,000 multiple births). This rate has fallen by 7.1% since 2006, when it was 7.0 per 1,000 live births and stillbirths.

Mothers, 2015

- 64,624 maternities were reported to NPRS in 2015, representing a 2.6 per cent decrease between 2014 and 2015
- The average age of mothers has increased from 30.5 years in 2006 to 31.9 years in 2015
- 34% of mothers were aged 35 years or older, up from 26% in 2006
- 22% of first births were to women aged 35 years or older, compared to 14% in 2006
- 2% of total mothers giving birth were aged under 20 years, compared to 4% in 2006
- 38% of mothers gave birth for the first time, with an average age for first time mothers of 30.1 years
- 2% of mothers had a multiple pregnancy
- 58% of mothers recorded any breastfeeding, compared to 55% in 2011 and 49% in 2006
- 48% of mothers exclusively breastfed, compared to 47% in 2011 and 44% in 2006
- 55% of women having a singleton live birth delivered spontaneously, while deliveries by Caesarean section accounted for 30%, 4% were delivered using forceps and 11% via vacuum extractions
- 25% of women having a multiple live birth delivered spontaneously, while deliveries by Caesarean section accounted for 66%, 2% were delivered using forceps and 5% via vacuum extractions
- For women having a singleton live birth 54% had a postnatal length of stay of 2 days or less and 44% had a postnatal length of stay of 3-5 days
- For women having a multiple live birth 13% had a postnatal length of stay of 2 days or less and 72% had a postnatal length of stay of 3-5 days
- 22% of births in 2015 were to mothers born outside Ireland compared to 24% in 2011 and 19% in 2006.

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 2015.² 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 2015 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 2015 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 2006 to 2015. Appendix I includes data on method of delivery for primiparous and multiparous women for 2006 to 2015.

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. 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.

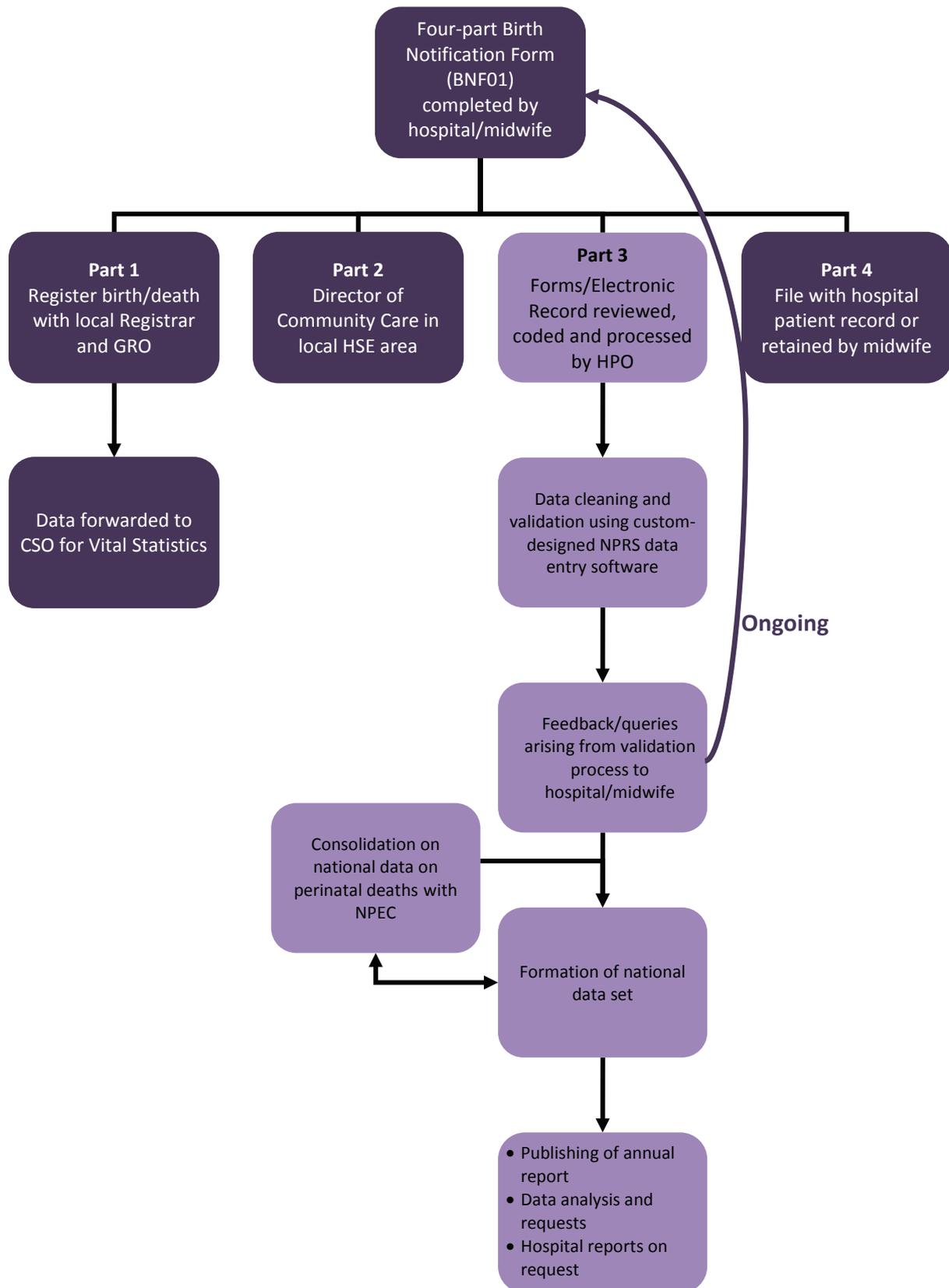
The link between the Birth Notification Form and the birth registration process for the General Register Office (GRO) ensures complete coverage of all births for the NPRS. The number of total births included in the NPRS are based on the data collected by the NPRS via part 3 of the Birth Notification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

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 2015 to both reporting systems. As a result of this data reconciliation exercise, the data reported on perinatal deaths for 2015 (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, 2015

	NPRS		NPEC	
	Number	Rate ^a	Number	Rate
Total births	65,869	-	-	-
Stillbirths	262	4.0	262	4.0
Early neonatal deaths	164	2.5	164	2.5
Perinatal deaths	426	6.5	426	6.5
Adjusted perinatal deaths ^b	287	4.4	261	4.0

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 139 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. Export files are currently being tested by the MN-CMS project team with further development on-going as each site goes live.

The first maternity unit went live in December 2016, with plans for a further three sites to go live during 2017. Further phases of the project, which will include all 19 maternity units, are scheduled over the next 3 year period.

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 2006 to 2015.¹¹

TRENDS IN SELECTED STATISTICS

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

- While there was an increase in total births from 2006 to 2009, the trend in total births over the past six years has been downward, seeing a return to the number of births recorded in 2006.
- Mothers giving birth in Ireland in 2015 with an average age of 31.9 years were on average 1.4 years older than those who gave birth in 2006 (30.5 years) and just slightly older than those giving birth in 2014 (average age 31.8 years).
- Over the decade 2006 to 2015, 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 8.0 per cent of births in 2006 compared with 4.3 per cent in 2015. Births to primiparous women aged 40 years and older increased from 2.1 per cent of births in 2006 to 4.0 per cent in 2015.
- Births to multiparous women aged less than 20 years accounted for 0.5 per cent of births in 2006 compared with 0.3 per cent in 2015.
- Over the decade, mother's immunity to rubella ranged between 90.0 per cent in 2008 to 94.3 per cent in 2011 and 2012 and is recorded at 92.9 per cent in 2015.
- The percentage of women recording any breastfeeding was 48.9 per cent in 2006, increasing to 58.0 per cent in 2015.
- The percentage of women exclusively breastfeeding has increased from 46.6 per cent in 2014 to 48.0 per cent in 2015. This represents the largest year on year change in exclusive breastfeeding over the decade.
- Irish mothers record a 8.4 per cent increase in the proportion of mothers recording exclusive breastfeeding over the decade, while mothers from the UK record a 2.1 per cent increase over the

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.

period. Mothers from the EU, Asia and Africa all record a decrease in the proportion of women recording exclusive breastfeeding at discharge over the decade.

- Mothers' average length of stay in hospital was recorded at 3.7 days in 2006 and has decreased to 3.4 days in 2015 representing a decrease of 8.1 per cent over the decade.

Data on parents' nationality show the following:¹²

- Births to mothers born in Ireland have declined from 81.4 per cent of births in 2006 to 77.5 per cent of births in 2015, a decrease of 4.8 per cent over the time period.
- A decline of 47.5 per cent was recorded in births to mothers from Africa from 4.0 per cent in 2006 to 2.1 per cent in 2015.
- An increase of 6.7 per cent was recorded in births to mothers from Asia from 3.0 per cent in 2006 to 3.2 per cent in 2015.

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

- For total live births the percentage of spontaneous deliveries fell from 58.8 per cent in 2006 to 53.5 per cent in 2015. The upward trend in delivery by Caesarean section continues with a rate of 25.4 per cent reported in 2006 compared with 31.4 per cent for 2015.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 29.5 per cent to 30.6 per cent between 2014 and 2015, an increase of 3.7 per cent in the proportion of women delivering by Caesarean section.

Regarding infant characteristics trends have been largely consistent over the decade 2006 to 2015.

- The average birthweight for total live births was 3,446.9 grams in 2015, which is broadly consistent with the preceding decade.
- While the average birthweight for singleton births of 3,487.2 grams has remained consistent over the decade, slightly more variation is observed for multiple births. The average birthweight for multiple births in 2015 was recorded at 2,412.2 grams.
- The percentage of total live births recording low birthweight (<2,500 grams) was 5.0 per cent in 2006 compared with 5.7 per cent in 2015.
- The percentage of total live births classified as high birthweight (4,500 grams or more) has decreased from 2.9 per cent in 2006 to 2.2 per cent in 2015.
- For total births, the infant's average length of stay in hospital declined from 3.7 days in 2006 to 3.3 days in 2015.

¹² Based on EU25 for 2006, EU27 for 2007-2013 and EU28 for 2014 and 2015. 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, 2006–2015

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% Change		
													2006–2015	2014–2015
Total Births	N	65,810	71,963	75,587	76,023	75,600	74,377	71,986	69,267	67,610	65,869		0.1	-2.6
Total Maternities	N	64,817	70,816	74,242	74,810	74,318	73,008	70,709	67,952	66,338	64,624		-0.3	-2.6
Birth Rate ¹	Per 1,000 population	15.5	16.4	16.8	16.7	16.5	16.2	15.6	15.0	14.6	14.2		-8.4	-2.7
Maternal Characteristics														
Age of mother (years) ^{2,3}	Avg	30.5	30.6	30.6	30.8	31.0	31.2	31.4	31.6	31.8	31.9		4.6	0.3
Age of single mother (years) ^{2,3}	Avg	26.3	26.6	26.8	27.0	27.5	27.8	28.3	28.5	28.9	29.1		10.6	0.7
Mother's Civil Status	Married	%	66.8	66.4	66.0	66.0	65.2	64.0	63.8	62.6	62.2		-6.9	-0.6
	Single	%	31.4	31.7	32.2	32.2	32.8	33.2	34.3	34.7	35.8		36.4	1.7
	All other	%	1.9	1.9	1.7	1.8	1.6	1.6	1.7	1.5	1.5		1.4	-6.7
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	%	8.0	7.7	6.9	6.5	5.9	5.2	4.7	4.3	4.3		-46.3	0.0
	20–24 Years	%	20.4	19.8	19.5	18.4	16.8	15.5	15.3	14.8	14.1		-30.9	0.0
	25–29 Years	%	26.7	27.4	28.5	29.5	29.2	27.5	26.1	24.5	23.5		-15.4	-3.8
	30–34 Years	%	30.5	30.9	30.8	31.1	32.6	34.7	35.6	36.3	36.9		20.7	-0.3
	35–39 Years	%	12.1	12.2	12.1	12.4	12.9	14.1	14.8	16.2	17.4		18.1	4.0
40 Years and Older	%	2.1	2.1	2.1	2.2	2.6	3.0	3.2	3.5	3.8	4.0		90.5	5.3
Births to Multiparous Women by Maternal Age ²	Under 20 Years	%	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.3		-40.0	0.0
	20–24 Years	%	7.6	7.4	7.2	7.1	6.7	6.4	6.1	6.0	5.6		5.5	-1.8
	25–29 Years	%	20.6	20.4	20.4	20.3	19.9	19.4	18.5	17.7	17.3		16.7	-3.5
	30–34 Years	%	36.7	36.5	36.1	35.4	36.2	37.0	36.8	37.0	36.5		35.7	-2.2
	35–39 Years	%	28.7	29.2	29.8	30.4	30.4	30.2	31.1	31.8	32.7		34.1	18.8
40 Years and Older	%	5.9	5.9	5.9	6.3	6.3	6.5	7.0	7.2	7.6	7.7		30.5	1.3
Number of previous stillbirths per 1,000 maternities ²	Avg	10.6	10.8	10.9	11.7	11.5	11.9	9.7	10.9	10.8	9.5		-10.4	-12.0
Gestational age at delivery (weeks) ²	Avg	39.4	39.4	39.4	39.4	39.4	39.3	39.3	39.3	39.2	39.2		-0.5	0.0
Interval since last birth (years) ^{3,4}	Avg	3.3	3.4	3.4	3.3	3.4	3.3	3.3	3.4	3.4	3.4		3.0	0.0
Immunity to rubella ²	%	92.2	92.4	90.0	90.5	92.3	94.3	94.3	94.2	93.4	92.9		0.8	-0.5
Any breastfeeding ^{1,2,5,6}	%	48.9	50.6	51.1	52.8	54.1	55.3	55.4	55.9	57.0	58.0		18.6	1.8
Exclusive breastfeeding ^{1,2,5}	%	44.4	45.2	44.6	45.5	46.2	47.0	46.9	46.6	46.6	48.0		8.1	3.0
Exclusive breastfeeding by Mother's Nationality ^{1,2,5}	Irish	%	39.3	39.4	38.0	38.9	39.1	40.1	40.0	40.5	41.1		42.6	8.4
	UK	%	52.3	54.5	51.7	52.4	54.4	51.2	51.0	54.2	50.9		53.4	2.1
	EU ⁷	%	81.9	77.7	76.6	75.6	76.2	76.9	77.5	75.3	74.4		73.7	-10.0
	Africa	%	55.6	53.6	52.6	48.4	51.2	51.3	51.6	47.4	45.3		45.8	-17.6
Asia	%	65.5	62.1	59.3	59.7	57.9	60.2	58.5	54.5	53.3	55.7		-15.0	4.5
Mother's length of stay (days) ^{1,2,8}	Avg	3.7	3.6	3.5	3.5	3.4	3.3	3.4	3.4	3.4	3.4		3.4	-8.1

TABLE 2.1
Trends in Selected Statistics, 2006–2015 (contd.)

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% Change			
													2006–2015	2014-2015	
Parents Nationality															
Mother's Nationality	Irish	%	81.4	79.1	77.3	76.1	75.4	76.1	76.0	77.1	77.8	77.5	-4.8	-0.4	
	UK	%	3.3	2.9	2.7	2.6	2.7	2.3	2.4	2.3	2.2	2.4	-27.3	9.1	
	EU ⁷	%	5.2	8.5	10.6	11.7	12.9	13.0	12.7	12.9	12.4	12.5	140.4	0.8	
	Africa	%	4.0	3.6	3.4	3.4	3.0	2.6	2.7	2.4	2.4	2.3	2.1	-47.5	-8.7
	Asia	%	3.0	3.6	3.7	4.0	3.8	4.0	4.0	3.4	3.2	3.2	3.2	6.7	0.0
Father's Nationality ⁹	Irish	%	62.1	60.5	58.4	58.0	59.1	59.4	57.5	57.1	56.0	58.2	-6.3	3.9	
	UK	%	2.8	2.6	2.5	2.3	2.4	2.2	2.0	2.0	1.9	1.9	-32.1	0.0	
	EU ⁷	%	2.9	5.3	6.8	7.8	8.6	8.8	8.4	8.1	7.9	7.9	172.4	0.0	
	Africa	%	3.2	3.0	2.7	2.7	2.4	2.1	1.9	1.6	1.5	1.4	-56.3	-6.7	
	Asia	%	2.3	2.8	2.9	3.3	3.1	3.3	3.1	2.4	2.2	2.4	4.3	9.1	
Perinatal Care															
Hospital & G.P. combined antenatal care ^{2,10}															
Booked hospital admissions ^{2,8}															
Method of delivery ¹¹	Spontaneous	%	78.9	77.4	79.3	80.7	80.9	77.3	77.5	79.5	80.9	81.9	3.8	1.2	
	Caesarean section	%	98.9	99.0	98.9	99.0	99.3	99.3	99.3	99.2	96.9	99.1	0.2	2.3	
	Forceps ¹³	%	58.8	57.3	56.6	56.4	56.5	55.8	55.6	55.1	54.2	53.5	-9.0	-1.3	
Total live births ¹²	Spontaneous	%	25.4	26.2	26.7	26.9	27.1	28.1	28.9	29.7	30.4	31.4	23.6	3.3	
	Caesarean section	%	3.0	3.7	3.7	4.1	4.0	4.1	3.9	3.8	3.8	3.5	16.7	-7.9	
	Forceps ¹³	%	59.4	58.0	57.4	57.0	57.2	56.6	56.3	55.9	55.0	54.2	-8.8	-1.5	
Method of delivery ¹¹	Spontaneous	%	24.8	25.5	25.9	26.2	26.3	27.3	28.1	28.9	29.5	30.6	23.4	3.7	
	Caesarean section	%	3.0	3.7	3.7	4.1	4.0	4.1	3.9	3.9	3.8	3.5	16.7	-7.9	
	Forceps ¹³	%	59.4	58.0	57.4	57.0	57.2	56.6	56.3	55.9	55.0	54.2	-8.8	-1.5	
Infant Characteristics															
Birthweight (grams) ¹	Total births	AVG	3,473.0	3,465.4	3,464.0	3,466.1	3,468.4	3,467.0	3,464.0	3,452.4	3,448.8	3,446.9	-0.8	-0.1	
	Singleton births	AVG	3,503.9	3,499.3	3,501.9	3,498.9	3,504.0	3,505.0	3,502.0	3,493.2	3,488.5	3,487.2	-0.5	0.0	
	Multiple births	AVG	2,464.8	2,421.4	2,424.5	2,465.2	2,447.2	2,464.6	2,420.2	2,411.7	2,428.3	2,412.2	-2.1	-0.7	
Low birthweight (<2500 grams) ¹	Total births	%	5.0	5.3	5.3	5.0	5.1	5.2	5.4	5.5	5.6	5.7	14.0	1.8	
	Singleton births	%	3.7	3.8	3.8	3.7	3.6	3.6	3.8	3.8	3.9	3.9	5.4	0.0	
	Multiple births	%	46.4	50.4	48.4	45.4	47.6	46.0	49.9	49.0	49.4	49.9	7.5	1.0	
High birthweight (≥4500 grams) ¹	Total births	%	2.9	2.8	2.7	2.7	2.7	2.6	2.5	2.3	2.3	2.2	-24.1	-4.3	
	Singleton births	AVG	3.7	3.5	3.4	3.3	3.2	3.2	3.2	3.2	3.3	3.3	-10.8	0.0	
	Multiple births	AVG	3.5	3.3	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.1	-11.4	3.3	
Post-mortems for early neonatal deaths	Total births	AVG	9.9	10.0	9.9	9.0	9.5	8.6	9.4	9.7	9.3	9.5	-4.0	2.2	
	Singleton births	%	26.3	30.3	28.9	33.5	32.9	24.8	27.3	35.2	31.6	37.8	43.7	19.6	
	Multiple births	%	26.3	30.3	28.9	33.5	32.9	24.8	27.3	35.2	31.6	37.8	43.7	19.6	

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 Based on multiparous maternities. ⁵ Excludes early neonatal deaths. ⁶ Any breastfeeding includes type of feeding recorded as either breast or combined. ⁷ Based on EU25 for 2006, EU27 for 2007-2013 and EU28 for 2014 and 2015. As the EU expanded over this period caution should be exercised when interpreting these data. See also Appendix F. ⁸ Excludes domiciliary births. ⁹ Father's details are only required for registration purposes where mother's civil status is recorded as 'married'. As a result, there is a proportion of records for which information is incomplete, these are assigned to the category 'not applicable'. The data presented here, reports father's nationality where recorded, regardless of mother's civil status. ¹⁰ Deliveries under hospital schemes (such as domino, early transfer home, planned community midwives, and midwifery-led units) and domiciliary births were included in hospital and G.P. combined care. ¹¹ See also Appendix I 'Method of Delivery for Primiparous and Multiparous Women'. ¹² These figures were based on total live births, as each infant in a multiple pregnancy can have a different method of delivery. ¹³ Excludes breech deliveries.

SINGLETON AND MULTIPLE BIRTHS

Table 2.2 shows the numbers of singleton and multiple births each year for the period 2006 to 2015.

- Of the 65,869 births presented in this report for 2015, 63,384 were singleton births, 2,390 were twin births and 95 were higher-order multiple births.¹³
- The twinning rate was 18.5 per 1,000 maternities in 2015; this represents an increase of 25.0 per cent over the decade and unchanged between 2014 and 2015.

TABLE 2.2

Singleton and Multiple Births, 2006–2015

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% Change	
											2006-2015	2014-2015
Singleton births	63,839	69,692	72,916	73,603	73,046	71,651	69,452	66,650	65,070	63,384	-0.7	-2.6
Twin births	1,916	2,185	2,575	2,373	2,480	2,638	2,435	2,526	2,461	2,390	24.7	-2.9
Higher-order multiple births	55	86	96	43	74	88	99	91	79	95	72.7	20.3
Twinning rate (per 1,000 maternities)	14.8	15.4	17.4	15.9	16.7	18.1	17.2	18.6	18.5	18.5	25.0	0.0

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 2006 and 2015 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 5.8 in 2015, compared to 6.5 per 1,000 live births and stillbirths in 2006.
- The total perinatal mortality rate for multiple births was recorded at 22.5 in 2015, down from 23.8 per 1,000 live births and stillbirths in 2006.
- For 2015 the stillbirth mortality rate was recorded at 3.7 per 1,000 live births and stillbirths for singleton births compared to 11.7 for multiple births.
- The early neonatal mortality rate for 2015 was recorded at 2.2 per 1,000 live births for singleton births compared to 11.0 for multiple 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 2015, there were 63,433 singleton births, 2,407 twin births, 95 triplets and 5 quadruplets reported to the NPRS; of these, 71 births weighed less than 500 grams (including 49 singleton births and 22 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, 2006–2015

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% Change	
	Number of Births and Perinatal Deaths										2006-2015	2014-2015
Total Births	65,810	71,963	75,587	76,023	75,600	74,377	71,986	69,267	67,610	65,869	0.1	-2.6
Singleton	63,839	69,692	72,916	73,603	73,046	71,651	69,452	66,650	65,070	63,384	-0.7	-2.6
Multiple	1,971	2,271	2,671	2,420	2,554	2,726	2,534	2,617	2,540	2,485	26.1	-2.2
Live Births	65,502	71,570	75,229	75,651	75,245	74,080	71,705	68,990	67,324	65,607	0.2	-2.6
Singleton	63,555	69,318	72,582	73,247	72,709	71,375	69,188	66,386	64,803	63,151	-0.6	-2.5
Multiple	1,947	2,252	2,647	2,404	2,536	2,705	2,517	2,604	2,521	2,456	26.1	-2.6
Stillbirths	308	393	358	372	355	297	281	277	286	262	-14.9	-8.4
Singleton	284	374	334	356	337	276	264	264	267	233	-18.0	-12.7
Multiple	24	19	24	16	18	21	17	13	19	29	20.8	52.6
Early Neonatal Deaths	152	132	159	155	161	153	143	159	136	164	7.9	20.6
Singleton	129	118	138	142	135	126	122	133	117	137	6.2	17.1
Multiple	23	14	21	13	26	27	21	26	19	27	17.4	42.1
Perinatal Deaths	460	525	517	527	516	450	424	436	422	426	-7.4	0.9
Singleton	413	492	472	498	472	402	386	397	384	370	-10.4	-3.6
Multiple	47	33	45	29	44	48	38	39	38	56	19.1	47.4
	Rates ^a											
Stillbirths	4.7	5.5	4.7	4.9	4.7	4.0	3.9	4.0	4.2	4.0	-14.9	-4.8
Singleton	4.4	5.4	4.6	4.8	4.6	3.9	3.8	4.0	4.1	3.7	-15.9	-9.8
Multiple	12.2	8.4	9.0	6.6	7.0	7.7	6.7	5.0	7.5	11.7	-4.1	56.0
Early Neonatal Deaths	2.3	1.8	2.1	2.0	2.1	2.1	2.0	2.3	2.0	2.5	8.7	25.0
Singleton	2.0	1.7	1.9	1.9	1.9	1.8	1.8	2.0	1.8	2.2	10.0	22.2
Multiple	11.8	6.2	7.9	5.4	10.3	10.0	8.3	10.0	7.5	11.0	-6.8	46.7
Perinatal Deaths	7.0	7.3	6.8	6.9	6.8	6.1	5.9	6.3	6.2	6.5	-7.1	4.8
Singleton	6.5	7.1	6.5	6.8	6.5	5.6	5.6	6.0	5.9	5.8	-10.8	-1.7
Multiple	23.8	14.5	16.8	12.0	17.2	17.6	15.0	14.9	15.0	22.5	-5.5	50.0

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 61.5 per cent of perinatal deaths in 2015.^{16,17} Table 2.4 presents the numbers and rates for total births and perinatal deaths for Ireland from 2006 to 2015.

- In 2015 approximately 1 in every 250 births was stillborn and 1 in every 400 live births died in the first week of life.
- Over the decade 2006 to 2015, the perinatal mortality rate has fallen from 7.0 per 1,000 live births and stillbirths to 6.5 per 1,000. This represents a 7.1 per cent decrease over the decade.
- The perinatal mortality rate was reported at 6.2 per 1,000 live births and stillbirths in 2014; this has increased slightly in 2015 and is reported at 6.5 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, 2006–2015

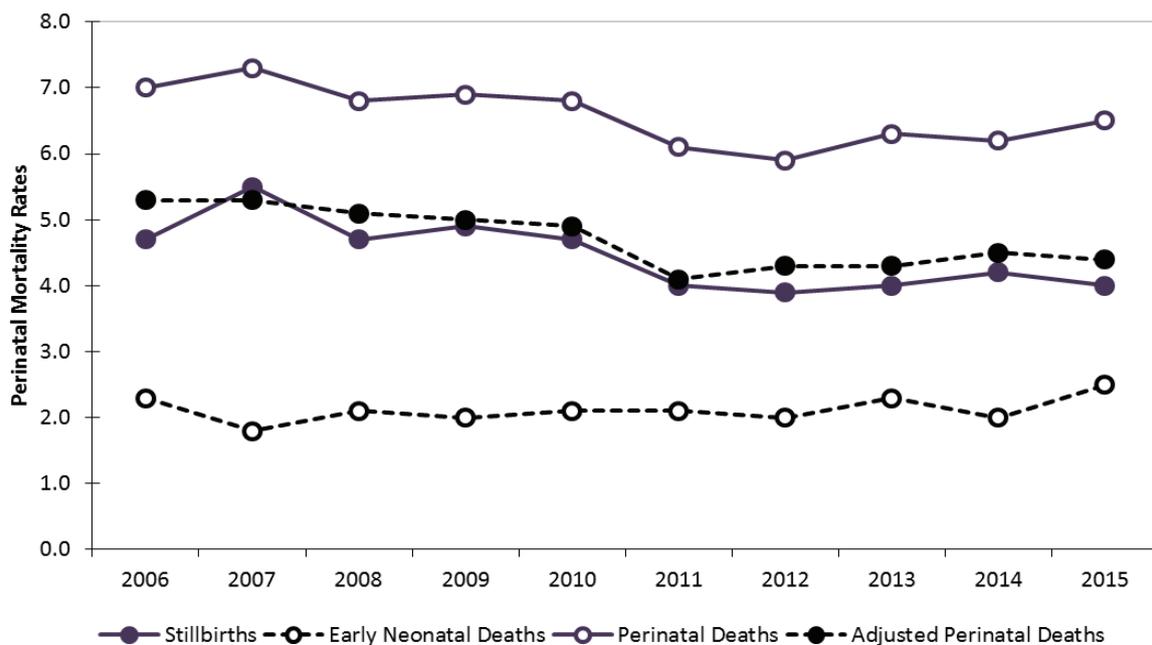
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% Change	
	Number of Births and Perinatal Deaths										2006–2015	2014–2015
Total Births	65,810	71,963	75,587	76,023	75,600	74,377	71,986	69,267	67,610	65,869	0.1	-2.6
Live Births	65,502	71,570	75,229	75,651	75,245	74,080	71,705	68,990	67,324	65,607	0.2	-2.6
Stillbirths	308	393	358	372	355	297	281	277	286	262	-14.9	-8.4
Early Neonatal Deaths	152	132	159	155	161	153	143	159	136	164	7.9	20.6
Perinatal Deaths	460	525	517	527	516	450	424	436	422	426	-7.4	0.9
Adjusted Perinatal Deaths	345	383	384	381	368	308	309	297	304	287	-16.8	-5.6
Rates^a												
Stillbirth	4.7	5.5	4.7	4.9	4.7	4.0	3.9	4.0	4.2	4.0	-14.9	-4.8
Early Neonatal Deaths	2.3	1.8	2.1	2.0	2.1	2.1	2.0	2.3	2.0	2.5	8.7	25.0
Perinatal Mortality	7.0	7.3	6.8	6.9	6.8	6.1	5.9	6.3	6.2	6.5	-7.1	4.8
Adjusted Perinatal Mortality	5.3	5.3	5.1	5.0	4.9	4.1	4.3	4.3	4.5	4.4	-17.0	-2.2

Notes: Percentage columns are subject to rounding.

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

FIGURE 2.1

Stillbirth, Early Neonatal and Perinatal Mortality Rates, Ireland, 2006–2015



Note: See Table 2.4 for data.

As European comparisons on perinatal mortality rates were not available for 2015 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 2015 data.

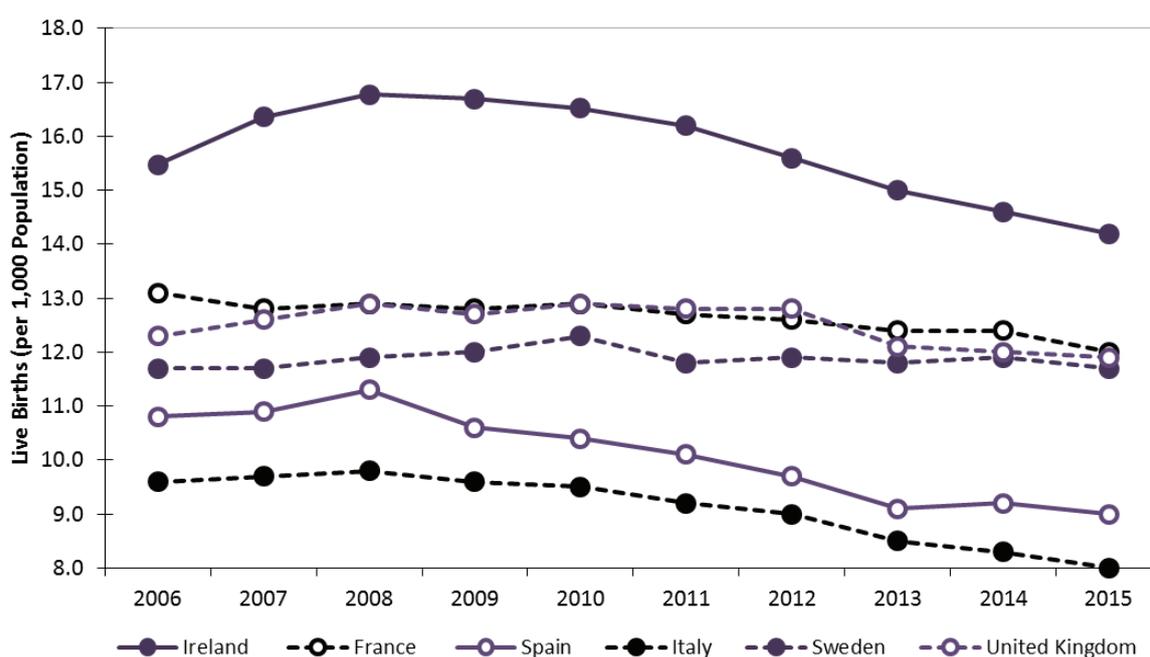
BIRTH RATES¹⁸

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 2006 to 2015. Figure 2.3 presents birth rates in the 28 EU countries for 2015.

- Of the countries reviewed, Ireland has consistently had the highest birth rate over the period, and is recorded at 14.2 per 1,000 population in 2015 (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 14.2 per 1,000 population in 2015.
- After Ireland, the countries with the next highest birth rates in 2015 are France and the United Kingdom (12.0 and 11.9 respectively) followed by Sweden and Latvia (11.7 and 11.1 respectively). In 2015, Italy (8.0) had the lowest birth rate, followed by Portugal and Greece, each having a birth rate of 8.3 and 8.5 respectively (see Figure 2.3).

FIGURE 2.2

Trends in Birth Rates for Selected EU Countries, 2006–2015



Sources: 'Population and social conditions', Eurostat, Data Navigation Tree, date consulted March 2017.

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

Data for Ireland are based on NPRS data on live births from 2006 onwards. The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted March 2017.

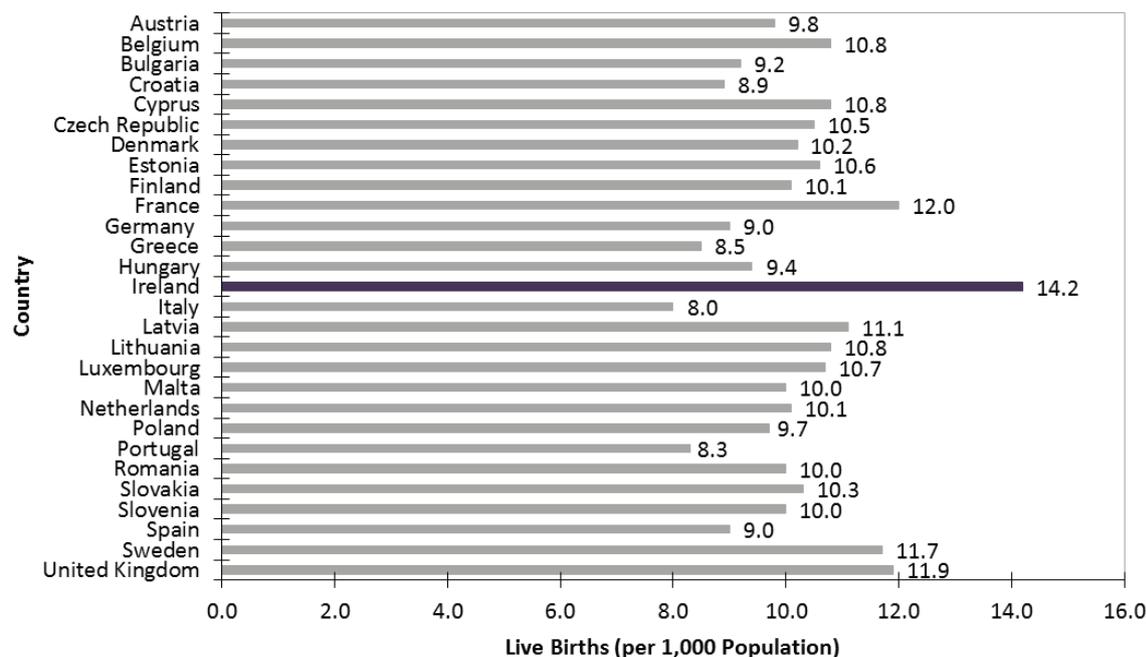
www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0

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 March 2017. www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0

²⁰ The CSO also estimates the Irish birth rate at 14.2 per 1,000 population for 2015. See Vital Statistics, Fourth Quarter and Yearly Summary 2015, May 2016. CSO 2015 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, 2015



Sources: 'Population and social conditions', Eurostat, Data Navigation Tree, date consulted March 2017.

<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 March 2017.

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

FERTILITY

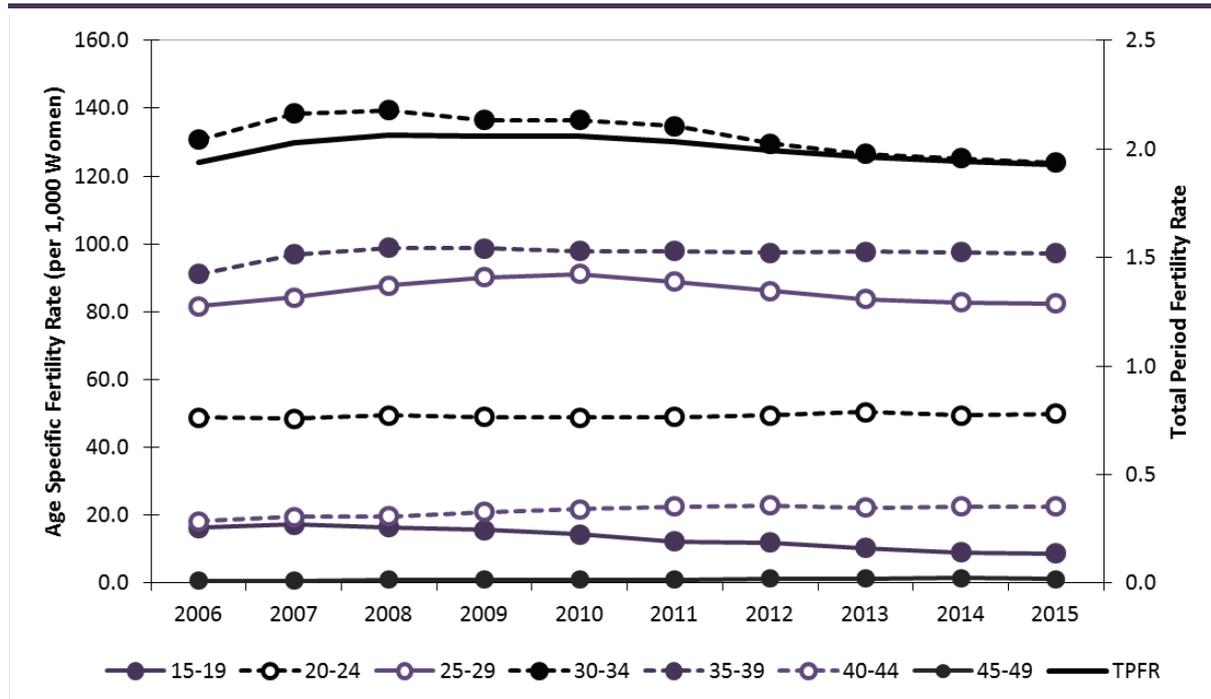
The Total Period Fertility Rate (TPFR) for a given year indicates the number of children a woman could expect to have if the Age-Specific Fertility Rates (ASFR) for that year applied throughout her fertile years.²¹ The ASFR refers to the number of live births to women in a particular age group per 1,000 women. Figure 2.4 displays the trend in the ASFR and TPFR in Ireland from 2006–2015.

- The Irish TPFR has increased from an average of 1.9 in 2006 to a high of 2.1 in 2008–2010 and is estimated at the same rate as reported at the beginning of the decade at 1.9 in 2015.²²
- The ASFRs for the 20–24 year age group increased slightly from 2014–2015. All other age groups recorded decreasing ASFR rates for 2015.
- Over the decade 2006–2015, the ASFRs for the 15–19 and 30–34 year age groups have declined. All other age groups recorded higher ASFR rates over the decade.
- The ASFRs show women in the 25–29 year age group recorded annual increases in fertility between 2006–2010 and reported decreasing rates in more recent years.
- In all years the 30–34 year age group recorded the highest ASFR.
- The ASFR for the 40–44 year age group was higher than that reported for the 15–19 year age group in 2015, and this divergence has been increasing since 2006.

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

²² The CSO estimates the TPFR at 1.9 for 2015. See Vital Statistics, Fourth Quarter and Yearly Summary 2015, May 2016. CSO 2015 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, 2006–2015

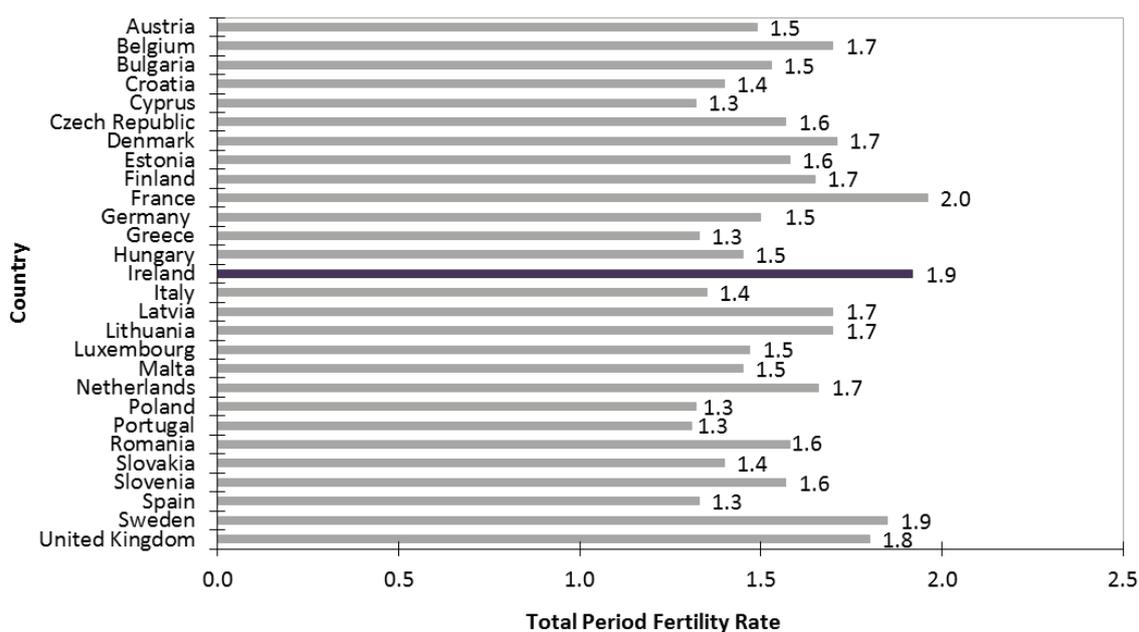


Sources: Total period fertility rates (TPFRs) and age-specific fertility rates (ASFRs) are calculated using NPRS data from 2006 onwards. Female population estimates from 2006 onwards were obtained from the CSO Statistical Databases, date consulted March 2017. <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0>

The TPF_R for Ireland is based on population data for 2015, and at 1.9 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 TPF_Rs for 2015 using data from Eurostat and the NPRS.

- France had the highest TPF_R (2.0) in the 28 EU countries, followed next in line by Ireland and Sweden, both reporting a TPF_R of 1.9.
- The UK was just behind Ireland with a TPF_R of 1.8, while Portugal and Cyprus recorded the lowest TPF_R of 1.3 in 2015.

FIGURE 2.5
Total Period Fertility Rates for EU Countries, 2015



Sources: 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted March 2017.
<http://epp.eurostat.ec.europa.eu>

*Data for Ireland are based on NPRS data on live births. Female population estimates for 2015 were obtained from the CSO Statistical Databases, date consulted March 2017.
www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0

²³ See Vital Statistics, Fourth Quarter and Yearly Summary 2015, May 2016.

SECTION THREE

GENERAL CHARACTERISTICS

INTRODUCTION

This section presents more detailed analyses of data reported to the NPRS for 2015.

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 2015, the highest percentage of births were to women aged 30 to 34 years.
- Over 37 per cent of multiple births were to mothers aged 35 to 39 years.

TABLE 3.1

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Under 20 Years	1,198	1.8	1,196	1.7	2.5	4.2	4.2	1,194
20-24 Years	5,732	8.7	5,700	5.6	2.5	8.0	5.9	5,683
25-29 Years	12,393	18.8	12,350	3.5	3.0	6.5	3.8	12,243
30-34 Years	23,769	36.1	23,690	3.3	1.9	5.3	4.0	23,357
35-39 Years	18,544	28.2	18,469	4.0	2.7	6.7	4.2	18,077
40-44 Years	4,021	6.1	3,991	7.5	3.5	10.9	7.0	3,876
45 Years and Over	*	^	*	4.8	4.8	9.5	9.5	*
Not Stated	~	^	~	-	-	-	-	~
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Under 20 Years	1,190	1.9	1,188	1.7	2.5	4.2	4.2	*
20-24 Years	5,634	8.9	5,604	5.3	2.5	7.8	5.7	5,634
25-29 Years	12,092	19.1	12,054	3.1	2.5	5.6	3.1	12,092
30-34 Years	22,949	36.2	22,876	3.2	1.7	4.8	3.5	22,949
35-39 Years	17,607	27.8	17,540	3.8	2.4	6.2	3.9	17,607
40-44 Years	3,735	5.9	3,713	5.9	2.7	8.6	5.1	3,735
45 Years and Over	*	^	*	5.7	-	5.7	5.7	*
Not Stated	~	^	~	-	-	-	-	~
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Under 20 Years	8	0.3	8	-	-	-	-	~
20-24 Years	98	3.9	96	20.4	-	20.4	20.4	49
25-29 Years	301	12.1	296	16.6	23.6	39.9	33.4	151
30-34 Years	820	33.0	814	7.3	9.8	17.1	15.9	408
35-39 Years	937	37.7	929	8.5	7.5	16.0	9.7	470
40-44 Years	286	11.5	278	28.0	14.4	42.0	31.8	141
45 Years and Over	35	1.4	35	-	28.6	28.6	28.6	*
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

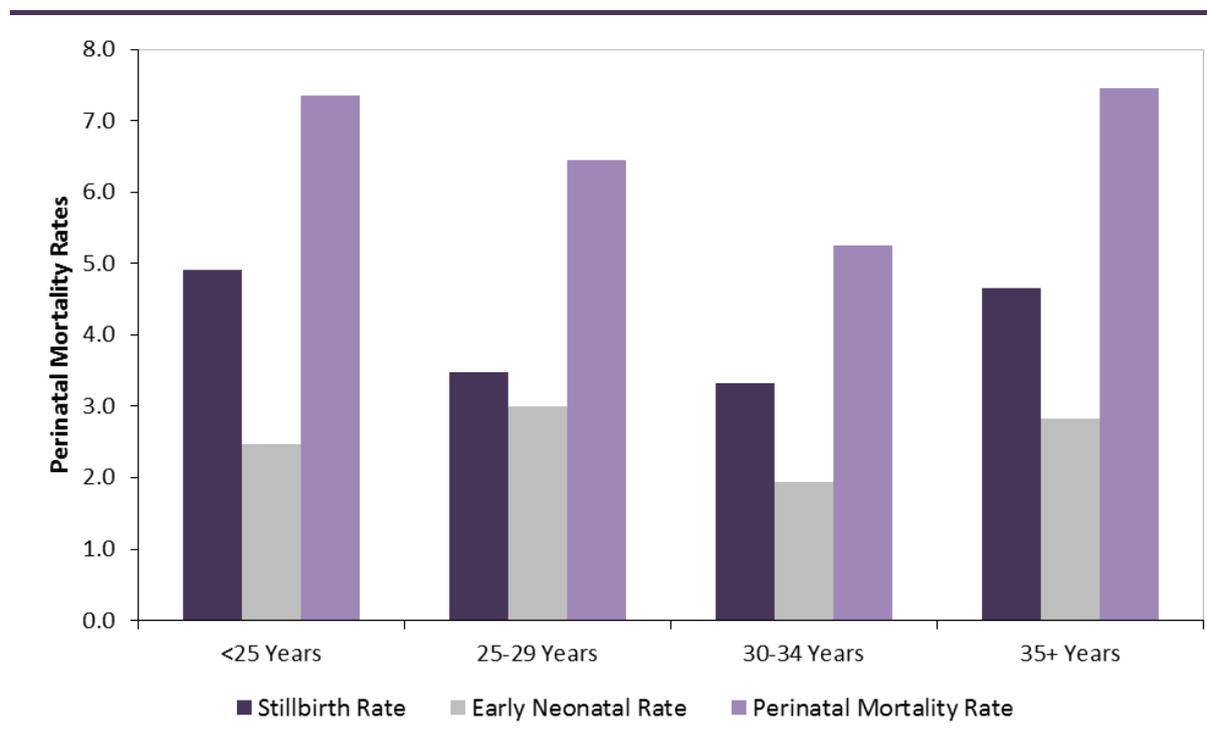
Notes:

- 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 5.3 per 1,000 live births and stillbirths, the perinatal mortality rate was lowest for mothers aged in the 30 to 34 year age group, whilst higher perinatal mortality rates were recorded for all other age groups presented in Figure 3.1.
- The highest stillbirth rate was recorded for mothers aged less than 25 years (at 4.9 per 1,000 live births and stillbirths), while the lowest stillbirth rate was recorded for the 30 to 34 year age group (3.3 per 1,000 live births and stillbirths).
- At 3.0 per 1,000 live births the highest early neonatal rate was recorded for the 25 to 29 year age group, while the lowest early neonatal rates were recorded for mothers in the 30 to 34 year age group (1.9 per 1,000 live births).

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



Note: See Table 3.1 for data.

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	40,968	62.2	40,811	3.8	2.2	6.1	3.9	40,101
Single	23,990	36.4	23,891	4.1	2.9	7.0	5.0	23,639
Widowed	63	0.1	63	-	15.9	15.9	15.9	60
Separated	443	0.7	439	9.0	4.6	13.5	9.1	430
Divorced	387	0.6	385	5.2	2.6	7.8	5.2	377
Civil Partner	*	^	*	-	-	-	-	*
Not Stated	~	^	~	-	-	-	-	~
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Married	39,237	61.9	39,099	3.5	1.8	5.4	3.4	39,237
Single	23,289	36.7	23,199	3.9	2.6	6.5	4.5	23,289
Widowed	*	^	*	-	17.5	17.5	17.5	*
Separated	417	0.7	414	7.2	4.8	12.0	7.2	417
Divorced	368	0.6	366	5.4	2.7	8.2	5.4	368
Civil Partner	*	^	*	-	-	-	-	*
Not Stated	~	^	~	-	-	-	-	~
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Married	1,731	69.7	1,712	11.0	11.1	22.0	16.3	864
Single	701	28.2	692	12.8	11.6	24.3	21.5	350
Widowed	*	^	*	-	-	-	-	~
Separated	26	1.0	25	38.5	-	38.5	38.5	13
Divorced	19	0.8	19	-	-	-	-	9
Civil Partner	0	0.0	0	-	-	-	-	0
Not Stated	~	^	~	-	-	-	-	~
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

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.

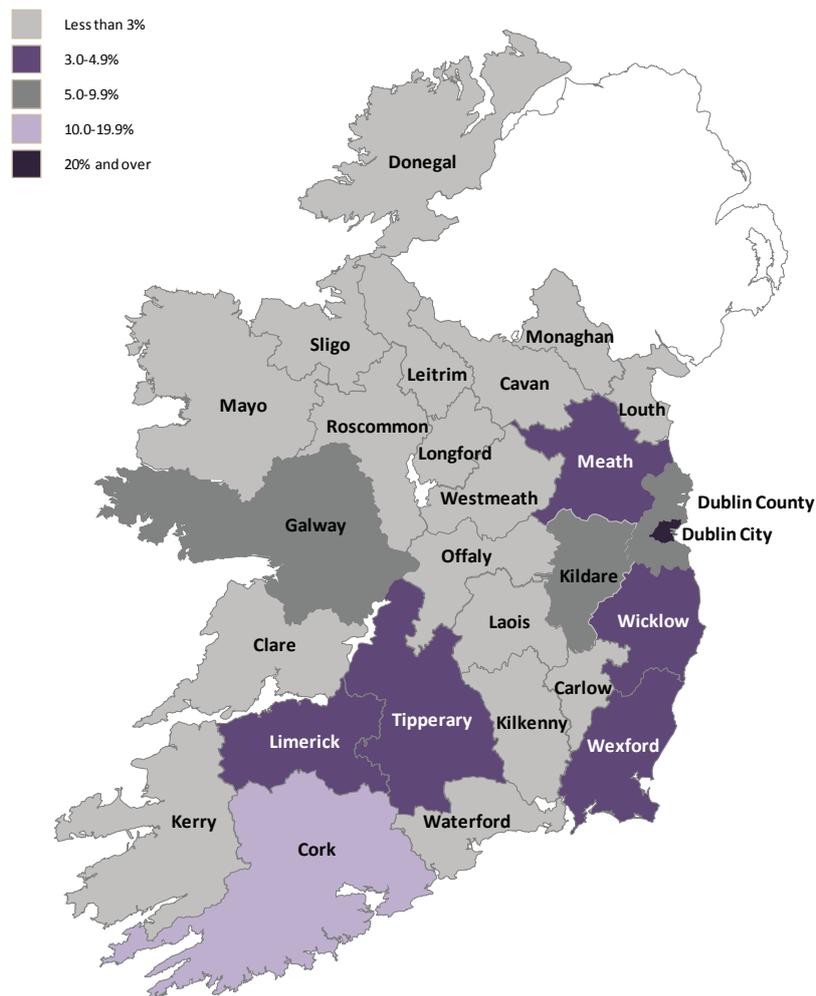
MOTHER'S COUNTY OF RESIDENCE

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 11.6 per cent were to mothers resident in County Cork.
- There were less than 1 per cent of births to mothers resident in Longford or Leitrim.

FIGURE 3.2

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



Notes: See Appendix G, Table G1 for data.
 Example: 1.3 per cent of all births were to mothers resident in Carlow.
 See Appendix E for details of county of residence classification.

SOCIO-ECONOMIC GROUP

MOTHER'S SOCIO-ECONOMIC GROUP

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

- The highest proportions of total births were to mothers whose socio-economic group was classified as either 'home duties' (19.9 per cent) or 'intermediate non-manual workers' (19.2 per cent).
- Mothers classified as 'lower professional' accounted for 18.6 per cent of total births, while mothers in the 'other non-manual workers' group accounted for a further 14.5 per cent of total births.
- Where rates are calculated on more than 20 perinatal deaths, the highest perinatal mortality rate of 9.2 per 1,000 live births and stillbirths was reported for mothers in the socio-economic group 'home duties' followed by 'unemployed' (8.1 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 (5.4 per 1,000 live births and stillbirths), and in the 'intermediate non-manual workers' socio-economic group (5.9 per 1,000 live births and stillbirths).

TABLE 3.3

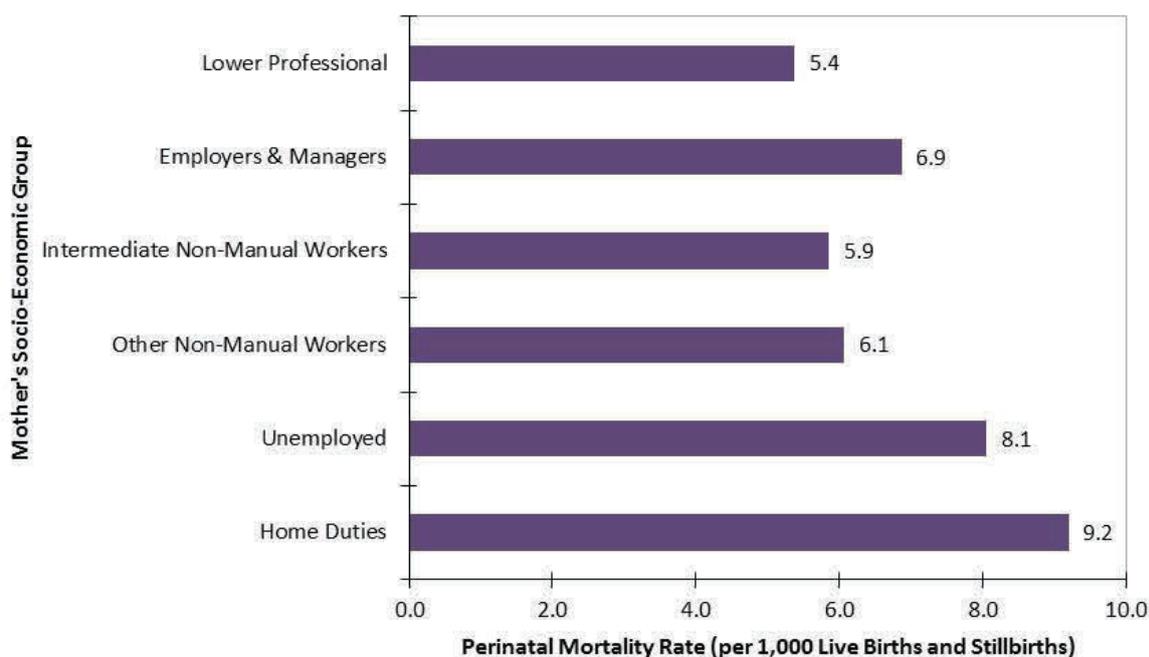
Mother's Socio-economic Group: Total Births, Live Births, Mortality Rates, and Maternities

	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	73	0.1	73	-	-	-	-	70
Other Agricultural Occupations & Fishermen	71	0.1	71	-	-	-	-	69
Higher Professional	4,519	6.9	4,505	3.1	0.7	3.8	2.7	4,416
Lower Professional	12,246	18.6	12,206	3.3	2.1	5.4	2.9	11,985
Employers & Managers	4,796	7.3	4,777	4.0	2.9	6.9	4.0	4,693
Salaried Employees	778	1.2	776	2.6	-	2.6	1.3	759
Intermediate Non-Manual Workers	12,624	19.2	12,577	3.7	2.1	5.9	4.5	12,364
Other Non-Manual Workers	9,539	14.5	9,503	3.8	2.3	6.1	4.7	9,386
Skilled Manual Workers	839	1.3	836	3.6	2.4	6.0	4.8	822
Semi-Skilled Manual Workers	2,016	3.1	2,012	2.0	1.0	3.0	3.0	1,981
Unskilled Manual Workers	17	0.0	17	-	-	-	-	17
Unemployed	2,978	4.5	2,962	5.4	2.7	8.1	6.1	2,953
Not Classifiable	1,945	3.0	1,935	5.1	2.1	7.2	4.1	1,917
Home Duties	13,134	19.9	13,065	5.3	4.0	9.2	5.9	12,904
Not Stated	294	0.4	292	6.8	13.7	20.4	17.1	288
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Farmers & Farm Managers	*	^	*	-	-	-	-	*
Other Agricultural Occupations & Fishermen	*	^	*	-	-	-	-	*
Higher Professional	4,315	6.8	4,304	2.5	0.7	3.2	2.1	4,315
Lower Professional	11,726	18.5	11,692	2.9	2.0	4.9	2.3	11,726
Employers & Managers	4,591	7.2	4,575	3.5	1.7	5.2	3.1	4,591
Salaried Employees	740	1.2	738	2.7	-	2.7	1.4	740
Intermediate Non-Manual Workers	12,106	19.1	12,064	3.5	1.8	5.3	4.0	12,106
Other Non-Manual Workers	9,228	14.6	9,194	3.7	2.0	5.6	4.3	9,228
Skilled Manual Workers	804	1.3	801	3.7	2.5	6.2	5.0	804
Semi-Skilled Manual Workers	1,947	3.1	1,943	2.1	0.5	2.6	2.6	1,947
Unskilled Manual Workers	17	0.0	17	-	-	-	-	17
Unemployed	2,928	4.6	2,913	5.1	2.4	7.5	5.8	2,928
Not Classifiable	1,891	3.0	1,881	5.3	2.1	7.4	4.2	1,891
Home Duties	12,675	20.0	12,615	4.7	3.6	8.3	5.1	12,675
Not Stated	282	0.4	280	7.1	14.3	21.3	17.8	282
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Farmers & Farm Managers	*	^	*	-	-	-	-	~
Other Agricultural Occupations & Fishermen	~	^	~	-	-	-	-	~
Higher Professional	204	8.2	201	14.7	-	14.7	14.7	101
Lower Professional	520	20.9	514	11.5	5.8	17.3	15.4	259
Employers & Managers	205	8.2	202	14.6	29.7	43.9	24.9	102
Salaried Employees	38	1.5	38	-	-	-	-	19
Intermediate Non-Manual Workers	518	20.8	513	9.7	9.7	19.3	17.4	258
Other Non-Manual Workers	311	12.5	309	6.4	12.9	19.3	16.1	158
Skilled Manual Workers	35	1.4	35	-	-	-	-	18
Semi-Skilled Manual Workers	69	2.8	69	-	14.5	14.5	14.5	34
Unskilled Manual Workers	0	0.0	0	-	-	-	-	0
Unemployed	50	2.0	49	20.0	20.4	40.0	20.4	25
Not Classifiable	54	2.2	54	-	-	-	-	26
Home Duties	459	18.5	450	19.6	15.6	34.9	26.4	229
Not Stated	12	0.5	12	-	-	-	-	6
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

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 'other non-manual workers' accounted for 9.1 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	1,766	2.7	1,752	7.9	2.9	10.8	5.7	1,726
Other Agricultural Occupations & Fishermen	591	0.9	589	3.4	-	3.4	1.7	580
Higher Professional	4,142	6.3	4,131	2.7	1.2	3.9	2.4	4,037
Lower Professional	4,624	7.0	4,607	3.7	3.0	6.7	3.9	4,531
Employers & Managers	4,601	7.0	4,586	3.3	2.4	5.7	3.9	4,497
Salaried Employees	852	1.3	850	2.3	-	2.3	2.3	835
Intermediate Non-Manual Workers	5,935	9.0	5,916	3.2	2.2	5.4	3.7	5,811
Other Non-Manual Workers	5,965	9.1	5,944	3.5	1.9	5.4	3.9	5,870
Skilled Manual Workers	12,109	18.4	12,073	3.0	1.9	4.9	3.0	11,858
Semi-Skilled Manual Workers	3,295	5.0	3,285	3.0	1.5	4.6	3.3	3,234
Unskilled Manual Workers	397	0.6	393	10.1	-	10.1	7.6	393
Unemployed	2,749	4.2	2,726	8.4	4.0	12.4	9.5	2,703
Not Classifiable	2,023	3.1	2,014	4.4	2.5	6.9	5.0	1,984
Home Duties	146	0.2	146	-	13.7	13.7	13.7	142
Not Stated/Not Applicable	16,674	25.3	16,595	4.7	3.6	8.3	5.7	16,423
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Farmers & Farm Managers	1,690	2.7	1,678	7.1	1.8	8.9	4.8	1,690
Other Agricultural Occupations & Fishermen	568	0.9	566	3.5	-	3.5	1.8	568
Higher Professional	3,932	6.2	3,922	2.5	1.0	3.6	2.3	3,932
Lower Professional	4,438	7.0	4,423	3.4	2.3	5.6	2.9	4,438
Employers & Managers	4,397	6.9	4,385	2.7	1.8	4.5	3.4	4,397
Salaried Employees	818	1.3	816	2.4	-	2.4	2.4	818
Intermediate Non-Manual Workers	5,682	9.0	5,665	3.0	2.1	5.1	3.3	5,682
Other Non-Manual Workers	5,776	9.1	5,758	3.1	1.4	4.5	2.9	5,776
Skilled Manual Workers	11,611	18.3	11,578	2.8	1.7	4.6	2.7	11,611
Semi-Skilled Manual Workers	3,171	5.0	3,164	2.2	1.3	3.5	2.2	3,171
Unskilled Manual Workers	*	^	*	10.3	-	10.3	7.7	*
Unemployed	2,655	4.2	2,634	7.9	3.8	11.7	8.7	2,655
Not Classifiable	1,944	3.1	1,936	4.1	2.1	6.2	5.1	1,944
Home Duties	*	^	*	-	14.5	14.5	14.5	*
Not Stated/Not Applicable	16,175	25.5	16,103	4.5	3.2	7.7	5.1	16,175
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Farmers & Farm Managers	76	3.1	74	26.3	27.0	52.6	27.0	36
Other Agricultural Occupations & Fishermen	23	0.9	23	-	-	-	-	12
Higher Professional	210	8.5	209	4.8	4.8	9.5	4.8	105
Lower Professional	186	7.5	184	10.8	21.7	32.3	27.0	93
Employers & Managers	204	8.2	201	14.7	14.9	29.4	14.9	100
Salaried Employees	34	1.4	34	-	-	-	-	17
Intermediate Non-Manual Workers	253	10.2	251	7.9	4.0	11.9	11.9	129
Other Non-Manual Workers	189	7.6	186	15.9	16.1	31.7	31.7	94
Skilled Manual Workers	498	20.0	495	6.0	6.1	12.0	10.1	247
Semi-Skilled Manual Workers	124	5.0	121	24.2	8.3	32.3	32.3	63
Unskilled Manual Workers	*	^	*	-	-	-	-	~
Unemployed	94	3.8	92	21.3	10.9	31.9	31.9	48
Not Classifiable	79	3.2	78	12.7	12.8	25.3	-	40
Home Duties	*	^	*	-	-	-	-	~
Not Stated/Not Applicable	499	20.1	492	14.0	14.2	28.1	24.1	248
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

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 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 77 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 12.4 per cent.²⁴
- Births to mothers from Asia accounted for 3.2 per cent of total births, followed by 2.4 per cent to mothers from the UK and 2.1 per cent to mothers from Africa.
- The remainder of births were to mothers from the Rest of Europe, America, Australia, New Zealand and Other Oceania and Multi-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	51,046	77.5	50,837	4.1	2.7	6.7	4.5	50,028
UK	1,594	2.4	1,593	0.6	5.6	6.3	1.9	1,564
EU15 (excluding Ireland & UK)	998	1.5	995	3.0	-	3.0	3.0	986
EU15 to EU28	7,208	10.9	7,188	2.8	1.3	4.0	3.3	7,116
Rest of Europe	559	0.8	558	1.8	1.8	3.6	1.8	545
Africa	1,390	2.1	1,377	9.4	4.4	13.7	9.4	1,360
Asia	2,091	3.2	2,084	3.3	0.5	3.8	2.4	2,060
America	630	1.0	626	6.3	1.6	7.9	4.8	618
Australia	89	0.1	88	11.2	-	11.2	11.2	88
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Multi-Nationality	~	^	~	-	-	-	-	~
Not Stated	234	0.4	231	12.8	8.7	21.4	12.9	231
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Ireland	49,010	77.3	48,823	3.8	2.2	6.0	4.0	49,010
UK	1,536	2.4	1,535	0.7	5.9	6.5	2.0	1,536
EU15 (excluding Ireland & UK)	974	1.5	971	3.1	-	3.1	3.1	974
EU15 to EU28	7,027	11.1	7,009	2.6	1.3	3.8	3.1	7,027
Rest of Europe	531	0.8	530	1.9	1.9	3.8	1.9	531
Africa	1,331	2.1	1,322	6.8	4.5	11.3	6.8	1,331
Asia	2,028	3.2	2,022	3.0	0.5	3.5	2.0	2,028
America	606	1.0	602	6.6	1.7	8.3	5.0	606
Australia	*	^	*	11.5	-	11.5	11.5	*
New Zealand and Other Oceania	25	0.0	25	-	-	-	-	25
Multi-Nationality	~	^	~	-	-	-	-	~
Not Stated	*	^	*	13.2	4.4	17.5	8.8	*
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Ireland	2,036	81.9	2,014	10.8	12.9	23.6	17.8	1,018
UK	58	2.3	58	-	-	-	-	28
EU15 (excluding Ireland & UK)	24	1.0	24	-	-	-	-	12
EU15 to EU28	181	7.3	179	11.0	-	11.0	11.0	89
Rest of Europe	28	1.1	28	-	-	-	-	14
Africa	59	2.4	55	67.8	-	67.8	67.8	29
Asia	63	2.5	62	15.9	-	15.9	15.9	32
America	24	1.0	24	-	-	-	-	12
Australia	~	^	~	-	-	-	-	~
New Zealand and Other Oceania	~	^	~	-	-	-	-	~
Multi-Nationality	0	0.0	0	-	-	-	-	0
Not Stated	*	^	*	-	166.7	166.7	166.7	~
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

Notes:

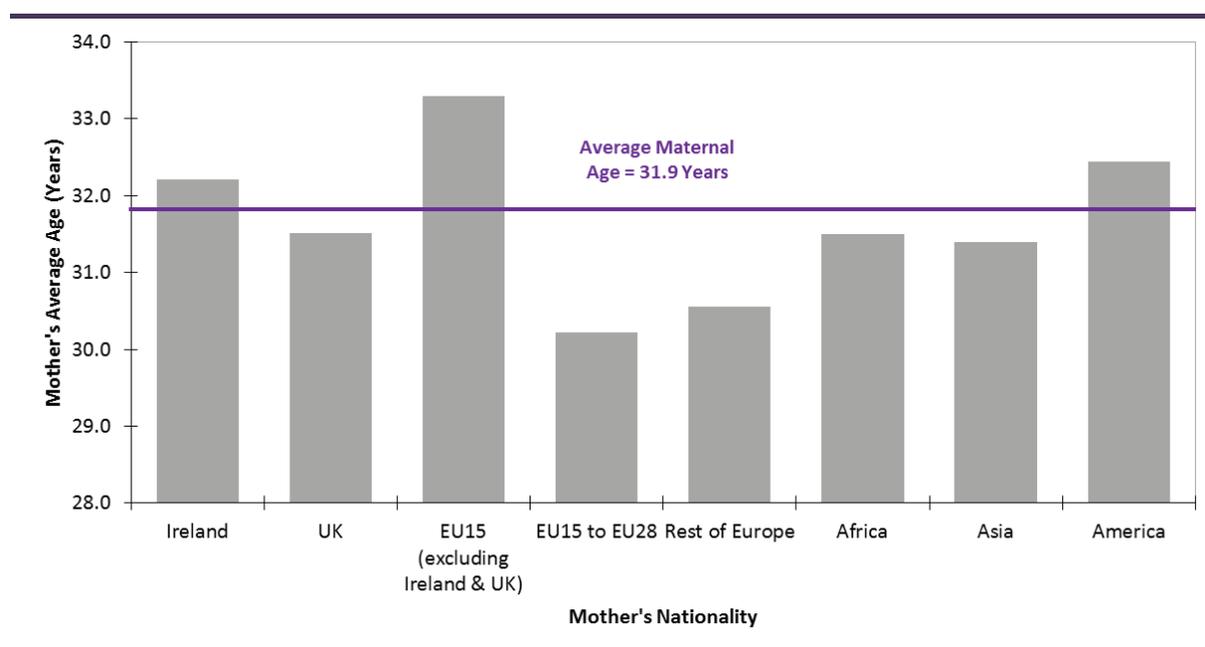
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- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. 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 2015.

- The average age of all mothers giving birth was 31.9 years and the average age of mothers from Ireland giving birth was slightly higher at 32.2 years.
- Mothers giving birth from the EU15 to EU28 were on average younger at 30.2 years, while mothers from the EU15 (excluding Ireland and United Kingdom) recorded the highest average maternal age at 33.3 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 58.2 per cent of total births.
- Births to fathers from the EU15 to EU28 and Asia accounted for 7.0 per cent and 2.4 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	38,353	58.2	38,203	3.9	2.5	6.4	4.4	37,547
UK	1,254	1.9	1,250	3.2	4.0	7.2	4.0	1,230
EU15 (excluding Ireland & UK)	610	0.9	609	1.6	-	1.6	-	603
EU15 to EU28	4,582	7.0	4,572	2.2	1.3	3.5	2.6	4,524
Rest of Europe	363	0.6	363	-	-	-	-	355
Africa	952	1.4	941	11.6	2.1	13.7	9.5	931
Asia	1,550	2.4	1,544	3.9	-	3.9	3.2	1,525
America	333	0.5	333	-	3.0	3.0	-	326
Australia	63	0.1	63	-	-	-	-	62
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Multi-Nationality	~	^	~	-	-	-	-	~
Not Stated/ Not Applicable	17,756	27.0	17,676	4.5	3.1	7.6	5.0	17,468
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Ireland	36,737	58.0	36,602	3.7	2.1	5.7	3.9	36,737
UK	1,207	1.9	1,205	1.7	4.1	5.8	2.5	1,207
EU15 (excluding Ireland & UK)	596	0.9	595	1.7	-	1.7	-	596
EU15 to EU28	4,468	7.0	4,460	1.8	1.3	3.1	2.2	4,468
Rest of Europe	347	0.5	347	-	-	-	-	347
Africa	911	1.4	902	9.9	2.2	12.1	7.7	911
Asia	1,499	2.4	1,494	3.3	-	3.3	2.7	1,499
America	*	^	*	-	3.1	3.1	-	*
Australia	*	^	*	-	-	-	-	*
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Multi-Nationality	~	^	~	-	-	-	-	~
Not Stated/ Not Applicable	17,186	27.1	17,113	4.2	2.7	7.0	4.5	17,186
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Ireland	1,616	65.0	1,601	9.3	11.9	21.0	15.6	810
UK	47	1.9	45	42.6	-	42.6	42.6	23
EU15 (excluding Ireland & UK)	14	0.6	14	-	-	-	-	7
EU15 to EU28	114	4.6	112	17.5	-	17.5	17.5	56
Rest of Europe	16	0.6	16	-	-	-	-	8
Africa	41	1.6	39	48.8	-	48.8	48.8	20
Asia	51	2.1	50	19.6	-	19.6	19.6	26
America	*	^	*	-	-	-	-	*
Australia	~	^	~	-	-	-	-	~
New Zealand and Other Oceania	0	0.0	0	-	-	-	-	0
Multi-Nationality	0	0.0	0	-	-	-	-	0
Not Stated/ Not Applicable	570	22.9	563	12.3	14.2	26.3	21.2	282
Total	2,485	100.0	2,456	11.7	11.0	22.5	17.8	1,240

Notes:

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. See Appendix 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 38.2 per cent of all maternities, with 9.2 per cent of maternities having three or more previous live births or stillbirths.

TABLE 3.7

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
0	25,244	38.3	25,149	3.8	2.5	6.3	4.7	24,695
1	22,896	34.8	22,808	3.8	2.3	6.1	3.9	22,505
2	11,682	17.7	11,631	4.4	2.5	6.8	4.0	11,483
3	3,995	6.1	3,979	4.0	1.8	5.8	3.5	3,929
4	1,212	1.8	1,206	5.0	4.1	9.1	6.6	1,186
5	451	0.7	448	6.7	8.9	15.5	11.1	443
6	218	0.3	216	9.2	9.3	18.3	13.8	214
More than 6	171	0.3	170	5.8	5.9	11.7	11.7	169
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
0	24,151	38.1	24,069	3.4	2.0	5.4	3.9	24,151
1	22,115	34.9	22,039	3.4	2.2	5.6	3.5	22,115
2	11,284	17.8	11,236	4.3	2.2	6.5	3.8	11,284
3	3,863	6.1	3,848	3.9	1.6	5.4	3.1	3,863
4	1,160	1.8	1,154	5.2	4.3	9.5	6.9	1,160
5	434	0.7	431	6.9	7.0	13.8	9.3	434
6	*	^	*	9.5	4.8	14.3	9.6	*
More than 6	*	^	*	6.0	6.0	12.0	12.0	*
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
0	1,093	44.0	1,080	11.9	14.8	26.5	23.0	544
1	781	31.4	769	15.4	5.2	20.5	14.2	390
2	398	16.0	395	7.5	10.1	17.6	10.1	199
3	132	5.3	131	7.6	7.6	15.2	15.2	66
4	52	2.1	52	-	-	-	-	26
5	17	0.7	17	-	58.8	58.8	58.8	9
6	*	^	*	-	125.0	125.0	125.0	~
More than 6	~	^	~	-	-	-	-	~
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

Notes:

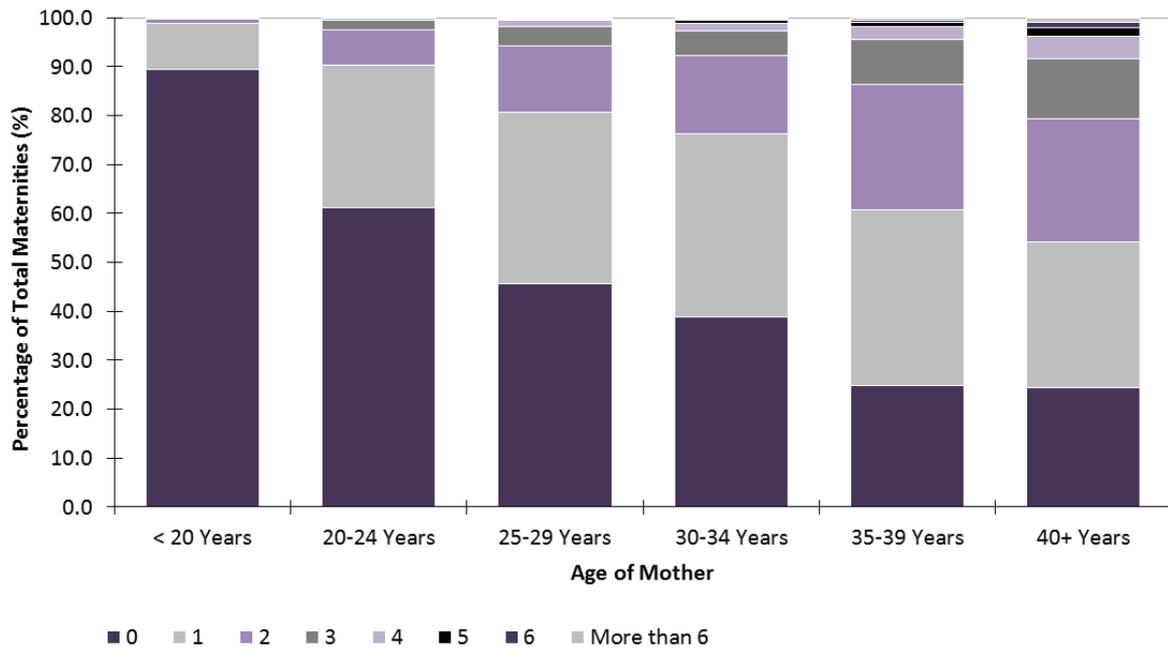
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated 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, almost 90 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 just under 30 per cent 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 2015, 98.6 per cent of multiparous women giving birth recorded no previous stillbirths while 1.4 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	40,049	98.6	39,888	4.0	2.4	6.4	4.1	39,369
1	530	1.3	526	7.5	7.6	15.1	9.5	515
2	38	0.1	36	52.6	-	52.6	27.0	37
3 and over	8	0.0	8	-	-	-	-	8
Total	40,625	100	40,458	4.1	2.5	6.6	4.1	39,929
Singleton Births								
0	38,689	98.6	38,544	3.7	2.2	5.9	3.7	38,689
1	*	^	*	8.0	8.1	16.0	10.1	*
2	*	^	*	55.6	-	55.6	28.6	*
3 and over	8	0.0	8	-	-	-	-	8
Total	39,233	100	39,082	3.8	2.3	6.1	3.8	39,233
Multiple Births								
0	1,360	97.7	1,344	11.8	8.2	19.9	14.1	680
1	*	^	*	-	-	-	-	*
2	~	^	~	-	-	-	-	~
3 and over	0	0.0	0	-	-	-	-	0
Total	1,392	100	1,376	11.5	8.0	19.4	13.7	696

Notes:

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

This table only includes women having second and subsequent births. Primiparous women (i.e. women who have had no previous pregnancy resulting in a live birth or stillbirth) are not included in this table.

INTERVAL SINCE LAST BIRTH

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

- An interval of 1 year or less was recorded for 1.2 per cent of all multiparous mothers.
- Just over 25 per cent recorded an interval of between two and three years since the last birth.
- Almost 16 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	492	1.2	488	8.1	2.0	10.2	4.1	475
>1 year to 2 years	9,469	23.3	9,424	4.8	2.7	7.4	4.4	9,297
>2 years to 3 years	10,251	25.2	10,214	3.6	2.2	5.8	3.5	10,091
>3 years to 4 years	6,699	16.5	6,674	3.7	2.1	5.8	4.0	6,597
>4 years to 5 years	4,330	10.7	4,315	3.5	2.5	6.0	4.2	4,254
>5 years to 6 years	2,735	6.7	2,723	4.4	3.3	7.7	4.0	2,693
More than 6 years	6,473	15.9	6,445	4.3	2.8	7.1	5.0	6,348
Not Stated	176	0.4	175	5.7	-	5.7	-	174
Total	40,625	100	40,458	4.1	2.5	6.6	4.1	39,929
Singleton Births								
1 year or less	*	^	*	4.4	2.2	6.5	-	*
>1 year to 2 years	9,122	23.3	9,081	4.5	2.3	6.8	4.0	9,122
>2 years to 3 years	9,926	25.3	9,891	3.5	2.0	5.5	3.2	9,926
>3 years to 4 years	6,494	16.6	6,471	3.5	2.0	5.5	3.9	6,494
>4 years to 5 years	4,180	10.7	4,166	3.3	2.6	6.0	4.1	4,180
>5 years to 6 years	2,653	6.8	2,642	4.1	3.0	7.2	3.8	2,653
More than 6 years	6,227	15.9	6,203	3.9	2.4	6.3	4.7	6,227
Not Stated	*	^	*	5.8	-	5.8	-	*
Total	39,233	100	39,082	3.8	2.3	6.1	3.8	39,233
Multiple Births								
1 year or less	*	^	*	60.6	-	60.6	60.6	*
>1 year to 2 years	347	24.9	343	11.5	11.7	23.1	17.4	175
>2 years to 3 years	325	23.3	323	6.2	6.2	12.3	12.3	165
>3 years to 4 years	205	14.7	203	9.8	4.9	14.6	9.8	103
>4 years to 5 years	150	10.8	149	6.7	-	6.7	6.7	74
>5 years to 6 years	82	5.9	81	12.2	12.3	24.4	12.3	40
More than 6 years	246	17.7	242	16.3	12.4	28.5	12.4	121
Not Stated	~	^	~	-	-	-	-	~
Total	1,392	100	1,376	11.5	8.0	19.4	13.7	696

Notes:

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

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 3487.2 grams for singletons, 2412.2 grams for multiples, and 3446.9 grams for total live births.
- The average birthweight for live births was 3,507.8 grams for males compared to 3,383.2 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 49.9 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 8.5 per cent for multiple births (see Figure 3.6).
- 92.1 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 (5.1 per cent) compared with female live births (6.2 per cent).
- The percentage of total live births weighing 4,500 grams and over was 2.2 per cent (3.0 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

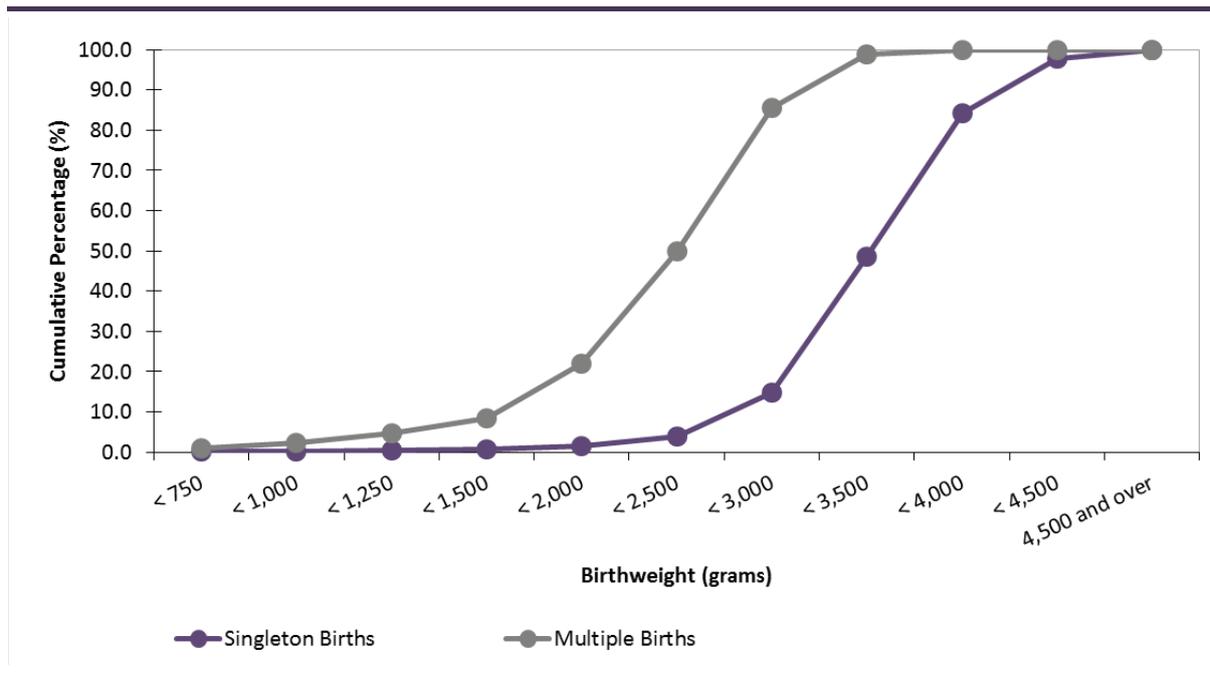
Birthweight (grams): Total Births, Live Births, Mortality Rates, and Maternities

	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	146	0.2	102	301.4	313.7	520.5	473.7	129
750-999	137	0.2	108	211.7	129.6	313.9	248.0	121
1000-1249	171	0.3	153	105.3	58.8	157.9	111.1	132
1250-1499	245	0.4	226	77.6	53.1	126.5	85.5	191
1500-1999	864	1.3	832	37.0	21.6	57.9	25.1	683
2000-2499	2,321	3.5	2,288	14.2	10.1	24.1	16.1	1,971
2500-2999	7,860	11.9	7,820	5.1	2.9	8.0	5.2	7,429
3000-3499	21,530	32.7	21,505	1.2	0.8	2.0	1.4	21,387
3500-3999	22,611	34.3	22,597	0.6	0.4	1.0	0.6	22,597
4000-4499	8,518	12.9	8,511	0.8	0.5	1.3	0.9	8,518
4500 and Over	1,466	2.2	1,465	0.7	2.0	2.7	2.7	1,466
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
500-749	114	0.2	76	333.3	289.5	526.3	465.3	114
750-999	105	0.2	80	238.1	112.5	323.8	244.7	105
1000-1249	107	0.2	92	140.2	76.1	205.6	141.4	107
1250-1499	149	0.2	133	107.4	75.2	174.5	121.4	149
1500-1999	527	0.8	501	49.3	29.9	77.8	33.8	527
2000-2499	1,631	2.6	1,602	17.8	11.9	29.4	19.8	1,631
2500-2999	6,982	11.0	6,944	5.4	3.3	8.7	5.6	6,982
3000-3499	21,206	33.5	21,182	1.1	0.8	1.9	1.3	21,206
3500-3999	*	^	*	0.6	0.4	1.0	0.6	*
4000-4499	*	^	*	0.8	0.5	1.3	0.9	*
4500 and Over	1,466	2.3	1,465	0.7	2.0	2.7	2.7	1,466
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
500-749	32	1.3	26	187.5	384.6	500.0	500.0	15
750-999	32	1.3	28	125.0	178.6	281.3	258.1	16
1000-1249	64	2.6	61	46.9	32.8	78.1	63.5	25
1250-1499	96	3.9	93	31.3	21.5	52.1	31.9	42
1500-1999	337	13.6	331	17.8	9.1	26.7	12.0	156
2000-2499	690	27.8	686	5.8	5.8	11.6	7.3	340
2500-2999	878	35.3	876	2.3	-	2.3	2.3	447
3000-3499	324	13.0	323	3.1	3.1	6.2	6.2	181
3500-3999	*	^	*	-	-	-	-	*
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	0	0.0	0	-	-	-	-	0
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

Notes:

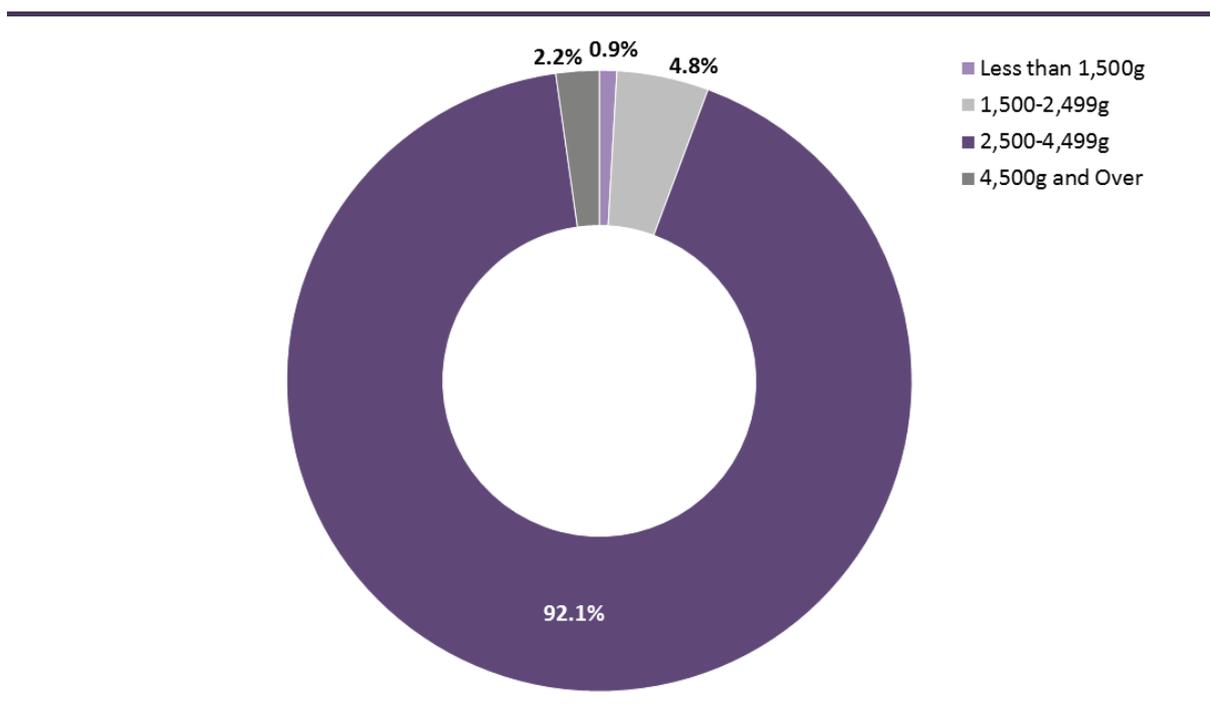
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- * Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated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

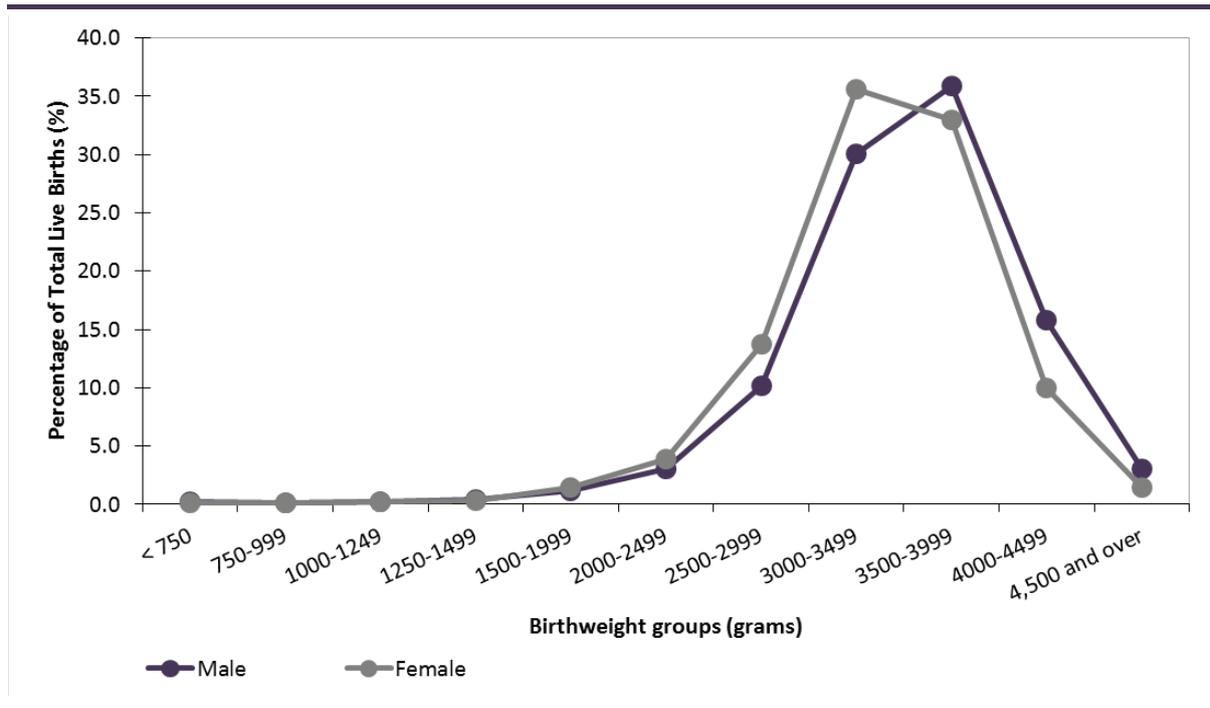
FIGURE 3.7
Percentage of Births by Birthweight Groups, Total Live Births



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 39.2 weeks and stillbirths reported an average gestational age of 32.7 weeks. The average gestational age for singleton live births was 39.3 weeks compared with 35.6 weeks for live twin births and 31.5 weeks for higher-order multiple live births.

Table 3.11 presents data on gestational age.

- Over 90 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 53.2 per cent for multiple births).

TABLE 3.11

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
Less than 28	248	0.4	192	225.8	229.2	403.2	375.5	220
28-31	526	0.8	482	83.7	37.3	117.9	84.8	433
32-36	3,637	5.5	3,558	21.7	12.6	34.1	20.9	3,081
37-41	59,882	90.9	59,800	1.4	0.9	2.3	1.3	59,314
42 and Over	1,566	2.4	1,565	0.6	0.6	1.3	-	1,566
Not Stated	10	0.0	10	-	-	-	-	10
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Less than 28	189	0.3	142	248.7	218.3	412.7	376.4	189
28-31	349	0.6	306	123.2	42.5	160.5	114.8	349
32-36	2,539	4.0	2,478	24.0	14.9	38.6	23.6	2,539
37-41	58,731	92.7	58,650	1.4	0.9	2.3	1.3	58,731
42 and Over	1,566	2.5	1,565	0.6	0.6	1.3	-	1,566
Not Stated	10	0.0	10	-	-	-	-	10
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Less than 28	59	2.4	50	152.5	260.0	372.9	372.9	31
28-31	177	7.1	176	5.6	28.4	33.9	28.4	84
32-36	1,098	44.2	1,080	16.4	7.4	23.7	14.7	542
37-41	1,151	46.3	1,150	0.9	0.9	1.7	0.9	583
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

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. Gestational age tables by primiparous and multiparous women are provided in Appendix G, Tables G7 and G8.

MONTH OF BIRTH

Table 3.12 presents data on the month of birth.

- Total births were fairly evenly spread throughout the year, with the lowest number of births occurring in February (7.6 per cent) and the highest occurring in July (9.1 per cent).
- July and September recorded the highest number of singleton births (9.0 per cent), while July recorded the highest number of multiple births (11.8 per cent) (see Figure 3.9).

TABLE 3.12

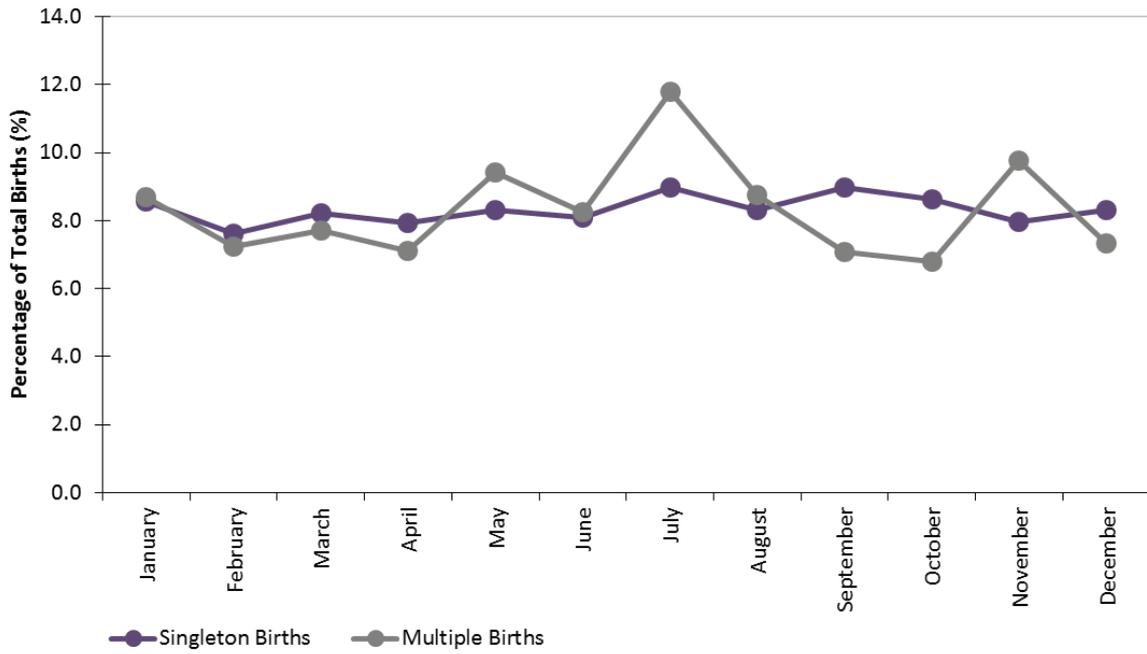
Month of Birth: Total Births, Live Births, Mortality Rates, and Maternities

	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	5,642	8.6	5,619	4.1	2.1	6.2	3.6	5,532
February	5,012	7.6	4,997	3.0	2.0	5.0	3.4	4,920
March	5,406	8.2	5,381	4.6	3.2	7.8	6.1	5,310
April	5,208	7.9	5,181	5.2	3.3	8.4	6.5	5,120
May	5,508	8.4	5,489	3.4	2.9	6.4	4.0	5,388
June	5,336	8.1	5,306	5.6	1.7	7.3	5.8	5,235
July	5,986	9.1	5,973	2.2	2.2	4.3	2.7	5,841
August	5,494	8.3	5,472	4.0	4.2	8.2	5.3	5,384
September	5,871	8.9	5,847	4.1	2.9	7.0	3.9	5,784
October	5,649	8.6	5,622	4.8	1.4	6.2	3.9	5,565
November	5,299	8.0	5,284	2.8	2.6	5.5	3.8	5,178
December	5,458	8.3	5,436	4.0	1.5	5.5	3.7	5,367
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
January	5,426	8.6	5,404	4.1	2.0	6.1	3.5	5,426
February	4,832	7.6	4,817	3.1	2.1	5.2	3.5	4,832
March	5,214	8.2	5,193	4.0	2.7	6.7	5.0	5,214
April	5,031	7.9	5,010	4.2	2.4	6.6	5.2	5,031
May	5,274	8.3	5,260	2.7	2.5	5.1	2.9	5,274
June	5,131	8.1	5,101	5.8	1.4	7.2	5.7	5,131
July	5,693	9.0	5,681	2.1	1.8	3.9	2.5	5,693
August	5,276	8.3	5,256	3.8	4.0	7.8	4.8	5,276
September	5,695	9.0	5,673	3.9	2.5	6.3	3.5	5,695
October	5,480	8.6	5,455	4.6	1.1	5.7	3.5	5,480
November	5,056	8.0	5,044	2.4	2.4	4.7	3.4	5,056
December	5,276	8.3	5,257	3.6	1.3	4.9	3.0	5,276
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
January	216	8.7	215	4.6	4.7	9.3	4.7	106
February	180	7.2	180	-	-	-	-	88
March	192	7.7	188	20.8	16.0	36.5	36.5	96
April	177	7.1	171	33.9	29.2	62.1	46.0	89
May	234	9.4	229	21.4	13.1	34.2	30.0	114
June	205	8.2	205	-	9.8	9.8	9.8	104
July	293	11.8	292	3.4	10.3	13.7	6.9	148
August	218	8.8	216	9.2	9.3	18.3	18.3	108
September	176	7.1	174	11.4	17.2	28.4	17.2	89
October	169	6.8	167	11.8	12.0	23.7	17.9	85
November	243	9.8	240	12.3	8.3	20.6	12.4	122
December	182	7.3	179	16.5	5.6	22.0	22.0	91
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

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, Total 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 (34.2 per cent) than those delivering singleton births (17.4 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	11,892	18.1	11,838	4.5	4.1	8.7	5.0	11,462
General Practitioner only	162	0.2	161	6.2	-	6.2	6.2	158
Hospital & G.P. combined	53,731	81.6	53,527	3.8	2.1	5.9	4.2	52,922
None	69	0.1	66	43.5	-	43.5	43.5	69
Not Stated	15	0.0	15	-	-	-	-	13
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Hospital/Obstetrician	11,038	17.4	10,995	3.9	3.5	7.3	3.9	11,038
General Practitioner only	*	^	151	6.6	-	6.6	6.6	*
Hospital & G.P. combined	52,114	82.2	51,928	3.6	1.9	5.5	3.8	52,114
None	69	0.1	66	43.5	-	43.5	43.5	69
Not Stated	*	^	11	-	-	-	-	*
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Hospital/Obstetrician	854	34.4	843	12.9	13.0	25.8	18.9	424
General Practitioner only	*	^	*	-	-	-	-	*
Hospital & G.P. combined	1,617	65.1	1,599	11.1	10.0	21.0	17.4	808
None	0	0.0	0	-	-	-	-	0
Not Stated	~	^	~	-	-	-	-	~
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

- 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.

- Over two-thirds 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 4.9 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	45,244	68.7	45,068	3.9	2.2	6.0	4.3	44,354
13-19	17,206	26.1	17,146	3.5	2.4	5.9	3.6	16,930
20 and over	3,260	4.9	3,237	7.1	7.7	14.7	8.6	3,187
Not Stated	159	0.2	156	18.9	-	18.9	12.7	153
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
0-12	43,473	68.6	43,317	3.6	1.8	5.4	3.8	43,473
13-19	16,650	26.3	16,593	3.4	2.3	5.7	3.4	16,650
20 and over	3,115	4.9	3,097	5.8	6.1	11.9	6.1	3,115
Not Stated	146	0.2	144	13.7	-	13.7	13.7	146
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
0-12	1,771	71.3	1,751	11.3	9.7	20.9	16.4	881
13-19	556	22.4	553	5.4	7.2	12.6	10.8	280
20 and over	145	5.8	140	34.5	42.9	75.9	62.9	72
Not Stated	13	0.5	12	76.9	-	76.9	-	7
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Although 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 34.9 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

- Over 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	65,061	99.1	64,809	3.9	2.5	6.3	4.3	63,829
Not Booked	595	0.9	585	16.8	5.1	21.8	18.5	582
Not Stated	7	0.0	7	-	-	-	-	7
Total	65,663	100	65,401	4.0	2.5	6.5	4.4	64,418
Singleton Births								
Booked	62,603	99.1	62,380	3.6	2.2	5.7	3.7	62,603
Not Booked	568	0.9	558	17.6	1.8	19.4	15.9	568
Not Stated	7	0.0	7	-	-	-	-	7
Total	63,178	100	62,945	3.7	2.2	5.9	3.9	63,178
Multiple Births								
Booked	2,458	98.9	2,429	11.8	10.3	22.0	17.2	1,226
Not Booked	27	1.1	27	0.0	74.1	74.1	74.1	14
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Domiciliary births, of which there were 206, are excluded from this table. See Appendix H for detailed analysis.

MOTHER'S ANTENATAL LENGTH OF STAY

The average antenatal length of stay was less than one day (0.8 days) for singleton births and 2.6 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 75.9 per cent of multiple births were delivered within a day of mother's admission to hospital.
- For total births, 1.9 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	58,292	88.8	58,079	3.7	2.2	5.8	3.8	57,350
2 Days	4,120	6.3	4,096	5.8	2.7	8.5	6.3	4,038
3-5 Days	1,922	2.9	1,908	7.3	2.6	9.9	7.8	1,838
6-8 Days	484	0.7	481	6.2	8.3	14.5	12.4	451
9-11 Days	231	0.4	229	8.7	30.6	39.0	30.6	197
12-14 Days	135	0.2	133	14.8	-	14.8	14.8	122
More than 2 Weeks	422	0.6	418	9.5	23.9	33.2	28.6	365
Not Stated	57	0.1	57	-	-	-	-	57
Total	65,663	100	65,401	4.0	2.5	6.5	4.4	64,418
Singleton Births								
0-1 Days	56,405	89.3	56,215	3.4	1.9	5.3	3.3	56,405
2 Days	3,956	6.3	3,934	5.6	2.0	7.6	6.1	3,956
3-5 Days	1,755	2.8	1,743	6.8	2.9	9.7	7.4	1,755
6-8 Days	418	0.7	416	4.8	7.2	12.0	9.6	418
9-11 Days	166	0.3	164	12.0	24.4	36.1	30.3	166
12-14 Days	110	0.2	108	18.2	-	18.2	18.2	110
More than 2 Weeks	311	0.5	308	9.6	29.2	38.6	32.4	311
Not Stated	57	0.1	57	-	-	-	-	57
Total	63,178	100	62,945	3.7	2.2	5.9	3.9	63,178
Multiple Births								
0-1 Days	1,887	75.9	1,864	12.2	10.2	22.3	18.1	945
2 Days	164	6.6	162	12.2	18.5	30.5	12.4	82
3-5 Days	167	6.7	165	12.0	-	12.0	12.0	83
6-8 Days	66	2.7	65	15.2	15.4	30.3	30.3	33
9-11 Days	65	2.6	65	-	46.2	46.2	31.3	31
12-14 Days	25	1.0	25	-	-	-	-	12
More than 2 Weeks	111	4.5	110	9.0	9.1	18.0	18.0	54
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Domiciliary births, of which there were 206, are excluded from this table. See Appendix H for detailed analysis.

MOTHER'S POSTNATAL LENGTH OF STAY

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

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

- Almost 54 per cent of maternities delivering singleton births remained in hospital for up to 2 days following delivery, compared to 14.2 per cent of maternities delivering multiple births.
- For total maternities 43.9 per cent of singleton births and 71.5 per cent of multiple births were discharged 3 to 5 days post delivery.
- 2.5 per cent of total maternities had a postnatal length of stay of 6 or more days (2.3 per cent of singleton births and 14.4 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	15,196	23.1	15,075	8.0	3.3	11.3	7.5	15,148
2 Days	19,165	29.2	19,105	3.1	1.0	4.2	3.1	19,048
3-5 Days	29,496	44.9	29,427	2.3	2.7	5.1	3.2	28,602
6-8 Days	1,539	2.3	1,529	6.5	7.2	13.6	9.8	1,378
9-11 Days	186	0.3	185	5.4	10.8	16.1	16.1	168
12-14 Days	36	0.1	36	0.0	27.8	27.8	27.8	33
More than 2 Weeks	36	0.1	35	27.8	-	27.8	27.8	32
Not Stated	9	0.0	9	-	-	-	-	9
Total	65,663	100	65,401	4.0	2.5	6.5	4.4	64,418
Singleton Births								
0-1 Days	15,098	23.9	14,987	7.4	3.0	10.3	6.5	15,098
2 Days	18,922	30.0	18,864	3.1	0.9	4.0	2.9	18,922
3-5 Days	27,716	43.9	27,658	2.1	2.3	4.4	2.7	27,716
6-8 Days	1,224	1.9	1,219	4.1	6.6	10.6	8.2	1,224
9-11 Days	151	0.2	151	-	13.2	13.2	13.2	151
12-14 Days	*	^	*	-	33.3	33.3	33.3	*
More than 2 Weeks	*	^	*	35.7	-	35.7	35.7	*
Not Stated	9	0.0	9	-	-	-	-	9
Total	63,178	100	62,945	3.7	2.2	5.9	3.9	63,178
Multiple Births								
0-1 Days	98	3.9	88	102.0	56.8	153.1	153.1	50
2 Days	243	9.8	241	8.2	12.4	20.6	20.6	126
3-5 Days	1,780	71.6	1,769	6.2	9.0	15.2	10.2	886
6-8 Days	315	12.7	310	15.9	9.7	25.4	16.0	154
9-11 Days	35	1.4	34	28.6	-	28.6	28.6	17
12-14 Days	*	^	*	-	-	-	-	~
More than 2 Weeks	*	^	*	-	-	-	-	~
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

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 206, 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 over 79 per cent of singleton spontaneous deliveries compared to 40.5 per cent of multiple spontaneous deliveries.
- For Caesarean section deliveries, mother's postnatal length of stay was 3 to 5 days for 88.9 per cent of singleton deliveries compared to 79.2 per cent for multiple deliveries.

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

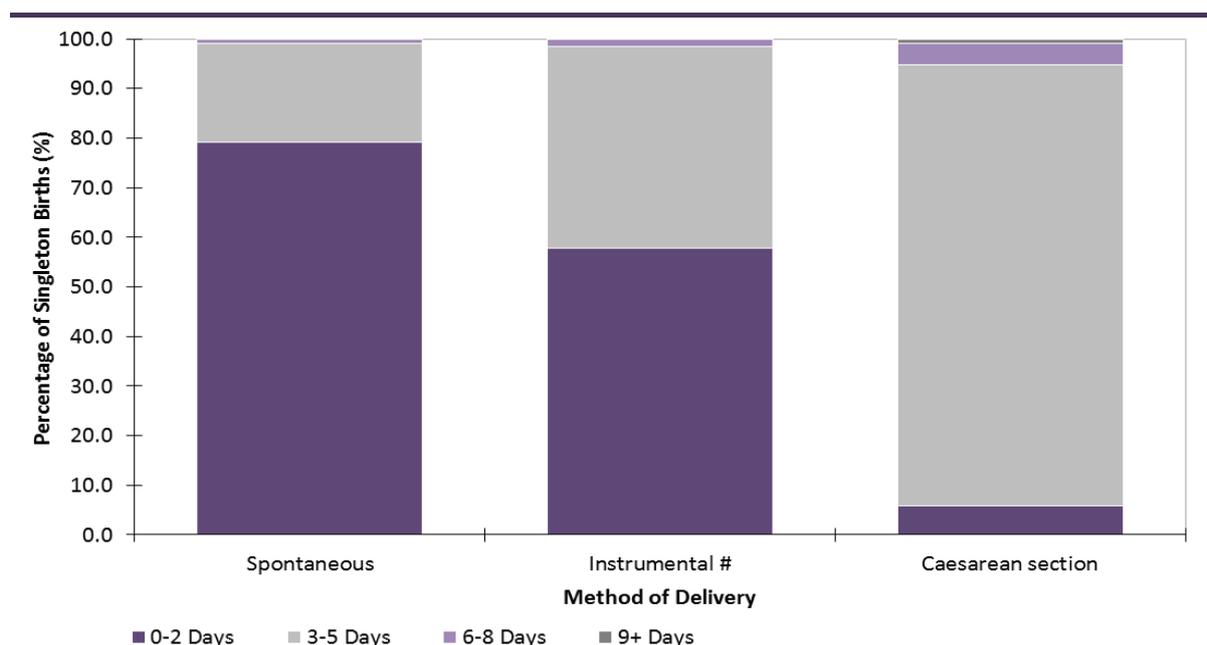
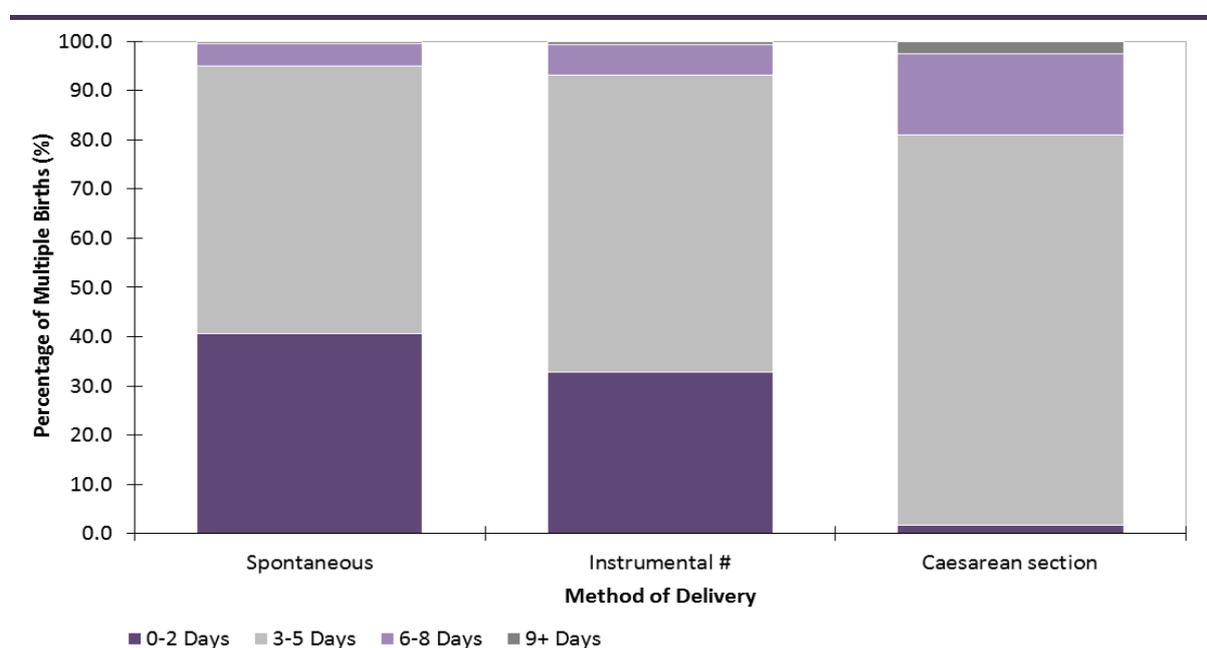


FIGURE 4.2
Mother's Postnatal Length of Stay by Method of Delivery, Multiple Births



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, almost 93 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	60,052	92.9
Not Immune	2,933	4.5
Not known	1,639	2.5
Total	64,624	100
Singleton Births		
Immune	58,886	92.9
Not Immune	2,884	4.6
Not known	1,614	2.5
Total	63,384	100
Multiple Births		
Immune	1,166	94.0
Not Immune	49	4.0
Not known	25	2.0
Total	1,240	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 20,576 live births delivered by Caesarean section, representing 31.4 per cent of total live births (30.0 per cent of live singleton births, and 67.1 per cent of live multiple births).
- Almost 54 per cent of total live births delivered spontaneously (54.7 per cent of live singleton births and 21.9 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 (11.1 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

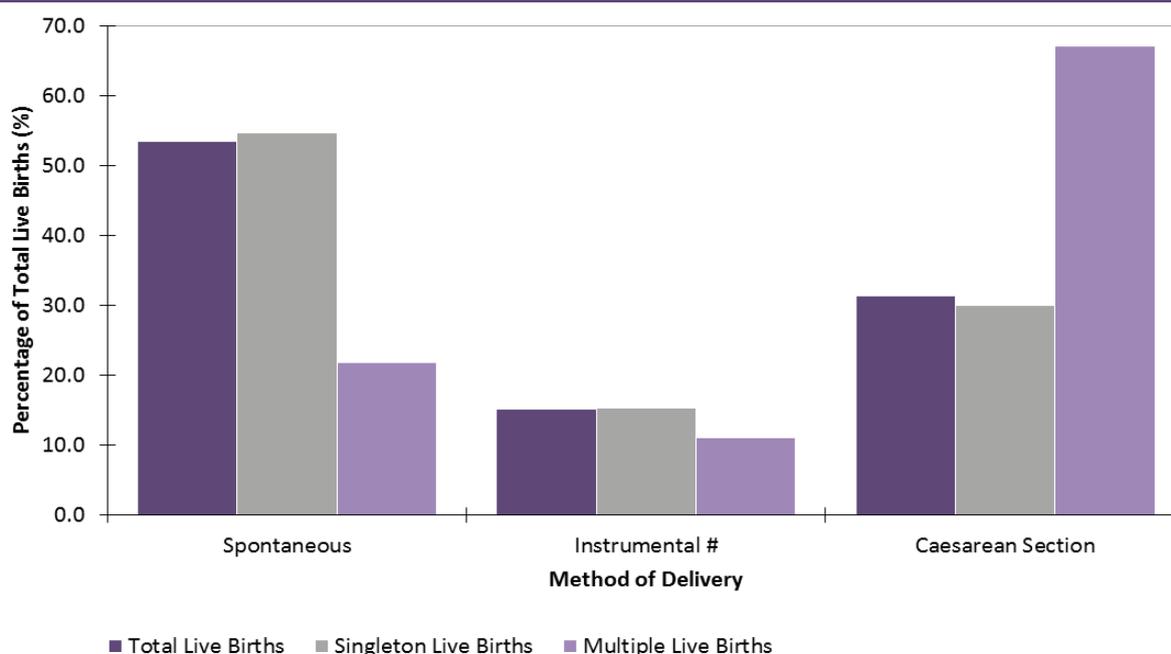
²⁷ Throughout this section, method of delivery recorded as 'other specified & combined' are not presented in the figures displaying data on method of delivery

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	35,275	53.6	35,095	5.1	2.1	7.1	5.1	35,056
Breech / Forceps	*	^	*	117.0	44.2	156.0	101.9	*
Forceps	2,307	3.5	2,306	0.4	0.9	1.3	0.4	2,289
Vacuum extraction	7,382	11.2	7,380	0.3	-	0.3	0.3	7,306
Caesarean section	20,622	31.3	20,576	2.2	3.8	6.1	3.8	19,774
Not Stated	~	^	~	-	-	-	-	~
Total	65,869	100	65,607	4.0	2.5	6.5	4.4	64,624
Singleton Births								
Spontaneous	34,727	54.8	34,558	4.9	1.8	6.7	4.6	34,727
Breech / Forceps	*	^	*	162.3	43.8	199.0	125.7	*
Forceps	2,259	3.6	2,258	0.4	0.9	1.3	0.4	2,259
Vacuum extraction	7,247	11.4	7,245	0.3	-	0.3	0.3	7,247
Caesarean section	18,959	29.9	18,929	1.6	3.5	5.1	3.1	18,959
Not Stated	~	^	~	-	-	-	-	~
Total	63,384	100	63,151	3.7	2.2	5.8	3.8	63,384
Multiple Births								
Spontaneous	548	22.1	537	20.1	18.6	38.3	34.8	329
Breech / Forceps	91	3.7	89	22.0	44.9	65.9	55.6	7
Forceps	48	1.9	48	-	-	-	-	30
Vacuum extraction	135	5.4	135	-	-	-	-	59
Caesarean section	1,663	66.9	1,647	9.6	7.9	17.4	12.1	815
Not Stated	0	0.0	0	-	-	-	-	0
Total	2,485	100	2,456	11.7	11.0	22.5	17.8	1,240

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 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 61 per cent for mothers aged less than 20 years compared to 42.1 per cent to mothers aged 40 years and over.
- Caesarean section rates ranged from 18.8 per cent for mothers aged less than 20 years to 47.6 per cent for mothers aged 40 years and over (see Figure 4.4).

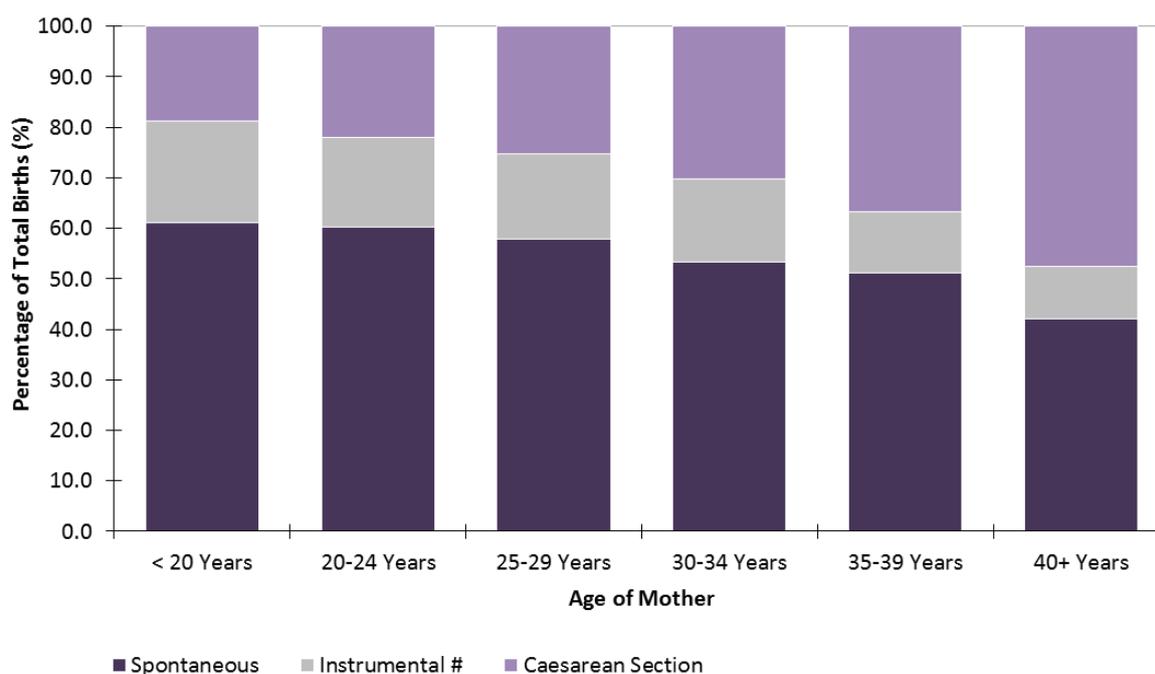
TABLE 4.7b

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	731 61.0	3,451 60.2	7,173 57.9	12,668 53.3	9,470 51.1	1,781 42.1	35,274 53.6
Breech/Forceps	~ ^	28 0.5	47 0.4	102 0.4	87 0.5	* ^	282 0.4
Forceps	* ^	216 3.8	485 3.9	947 4.0	518 2.8	* ^	2,307 3.5
Vacuum extraction	188 15.7	776 13.5	1,542 12.4	2,871 12.1	1,674 9.0	331 7.8	7,382 11.2
Caesarean section	225 18.8	1,261 22.0	3,145 25.4	7,181 30.2	6,795 36.6	2,014 47.6	20,621 31.3
Total	1,198 100	5,732 100	12,392 100	23,769 100	18,544 100	4,231 100	65,866 100

Notes: Percentage columns are subject to rounding.
~ Denotes five or fewer births (or maternities) reported to NPRS.
* Further suppression required to prevent disclosure of five or fewer births (or maternities).
^ Percentage not provided to prevent disclosure of small numbers.
There were 3 births to mothers with unknown maternal age or unknown method of delivery; 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.

- Almost one quarter (24.4 per cent) of total births took place in 10 maternity units accommodating between 1,000 and 1,999 births each annually.
- Four maternity units each accommodated 8,000 or more births, accounting for over half (52.4 per cent) of total births (see Figure 4.5).

TABLE 4.8

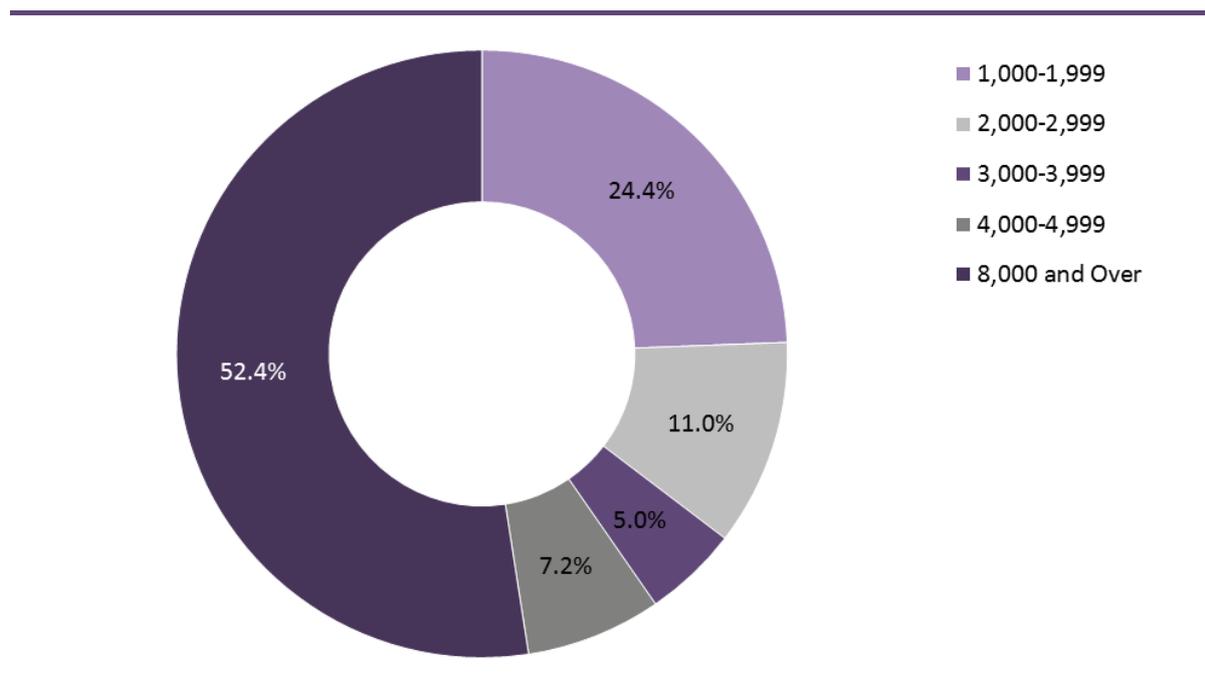
Size of Maternity Unit (Number of Live Births and Stillbirths Annually) by Number of Units: Total Births, Live Births, Stillbirths, Early Neonatal Deaths and Mortality Rates

	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	10	16,017	24.4	15,958	59	3.7	31	1.9	5.6	3.9
2000-2999	3	7,212	11.0	7,179	33	4.6	14	2.0	6.5	4.4
3000-3999	1	3,291	5.0	3,277	14	4.3	12	3.7	7.9	6.1
4000-4999	1	4,708	7.2	4,686	22	4.7	10	2.1	6.8	4.0
8000 and Over	4	34,435	52.4	34,301	134	3.9	97	2.8	6.7	4.5
Total	19	65,663	100	65,401	262	4.0	164	2.5	6.5	4.4

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 is based on the 19 maternity units reporting to NPRS. No unit delivered between 5,000 and 7,999 births. Domiciliary births, of which there were 206, 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 2015.

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; less than 1 per cent of live births were transferred to another hospital for medical reasons.
- Less than 1 per cent of singleton births were transferred to another hospital for medical reasons, compared to 3.5 per cent of multiple births.

TABLE 4.9

Inter-Hospital Transfer of Infants

	Live Births	Per Cent Live Births
Total Births		
Transferred	*	^
Not Transferred	64,883	99.2
Not Stated	~	^
Total	65,401	100
Singleton Births		
Transferred	*	^
Not Transferred	62,514	99.3
Not Stated	~	^
Total	62,945	100
Multiple Births		
Transferred	87	3.5
Not Transferred	2,369	96.5
Not Stated	0	0.0
Total	2,456	100

Note: Percentage column is subject to rounding.
This table does not include domiciliary births.

INFANT'S LENGTH OF STAY

The mean length of stay for infants was 3.3 days. When analysed by birth weight, low birthweight babies (weighing less than 2,500 grams) recorded a mean length of stay of 14.3 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 13.4 days while babies born at term reported a mean length of stay of 2.6 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 53 per cent of singleton live births were discharged from hospital within 2 days, compared to just 10.3 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 61.3 per cent of multiple live births.
- 6.1 per cent of total live births had a length of stay of 6 or more days (just under 5 per cent for singleton live births compared to almost 39 per cent for multiple births).

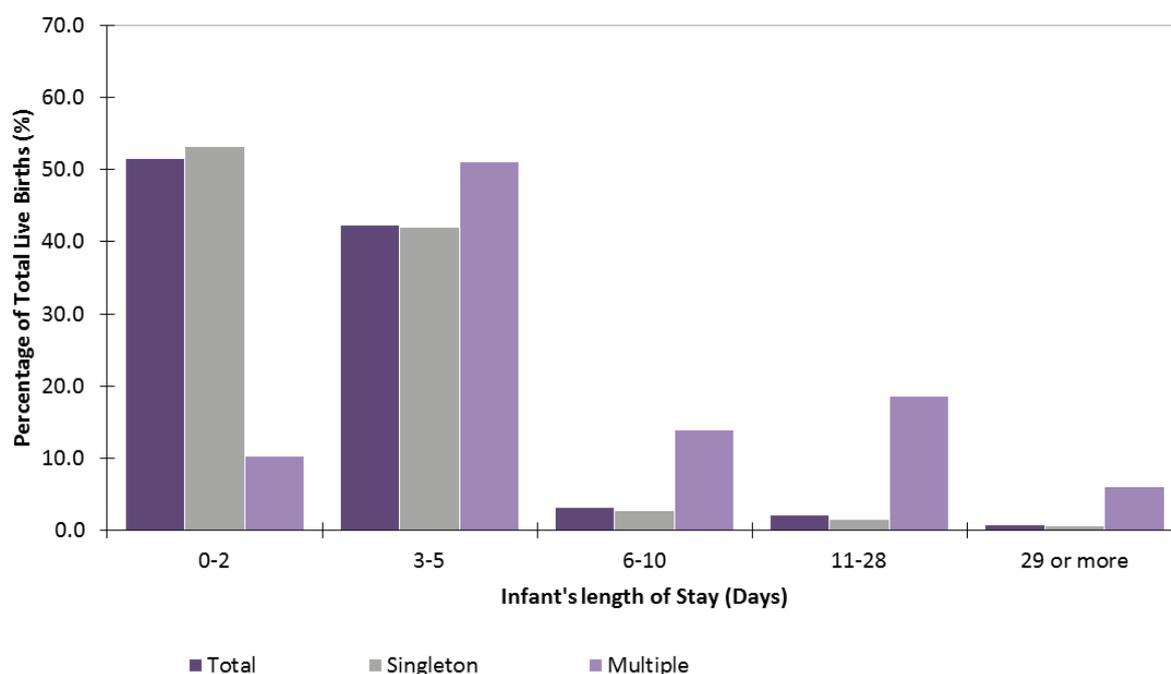
TABLE 4.10

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

	Live Births	Per Cent Live Births
Total Births		
0-2 Days	33,643	51.6
3-5 Days	27,616	42.3
6-10 Days	2,081	3.2
11-28 Days	1,387	2.1
29 Days or more	500	0.8
Not Stated	10	0.0
Total	65,237	100
Singleton Births		
0-2 Days	33,393	53.2
3-5 Days	26,376	42.0
6-10 Days	1,742	2.8
11-28 Days	936	1.5
29 Days or more	*	^
Not Stated	*	^
Total	62,808	100
Multiple Births		
0-2 Days	250	10.3
3-5 Days	1,240	51.0
6-10 Days	339	14.0
11-28 Days	451	18.6
29 Days or more	*	^
Not Stated	~	^
Total	2,429	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 47.7 per cent, a higher proportion of total births were breastfed compared to 42.1 per cent reporting artificial feeding.
- Artificial feeding was more common for multiple births (47.5 per cent for multiple births compared to 41.8 per cent for singleton births), while breastfeeding was more common for singleton births (48.3 per cent for singleton births compared to 32.2 per cent for multiple births).
- Breastfeeding was more common than artificial feeding among mothers aged 30 years or more. Mothers in the 30 to 34 year age group reported a breastfeeding rate of 52.2 per cent, while mothers in the 35 to 39 year age group reported the highest breastfeeding rate at 53.1 per cent (see Figure 4.7).
- More than one-fifth (21.5 per cent) of infants born to mothers aged under 20 years were exclusively breastfed.

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

TABLE 4.11

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

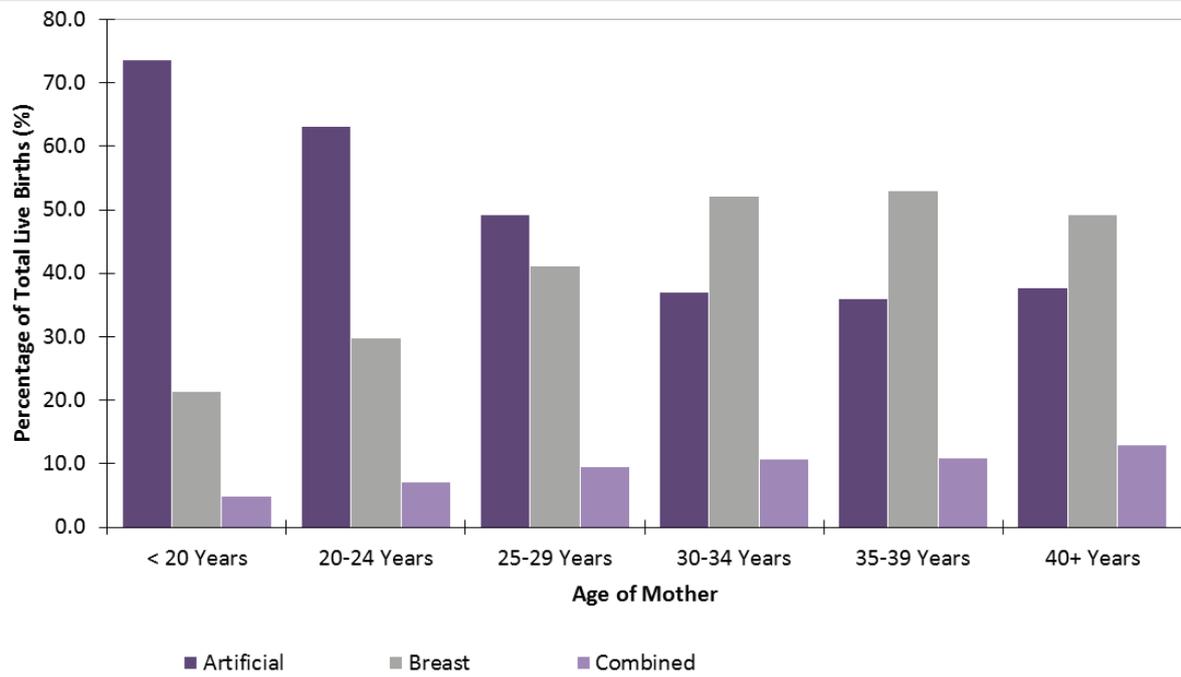
Frequency Row Per Cent Col. Per Cent	Type of Feeding															
	Total Births					Singleton Births					Multiple Births					
	Artificial	Breast	Combined	Total	Artificial	Breast	Combined	Total	Artificial	Breast	Combined	Total	Artificial	Breast	Combined	Total
Under 20 Years	879	256	58	1,193	*	*	58	1,185	*	~	0	8	~	~	0	8
	73.7	21.5	4.9	100.0	^	^	4.9	100.0	^	^	0.0	100	^	^	0.0	100
	3.2	0.8	0.9	1.8	^	^	0.9	1.9	^	^	0.0	0.3	^	^	0.0	0.3
20-24 Years	3,591	1,691	404	5,686	3,529	1,666	395	5,590	62	25	9	96	64.6	26.0	9.4	100
	63.2	29.7	7.1	100.0	63.1	29.8	7.1	100.0	64.6	26.0	9.4	100	64.6	26.0	9.4	100
	13.0	5.4	6.0	8.7	13.4	5.5	6.3	8.9	5.4	3.2	1.8	4.0	5.4	3.2	1.8	4.0
25-29 Years	6,063	5,071	1,179	12,313	5,898	5,000	1,126	12,024	165	71	53	289	165	71	53	289
	49.2	41.2	9.6	100.0	49.1	41.6	9.4	100.0	57.1	24.6	18.3	100	57.1	24.6	18.3	100
	22.0	16.2	17.6	18.8	22.4	16.4	18.1	19.1	14.3	9.1	10.7	11.9	14.3	9.1	10.7	11.9
30-34 Years	8,758	12,353	2,533	23,644	8,379	12,097	2,362	22,838	379	256	171	806	379	256	171	806
	37.0	52.2	10.7	100.0	36.7	53.0	10.3	100.0	47.0	31.8	21.2	100	47.0	31.8	21.2	100
	31.8	39.6	37.7	36.1	31.8	39.8	38.0	36.2	32.8	32.8	34.6	33.2	32.8	32.8	34.6	33.2
35-39 Years	6,648	9,775	1,997	18,420	6,231	9,449	1,818	17,498	417	326	179	922	417	326	179	922
	36.1	53.1	10.8	100.0	35.6	54.0	10.4	100.0	45.2	35.4	19.4	100	45.2	35.4	19.4	100
	24.2	31.3	29.7	28.1	23.6	31.1	29.2	27.8	36.1	41.7	36.2	38.0	36.1	41.7	36.2	38.0
40-44 Years	1,499	1,966	512	3,977	1,388	1,877	438	3,703	111	89	74	274	111	89	74	274
	37.7	49.4	12.9	100.0	37.5	50.7	11.8	100.0	40.5	32.5	27.0	100	40.5	32.5	27.0	100
	5.4	6.3	7.6	6.1	5.3	6.2	7.0	5.9	9.6	11.4	15.0	11.3	9.6	11.4	15.0	11.3
45 Years and Over	81	95	32	208	*	*	24	174	*	*	8	34	*	*	8	34
	38.9	45.7	15.4	100.0	^	^	13.8	100.0	^	^	23.5	100	^	^	23.5	100
	0.3	0.3	0.5	0.3	^	^	0.4	0.3	^	^	1.6	1.4	^	^	1.6	1.4
Total	27,519	31,207	6,715	65,441	26,365	30,426	6,221	63,012	1,154	781	494	2,429	1,154	781	494	2,429
	42.1	47.7	10.3	100	41.8	48.3	9.9	100	47.5	32.2	20.3	100	47.5	32.2	20.3	100
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Notes:

- ~ Percentage rows and columns are subject to rounding.
- * Denotes five or fewer births (or maternities) reported to NPRS.
- ^ Further suppression required to prevent disclosure of five or fewer births (or maternities).
- Percentage not provided to prevent disclosure of small numbers.
- This table excludes early neonatal deaths.
- There were 5 births to mothers with unknown maternal age; these were excluded from this table.

FIGURE 4.7

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



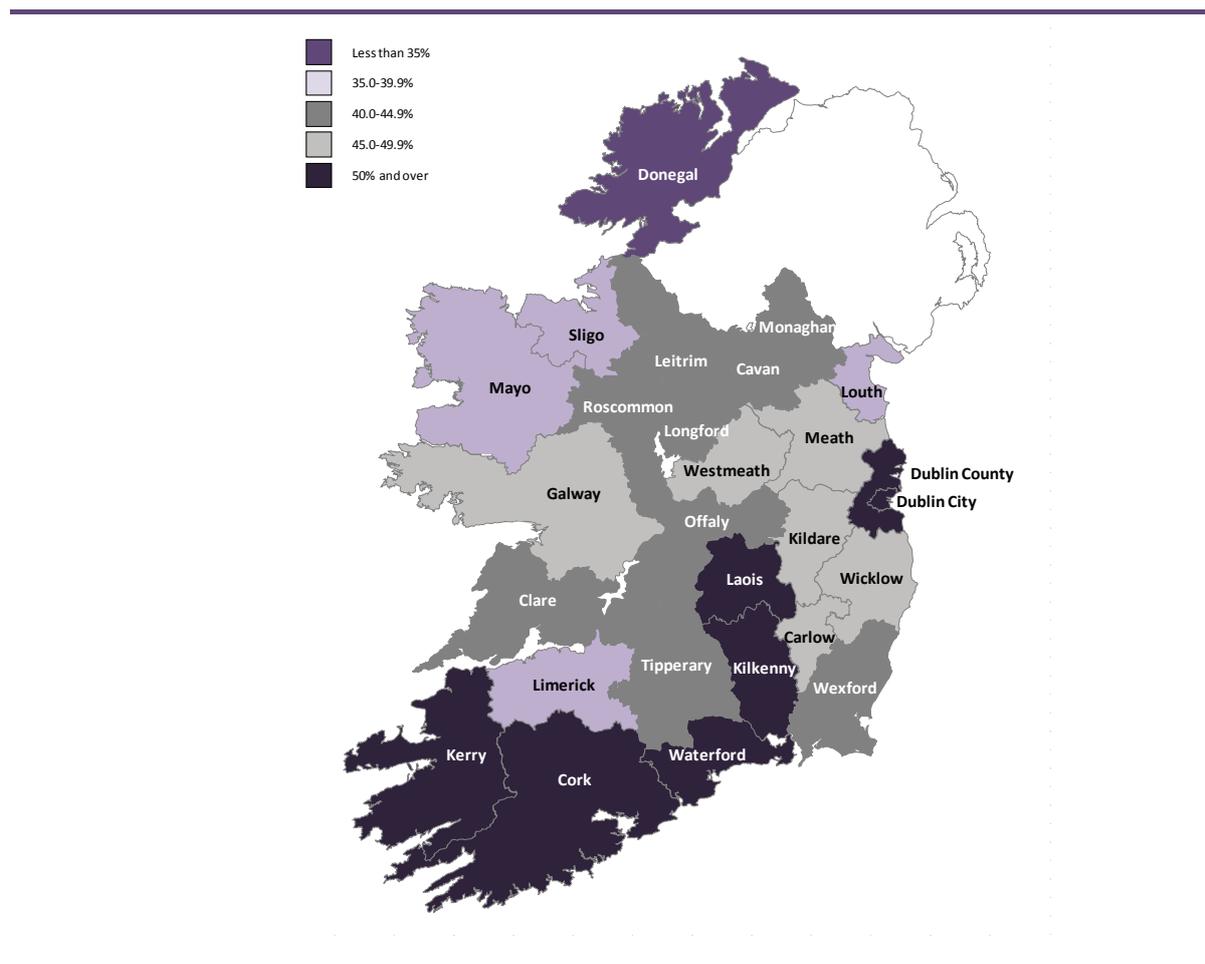
Note: See Table 4.11 for data.

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

- Infants born to mothers resident in Kilkenny recorded the highest rate of breastfeeding at 57.6 per cent, with Cork and Waterford reporting rates at 57.5 per cent and 55.8 per cent respectively.
- Other counties reporting exclusive breastfeeding rates higher than the national rate of 47.7 per cent include Westmeath, Wicklow, Carlow, Laois, Kerry, Dublin City and Dublin County.

FIGURE 4.8

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



Notes: See Appendix G, Table G10 for data.

Example: Of all live births to mothers resident in Westmeath, 48.3 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' (65.6 per cent) and 'skilled manual workers' (63.5 per cent) socio-economic groups. Breastfeeding was least common among 'unemployed' mothers (28.6 per cent) (see Figure 4.9).
- Artificial feeding was most common among 'unemployed' mothers with a rate of 63.6 per cent, and mothers whose socio-economic group was recorded as 'home duties' (50.7 per cent).

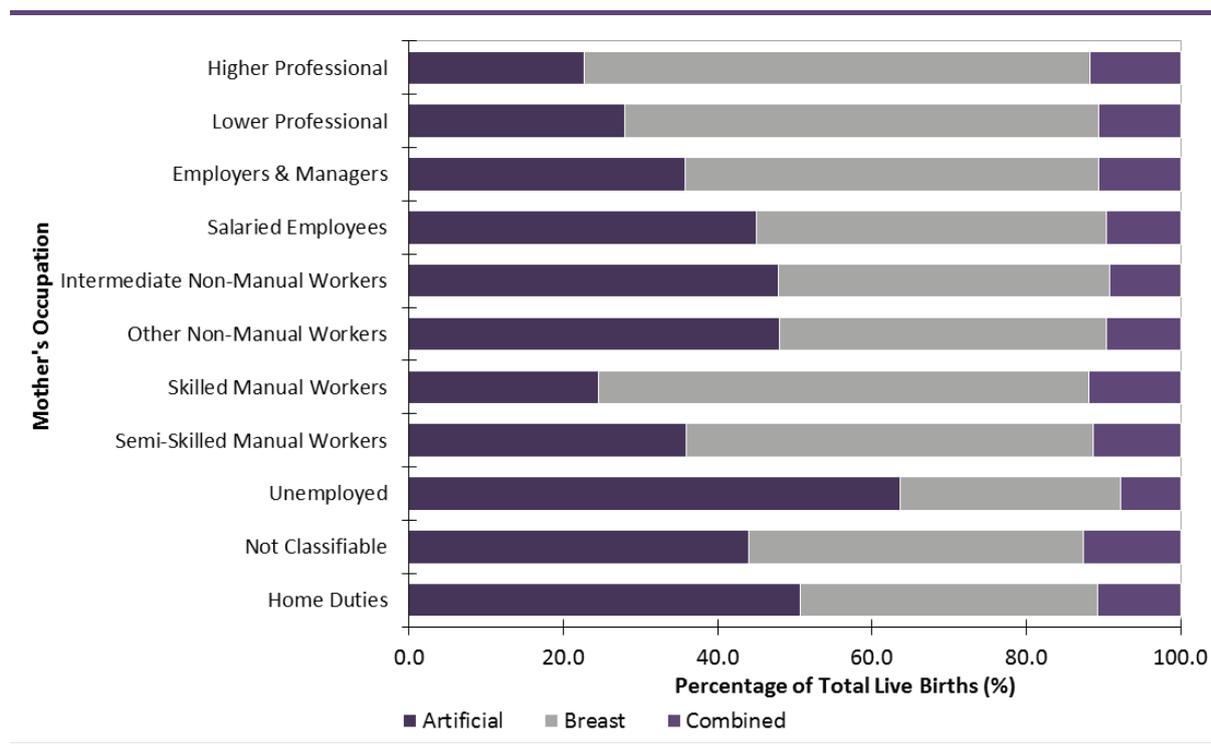
TABLE 4.12
 Mother's Socio-economic Group by Infant's Type of Feeding, Total Live Births

Frequency Row Per Cent	Type of Feeding			Total
	Artificial	Breast	Combined	
Farmers & Farm Managers	*	46	~	73
	^	63.0	^	100
Other Agricultural Occupations & Fishermen	*	42	~	71
	^	59.2	^	100
Higher Professional	1,022	2,953	527	4,502
	22.7	65.6	11.7	100
Lower Professional	3,410	7,467	1,303	12,180
	28.0	61.3	10.7	100
Employers & Managers	1,706	2,548	509	4,763
	35.8	53.5	10.7	100
Salaried Employees	349	352	75	776
	45.0	45.4	9.7	100
Intermediate Non-Manual Workers	5,998	5,403	1,149	12,550
	47.8	43.1	9.2	100
Other Non-Manual Workers	4,556	4,016	909	9,481
	48.1	42.4	9.6	100
Skilled Manual Workers	205	530	99	834
	24.6	63.5	11.9	100
Semi-Skilled Manual Workers	723	1,058	229	2,010
	36.0	52.6	11.4	100
Unskilled Manual Workers	*	10	~	17
	^	58.8	^	100
Unemployed	1,880	845	229	2,954
	63.6	28.6	7.8	100
Not Classifiable	851	836	244	1,931
	44.1	43.3	12.6	100
Home Duties	6,604	5,004	1,405	13,013
	50.7	38.5	10.8	100
Not Stated	163	98	27	288
	56.6	34.0	9.4	100
Total	27,520	31,208	6,715	65,443
	42.1	47.7	10.3	100

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

FIGURE 4.9

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



Notes: See Table 4.12 for data.

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

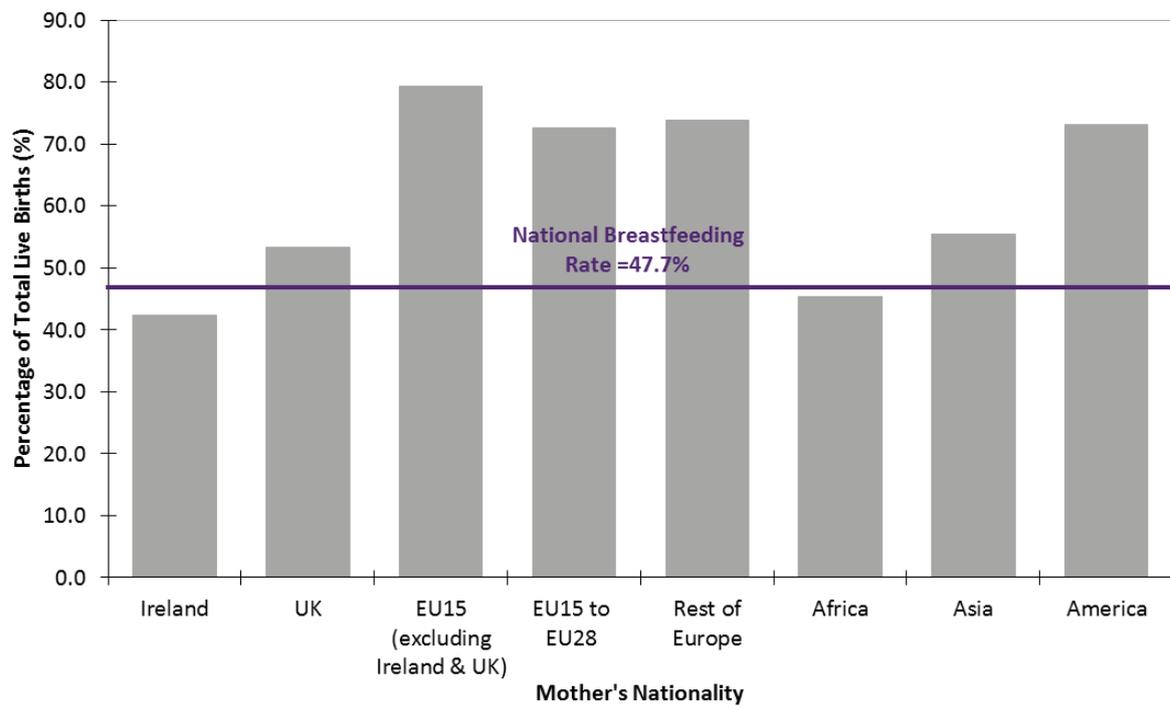
Figure 4.10 presents the rate of exclusive breastfeeding by mother's nationality.²⁹

- At 42.3 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 79.3 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 53.3 per cent for mothers from the UK and 55.4 per cent for mothers from Asia, while mothers from Africa reported a breastfeeding rate of 45.4 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 65,869 births recorded by the NPRS in 2015, 262 were stillbirths and 164 were early neonatal deaths, giving a total of 426 perinatal deaths and a perinatal mortality rate of 6.5 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

- Two thirds (66.4 per cent) of total perinatal deaths weighed less than 2,500 grams, 69.8 per cent for primiparous women and 64.4 per cent for multiparous women (see Figure 5.1).
- The perinatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 72.9 per 1,000 live births and stillbirths (59.1 per 1,000 for primiparous women and 85.8 per 1,000 for multiparous women).
- The early neonatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 29.1 per 1,000 live births (26.4 per 1,000 for primiparous women and 31.7 per 1,000 for multiparous women).
- The stillbirth rate for low birthweight babies (weighing less than 2,500 grams) was 45.1 per 1,000 live births and stillbirths (33.5 per 1,000 for primiparous women and 55.9 per 1,000 for multiparous women).
- For births weighing 2,500 grams or more, the perinatal mortality rate was 2.3 per 1,000 live births and stillbirths (2.1 for primiparous women and 2.5 for multiparous women).
- Higher perinatal mortality rates for all births were recorded for births less than 1,500 grams at 253.2 per 1,000 live births and stillbirths and an adjusted perinatal mortality rate of 201.8 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

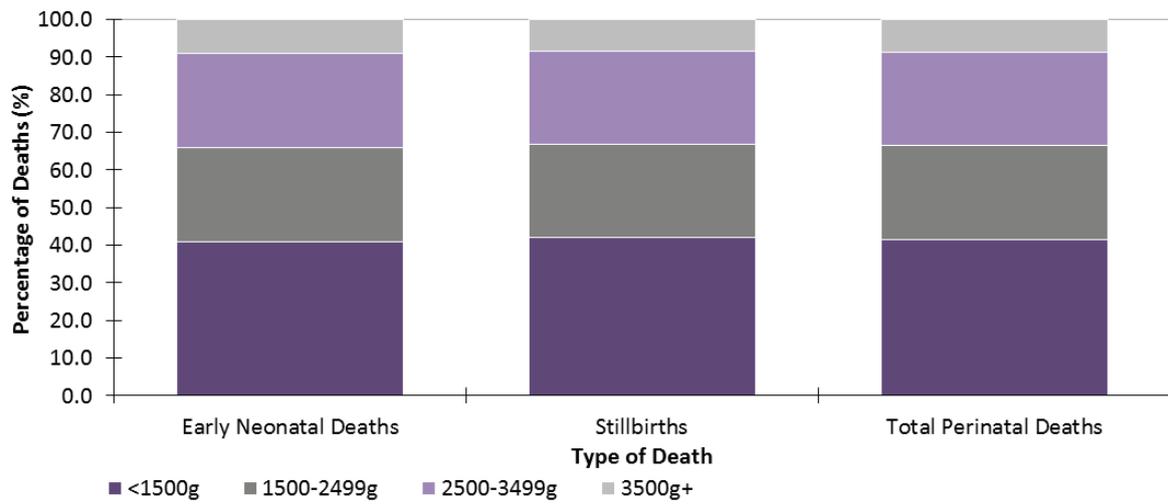
Birthweight (grams): Total Perinatal Deaths, Antepartum and Intrapartum Stillbirths, Early Neonatal Deaths, and Mortality Rates by Parity

	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	76	17.8	38	~	~	301.4	32	313.7	520.5	473.7
750-999	43	10.1	28	~	0	211.7	*	129.6	313.9	248.0
1000-1249	27	6.3	17	~	0	105.3	*	58.8	157.9	111.1
1250-1499	31	7.3	18	0	~	77.6	*	53.1	126.5	85.5
1500-1999	50	11.7	28	~	0	37.0	*	21.6	57.9	25.1
2000-2499	56	13.1	31	~	0	14.2	*	10.1	24.1	16.1
2500-2999	63	14.8	38	~	0	5.1	*	2.9	8.0	5.2
3000-3499	43	10.1	22	~	0	1.2	*	0.8	2.0	1.4
3500-3999	22	5.2	14	0	0	0.6	8	0.4	1.0	0.6
4000-4499	*	^	*	0	0	0.8	~	0.5	1.3	0.9
4500 and over	~	^	~	0	0	0.7	~	2.0	2.7	2.7
Total	426	100	242	*	~	4.0	164	2.5	6.5	4.4
Primiparous Women										
500-749	42	26.4	19	~	~	267.4	19	301.6	488.4	463.4
750-999	14	8.8	7	0	0	109.4	7	122.8	218.8	180.3
1000-1249	7	4.4	~	~	0	62.5	~	26.7	87.5	51.9
1250-1499	9	5.7	~	0	0	39.7	~	33.1	71.4	48.8
1500-1999	20	12.6	11	0	0	24.9	9	20.9	45.2	25.4
2000-2499	19	11.9	11	~	0	11.1	*	6.5	17.6	11.2
2500-2999	22	13.8	15	0	0	4.3	7	2.0	6.4	4.6
3000-3499	13	8.2	*	0	0	0.9	~	0.6	1.5	1.1
3500-3999	10	6.3	*	0	0	0.9	~	0.4	1.2	1.0
4000-4499	~	^	~	0	0	0.8	0	-	0.8	0.8
4500 and over	~	^	0	0	0	-	~	2.7	2.7	2.7
Total	159	100	89	~	~	3.8	64	2.5	6.3	4.7
Multiparous Women										
500-749	34	12.7	19	~	0	350.0	*	333.3	566.7	490.2
750-999	29	10.9	21	~	0	301.4	*	137.3	397.3	312.5
1000-1249	20	7.5	13	0	0	142.9	7	89.7	219.8	164.7
1250-1499	22	8.2	13	0	~	117.6	*	76.2	184.9	126.1
1500-1999	30	11.2	17	~	0	49.8	*	22.4	71.1	24.9
2000-2499	37	13.9	20	~	0	16.9	*	13.1	29.8	20.4
2500-2999	41	15.4	23	~	0	5.7	*	3.7	9.3	5.7
3000-3499	30	11.2	*	~	0	1.3	*	1.0	2.4	1.6
3500-3999	12	4.5	*	0	0	0.5	~	0.3	0.8	0.4
4000-4499	*	^	~	0	0	0.8	~	0.7	1.5	1.0
4500 and over	~	^	~	0	0	0.9	~	1.8	2.7	2.7
Total	267	100	153	*	~	4.1	100	2.5	6.6	4.1

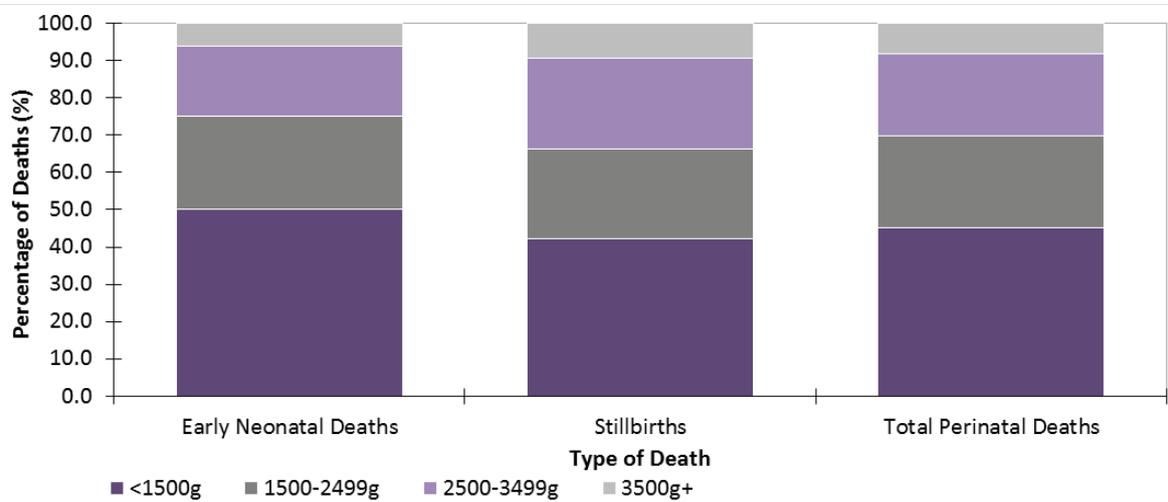
Notes: ~ Percentage column is subject to rounding.
 ~ Denotes five or fewer births (or maternities) reported to NPRS.
 * Further suppression required to prevent disclosure of five or fewer births (or maternities).
 ^ Percentage not provided to prevent disclosure of small numbers.
 a Rates are calculated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

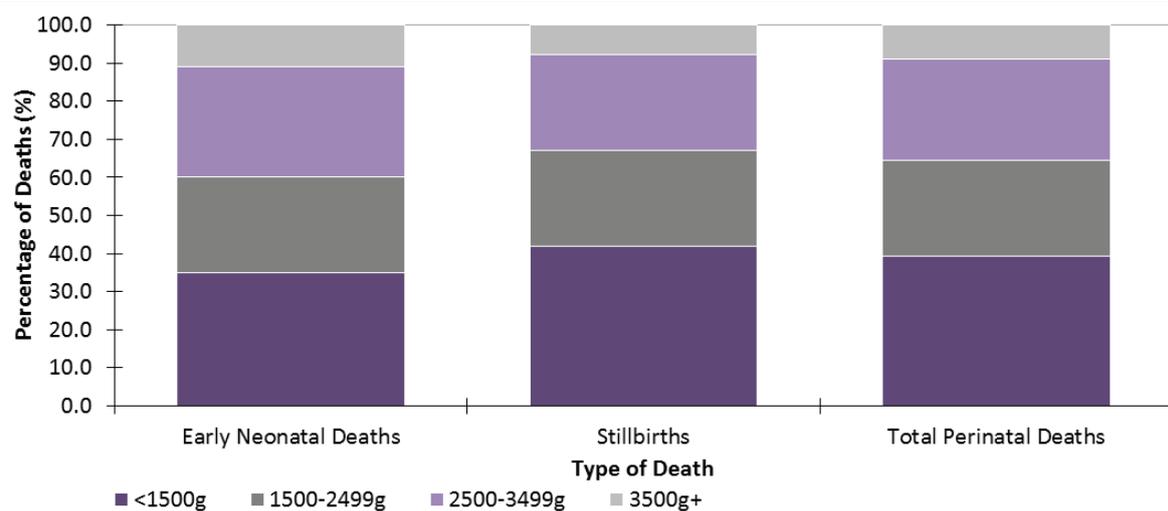
Total Perinatal Deaths



Perinatal Deaths: Primiparous Women

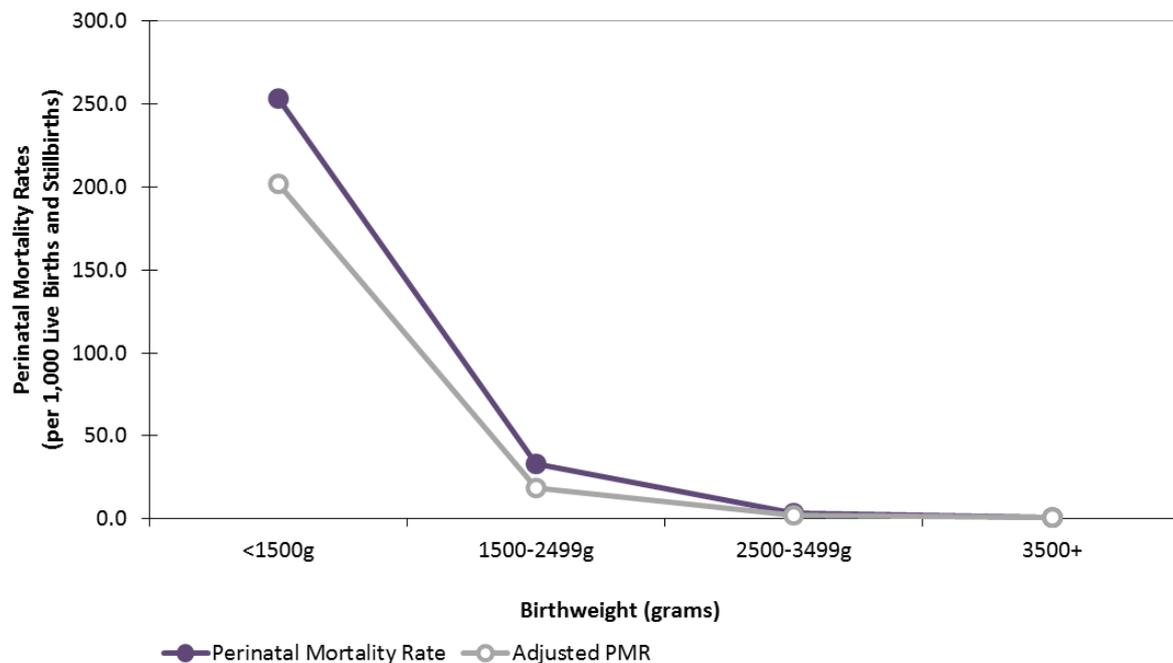


Perinatal Deaths: Multiparous Women



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 (32.6 per cent) followed by foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04), which accounted for 20.7 per cent.
- Just over two thirds (66.4 per cent) of perinatal deaths weighed <2,500 grams, and of these 32.9 per cent were due to congenital malformations (Q00-Q99), followed by maternal factors (P00-P04) accounting for 21.2 per cent (see Figure 5.3).
- Of the 33.6 per cent of perinatal deaths weighing $\geq 2,500$ grams, 32.2 per cent recorded cause of death due to congenital malformations (Q00-Q99) and 19.6 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	54.8	102.2	29.2	28.6	11.6	6.9	1.8	0.3	0.3	0.2	-	88	1.3		
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery															
P05-P08	171.2	21.9	29.2	-	1.2	-	0.1	-	-	-	-	35	0.5		
Disorders related to length of gestation and foetal growth															
P10-P15	6.8	-	-	-	-	-	-	-	-	-	-	~	0.0		
Birth trauma															
P20-P29	61.6	29.2	17.5	12.2	4.6	4.3	1.0	0.2	0.2	0.5	-	53	0.8		
Respiratory and cardiovascular disorders specific to the perinatal period															
P35-P39	34.2	7.3	-	4.1	1.2	0.9	0.1	-	-	-	-	11	0.2		
Infections specific to the perinatal period															
P50-P61	20.5	21.9	-	4.1	-	1.7	0.1	0.1	-	-	-	15	0.2		
Haemorrhagic and haematological disorders of foetus and newborn															
P70-P74	6.8	-	-	4.1	-	-	-	-	0.0	-	0.7	~	0.1		
Transitory endocrine and metabolic disorders specific to foetus and newborn															
P80-P83	20.5	7.3	-	8.2	1.2	0.4	0.1	-	-	-	-	9	0.1		
Conditions involving the integument and temperature regulation of foetus and newborn															
P90.0-P94.9, P96.0-P96.8	-	-	-	-	-	-	0.3	-	0.0	-	-	~	0.0		
Other disorders originating in the perinatal period															
P95, P96.9	47.9	36.5	29.2	20.4	3.5	1.7	1.7	0.8	0.1	0.2	2.0	66	1.0		
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified															
Q00-Q07	6.8	21.9	11.7	12.2	2.3	1.7	0.3	-	-	0.1	-	18	0.3		
Congenital malformations of the nervous system															
Q20-Q28	13.7	14.6	-	-	2.3	1.3	0.4	0.2	0.1	-	-	18	0.3		
Congenital malformations of the circulatory system															
Q30-Q34	-	-	-	-	-	1.3	0.1	0.0	0.1	0.1	-	8	0.1		
Congenital malformations of the respiratory system															
Q50-Q56	-	-	-	-	-	0.4	-	-	-	-	-	~	0.0		
Congenital malformations of genital organs															
Q60-Q64	13.7	-	-	4.1	8.1	1.3	0.3	-	0.0	-	-	16	0.2		
Congenital malformations of the urinary system															
Q65-Q79	-	-	5.8	8.2	2.3	0.4	0.1	0.1	0.1	0.1	-	13	0.2		
Congenital malformations and deformations of the musculoskeletal system															
Q80-Q89	6.8	14.6	5.8	4.1	3.5	0.4	0.6	0.2	0.0	-	-	19	0.3		
Other congenital malformations															
Q90-Q99	47.9	36.5	29.2	16.3	15.0	1.3	1.0	0.0	-	-	-	46	0.7		
Chromosomal abnormalities, not elsewhere classified															
All other causes															
A00.0-O99.9, R00.0-Z99.9	6.8	-	-	-	1.2	-	-	-	-	-	-	~	0.0		
Total	76	43	27	31	50	56	63	43	22	*	~	426	6.5		
PMR	520.5	313.9	157.9	126.5	57.9	24.1	8.0	2.0	1.0	1.3	2.7				

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	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		
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	43.9	114.3	46.7	33.6	11.4	8.6	2.0	0.3	0.3	0.2	-	75	1.2	
P00-P04														
Disorders related to length of gestation and foetal growth	166.7	9.5	28.0	-	1.9	-	0.1	-	-	-	-	25	0.4	
P05-P08														
Birth trauma	8.8	-	-	-	-	-	-	-	-	-	-	~	0.0	
P10-P15														
Respiratory and cardiovascular disorders specific to the perinatal period	52.6	38.1	28.0	20.1	7.6	5.5	1.1	0.1	0.2	0.5	-	48	0.8	
P20-P29														
Infections specific to the perinatal period	43.9	9.5	-	-	1.9	0.6	0.1	-	-	-	-	9	0.1	
P35-P39														
Haemorrhagic and haematological disorders of foetus and newborn	8.8	9.5	-	6.7	-	1.8	0.1	0.1	-	-	-	10	0.2	
P50-P61														
Transitory endocrine and metabolic disorders specific to foetus and newborn	8.8	-	-	6.7	-	-	-	-	0.0	-	0.7	~	0.1	
P70-P74														
Conditions involving the integument and temperature regulation of foetus and newborn	8.8	9.5	-	13.4	1.9	0.6	0.1	-	-	-	-	7	0.1	
P80-P83														
Other disorders originating in the perinatal period	-	-	-	-	-	-	0.3	-	0.0	-	-	~	0.0	
P90.0-P94.9, P96.0-P96.8														
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	61.4	28.6	28.0	33.6	5.7	2.5	1.6	0.8	0.1	0.2	2.0	59	0.9	
P95, P96.9														
Congenital malformations of the nervous system	8.8	28.6	18.7	13.4	1.9	2.5	0.3	-	-	0.1	-	16	0.3	
Q00-Q07														
Congenital malformations of the circulatory system	17.5	19.0	-	-	1.9	0.6	0.4	0.2	0.1	-	-	15	0.2	
Q20-Q28														
Congenital malformations of the respiratory system	-	-	-	-	-	1.8	0.1	0.0	0.1	0.1	-	8	0.1	
Q30-Q34														
Congenital malformations of the urinary system	17.5	-	-	6.7	11.4	1.8	0.3	-	0.0	-	-	15	0.2	
Q60-Q64														
Congenital malformations and deformations of the musculoskeletal system	-	-	9.3	13.4	1.9	0.6	0.1	0.1	0.1	0.1	-	12	0.2	
Q65-Q79														
Other congenital malformations	8.8	19.0	9.3	6.7	5.7	0.6	0.7	0.2	0.0	-	-	19	0.3	
Q80-Q89														
Chromosomal abnormalities, not elsewhere classified	61.4	38.1	37.4	20.1	22.8	1.8	1.1	0.0	-	-	-	42	0.7	
Q90-Q99														
All other causes	8.8	-	-	-	1.9	-	-	-	-	-	-	~	0.0	
A00.0-Q99.9, R00.0-Z99.9														
Total	60	34	22	26	41	48	61	41	22	22	~	370	5.8	
PMIR	526.3	323.8	205.6	174.5	77.8	29.4	8.7	1.9	1.0	1.3	2.7	370	5.8	

TABLE 5.2

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

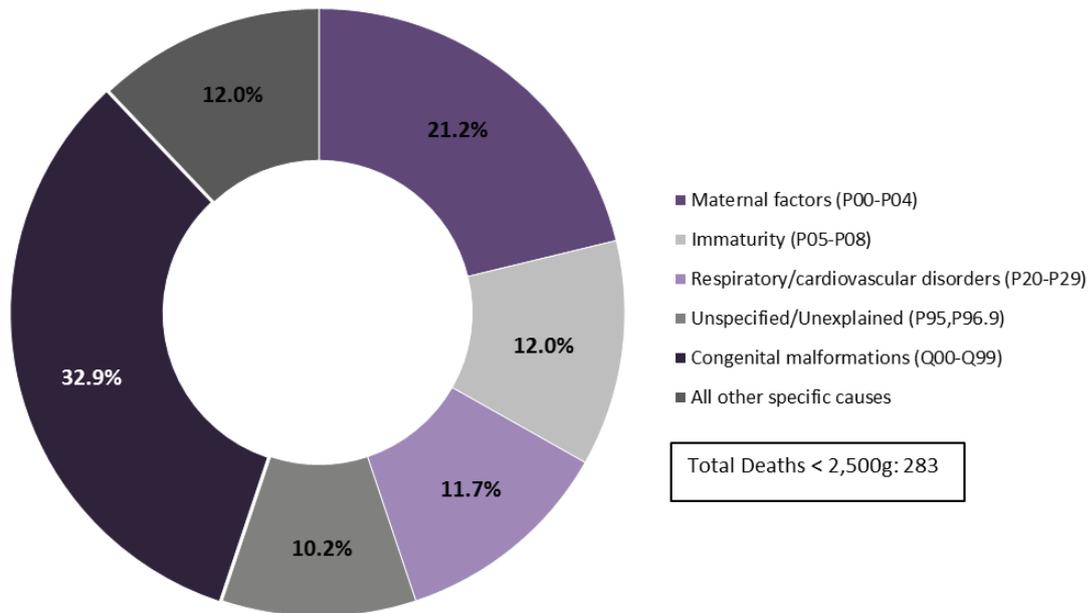
ICD-10 Code	Birthweight (grams)													Total
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	4500 and over	N	PMIR ^a	
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	93.8	62.5	0.0	20.8	11.9	2.9	-	-	-	-	-	-	13	5.2
Disorders related to length of gestation and foetal growth	187.5	62.5	31.3	-	-	-	-	-	-	-	-	-	10	4.0
Respiratory and cardiovascular disorders specific to the perinatal period	93.8	-	-	-	-	1.4	-	3.1	-	-	-	-	~	2.0
Infections specific to the perinatal period	-	-	-	10.4	-	1.4	-	-	-	-	-	-	~	0.8
Haemorrhagic and haematological disorders of foetus and newborn	62.5	62.5	-	-	-	1.4	-	-	-	-	-	-	~	2.0
Conditions involving the integument and temperature regulation of foetus and newborn	62.5	-	-	-	-	-	-	-	-	-	-	-	~	0.8
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	-	62.5	31.3	-	-	-	2.3	3.1	-	-	-	-	7	2.8
Congenital malformations of the nervous system	-	-	-	10.4	3.0	-	-	-	-	-	-	-	~	0.8
Congenital malformations of the circulatory system	-	-	-	-	3.0	2.9	-	-	-	-	-	-	~	1.2
Congenital malformations of genital organs	-	-	-	-	-	1.4	-	-	-	-	-	-	~	0.4
Congenital malformations of the urinary system	-	-	-	-	3.0	-	-	-	-	-	-	-	~	0.4
Congenital malformations and deformations of the musculoskeletal system	-	-	-	-	3.0	-	-	-	-	-	-	-	~	0.4
Chromosomal abnormalities, not elsewhere classified	-	31.3	15.6	10.4	3.0	-	-	-	-	-	-	-	~	1.6
Total	16	9	~	~	9	8	~	~	0	0	0	0	56	22.5
PMR	500.0	281.3	78.1	52.1	26.7	11.6	2.3	6.2	-	-	-	-	56	22.5

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

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

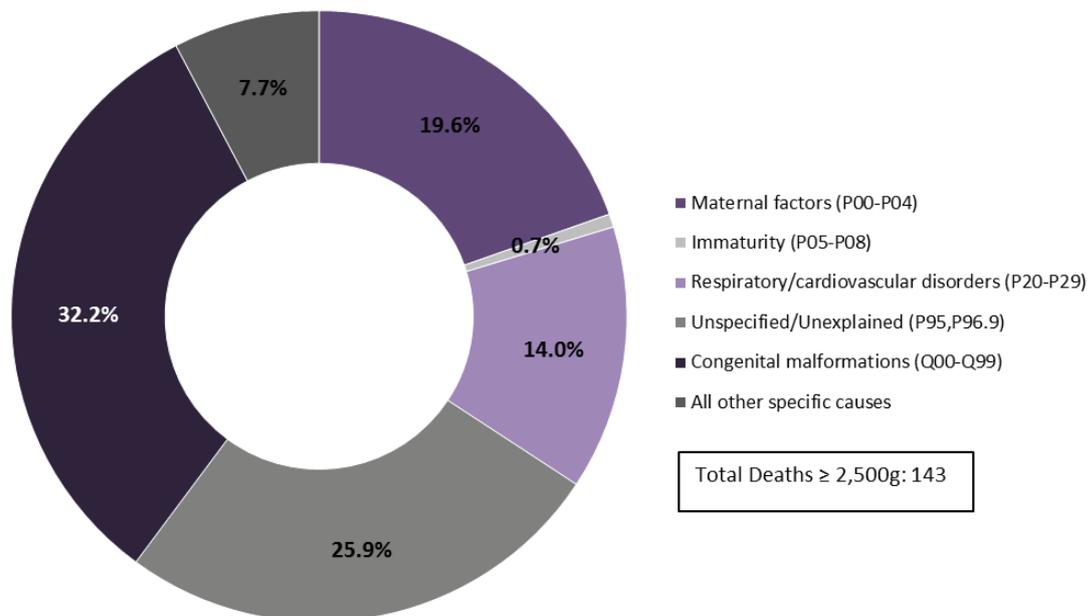
a Rates are calculated per 1,000 births. For perinatal deaths, rates are calculated on total live births and stillbirths.

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}
- 62.7 per cent of singleton perinatal deaths and 96.4 per cent of multiple perinatal deaths were preterm.
- 26.8 per cent of early neonatal deaths recorded a gestational age of less than 28 completed weeks compared to 21.4 per cent of stillbirths (see Figure 5.5).
- The perinatal mortality rate for babies born before 37 completed weeks of gestation was 64.8 per 1,000 live births and stillbirths (75.4 per 1,000 singleton births and 40.5 per 1,000 multiple births).
- For babies born at 37 or more completed weeks of gestation, the perinatal mortality rate was 2.3 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	100	23.5	49	*	~	225.8	44	229.2	403.2	375.5
28-31	*	^	43	~	0	83.7	*	37.3	117.9	84.8
32-36	124	29.1	77	~	~	21.7	45	12.6	34.1	20.9
37-41	138	32.4	73	9	0	1.4	56	0.9	2.3	1.3
42 and Over	~	^	0	~	0	0.6	~	0.6	1.3	-
Total	426	100	242	*	~	4.0	164	2.5	6.5	4.4
Singleton Births										
Less than 28	78	21.1	*	~	~	248.7	31	218.3	412.7	376.4
28-31	*	^	*	~	0	123.2	*	42.5	160.5	114.8
32-36	98	26.5	60	0	~	24.0	*	14.9	38.6	23.6
37-41	136	36.8	*	9	0	1.4	*	0.9	2.3	1.3
42 and Over	~	^	0	~	0	0.6	~	0.6	1.3	-
Total	370	100	215	*	~	3.7	*	2.2	5.8	3.8
Multiple Births										
Less than 28	22	39.3	*	~	0	152.5	13	260.0	372.9	372.9
28-31	*	^	~	0	0	5.6	~	28.4	33.9	28.4
32-36	26	46.4	17	~	0	16.4	*	7.4	23.7	14.7
37-41	~	^	~	0	0	0.9	~	0.9	1.7	0.9
42 and Over	0	0.0	0	0	0	-	0	-	-	-
Total	56	100	27	~	0	11.7	*	11.0	22.5	17.8

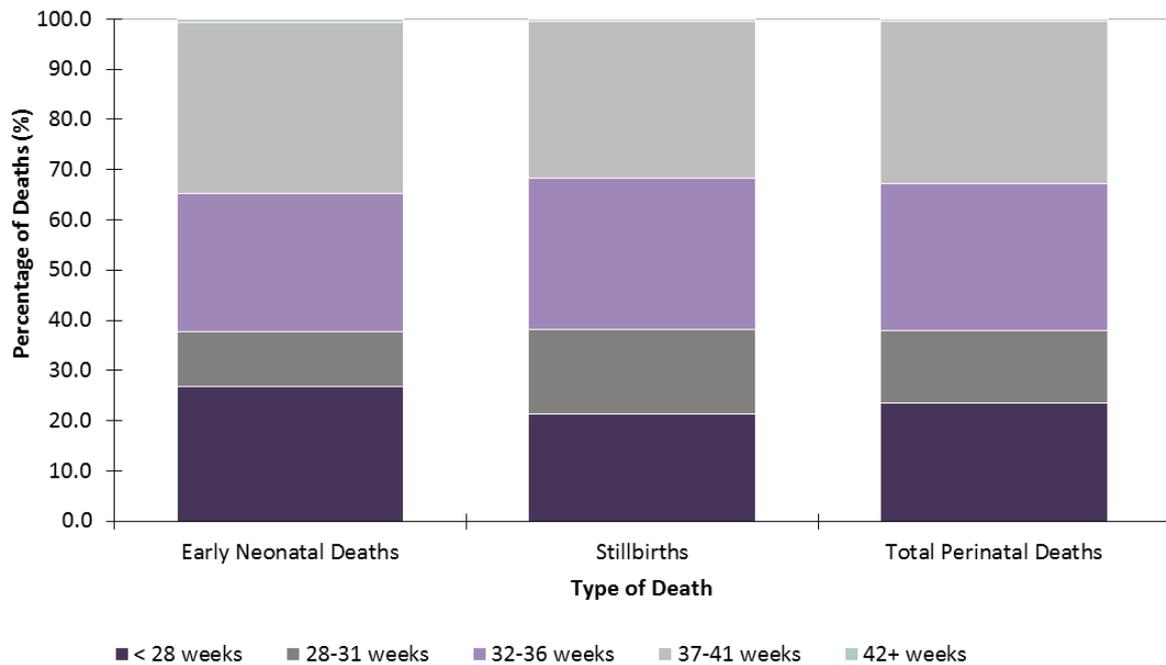
Notes:

- ~ 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 2015, 6.7 per cent of total births were preterm.

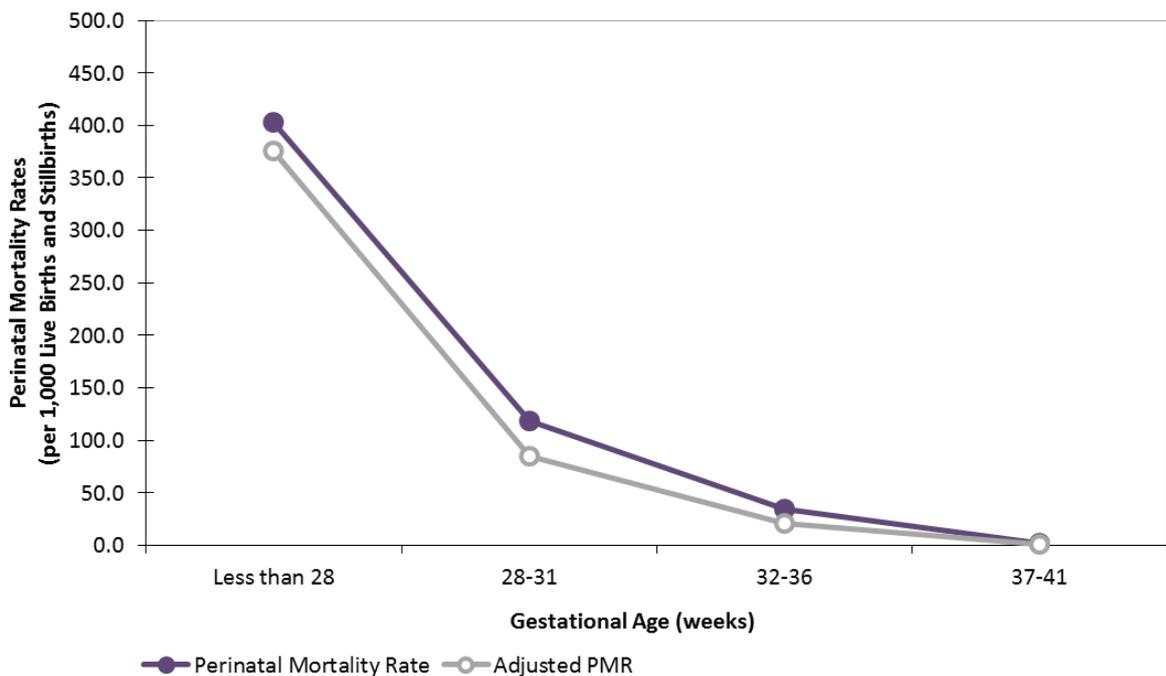
FIGURE 5.5
Total Perinatal Deaths by Gestational Age (weeks)



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 15.5% of total perinatal deaths were classified as 'unspecified/unexplained' (P95 ,P96.9). The fact that over 50 per cent of all perinatal deaths in Ireland do not undergo post-mortem examinations may be a contributing factor to the numbers assigned to this category (see also Table 5.5). This finding is not unique to Ireland, however, as many countries report high percentages of unexplained deaths in the perinatal period.

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

ICD-10 Code	Total Deaths			Singleton Deaths			Multiple Deaths		
	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths
	Rate	Rate	N Rate	Rate	Rate	N Rate	Rate	Rate	N Rate
P00-P04	1.3	0.1	88 1.3	1.2	0.0	75 1.2	4.4	0.8	13 5.2
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery									
P000 - P009	0.0	-	~ 0.0	0.0	-	~ 0.0	-	-	0 -
P020 - P029	1.3	0.1	87 1.3	1.1	0.0	74 1.2	4.4	0.8	13 5.2
Foetus and newborn affected by complications of placenta, cord and membranes									
P05-P08	0.2	0.3	35 0.5	0.2	0.2	25 0.4	1.6	2.4	10 4.0
Disorders related to length of gestation and foetal growth									
P050 - P059	0.1	-	~ 0.1	0.1	-	~ 0.1	-	-	0 -
P070 - P073	0.2	0.3	31 0.5	0.1	0.2	21 0.3	1.6	2.4	10 4.0
Disorders related to short gestation and low birth weight, not elsewhere classified									
P10-P15	-	0.0	~ 0.0	-	0.0	~ 0.0	-	-	0 -
Birth trauma									
P100 - P109	-	0.0	~ 0.0	-	0.0	~ 0.0	-	-	0 -
Intracranial laceration and haemorrhage due to birth injury									
P20-P29	0.5	0.3	0.8	0.5	0.3	* 0.8	0.4	1.6	~ 2.0
Respiratory and cardiovascular disorders specific to the perinatal period									
P200 - P209	0.4	-	28 0.4	0.4	-	* 0.4	0.4	-	~ 0.4
P210 - P219	-	0.0	~ 0.0	-	-	0 -	-	0.4	~ 0.4
P220 - P229	-	0.0	~ 0.0	-	0.0	~ 0.0	-	0.4	~ 0.4
P230 - P239	-	0.0	~ 0.0	-	0.0	~ 0.0	-	-	0 -
P250 - P258	-	0.0	~ 0.0	-	0.0	~ 0.0	-	-	0 -
Interstitial emphysema and related conditions originating in the perinatal period									
P260 - P269	-	0.0	~ 0.0	-	0.0	~ 0.0	-	0.4	~ 0.4
P280 - P289	-	0.2	11 0.2	-	0.2	* 0.2	-	0.4	~ 0.4
P290 - P299	0.0	0.1	7 0.1	0.0	0.1	7 0.1	-	-	0 -
Infections specific to the perinatal period									
P35-P39	0.1	0.1	11 0.2	0.1	0.1	* 0.1	0.4	0.4	~ 0.8
Bacterial sepsis of newborn									
P360 - P369	0.0	0.0	~ 0.0	0.0	0.0	~ 0.0	-	-	0 -
Other infections specific to the perinatal period									
P390 - P399	0.1	0.1	9 0.1	0.1	0.0	* 0.1	0.4	0.4	~ 0.8
Haemorrhagic and haematological disorders of foetus and newborn									
P50-P61	0.1	0.1	15 0.2	0.1	0.0	* 0.0	0.4	1.6	~ 2.0
Foetal blood loss									
P500 - P509	0.1	-	8 0.1	0.1	-	8 0.1	-	-	0 -
Intracranial nontraumatic haemorrhage of foetus and newborn									
P520 - P529	0.0	0.1	7 0.1	-	0.0	~ 0.0	0.4	1.6	~ 2.0

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	
		Rate	Rate	N	Rate	Rate	N	Rate	Rate	N	
Congenital malformations of the urinary system	Q60-Q64	0.1	0.2	16	0.1	0.1	*	0.2	0.4	~	0.4
Renal agenesis and other reduction defects of kidney	Q600 - Q606	0.0	0.2	12	0.0	0.1	*	0.2	0.4	~	0.4
Cystic kidney disease	Q610 - Q619	0.0	-	~	0.0	-	~	0.0	-	0	-
Congenital obstructive defects of renal pelvis and congenital malformations of ureter	Q620 - Q628	0.0	-	~	0.0	-	~	0.0	-	0	-
Congenital malformations and deformations of the musculoskeletal system	Q65-Q79	0.0	0.2	13	0.0	0.2	*	0.2	0.4	~	0.4
Other congenital musculoskeletal deformities	Q680 - Q688	0.0	-	~	0.0	-	~	0.0	-	0	-
Osteochondrodysplasia with defects of growth of tubular bones and spine	Q770 - Q779	-	0.0	~	-	0.0	~	0.0	-	0	-
Other osteochondrodysplasias	Q780 - Q789	-	0.0	~	-	0.0	~	0.0	-	0	-
Congenital malformations of musculoskeletal system, not elsewhere classified	Q790 - Q799	0.0	0.1	10	0.0	0.1	*	0.1	0.4	~	0.4
Other congenital malformations	Q80-Q89	0.1	0.2	19	0.1	0.2	19	0.3	-	0	-
Congenital ichthyosis	Q800 - Q809	-	0.0	~	-	0.0	~	0.0	-	0	-
Other specified congenital malformation syndromes affecting multiple systems	Q870 - Q878	0.0	0.0	~	0.0	0.0	~	0.1	-	0	-
Other congenital malformations, not elsewhere classified	Q890 - Q899	0.1	0.2	14	0.1	0.2	14	0.2	-	0	-
Chromosomal abnormalities, not elsewhere classified	Q90-Q99	0.5	0.2	46	0.5	0.2	*	0.7	0.8	~	1.6
Downs syndrome	Q900 - Q909	0.1	0.0	11	0.1	0.0	*	0.2	0.4	~	0.4
Edwards syndrome and Patau syndrome	Q910 - Q917	0.3	0.2	28	0.3	0.1	*	0.4	0.4	~	1.2
Other trisomies and partial trisomies of the autosomes, not elsewhere classified	Q920 - Q929	0.0	-	~	0.0	-	~	0.0	-	0	-
Turners syndrome	Q960 - Q969	0.0	-	~	0.0	-	~	0.0	-	0	-
Other chromosome abnormalities, not elsewhere classified	Q990 - Q999	0.0	0.0	~	0.0	0.0	~	0.0	-	0	-
All other causes	A00.0-O99.9, R00.0-Z99.9	0.0	0.0	~	0.0	0.0	~	0.0	-	0	-
Total		4.0	2.5	426	3.7	2.2	370	5.8	11.7	11.0	22.5

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.

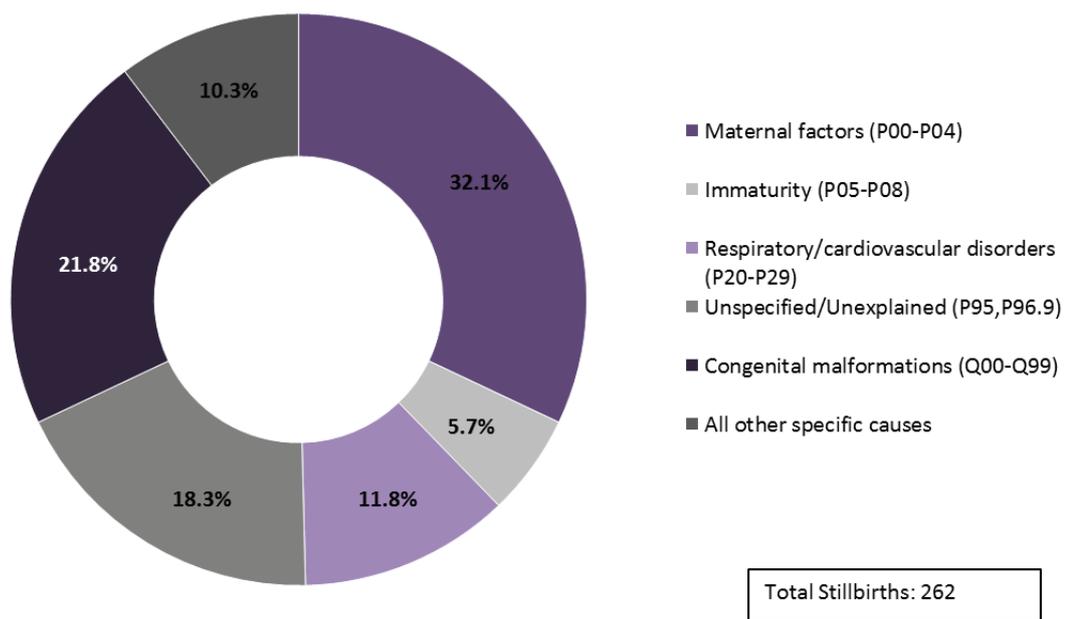
STILLBIRTHS

Figure 5.7 presents the main cause of death for stillbirths.

- Maternal factors (P00-P04) were the leading cause of death for total stillbirths (32.1 per cent).
- Congenital malformations (Q00-Q99) contributed to just over 1 in 5 deaths for total stillbirths (21.8 per cent).
- The cause of death was unspecified/unexplained (P95, P96.9) for 18.3 per cent of total stillbirths.

FIGURE 5.7

Total Stillbirths by Cause of Death



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

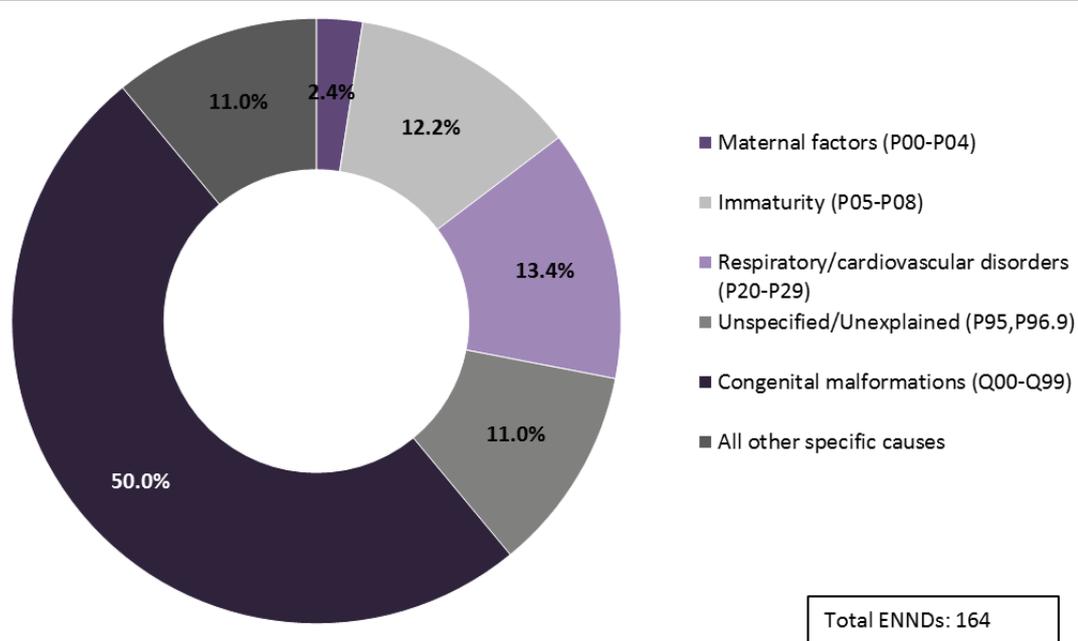
EARLY NEONATAL DEATHS

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

- Congenital malformations (Q00-Q99) was recorded as the leading cause of death for total early neonatal deaths (50.0 per cent).
- Respiratory/cardiovascular disorders (P20-P29) was the second leading cause of death, contributing to 13.4 per cent of total early neonatal deaths.
- The cause of death was unspecified/unexplained (P95, P96.9) for 11.0 per cent of total early neonatal deaths.

FIGURE 5.8

Total Early Neonatal Deaths by Cause of Death



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

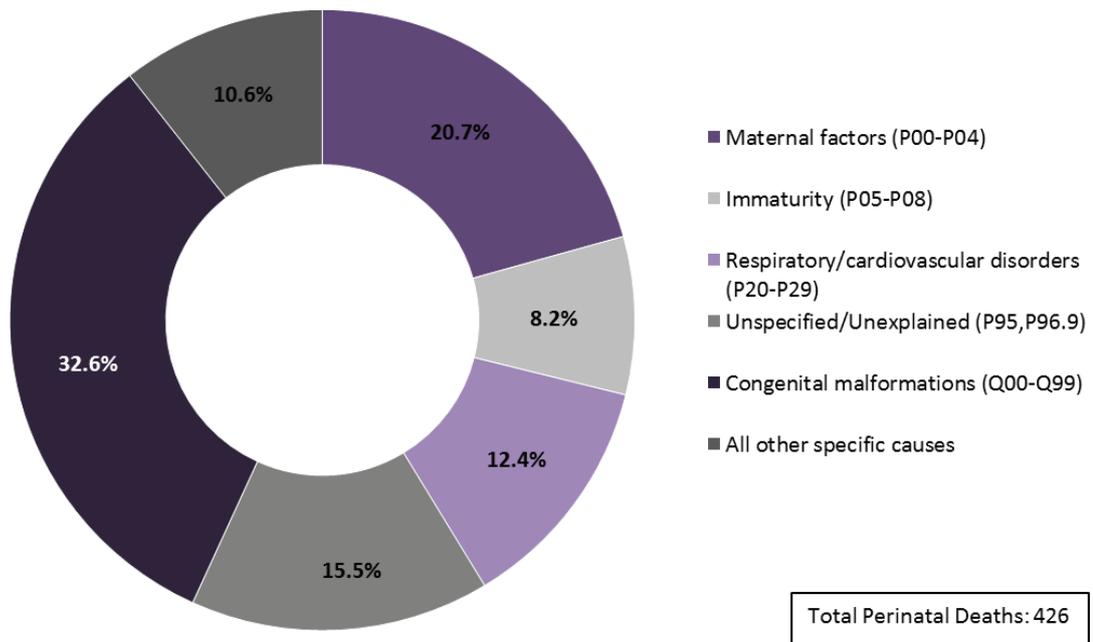
TOTAL PERINATAL DEATHS

Figure 5.9 presents data on all perinatal deaths.

- Congenital malformations (Q00-Q99) accounted for approximately 1 in 3 total perinatal deaths (32.6 per cent).
- Maternal factors (P00-P04) was the second most frequently reported cause of death for total perinatal deaths (20.7 per cent).
- The cause of death was unspecified/unexplained (P95, P96.9) for 15.5 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.

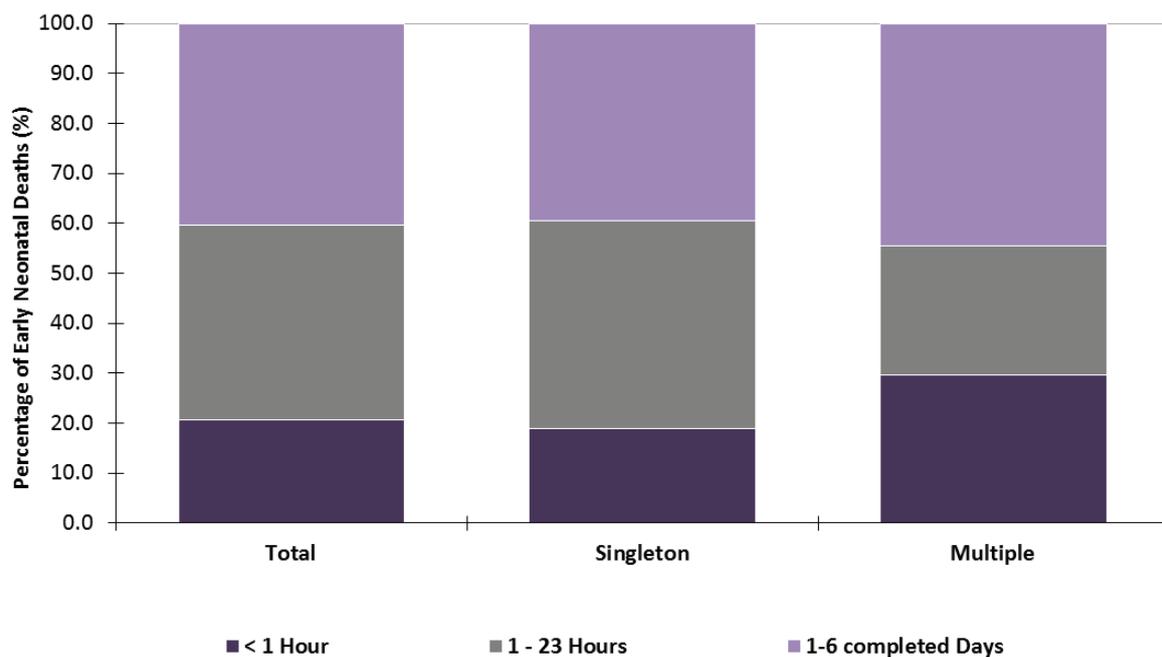
AGE AT DEATH

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

- Just over 1 in 5 total early neonatal deaths occurred within the first hour of life (19.0 per cent for singleton early neonatal deaths and 29.6 per cent for multiple early neonatal deaths).
- 59.8 per cent of total early neonatal deaths occurred within the first day of life (60.6 per cent for singleton early neonatal deaths and 55.6 per cent for multiple early neonatal deaths).
- Just over 40 per cent of total early neonatal deaths occurred between 1 and 6 completed days of life (39.4 per cent for singleton early neonatal deaths and 44.4 per cent for multiple early neonatal deaths).

FIGURE 5.10

Early Neonatal Deaths by Age at Death and Plurality



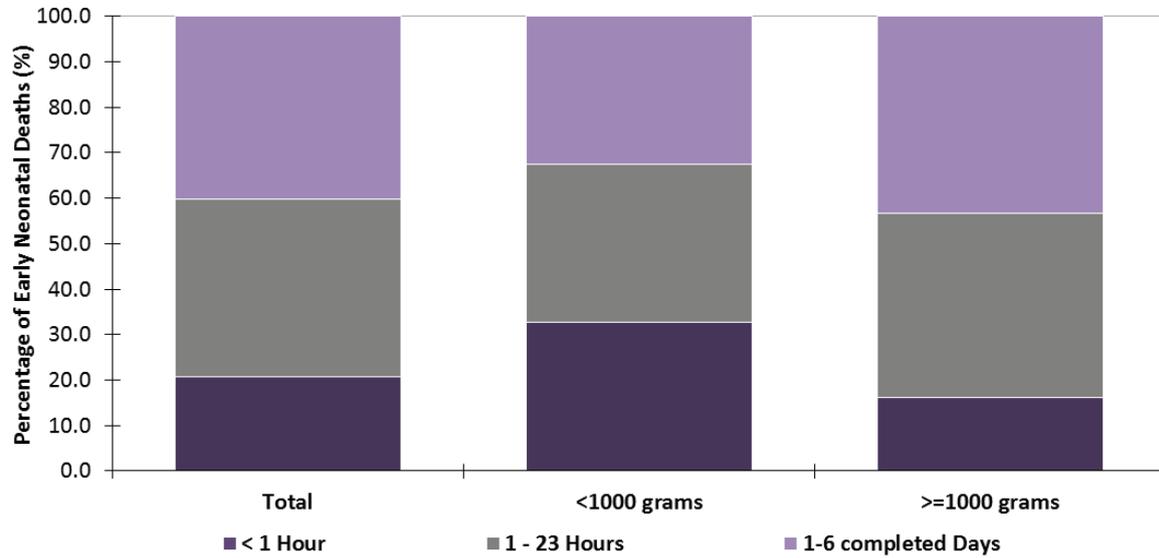
Notes: Percentages are subject to rounding
See Appendix G, Table G14 for data.

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

- For early neonatal deaths recording a birthweight of less than 1,000 grams, 32.6 per cent died within the first hour of life compared to 16.1 per cent for early neonatal deaths with a birthweight of 1,000 grams or more.

FIGURE 5.11

Early Neonatal Deaths by Age at Death and Birthweight Groups



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

POST-MORTEM EXAMINATIONS

Post-mortem examinations were less likely in the case of early neonatal deaths compared to stillbirths and this trend is consistent over recent years.³⁶ Table 5.5 presents data on post-mortem examinations.

- A post-mortem examination was undertaken for 45.5 per cent of total perinatal deaths in 2015.
- The percentage of early neonatal deaths undergoing post-mortem examinations was 37.8 per cent compared to 50.4 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	132 50.4	62 37.8	194 45.5
No Post-Mortem	130 49.6	93 56.7	223 52.3
Not Stated	0 0.0	9 5.5	9 2.1
Total	262 100	164 100	426 100

Note: Percentages are subject to rounding.

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 2015, there were 55 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 2015.

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

TYPE OF BIRTH 1 PLACE OF BIRTH (Hospital = 1, BBA = 2, Domiciliary = 3) 2 NAME AND _____
(Live = 1, Still = 2)

HOSPITAL NO. 3 _____ CASE NO. 6 _____ ADDRESS OF _____
Y Y Y Y HOSPITAL _____

INFANT'S DETAILS

DATE OF BIRTH (DDMM/YYYY) 14 _____

TIME OF BIRTH _____

IF MULTIPLE BIRTH ORDER OF BIRTH No. 22 of 23

SEX (Male = 1, Female = 2, Indeterminate = 3) 24

BIRTHWEIGHT 25 _____ GRAMMBS

PERIOD OF GESTATION 29 _____ WEEKS

FATHER'S DETAILS

COUNTRY 31 _____

COUNTRY 34 _____

NATIONALITY 38 _____

OCCUPATION 42 _____

DATE OF BIRTH (DDMM/YYYY) 44 _____

MOTHER'S DETAILS

COUNTRY 52 _____

COUNTRY 55 _____

NATIONALITY 59 _____

OCCUPATION 63 _____

DATE OF BIRTH (DDMM/YYYY) 65 _____

CIVIL STATUS (Married = 1, Single = 2, Widowed = 3, Separated = 4, Divorced = 5, Civil Partner = 6, Former Civil Partner = 7, Surviving Civil Partner = 8) 73

DATE OF PRESENT MARRIAGE/CIVIL PARTNERSHIP (DDMMYYYY) 74 _____

DATE OF LAST BIRTH (live or still) (DDMMYYYY) 82 _____

NO. OF PREVIOUS LIVE BIRTHS 90

CHILDREN STILL LIVING 92

STILLBIRTHS 94

SPONTANEOUS ABORTIONS 96

PERINATAL DEATH

TYPE OF DEATH (Early Neonatal = 1, Stillbirth = 2) 98

WAS AUTOPSY PERFORMED (Yes = 1, No = 2) 99

AGE AT DEATH 100 _____ DAYS 101 _____ HOURS

PLACE OF DEATH 103 _____

IF STILLBIRTH, DID DEATH OCCUR BEFORE LABOUR (1) DURING LABOUR (2) NOT KNOWN (3) 106

CAUSE OF DEATH

MAIN DISEASE OR CONDITION IN FETUS OR INFANT _____ 107 _____

OTHER DISEASES OR CONDITIONS IN FETUS OR INFANT _____ 112 _____

MOTHER'S HEALTH

ANTENATAL CARE THIS PREGNANCY (Hospital / Obstetrician = 1, O.P. Only = 2, Combined = 3, None = 4, Midwife Only=5) 117

DATE OF FIRST VISIT TO DOCTOR DURING PREGNANCY (DDMMYYYY) 118 _____

DATE OF FIRST VISIT TO HOSPITAL DURING PREGNANCY (DDMMYYYY) 126 _____

WAS MOTHER IMMUNE TO RUBELLA (Yes = 1, No = 2, Not Known = 3) 134

METHOD OF DELIVERY (Spontaneous = 1, Breech = Forceps = 2, Forceps = 3, Vac. Extraction = 4, Caesarian Sec. = 5, Other = 6) 135

MAIN MATERNAL DISEASE OR CONDITION AFFECTING FETUS OR INFANT _____ 136 _____

OTHER MATERNAL DISEASES OR CONDITIONS AFFECTING FETUS OR INFANT _____ 141 _____

INFANT'S HEALTH

TYPE OF FEEDING (Artificial = 1, Breast = 2, Combined = 3) 146

WAS BCG ADMINISTERED (Yes = 1, No = 2) 147

MAIN DISEASE OR CONGENITAL MALFORMATION AFFECTING INFANT _____ 148 _____

OTHER DISEASES OR CONGENITAL MALFORMATIONS AFFECTING INFANT _____ 153 _____

HOSPITAL

WAS ADMISSION BOOKED (Yes = 1, No = 2) 158

DATE OF MOTHER'S ADMISSION (DDMMYYYY) 159 _____

DATE OF MOTHER'S DISCHARGE (DDMMYYYY) 167 _____

DATE OF INFANT'S DISCHARGE (DDMMYYYY) 175 _____

WAS INFANT TRANSFERRED TO OTHER HOSPITAL FOR MEDICAL REASONS (Yes = 1, No = 2) 183

IF 'YES', NAME OF HOSPITAL _____ 184 _____

GENERAL PRACTITIONER ATTENDED BY MOTHER

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	825	1.3
Cavan	1,056	1.6
Clare	1,467	2.2
Cork	7,639	11.6
Donegal	1,925	2.9
Dublin City	14,561	22.1
Dublin County	5,026	7.6
Galway	3,511	5.3
Kerry	1,669	2.5
Kildare	3,336	5.1
Kilkenny	1,211	1.8
Laois	1,159	1.8
Leitrim	415	0.6
Limerick	2,819	4.3
Longford	591	0.9
Louth	1,896	2.9
Mayo	1,588	2.4
Meath	2,789	4.2
Monaghan	818	1.2
Offaly	993	1.5
Roscommon	766	1.2
Sligo	799	1.2
Tipperary	2,113	3.2
Waterford	1,571	2.4
Westmeath	1,257	1.9
Wexford	2,047	3.1
Wicklow	2,002	3.0
Other	20	0.0
Total	65,869	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	32.2
UK	31.5
EU15 (excluding Ireland & UK)	33.3
EU15 to EU28	30.2
Rest of Europe	30.6
Africa	31.5
Asia	31.4
America	32.4
Total	31.9

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	1,068 89.4	* ^	12 1.0	~ ^	0 0.0	0 0.0	0 0.0	0 0.0	* 100
20-24 Years	3,478 61.2	1,655 29.1	412 7.2	* ^	25 0.4	* ^	0 0.0	0 0.0	5,683 100
25-29 Years	5,593 45.7	4,297 35.1	1,639 13.4	494 4.0	149 1.2	47 0.4	14 0.1	10 0.1	12,243 100
30-34 Years	9,083 38.9	8,736 37.4	3,739 16.0	1,172 5.0	364 1.6	145 0.6	76 0.3	42 0.2	23,357 100
35-39 Years	4,475 24.8	6,498 35.9	4,659 25.8	1,656 9.2	458 2.5	171 0.9	84 0.5	76 0.4	18,077 100
40 Years and Over	* ^	1,206 29.6	1,022 25.1	500 12.3	190 4.7	* ^	40 1.0	41 1.0	4,068 100
Not Stated	~ ^	~ ^	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	~ 100
Total	24,695 38.2	22,505 34.8	11,483 17.8	3,929 6.1	1,186 1.8	443 0.7	214 0.3	169 0.3	64,624 100

Notes: Percentage rows are subject to rounding.
 ~ Denotes five or fewer births reported to NPRS.
 * Further suppression required to prevent disclosure of five or fewer births.
 ^ Percentage not provided to prevent disclosure of small numbers.

TABLE G4

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

	Total Births	Total Births %	Live Births	Stillbirth Rate ^a	Early Neonatal Mortality Rate ^a	Perinatal Mortality Rate ^a	Adjusted PMR ^a	Maternities
Total Births								
500-749	86	0.3	63	267.4	301.6	488.4	463.4	72
750-999	64	0.3	57	109.4	122.8	218.8	180.3	55
1000-1249	80	0.3	75	62.5	26.7	87.5	51.9	59
1250-1499	126	0.5	121	39.7	33.1	71.4	48.8	93
1500-1999	442	1.8	431	24.9	20.9	45.2	25.4	340
2000-2499	1,081	4.3	1,069	11.1	6.5	17.6	11.2	923
2500-2999	3,464	13.7	3,449	4.3	2.0	6.4	4.6	3,295
3000-3499	8,872	35.1	8,864	0.9	0.6	1.5	1.1	8,831
3500-3999	8,102	32.1	8,095	0.9	0.4	1.2	1.0	8,100
4000-4499	2,554	10.1	2,552	0.8	-	0.8	0.8	2,554
4500 and Over	373	1.5	373	-	2.7	2.7	2.7	373
Total	25,244	100	25,149	3.8	2.5	6.3	4.7	24,695
Singleton Births								
500-749	59	0.2	42	288.1	238.1	457.6	418.2	59
750-999	46	0.2	40	130.4	100.0	217.4	162.8	46
1000-1249	47	0.2	42	106.4	23.8	127.7	88.9	47
1250-1499	67	0.3	63	59.7	47.6	104.5	76.9	67
1500-1999	260	1.1	252	30.8	35.7	65.4	31.9	260
2000-2499	754	3.1	743	14.6	6.7	21.2	14.7	754
2500-2999	3,127	12.9	3,113	4.5	2.2	6.7	4.8	3,127
3000-3499	8,770	36.3	8,762	0.9	0.6	1.5	1.1	8,770
3500-3999	8,094	33.5	8,087	0.9	0.4	1.2	1.0	8,094
4000-4499	2,554	10.6	2,552	0.8	-	0.8	0.8	2,554
4500 and Over	373	1.5	373	-	2.7	2.7	2.7	373
Total	24,151	100	24,069	3.4	2.0	5.4	3.9	24,151
Multiple Births								
500-749	27	2.5	21	222.2	428.6	555.6	555.6	13
750-999	18	1.6	17	55.6	176.5	222.2	222.2	9
1000-1249	33	3.0	33	-	30.3	30.3	-	12
1250-1499	59	5.4	58	16.9	17.2	33.9	17.2	26
1500-1999	182	16.7	179	16.5	-	16.5	16.5	80
2000-2499	327	29.9	326	3.1	6.1	9.2	3.1	169
2500-2999	337	30.8	336	3.0	-	3.0	3.0	168
3000-3499	102	9.3	102	-	-	-	-	61
3500-3999	8	0.7	8	-	-	-	-	6
4000-4499	0	0.0	0	-	-	-	-	0
4500 and Over	0	0.0	0	-	-	-	-	0
Total	1,093	100	1,080	11.9	14.8	26.5	23.0	544

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 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	60	0.1	39	350.0	333.3	566.7	490.2	57
750-999	73	0.2	51	301.4	137.3	397.3	312.5	66
1000-1249	91	0.2	78	142.9	89.7	219.8	164.7	73
1250-1499	119	0.3	105	117.6	76.2	184.9	126.1	98
1500-1999	422	1.0	401	49.8	22.4	71.1	24.9	343
2000-2499	1,240	3.1	1,219	16.9	13.1	29.8	20.4	1,048
2500-2999	4,396	10.8	4,371	5.7	3.7	9.3	5.7	4,134
3000-3499	12,658	31.2	12,641	1.3	1.0	2.4	1.6	12,556
3500-3999	14,509	35.7	14,502	0.5	0.3	0.8	0.4	14,497
4000-4499	5,964	14.7	5,959	0.8	0.7	1.5	1.0	5,964
4500 and Over	1,093	2.7	1,092	0.9	1.8	2.7	2.7	1,093
Total	40,625	100	40,458	4.1	2.5	6.6	4.1	39,929
Singleton Births								
500-749	*	^	*	381.8	352.9	600.0	521.7	*
750-999	59	0.2	40	322.0	125.0	406.8	313.7	59
1000-1249	60	0.2	50	166.7	120.0	266.7	185.2	60
1250-1499	82	0.2	70	146.3	100.0	231.7	160.0	82
1500-1999	267	0.7	249	67.4	24.1	89.9	35.7	267
2000-2499	877	2.2	859	20.5	16.3	36.5	24.2	877
2500-2999	3,855	9.8	3,831	6.2	4.2	10.4	6.3	3,855
3000-3499	12,436	31.7	12,420	1.3	1.0	2.3	1.4	12,436
3500-3999	14,486	36.9	14,479	0.5	0.3	0.8	0.4	14,486
4000-4499	*	^	*	0.8	0.7	1.5	1.0	*
4500 and Over	1,093	2.8	1,092	0.9	1.8	2.7	2.7	1,093
Total	39,233	100	39,082	3.8	2.3	6.1	3.8	39,233
Multiple Births								
500-749	~	^	~	-	200.0	200.0	200.0	~
750-999	14	1.0	11	214.3	181.8	357.1	307.7	7
1000-1249	31	2.2	28	96.8	35.7	129.0	129.0	13
1250-1499	37	2.7	35	54.1	28.6	81.1	55.6	16
1500-1999	155	11.1	152	19.4	19.7	38.7	6.7	76
2000-2499	363	26.1	360	8.3	5.6	13.8	11.0	171
2500-2999	541	38.9	540	1.8	-	1.8	1.8	279
3000-3499	222	15.9	221	4.5	4.5	9.0	9.0	120
3500-3999	23	1.7	23	-	-	-	-	11
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	0	0.0	0	-	-	-	-	0
Total	1,392	100	1,376	11.5	8.0	19.4	13.7	696

Notes:

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

TABLE G6

Birthweight (grams) by Sex, Total Live Births

	Male		Female		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
500-749	59	0.2	43	0.1	102	0.2
750-999	55	0.2	53	0.2	108	0.2
1000-1249	79	0.2	74	0.2	153	0.2
1250-1499	122	0.4	104	0.3	226	0.3
1500-1999	373	1.1	459	1.4	832	1.3
2000-2499	1,031	3.1	1,257	3.9	2,288	3.5
2500-2999	3,406	10.1	4,413	13.8	7,819	11.9
3000-3499	10,086	30.1	11,417	35.6	21,503	32.8
3500-3999	12,032	35.9	10,565	33.0	22,597	34.4
4000-4499	5,307	15.8	3,204	10.0	8,511	13.0
4500 and Over	1,011	3.0	454	1.4	1,465	2.2
Total	33,561	100	32,043	100	65,604	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	*	^	*	189.8	234.2	379.6	360.9	*
28-31	260	1.0	248	46.2	24.2	69.2	58.4	208
32-36	1,572	6.2	1548	15.3	8.4	23.5	13.5	1,316
37-41	22,384	88.7	22351	1.5	0.9	2.3	1.6	22,165
42 and Over	887	3.5	887	-	-	-	-	887
Not Stated	~	^	~	-	-	-	-	~
Total	25,244	100	25149	3.8	2.5	6.3	4.7	24,695
Singleton Births								
Less than 28	*	^	*	202.1	200.0	361.7	333.3	*
28-31	161	0.7	149	74.5	26.8	99.4	88.1	161
32-36	1,067	4.4	1,049	16.9	9.5	26.2	14.2	1,067
37-41	21,938	90.8	21,905	1.5	0.9	2.4	1.6	21,938
42 and Over	887	3.7	887	-	-	-	-	887
Not Stated	~	^	~	-	-	-	-	~
Total	24,151	100	24,069	3.4	2.0	5.4	3.9	24,151
Multiple Births								
Less than 28	43	3.9	36	162.8	305.6	418.6	418.6	21
28-31	99	9.1	99	-	20.2	20.2	10.2	47
32-36	505	46.2	499	11.9	6.0	17.8	12.0	249
37-41	446	40.8	446	-	-	-	-	227
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
Total	1,093	100	1080	11.9	14.8	26.5	23.0	544

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	111	0.3	81	270.3	222.2	432.4	394.2	105
28-31	266	0.7	234	120.3	51.3	165.4	112.0	225
32-36	2,065	5.1	2,010	26.6	15.9	42.1	26.6	1,765
37-41	37,498	92.3	37,449	1.3	1.0	2.3	1.2	37,149
42 and Over	679	1.7	678	1.5	1.5	2.9	-	679
Not Stated	6	0.0	6	-	-	-	-	6
Total	40,625	100	40,458	4.1	2.5	6.6	4.1	39,929
Singleton Births								
Less than 28	95	0.2	67	294.7	238.8	463.2	420.5	95
28-31	188	0.5	157	164.9	57.3	212.8	139.5	188
32-36	1,472	3.8	1,429	29.2	18.9	47.6	30.4	1,472
37-41	36,793	93.8	36,745	1.3	1.0	2.3	1.2	36,793
42 and Over	679	1.7	678	1.5	1.5	2.9	-	679
Not Stated	6	0.0	6	-	-	-	-	6
Total	39,233	100	39,082	3.8	2.3	6.1	3.8	39,233
Multiple Births								
Less than 28	16	1.1	14	125.0	142.9	250.0	250.0	10
28-31	78	5.6	77	12.8	39.0	51.3	51.3	37
32-36	593	42.6	581	20.2	8.6	28.7	17.1	293
37-41	705	50.6	704	1.4	1.4	2.8	1.4	356
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
Total	1,392	100	1,376	11.5	8.0	19.4	13.7	696

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 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	79.1	20.0	0.7	0.1
Instrumental [#]	57.8	40.7	1.3	0.2
Caesarean section	5.8	88.9	4.5	0.8
Multiple Births				
Spontaneous	40.5	54.4	4.6	0.5
Instrumental [#]	32.8	60.2	6.2	0.7
Caesarean section	1.7	79.2	16.4	2.6

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	388	402	31	821
	47.3	49.0	3.8	100
	1.4	1.3	0.5	1.3
Cavan	553	431	63	1,047
	52.8	41.2	6.0	100
	2.0	1.4	0.9	1.6
Clare	798	584	75	1,457
	54.8	40.1	5.1	100
	2.9	1.9	1.1	2.2
Cork	2,892	4,364	338	7,594
	38.1	57.5	4.5	100
	10.5	14.0	5.0	11.6
Donegal	1,098	652	159	1,909
	57.5	34.2	8.3	100
	4.0	2.1	2.4	2.9
Dublin City	5,005	7,393	2,083	14,481
	34.6	51.1	14.4	100
	18.2	23.7	31.0	22.1
Dublin County	1,568	2,708	718	4,994
	31.4	54.2	14.4	100
	5.7	8.7	10.7	7.6
Galway	1,369	1,566	548	3,483
	39.3	45.0	15.7	100
	5.0	5.0	8.2	5.3
Kerry	711	840	106	1,657
	42.9	50.7	6.4	100
	2.6	2.7	1.6	2.5
Kildare	1,272	1,538	510	3,320
	38.3	46.3	15.4	100
	4.6	4.9	7.6	5.1
Kilkenny	502	695	9	1,206
	41.6	57.6	0.7	100
	1.8	2.2	0.1	1.8
Laois	505	577	72	1,154
	43.8	50.0	6.2	100
	1.8	1.8	1.1	1.8
Leitrim	182	173	55	410
	44.4	42.2	13.4	100
	0.7	0.6	0.8	0.6
Limerick	1,676	983	143	2,802
	59.8	35.1	5.1	100
	6.1	3.1	2.1	4.3
Longford	316	252	18	586
	53.9	43.0	3.1	100
	1.1	0.8	0.3	0.9
Louth	988	663	229	1,880
	52.6	35.3	12.2	100
	3.6	2.1	3.4	2.9
Mayo	713	599	267	1,579
	45.2	37.9	16.9	100
	2.6	1.9	4.0	2.4

TABLE G10

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

Frequency Row Per Cent Col. Per Cent	Type of Feeding			
	Artificial	Breast	Combined	Total
Meath	1,173 42.4 4.3	1,282 46.3 4.1	313 11.3 4.7	2,768 100 4.2
Monaghan	426 52.6 1.5	324 40.0 1.0	60 7.4 0.9	810 100 1.2
Offaly	506 51.5 1.8	422 42.9 1.4	55 5.6 0.8	983 100 1.5
Roscommon	363 47.6 1.3	308 40.4 1.0	92 12.1 1.4	763 100 1.2
Sligo	371 46.7 1.3	281 35.3 0.9	143 18.0 2.1	795 100 1.2
Tipperary	1,128 53.7 4.1	867 41.2 2.8	107 5.1 1.6	2,102 100 3.2
Waterford	651 41.7 2.4	870 55.8 2.8	39 2.5 0.6	1,560 100 2.4
Westmeath	576 46.2 2.1	602 48.3 1.9	69 5.5 1.0	1,247 100 1.9
Wexford	1,007 49.6 3.7	858 42.3 2.7	165 8.1 2.5	2,030 100 3.1
Wicklow	777 39.1 2.8	965 48.6 3.1	244 12.3 3.6	1,986 100 3.0
Other	6 31.6 0.0	9 47.4 0.0	4 21.1 0.1	19 100 0.0
Total	27,520 42.1 100	31,208 47.7 100	6,715 10.3 100	65,443 100 100

Notes: Percentage rows and columns are subject to rounding.
See Appendix E for details of county of residence classification.
This table excludes early neonatal deaths.

TABLE G11

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

Mother's Nationality	Breastfeeding (%)
Ireland	42.3
UK	53.3
EU15 (excluding Ireland & UK)	79.3
EU15 to EU28	72.7
Rest of Europe	73.8
Africa	45.4
Asia	55.4
America	73.1

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	76	17.8	38	~	~	301.4	32	313.7	520.5	473.7
750-999	43	10.1	28	~	0	211.7	*	129.6	313.9	248.0
1000-1249	27	6.3	17	~	0	105.3	*	58.8	157.9	111.1
1250-1499	31	7.3	18	0	~	77.6	*	53.1	126.5	85.5
1500-1999	50	11.7	28	~	0	37.0	*	21.6	57.9	25.1
2000-2499	56	13.1	31	~	0	14.2	*	10.1	24.1	16.1
2500-2999	63	14.8	38	~	0	5.1	*	2.9	8.0	5.2
3000-3499	43	10.1	22	~	0	1.2	*	0.8	2.0	1.4
3500-3999	*	^	14	0	0	0.6	*	0.4	1.0	0.6
4000-4499	11	2.6	*	0	0	0.8	~	0.5	1.3	0.9
4500 and over	~	^	~	0	0	0.7	~	2.0	2.7	2.7
Total	426	100	242	*	~	4.0	164	2.5	6.5	4.4
Singleton Births										
500-749	60	16.2	*	~	~	333.3	22	289.5	526.3	465.3
750-999	34	9.2	*	~	0	238.1	*	112.5	323.8	244.7
1000-1249	*	^	*	~	0	140.2	7	76.1	205.6	141.4
1250-1499	*	^	*	0	~	107.4	10	75.2	174.5	121.4
1500-1999	41	11.1	*	~	0	49.3	*	29.9	77.8	33.8
2000-2499	48	13.0	*	~	0	17.8	*	11.9	29.4	19.8
2500-2999	*	^	*	~	0	5.4	23	3.3	8.7	5.6
3000-3499	*	^	*	~	0	1.1	17	0.8	1.9	1.3
3500-3999	*	^	14	0	0	0.6	*	0.4	1.0	0.6
4000-4499	11	3.0	*	0	0	0.8	~	0.5	1.3	0.9
4500 and over	~	^	~	0	0	0.7	~	2.0	2.7	2.7
Total	370	100	215	*	~	3.7	137	2.2	5.8	3.8
Multiple Births										
500-749	16	28.6	~	~	0	187.5	10	384.6	500.0	500.0
750-999	9	16.1	~	0	0	125.0	~	178.6	281.3	258.1
1000-1249	~	^	~	0	0	46.9	~	32.8	78.1	63.5
1250-1499	~	^	~	0	0	31.3	~	21.5	52.1	31.9
1500-1999	9	16.1	*	0	0	17.8	~	9.1	26.7	12.0
2000-2499	8	14.3	~	~	0	5.8	~	5.8	11.6	7.3
2500-2999	~	^	~	0	0	2.3	0	-	2.3	2.3
3000-3499	~	^	~	0	0	3.1	~	3.1	6.2	6.2
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	56	100	*	~	0	11.7	27	11.0	22.5	17.8

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)	*	32.1	~	2.4	88	20.7
Immaturity (P05-P08)	15	5.7	20	12.2	35	8.2
Respiratory/cardiovascular disorders (P20-P29)	31	11.8	22	13.4	53	12.4
Unspecified/Unexplained (P95,P96.9)	*	18.3	*	11.0	66	15.5
Congenital malformations (Q00-Q99)	57	21.8	82	50.0	139	32.6
All other specific causes	27	10.3	18	11.0	45	10.6
Total	262	100	164	100	426	100

Note: Percentage columns are subject to rounding.
 ~ Denotes five or fewer births reported to NPRS.
 * Further suppression required to prevent disclosure of five or fewer births.

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	20.7	19.0	29.6
1-23 hours	39.0	41.6	25.9
Total under 1 day	59.8	60.6	55.6
1-6 completed days	40.2	39.4	44.4
Total	100	100	100

Note: Percentages are subject to rounding.

TABLE G15

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

	Total Births	Birthweight < 1,000g	Birthweight >= 1,000g
	Per Cent	Per Cent	Per Cent
Completed Hours			
<1 hour	20.7	32.6	16.1
1-23 hours	39.0	34.8	40.7
Total under 1 day	59.8	67.4	56.8
1-6 completed days	40.2	32.6	43.2
Total	100	100	100

Note: Percentages are subject to rounding.

APPENDIX H

DOMICILIARY BIRTHS, 2006–2015

INTRODUCTION

In the NPRS, domiciliary births are defined as planned home births attended by an independent 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 2006–2015.

- There were 206 domiciliary births in 2015 representing 0.3 per cent of all births.
- The number of domiciliary births has increased by 21.2 per cent over the decade while the increase from 186 births in 2014 to 206 births in 2015 is estimated at 10.8 per cent. The lowest number of domiciliary births over the 10-year period was reported for 2009 at 148 and the highest number 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 33.7 years in 2015.
- Women choosing a domiciliary delivery in 2015 had an average maternal parity of 1.5 previous births.
- The percentage of women recording any breastfeeding was 98.2 per cent in 2006; this increased to 99.4 per cent in 2011 and is reported at 96.1 per cent in 2015.
- Exclusive breastfeeding was reported for 95.1 per cent of domiciliary births in 2015.
- The average birthweight for domiciliary births in 2015 was 3712.8 grams.

TABLE H1

Trends in Domiciliary Births—Selected Statistics, 2006–2015

General Characteristics	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% Change	
											2006-2015	2014-2015
Total Domiciliary Births	170	186	158	148	177	168	176	162	186	206	21.2	10.8
Age of mother (years) ^{1,2}	Avg 33.9	33.6	33.8	34.5	33.4	33.2	33.8	33.3	34.1	33.7	-0.6	-1.2
Single mothers ¹	% 20.0	16.1	25.3	22.3	24.3	29.2	27.3	24.1	24.7	28.2	41.0	14.2
Maternal parity ¹	Avg 1.7	1.6	1.5	1.7	1.4	1.5	1.5	1.5	1.6	1.5	-11.8	-6.3
Gestational age at delivery in weeks ¹	Avg 40.1	40.0	40.1	40.0	40.0	40.0	39.9	39.8	40.0	39.9	-0.5	-0.3
Interval since last birth (years) ^{2,3}	Avg 2.9	2.9	3.1	3.2	2.9	2.7	2.9	2.6	2.5	2.9	0.0	16.0
Immunity to Rubella ¹	% 96.5	100.0	96.2	98.0	97.2	97.0	96.6	95.1	96.2	92.7	-3.9	-3.6
Any Breastfeeding ^{4,5}	% 98.2	96.2	95.6	96.6	97.2	99.4	98.3	96.3	93.5	96.1	-2.1	2.8
Exclusive Breastfeeding ⁴	% 97.1	95.7	95.6	96.6	96.6	98.2	96.6	93.8	91.4	95.1	-2.1	4.0
Combined Antenatal Care – Midwife and G.P./Hospital ⁶	% 76.5	60.8	77.8	99.3	98.9	93.5	86.9	96.9	93.0	99.5	30.1	7.0
Birthweight (grams) ⁷	Avg 3,742.2	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	-0.8	-1.5

Notes:

Percentages are subject to rounding.

There were no domiciliary multiple births in the years 2006–2015.

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.

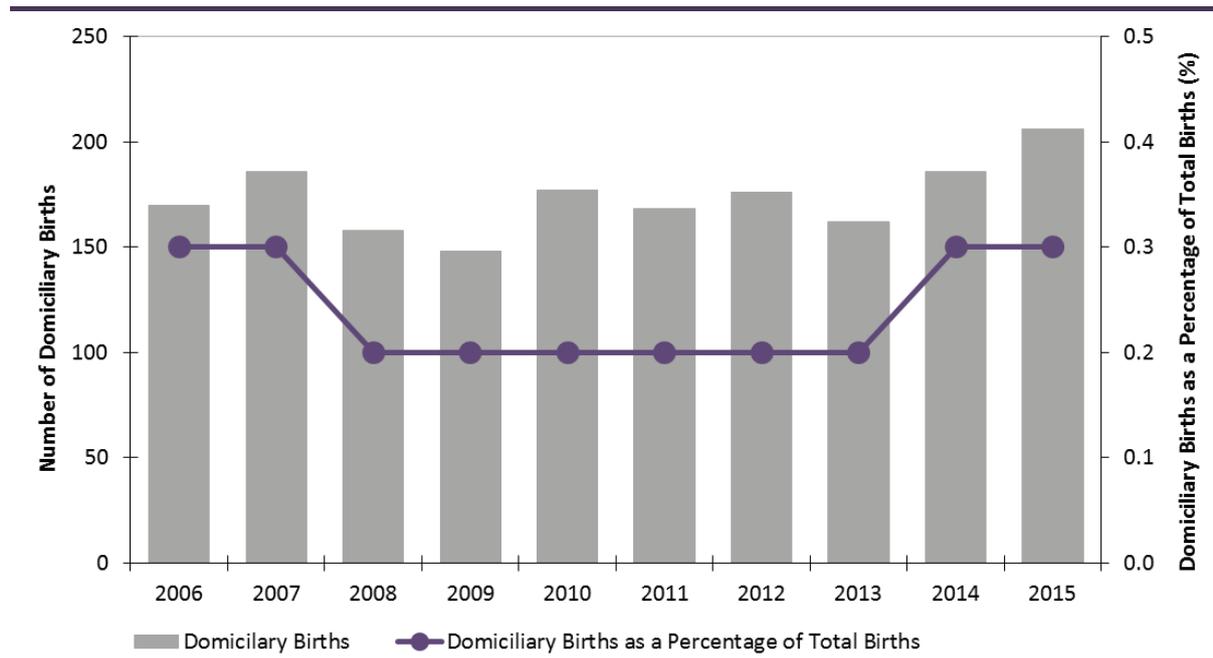
⁴ Based on maternities with live births. Excludes early neonatal deaths.

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, 2006–2015



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 2006 to 2015.

- The proportion of women having a spontaneous delivery has fallen from 59.4 per cent in 2006 to 54.2 per cent in 2015, with the rate of decrease higher for primiparous than multiparous women.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 24.8 per cent in 2006 to 30.6 per cent in 2015.
- 32.3 per cent of primiparous women delivered by Caesarean section in 2015 compared to 26.3 per cent in 2006, with the rate of increase for Caesarean section delivery higher for multiparous women, increasing from 23.7 per cent in 2006 to 29.6 per cent in 2015 (see Figure I1).

TABLE I1

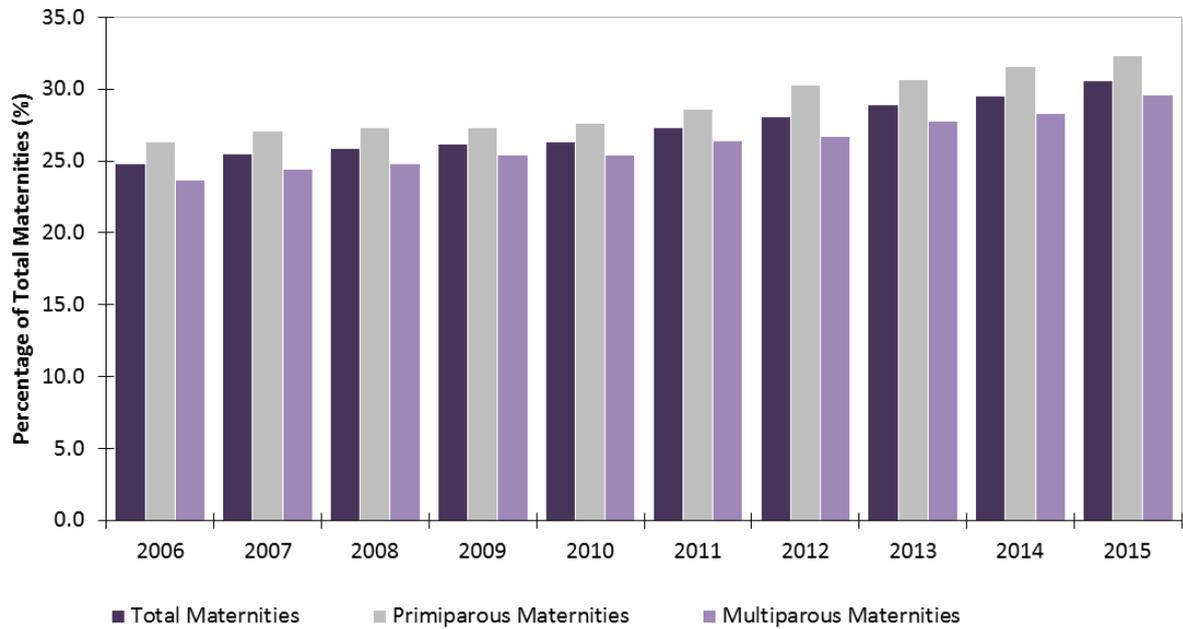
Percentage Distribution of Maternities by Method of Delivery, Primiparous and Multiparous Women, 2006–2015

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% Change	
											2006–2015	2014–2015
Total Maternities												
Spontaneous	59.4	58.0	57.4	57.0	57.2	56.6	56.3	55.9	55.0	54.2	-8.8	-1.5
Breech/forceps	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.3	-25.0	0.0
Forceps	3.0	3.7	3.7	4.1	4.0	4.1	3.9	3.9	3.8	3.5	16.7	-7.9
Vacuum extraction	12.2	12.2	12.6	12.2	11.9	11.5	11.3	10.9	11.3	11.3	-7.4	0.0
Caesarean section	24.8	25.5	25.9	26.2	26.3	27.3	28.1	28.9	29.5	30.6	23.4	3.7
Other specified & combined	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-100.0	0.0
Total	100											
Primiparous												
Spontaneous	45.6	44.1	43.5	42.7	42.7	41.2	40.5	40.2	39.0	38.4	-15.8	-1.5
Breech/forceps	0.6	0.6	0.5	0.5	0.7	0.6	0.4	0.4	0.4	0.4	-33.3	0.0
Forceps	5.8	7.2	7.2	8.2	8.0	8.6	8.3	8.4	8.2	7.9	36.2	-3.7
Vacuum extraction	21.5	21.0	21.4	21.2	21.0	21.0	20.5	20.3	20.8	21.0	-2.3	1.0
Caesarean section	26.3	27.1	27.3	27.3	27.6	28.6	30.3	30.7	31.6	32.3	22.8	2.2
Other specified & combined	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-100.0	0.0
Total	100											
Multiparous												
Spontaneous	69.1	68.0	67.6	67.4	67.5	66.8	66.4	65.7	65.0	64.1	-7.2	-1.4
Breech/forceps	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	-33.3	0.0
Forceps	1.0	1.2	1.1	1.1	1.2	1.1	1.1	1.0	1.0	0.8	-20.0	-20.0
Vacuum extraction	5.7	5.8	6.0	5.7	5.4	5.2	5.4	5.1	5.4	5.3	-7.0	-1.9
Caesarean section	23.7	24.4	24.8	25.4	25.4	26.4	26.7	27.8	28.3	29.6	24.9	4.6
Other specified & combined	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	-100.0	0.0
Total	100											

Note: Percentage columns are subject to rounding.

FIGURE I1

Percentage Distribution of Maternities Delivering by Caesarean Section for Total, Primiparous and Multiparous Women, 2006–2015



Note: See Table I1 for data.

Healthcare Pricing Office (HPO)
Brunel Building
Heuston South Quarter
Dublin 8
D08 X01F
Ireland
www.hpo.ie

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