

# Perinatal Statistics Report

# 2017

**Healthcare Pricing Office**  
September 2020



Building a  
Better Health  
Service

Seirbhís Sláinte  
Níos Fearr  
á Forbairt

**H**EALTHCARE  
**P**RICING  
**O**FFICE

**ISBN 978-1-78602-159-5**

# METADATA

## TITLE

Perinatal Statistics Report, 2017

## CREATOR

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

## SUBJECT

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

## SUMMARY DESCRIPTION

This is a report on national data on Perinatal events in 2017. 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.

## PUBLISHER

Health Service Executive

## CONTRIBUTORS

Healthcare Pricing Office, Health Service Executive

## DATE

First published September 2020

## TYPE

Report

## IDENTIFIER

978-1-78602-159-5

## LANGUAGE

en – English

## COVERAGE

National

## RIGHTS

Downloadable from [www.hpo.ie](http://www.hpo.ie)

## VERSION

1.0 (September 2020) File [NPRS\\_2017\\_ASOF\\_0120\\_V03\\_NATIONAL](#)

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

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



# ACKNOWLEDGEMENTS

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

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

We would like to thank Deirdre Murphy for reviewing and commenting on earlier drafts of this report. We would also like to express our gratitude to Mr. Alan Cahill (Department of Health) for his valuable contributions and comments on an early draft of this report.

Inevitably, a number of individuals have to carry most of the responsibility for producing a report of this type. In this case Karen Kearns, Laura Metcalfe, Sinead O'Hara and Izabela Sikora were to the fore in the preparation of the report. We wish to express our sincere thanks to these colleagues for all of their hard work on the report. Their commitment, enthusiasm and professionalism are gratefully acknowledged and sincerely appreciated. We would also especially like to thank Sheelagh Bonham who was NPRS manager until December 2018. She was to the fore in the preparation of the data and in the management of the system. We would like to thank her for her valuable contributions to the system and we wish her all the best in the future.



# TABLE OF CONTENTS

LIST OF TABLES .....	iii
LIST OF FIGURES .....	v
KEY FINDINGS .....	vii
<b>SECTION ONE</b>	<b>1</b>
<b>INTRODUCTION</b>	
Introduction .....	2
Purpose of this Report .....	2
Structure of this Report .....	2
Conventions used in this Report .....	3
Birth Notification and Registration .....	4
National Minimum Data Set .....	6
Data Collection and Quality .....	7
<b>SECTION TWO</b>	<b>9</b>
<b>TIME TRENDS AND INTERNATIONAL COMPARISONS</b>	
Introduction .....	10
Trends in Selected Statistics .....	10
Singleton and Multiple Births .....	14
Perinatal Mortality .....	16
Birth Rates .....	19
Fertility .....	20
<b>SECTION THREE</b>	<b>23</b>
<b>GENERAL CHARACTERISTICS</b>	
Introduction .....	24
Maternal Age .....	25
Mother's Civil Status .....	27
Mother's County of Residence .....	28
Socio-economic Group.....	29
Mother's Socio-economic Group .....	29
Father's Socio-economic Group.....	31
Nationality .....	33
Mother's Nationality .....	33
Father's Nationality .....	35
Maternal Parity .....	37
Number of Previous Stillbirths .....	39
Interval Since Last Birth .....	40
Birthweight .....	41
Gestational Age .....	45
Month of Birth .....	46

<b>SECTION FOUR</b>	<b>49</b>
<b>PERINATAL CARE</b>	
Introduction .....	50
Type of Antenatal Care .....	51
Duration of Pregnancy at First Antenatal Visit .....	52
Advance Hospital Bookings .....	53
Mother's Antenatal Length of Stay .....	54
Mother's Postnatal Length of Stay .....	55
Rubella: Immune Status of Mother .....	57
Method of Delivery .....	57
Method of Delivery by Births and Plurality .....	57
Method of Delivery by Maternal Age .....	60
Distribution of Births by Size of Maternity Unit .....	62
Inter-Hospital Transfer of Infants .....	64
Infant's Length of Stay .....	65
Infant's Type of Feeding .....	66
<b>SECTION FIVE</b>	<b>73</b>
<b>PERINATAL OUTCOMES</b>	
Introduction .....	74
Mortality by Birthweight and Parity .....	74
Cause of Death by Birthweight .....	77
Mortality by Gestational Age .....	82
Cause of Death .....	84
Age at Death .....	91
Post-Mortem Examinations .....	93
<b>APPENDICES</b>	<b>95</b>
Appendix A: Definitions .....	96
Appendix B: Copy of Part 3 of the Birth Notification Form .....	101
Appendix C: Classification of Socio-economic Group.....	102
Appendix D: Cause of Death Classification .....	103
Appendix E: Classification of County of Residence .....	107
Appendix F: Classification of Nationality .....	108
Appendix G: Source NPRS Data for Figures .....	112
Appendix H: Domiciliary Births .....	123
Appendix I: Method of Delivery for Primiparous and Multiparous Women.....	126



## LIST OF TABLES

### Tables for Introduction:

1.1	Total births, Stillbirths, Early Neonatal Deaths and Perinatal Deaths (≥500 grams only), NPRS and NPEC, 2017 .....	8
-----	--	---

### Tables for Time Trends and International Comparisons:

2.1	Trends in Selected Statistics, 2008–2017 .....	12
2.2	Singleton and Multiple Births, 2008–2017 .....	14
2.3	Live Births, Stillbirths and Early Neonatal Deaths, Numbers and Rates, Singleton and Multiple Births, 2008–2017 .....	15
2.4	Live Births, Stillbirths, Early Neonatal Deaths, and Perinatal Deaths, 2008–2017.....	16

### Tables for General Characteristics:

3.1	Age of Mother .....	25
3.2	Mother's Civil Status .....	27
3.3	Mother's Socio-economic Group.....	30
3.4	Father's Socio-economic Group.....	32
3.5	Mother's Nationality .....	34
3.6	Father's Nationality .....	36
3.7	Maternal Parity .....	37
3.8	Previous Stillbirths .....	39
3.9	Interval in Years Since Last Birth .....	40
3.10	Birthweight (grams).....	42
3.11	Gestational Age (weeks) at Delivery .....	45
3.12	Month of Birth .....	46

### Tables for Perinatal Care:

4.1	Type of Antenatal Care .....	51
4.2	Time of First Visit (weeks) to Doctor or Hospital during Pregnancy .....	52
4.3	Advance Hospital Bookings .....	53
4.4	Mother's Antenatal Length of Stay .....	54
4.5	Mother's Postnatal Length of Stay .....	55
4.6	Rubella: Immune Status of Mother, Numbers and Percentages .....	57
4.7a	Method of Delivery, Total Births .....	58
4.7b	Method of Delivery by Maternal Age .....	60
4.8	Size of Maternity Unit (Number of Live Births and Stillbirths Annually) .....	62
4.9	Inter-Hospital Transfer of Infants .....	64
4.10	Infant's Length of Stay (days) in Hospital, Live Births .....	65
4.11	Age of Mother by Infant's Type of Feeding, Numbers and Percentages, Total Live Births .....	67
4.12	Mother's Socio-economic Group by Infant's Type of Feeding, Total Live Births .....	70

**Tables for Perinatal Outcomes:**

5.1	Birthweight (grams): Total Perinatal Deaths, Antepartum and Intrapartum Stillbirths, Early Neonatal Deaths, and Mortality Rates by Parity.....	75
5.2	Cause of Death by ICD-10 Diagnosis Codes by Birthweight, Perinatal Mortality Rate and Numbers (Total) .....	78
5.3	Gestational Age (weeks): Total Perinatal Deaths, Antepartum, and Intrapartum Stillbirths, Early Neonatal Deaths, and Mortality Rates.....	82
5.4	Cause of Death by ICD-10 Diagnosis Codes, Mortality Rates and Numbers (Total) .....	85
5.5	Post-Mortem Examinations, Total Perinatal Deaths .....	93

**Appendix Tables:**

D1	Cause of Death Coding Rules .....	105
D2	ICD-10, Cause of Death Codes .....	106
G1	Mother's County of Residence, Total Births .....	113
G2	Mother's Average Age by Mother's Nationality, Total Maternities .....	114
G3	Age of Mother by Maternal Parity, Total Maternities .....	114
G4	Birthweight (grams) for Primiparous Women.....	115
G5	Birthweight (grams) for Multiparous Women .....	116
G6	Birthweight (grams) by Sex, Total Live Births .....	117
G7	Gestational Age (weeks) at Delivery, Primiparous Women .....	117
G8	Gestational Age (weeks) at Delivery, Multiparous Women .....	118
G9	Method of Delivery by Mother's Postnatal Length of Stay, Singleton and Multiple Births .....	118
G10	Mother's County of Residence by Infant's Type of Feeding, Total Live Births .....	119
G11	Mother's Nationality by Exclusively Breastfed Infants, Total Live Births.....	120
G12	Birthweight (grams): Total Perinatal Deaths, Antepartum and Intrapartum Stillbirths, Early Neonatal Deaths, and Mortality Rates .....	121
G13	Cause of Death: Total Perinatal Deaths .....	122
G14	Age at Death by Plurality, Early Neonatal Deaths .....	122
G15	Age at Death by Birthweight (<1,000g and >=1,000g), Early Neonatal Deaths .....	122
H1	Trends in Domiciliary Births - Selected Statistics, 2008–2017 .....	124
I1	Percentage Distribution of Maternities by Method of Delivery, Primiparous and Multiparous Women, 2008–2017 .....	126

## LIST OF FIGURES

1.1	National Perinatal Reporting System, Data Collection .....	5
-----	--	---

### Figures for Time Trends and International Comparisons:

2.1	Stillbirth, Early Neonatal and Perinatal Mortality Rates, Ireland, 2008–2017 .....	17
2.2	Perinatal Mortality Rates for Selected EU Countries, Ireland, 2017.....	18
2.3	Trends in Birth Rates for Selected EU Countries, 2008–2017.....	19
2.4	Birth Rates per 1,000 Population for EU Countries, 2017.....	20
2.5	Age-Specific Fertility Rates (ASFRs) and Total Period Fertility Rates (TPFRs), Ireland, 2008–2017 .....	21
2.6	Total Period Fertility Rates for EU Countries, 2017.....	22

### Figures for General Characteristics:

3.1	Age-specific Stillbirth, Early Neonatal and Perinatal Mortality Rates.....	26
3.2	Percentage of Births by Mother's County of Residence, Total Births .....	28
3.3	Perinatal Mortality Rates by Mother's Socio-economic Group.....	31
3.4	Average Age of Mother by Mother's Nationality, Total Maternities .....	35
3.5	Parity by Age of Mother, Total Maternities .....	38
3.6	Birthweight: Cumulative Percentages of Total Live Births .....	43
3.7	Percentage of Births by Birthweight Groups, Total Live Births .....	43
3.8	Percentage Distribution for Males and Females across Birthweight Groups, Total Live Births .....	44
3.9	Percentage of Births by Month of Birth, Singleton and Multiple Births .....	47

### Figures for Perinatal Care:

4.1	Mother's Postnatal Length of Stay by Method of Delivery, Singleton Births .....	56
4.2	Mother's Postnatal Length of Stay by Method of Delivery, Multiple Births .....	56
4.3	Percentage Distribution of Total Live Births by Method of Delivery .....	59
4.4	Percentage of Total Births by Method of Delivery and Age of Mother .....	61
4.5	Percentage Distribution of Births by Size of Maternity Unit, Total Births .....	63
4.6	Percentage Distribution of Total Live Births by Infant's Length of Stay .....	66
4.7	Percentage Distribution of Infant's Type of Feeding by Age of Mother, Total Live Births .....	68
4.8	Percentage Distribution of Exclusively Breastfed Infants by Mother's County of Residence, Total Live Births .....	69
4.9	Percentage Distribution of Infant's Type of Feeding by Mother's Socio-economic Group, Total Live Births .....	71
4.10	Percentage Distribution of Exclusively Breastfed Infants by Mother's Nationality, Total Live Births .....	72

**Figures for Perinatal Outcomes:**

5.1	Perinatal Deaths by Birthweight Groups and Parity .....	76
5.2	Perinatal Mortality Rates by Birthweight Groups.....	77
5.3	Total Perinatal Deaths with Birthweight < 2,500 grams by Cause of Death .....	81
5.4	Total Perinatal Deaths with Birthweight ≥ 2,500 grams by Cause of Death .....	81
5.5	Total Perinatal Deaths by Gestational Age (weeks).....	83
5.6	Perinatal Mortality Rates by Gestational Age (weeks) at Delivery.....	83
5.7	Total Stillbirths by Cause of Death.....	88
5.8	Total Early Neonatal Deaths by Cause of Death.....	89
5.9	Total Perinatal Deaths by Cause of Death.....	90
5.10	Early Neonatal Deaths by Age at Death and Plurality.....	91
5.11	Early Neonatal Deaths by Age at Death and Birthweight Groups.....	92

**Figures for Domiciliary Births:**

H1	Number and Percentage of Domiciliary Births Reported, 2008–2017 .....	125
I1	Percentage Distribution of Maternities Delivering by Caesarean Section for Total, Primiparous and Multiparous Women, 2008–2017 .....	127

## KEY FINDINGS

The Perinatal Statistics Report 2017 presents national statistics on perinatal events in Ireland. This report is based on data collected from Part 3 of the Birth Notification Form (BNF01)<sup>1</sup> for the National Perinatal Reporting System (NPRS) and provides information on mothers giving birth and babies born in 2017.

### SUMMARY STATISTICS, 2017

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

	Total Births	Live Births	Stillbirths		Early Neonatal Deaths		Perinatal Deaths		Adjusted Perinatal Deaths <sup>b</sup>	
	Number	Number	Number	Rate <sup>a</sup>	Number	Rate <sup>a</sup>	Number	Rate <sup>a</sup>	Number	Rate <sup>a</sup>
Singleton	59,749	59,549	200	3.3	87	1.5	287	4.8	193	3.2
Multiple	2,321	2,305	16	6.9	21	9.1	37	15.9	24	10.4
<b>Total</b>	<b>62,070</b>	<b>61,854</b>	<b>216</b>	<b>3.5</b>	<b>108</b>	<b>1.7</b>	<b>324</b>	<b>5.2</b>	<b>217</b>	<b>3.5</b>

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

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

### BABIES, 2017

- 62,070 births were reported to NPRS in 2017, representing a 3.2 per cent decrease between 2016 and 2017
- 7% of total births were preterm (less than 37 weeks gestation)
- 6% of live births were low birthweight (less than 2,500 grams)
- 2% of live births were high birthweight (4,500 grams or more)
- 60% of babies recorded any breastfeeding in 2017, compared to 56% in 2013 and 51% in 2008
- 48% of babies were exclusively breastfed in 2017 compared to 47% in 2013 and 45% in 2008
- 33% of total live births were delivered by Caesarean section, with 31% of singleton and 69% of multiple live births delivered by this method. In 2008, 27% of total live births were delivered by Caesarean section
- 94% of singleton births and 65% of multiple births were discharged from hospital within 5 days of birth
- Average total infant's length of stay was 3.3 days in 2017, compared to 3.4 days in 2008
- The perinatal mortality rate was 5.2 per 1,000 live births and stillbirths (4.8 per 1,000 singleton births and 15.9 per 1,000 multiple births). This rate has fallen by 23.2% since 2008, when it was 6.8 per 1,000 live births and stillbirths.

### Mothers, 2017

- 60,910 maternities were reported to NPRS in 2017, representing a 3.1 per cent decrease between 2016 and 2017
- The average age of mothers has increased from 30.6 years in 2008 to 32.3 years in 2017
- 37% of mothers were aged 35 years or older, up from 27% in 2008
- 25% of first births were to women aged 35 years or older, compared to 14% in 2008
- 2% of total mothers giving birth were aged under 20 years, compared to 3% in 2008
- 38% of mothers gave birth for the first time, with an average age for first time mothers of 30.5 years
- 2% of mothers had a multiple pregnancy
- 60% of mothers recorded any breastfeeding, compared to 51% in 2008
- 49% of mothers exclusively breastfed, compared to 47% in 2013 and 45% in 2008
- 54% of women having a singleton live birth delivered spontaneously, while deliveries by Caesarean section accounted for 31%, 4% were delivered using forceps and 11% via vacuum extractions
- 24% of women having a multiple live birth delivered spontaneously, while deliveries by Caesarean section accounted for 68%, 2% were delivered using forceps and 5% via vacuum extractions
- For women having a singleton live birth 53% 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 12% had a postnatal length of stay of 2 days or less and 73% had a postnatal length of stay of 3-5 days
- 23% of births in 2017 were to mothers born outside Ireland, similar to 23% in 2013 and 22% in 2008.

<sup>1</sup> This process differs in the small number of sites where MN-CMS is in operation. See Section 1 for more details on MN-CMS.



# SECTION ONE

## INTRODUCTION

## INTRODUCTION

The National Perinatal Reporting System (NPRS) is the principal source of national data on perinatal events. Since the 1<sup>st</sup> January 2014, the Healthcare Pricing Office (HPO) has overseen the administration and management of this system. The HPO is responsible for overseeing all functions associated with the operation of the NPRS database, including the development and support of the data collection, processing, management, reporting, and responding to requests for information on all births nationally.<sup>1</sup>

The NPRS is an important part of Ireland's broader health information system and is a key data source in the context of Ireland's medical birth registration. This reporting system is a valuable resource for informing policy and service planning. It feeds into many areas, for example, the WHO Health For All database, the National Healthcare Quality Reporting System reports along with other governmental reports, and Euro-Peristat. For research purposes, anonymised NPRS datasets can be accessed from the HPO under GDPR and data protection guidelines.

The analysis presented in this report is based on data collected from Part 3 of the Birth Notification Form (BNF01)<sup>2</sup> 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 2017.<sup>3</sup> In so doing, the report aims to

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

## STRUCTURE OF THIS REPORT

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

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

---

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

<sup>2</sup> This process differs in the small number of sites where MN-CMS is in operation.

<sup>3</sup> Previous reports in this series can be downloaded from [www.hpo.ie](http://www.hpo.ie).



**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.

**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 2008 to 2017. Appendix I includes data on method of delivery for primiparous and multiparous women for 2008 to 2017.

## CONVENTIONS USED IN THIS REPORT

- In accordance with the World Health Organization (WHO) guidelines, only births weighing 500 grams or more are included in any analysis of NPRS data.<sup>4,5</sup>
- 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.

<sup>4</sup> See [www.who.int/classifications/icd/ICD-10\\_2nd\\_ed\\_volume2.pdf](http://www.who.int/classifications/icd/ICD-10_2nd_ed_volume2.pdf) ; pg 96, 5.7.2. Reporting Criteria

<sup>5</sup> The National Perinatal Epidemiology Centre (NPEC) also publish a report on perinatal mortality in Ireland. Data published in this report are collected as a national audit on perinatal mortality based on data collected from 19 maternity units using a standardised perinatal death notification form. The NPEC report on perinatal deaths based on the criteria of at least 500g birthweight and/or at least 24 weeks gestation as well as WHO guidelines of ≥500g birthweight, irrespective of gestation. See <https://www.ucc.ie/en/npec/> for further details.

- 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.
- In contrast to reports prior to 2012, 'Not Stated' values are included in the calculation of percentages used in discussion when they are presented in the tables. 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, unless otherwise stated. '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 group<sup>6</sup> and father's nationality in this report.

## BIRTH NOTIFICATION AND REGISTRATION

Births are notified and registered on a standard four-part Birth Notification Form (BNF01)<sup>7</sup> used to notify local registrars of all live births and stillbirths occurring in Ireland. The third part of this form has all identifying information removed and is sent to the HPO (see Appendix B). Figure 1.1 provides a diagrammatic representation of the information system around the registration of births and data collection by the NPRS. All the tables and rates in this report are based on data contained in the third part of the standard form submitted to NPRS at the HPO.

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

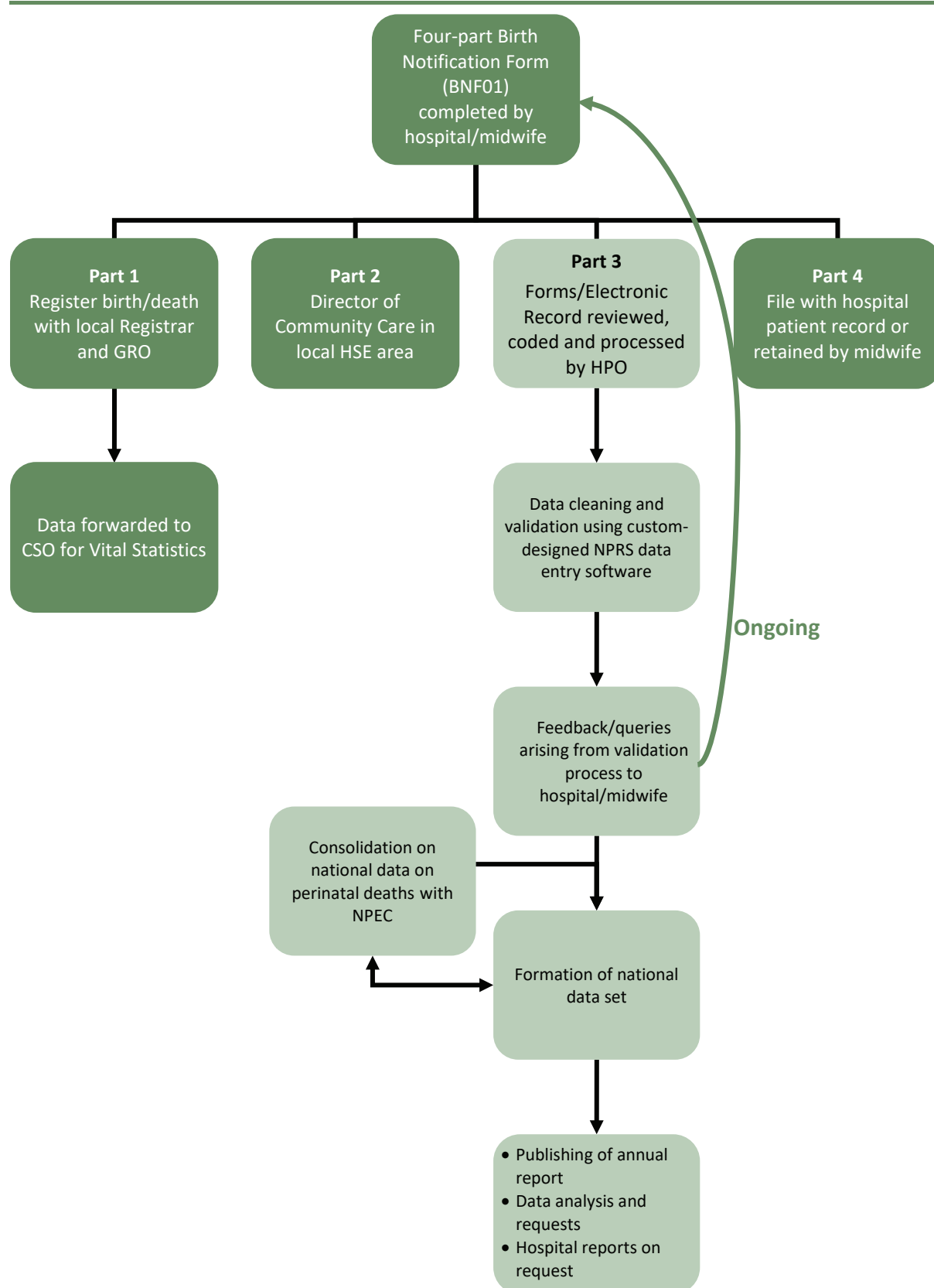
It should be noted that notification of birth differs to registration of birth. While the *Civil Registrations Act 2004* outlines the duty of persons attending each birth to notify the local registrar of a stillbirth or live birth, it is not a legal requirement of the parents/guardians to register stillbirths.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

<sup>6</sup> For further details see Appendix C Classification of socio-economic groups.

<sup>7</sup> This process differs in the small number of sites where MN-CMS is in operation.

**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. This process differs in the small number of sites where MN-CMS is in operation.

## 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<sup>8</sup>

### 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.

---

<sup>8</sup> The completion of this data is only mandatory where there is an infant death.

## 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 MN-CMS (see below) has been introduced into four sites and uses a national numbering system. Currently the HPO are crosschecking these numbers with the sites to ensure accuracy and completeness.

The IT Department at the HPO has developed a custom-designed data entry and validation software system for NPRS data. 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 data entry and clinical coding errors. If problems are identified, clarification can be sought from the hospital or midwife and corrections can be made at the point of data entry. This data validation process is continually reviewed and new checks are incorporated based on data quality activities and research. The completeness of each record is dependent on the commitment of those persons responsible for notification and registration of the births in each hospital/maternity unit throughout the country and on each SECM.

Recommendations from the Chief Medical Officer's Report into perinatal deaths in Midland Regional Hospital Portlaoise<sup>9</sup> include the consolidation of national data reported on perinatal events. The National Perinatal Epidemiology Centre (NPEC) conducts clinical audit on perinatal deaths, collecting data on perinatal deaths only. The NPRS is a national data collection system and collects data on total births (including live births, stillbirths and early neonatal deaths).

In collaboration with the NPEC in University College Cork, the HPO undertook extensive reconciliation of the data reported for 2017 to both reporting systems. As a result of this data reconciliation exercise, the data reported on perinatal deaths for 2017 (NPRS), based on the World Health Organization (WHO) guidelines, is reconciled to the data reported by NPEC (see also Conventions Used in this Report on page 3 and <https://www.ucc.ie/en/npec/><sup>10</sup> for further details). See Table 1.1.

<sup>9</sup> Holohan, T. (2014) HSE Midland Regional Hospital, Portlaoise Perinatal Deaths (2006-date). Dublin: Department of Health. Available at: <http://www.lenus.ie/hse/bitstream/10147/313524/1/portlaoiseperinataldeaths.pdf>

<sup>10</sup> The NPEC report on perinatal deaths based on the criteria of at least 500g birthweight and/or at least 24 weeks gestation as well as WHO guidelines of ≥500g birthweight, irrespective of gestation.

**TABLE 1.1**Total births, Stillbirths, Early Neonatal Deaths and Perinatal Deaths ( $\geq 500$  grams only), NPRS and NPEC, 2017

	NPRS		NPEC	
	Number	Rate <sup>a</sup>	Number	Rate
Total births	62,070	-	-	-
Stillbirths	216	3.5	216	3.5
Early neonatal deaths	108	1.7	108	1.7
Perinatal deaths	324	5.2	324	5.2
Adjusted perinatal deaths <sup>b</sup>	217	3.5	208	3.4

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

## CURRENT 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.

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

Four maternity units have gone live with the system (as of June 2019) with one of these units submitting data since the start of December 2017. The NPRS are working closely with the MN-CMS to ensure more timely and accurate data transfers from the four current sites to the NPRS national system.<sup>11</sup> Further phases of the project, which will include all 19 maternity units, are planned over the next number of years.

<sup>11</sup> There have been some difficulties in capturing all of the data previously returned on the BNF01 form which has led to an increase in 'not stated' values for particular variables. This will be monitored closely in data returned from 2018 onwards where there is likely to be a greater proportion of data returned from MN-CMS.

# SECTION TWO

## TIME TRENDS AND INTERNATIONAL COMPARISONS

## INTRODUCTION

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

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

At a national level, data presented here show how these parameters have changed over time.<sup>9</sup> International comparisons allow the most recent statistics for Ireland to be compared with those for other European countries.<sup>10</sup> The indicators for Ireland were calculated using data from the NPRS for the period 2008 to 2017.<sup>11</sup>

## TRENDS IN SELECTED STATISTICS

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

- Since 2009 the trend in total births has been downward, declining by 17.9 per cent between 2008 and 2017.
- Mothers giving birth in Ireland in 2017, with an average age of 32.3 years, were on average 1.7 years older than those who gave birth in 2008 (30.6 years) and just slightly older than those giving birth in 2016 (average age 32.2 years).
- Over the decade 2008 to 2017, the proportion of mothers giving birth for the first time generally fell for those aged less than 30 years and increased for those aged 30 years or more.
- Births to primiparous women aged less than 20 years reduced from 6.9 per cent of births in 2008 to 4.0 per cent in 2017. Births to primiparous women aged 40 years and older increased from 2.1 per cent of births in 2008 to 4.7 per cent in 2017.
- Births to multiparous women aged less than 20 years accounted for 0.5 per cent of births in 2008 compared with 0.3 per cent in 2017. Births to multiparous women aged 40 years and older increased from 5.9 per cent of births in 2008 to 8.2 per cent in 2017.
- Mother's immunity to rubella is recorded at 90.9 per cent in 2017.
- The percentage of women recording any breastfeeding was 51.1 per cent in 2008, increasing to 59.8 per cent in 2017.
- The percentage of women exclusively breastfeeding has increased from 44.6 per cent in 2008 to 48.6 per cent in 2017. This represents a rate of increase of 9.0 per cent in exclusive breastfeeding over the decade.

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

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

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



- Irish mothers record a 14.7 per cent increase in the proportion of mothers recording exclusive breastfeeding over the decade. Mothers from the UK, EU, Asia and Africa all record a decrease in the proportion of women recording exclusive breastfeeding at discharge over the decade.
- Mothers' average length of stay in hospital has remained stable over the decade and is recorded at 3.5 days in 2017.

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

- Births to mothers born in Ireland have declined slightly from 77.3 per cent of births in 2008 to 76.9 per cent of births in 2017, a decrease of 0.5 per cent over the time period.

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

- For total live births the percentage of spontaneous deliveries fell from 56.6 per cent in 2008 to 52.5 per cent in 2017. The upward trend in delivery by Caesarean section continues with a rate of 26.7 per cent reported in 2008 compared with 32.8 per cent for 2017.
- For total maternities, the percentage of deliveries by Caesarean section has increased slightly from 31.9 per cent in 2016 to 32.0 per cent in 2017 and has increased from 25.9 per cent to 32.0 per cent over the decade, an increase of 23.6 per cent in the proportion of women delivering by Caesarean section.

Regarding infant characteristics trends have been largely consistent over the decade 2008 to 2017.

- The average birthweight for total live births was 3,442.6 grams in 2017, which is broadly consistent with the preceding decade.
- The average birthweight for both singleton (3,482.4 grams) and multiple (2,412.4 grams) births has remained consistent over the decade.
- The percentage of total live births recording low birthweight (<2,500 grams) was 5.3 per cent in 2008 compared with 5.7 per cent in 2017.
- The percentage of total live births classified as high birthweight (4,500 grams or more) has decreased from 2.7 per cent in 2008 to 2.1 per cent in 2017.
- For total births, the infant's average length of stay in hospital has remained consistent across the decade, declining from 3.4 days in 2008 to 3.3 days in 2017.

<sup>12</sup> Based on EU27 for 2007-2013 and EU28 for 2014-2017. 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.

Trends in Selected Statistics, 2008–2017

length of stay (days)<sup>1,2,8</sup>

TABLE 2.1 Trends in Selected Statistics, 2008–2017 (contd.)

Parents Nationality														
			2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Change 2008–2017	% Change 2016–2017
Mother's Nationality	Irish	%	77.3	76.1	75.4	76.1	76.0	77.1	77.8	77.5	76.3	76.9	-0.5	0.8
	UK	%	2.7	2.6	2.7	2.3	2.4	2.3	2.2	2.4	2.3	2.2	-18.5	-4.3
	EU <sup>7</sup>	%	10.6	11.7	12.9	13.0	12.9	12.7	12.4	12.5	12.7	12.2	15.1	-3.9
	Africa	%	3.4	3.4	3.0	2.6	2.7	2.4	2.3	2.1	2.3	2.3	-32.4	0.0
	Asia	%	3.7	4.0	3.8	4.0	4.0	3.4	3.2	3.2	3.7	3.4	-8.1	-8.1
Father's Nationality <sup>9</sup>	Irish	%	58.4	58.0	59.1	59.4	57.5	57.1	56.0	58.2	58.8	59.1	1.2	0.5
	UK	%	2.5	2.3	2.4	2.2	2.0	2.0	1.9	1.9	1.6	1.6	-36.0	0.0
	EU <sup>7</sup>	%	6.8	7.8	8.6	8.8	8.4	8.1	7.9	7.9	7.9	7.7	13.2	-2.5
	Africa	%	2.7	2.7	2.4	2.1	1.9	1.6	1.5	1.4	1.5	1.5	-44.4	0.0
	Asia	%	2.9	3.3	3.1	3.3	3.1	2.4	2.2	2.4	2.8	2.6	-10.3	-7.1
Perinatal Care														
Hospital & G.P. combined antenatal care <sup>2,10</sup>		%	79.3	80.7	80.9	77.3	77.5	79.5	80.9	81.9	81.9	81.3	2.5	-0.7
Booked hospital admissions <sup>2,8</sup>		%	98.9	99.0	99.3	99.3	99.3	99.2	96.9	99.1	99.0	97.2	-1.7	-1.8
Method of delivery <sup>11</sup> Total live births <sup>12</sup>	Spontaneous	%	56.6	56.4	56.5	55.8	55.6	55.1	54.2	53.5	52.2	52.5	-7.2	0.6
	Caesarean section	%	26.7	26.9	27.1	28.1	28.9	29.7	30.4	31.4	32.7	32.8	22.8	0.3
	Forceps <sup>13</sup>	%	3.7	4.1	4.0	4.1	3.9	3.8	3.8	3.5	3.6	3.5	-5.4	-2.8
Method of delivery <sup>11</sup> Total maternities	Spontaneous	%	57.4	57.0	57.2	56.6	56.3	55.9	55.0	54.2	52.9	53.2	-7.3	0.6
	Caesarean section	%	25.9	26.2	26.3	27.3	28.1	28.9	29.5	30.6	31.9	32.0	23.6	0.3
	Forceps <sup>13</sup>	%	3.7	4.1	4.0	4.1	3.9	3.9	3.8	3.5	3.6	3.6	-2.7	0.0
Infant Characteristics														
Birthweight (grams) <sup>1</sup>	Total births	Avg	3,464.0	3,466.1	3,468.4	3,467.0	3,464.0	3,452.4	3,448.8	3,446.9	3,444.5	3,442.6	-0.6	-0.1
	Singleton births	Avg	3,501.9	3,498.9	3,504.0	3,505.0	3,502.0	3,493.2	3,488.5	3,487.2	3,485.2	3,482.4	-0.6	-0.1
	Multiple births	Avg	2,424.5	2,465.2	2,447.2	2,464.6	2,420.2	2,411.7	2,428.3	2,412.2	2,415.3	2,412.4	-0.5	-0.1
Low birthweight (<2500 grams) <sup>1</sup>	Total births	%	5.3	5.0	5.1	5.2	5.4	5.5	5.6	5.7	5.7	5.7	7.5	0.0
	Singleton births	%	3.8	3.7	3.6	3.6	3.8	3.8	3.9	3.9	3.9	4.0	5.3	2.6
	Multiple births	%	48.4	45.4	47.6	46.0	49.9	49.0	49.4	49.9	49.6	48.6	0.2	-2.2
High birthweight (≥4500 grams) <sup>1</sup>	Total births	%	2.7	2.7	2.7	2.6	2.5	2.3	2.3	2.2	2.2	2.1	-22.2	-4.5
	Total births	Avg	3.4	3.3	3.2	3.2	3.2	3.2	3.3	3.3	3.3	3.3	-2.9	0.0
	Singleton births	Avg	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1	0.0	0.0
Infant's length of stay (days) <sup>1,5,8</sup>	Multiple births	Avg	9.9	9.0	9.5	8.6	9.4	9.7	9.3	9.5	9.5	9.3	-6.1	-2.1
	Post-mortems for early neonatal deaths	%	28.9	33.5	32.9	24.8	27.3	35.2	31.6	37.8	31.5	36.1	24.9	14.6

**Notes:** Percentages are subject to rounding. <sup>1</sup> Based on live births. <sup>2</sup> Based on maternities. <sup>3</sup> For reports from 2014 onwards the calculation of average number of years has been revised, therefore caution should be exercised when comparing this with data reported in previous publications. <sup>4</sup> Based on multiparous maternities. <sup>5</sup> Excludes early neonatal deaths. <sup>6</sup> Any breastfeeding includes type of feeding recorded as either breast or combined. <sup>7</sup> Based on EU27 for 2007–2013 and EU28 for 2014–2017. As the EU expanded over this period caution should be exercised when interpreting these data. See also Appendix F. <sup>8</sup> Excludes domiciliary births. <sup>9</sup> Father's details are only required for registration purposes where mother's civil status is recorded as 'married'. As a result, there is a proportion of records for which information is incomplete, these are assigned to the category 'not applicable'. The data presented here, reports father's nationality where recorded, regardless of mother's civil status. <sup>10</sup> Deliveries under hospital schemes (such as domino, early transfer home, planned community midwives, and midwifery-led units) and domiciliary births were included in hospital and G.P. combined care. <sup>11</sup> See also Appendix I 'Method of Delivery for Primiparous and Multiparous Women'. <sup>12</sup> These figures were based on total live births, as each infant in a multiple pregnancy can have a different method of delivery. <sup>13</sup> Excludes breech deliveries.

## SINGLETON AND MULTIPLE BIRTHS

Table 2.2 shows the numbers of singleton and multiple births each year for the period 2008 to 2017.

- Of the 62,070 births presented in this report for 2017, 59,749 were singleton births, 2,273 were twin births and 48 were higher-order multiple births.<sup>13</sup>
- The twinning rate was 18.7 per 1,000 maternities in 2017; this represents an increase of 7.5 per cent over the decade and a decrease of 0.5 per cent between 2016 and 2017.

**TABLE 2.2**  
Singleton and Multiple Births, 2008–2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Change	
											2008-2017	2016-2017
Singleton births	72,916	73,603	73,046	71,651	69,452	66,650	65,070	63,384	61,655	59,749	-18.1	-3.1
Twin births	2,575	2,373	2,480	2,638	2,435	2,526	2,461	2,390	2,363	2,273	-11.7	-3.8
Higher-order multiple births	96	43	74	88	99	91	79	95	79	48	-50.0	-39.2
Twinning rate (per 1,000 maternities)	17.4	15.9	16.7	18.1	17.2	18.6	18.5	18.5	18.8	18.7	7.5	-0.5

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 2008 and 2017 are presented in Table 2.3.<sup>14</sup>

- Higher mortality rates were observed for multiple births when compared to singleton births.
- The total perinatal mortality rate for singleton births was recorded at 4.8 in 2017, compared to 6.5 per 1,000 live births and stillbirths in 2008.
- The total perinatal mortality rate for multiple births was recorded at 15.9 in 2017, down from 16.8 per 1,000 live births and stillbirths in 2008.
- For 2017 the stillbirth mortality rate was recorded at 3.5 per 1,000 live births and stillbirths.
- The early neonatal mortality rate for 2017 was recorded at 1.7 per 1,000 live births.

<sup>13</sup> In accordance with the World Health Organization (WHO) guidelines, only births weighing 500 grams or more are included in any analysis of NPRS data. In 2017, there were 59,749 singleton births, 2,273 twin births and 48 triplets reported to the NPRS; of these, 74 births weighed less than 500 grams (including 55 singleton births and 19 multiple births) and so were excluded from the analysis.

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

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

**TABLE 2.3**

Live Births, Stillbirths, Early Neonatal Deaths and Perinatal Deaths, Numbers and Rates, Singleton and Multiple Births, 2008–2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Change	
	Number of Births and Perinatal Deaths										2008-2017	2016-2017
<b>Total Births</b>	<b>75,587</b>	<b>76,023</b>	<b>75,600</b>	<b>74,377</b>	<b>71,986</b>	<b>69,267</b>	<b>67,610</b>	<b>65,869</b>	<b>64,097</b>	<b>62,070</b>	<b>-17.9</b>	<b>-3.2</b>
Singleton	72,916	73,603	73,046	71,651	69,452	66,650	65,070	63,384	61,655	59,749	-18.1	-3.1
Multiple	2,671	2,420	2,554	2,726	2,534	2,617	2,540	2,485	2,442	2,321	-13.1	-5.0
<b>Live Births</b>	<b>75,229</b>	<b>75,651</b>	<b>75,245</b>	<b>74,080</b>	<b>71,705</b>	<b>68,990</b>	<b>67,324</b>	<b>65,607</b>	<b>63,870</b>	<b>61,854</b>	<b>-17.8</b>	<b>-3.2</b>
Singleton	72,582	73,247	72,709	71,375	69,188	66,386	64,803	63,151	61,440	59,549	-18.0	-3.1
Multiple	2,647	2,404	2,536	2,705	2,517	2,604	2,521	2,456	2,430	2,305	-12.9	-5.1
<b>Stillbirths</b>	<b>358</b>	<b>372</b>	<b>355</b>	<b>297</b>	<b>281</b>	<b>277</b>	<b>286</b>	<b>262</b>	<b>227</b>	<b>216</b>	<b>-39.7</b>	<b>-4.8</b>
Singleton	334	356	337	276	264	264	267	233	215	200	-40.1	-7.0
Multiple	24	16	18	21	17	13	19	29	12	16	-33.3	33.3
<b>Early Neonatal Deaths</b>	<b>159</b>	<b>155</b>	<b>161</b>	<b>153</b>	<b>143</b>	<b>159</b>	<b>136</b>	<b>164</b>	<b>124</b>	<b>108</b>	<b>-32.1</b>	<b>-12.9</b>
Singleton	138	142	135	126	122	133	117	137	108	87	-37.0	-19.4
Multiple	21	13	26	27	21	26	19	27	16	21	0.0	31.3
<b>Perinatal Deaths</b>	<b>517</b>	<b>527</b>	<b>516</b>	<b>450</b>	<b>424</b>	<b>436</b>	<b>422</b>	<b>426</b>	<b>351</b>	<b>324</b>	<b>-37.3</b>	<b>-7.7</b>
Singleton	472	498	472	402	386	397	384	370	323	287	-39.2	-11.1
Multiple	45	29	44	48	38	39	38	56	28	37	-17.8	32.1
	Rates <sup>a</sup>											
<b>Stillbirths</b>	<b>4.7</b>	<b>4.9</b>	<b>4.7</b>	<b>4.0</b>	<b>3.9</b>	<b>4.0</b>	<b>4.2</b>	<b>4.0</b>	<b>3.5</b>	<b>3.5</b>	<b>-26.0</b>	<b>-0.6</b>
Singleton	4.6	4.8	4.6	3.9	3.8	4.0	4.1	3.7	3.5	3.3	-27.2	-4.4
Multiple	9.0	6.6	7.0	7.7	6.7	5.0	7.5	11.7	4.9	6.9	-23.4	40.7
<b>Early Neonatal Deaths</b>	<b>2.1</b>	<b>2.0</b>	<b>2.1</b>	<b>2.1</b>	<b>2.0</b>	<b>2.3</b>	<b>2.0</b>	<b>2.5</b>	<b>1.9</b>	<b>1.7</b>	<b>-16.9</b>	<b>-8.1</b>
Singleton	1.9	1.9	1.9	1.8	1.8	2.0	1.8	2.2	1.8	1.5	-23.1	-18.8
Multiple	7.9	5.4	10.3	10.0	8.3	10.0	7.5	11.0	6.6	9.1	15.3	38.0
<b>Perinatal Deaths</b>	<b>6.8</b>	<b>6.9</b>	<b>6.8</b>	<b>6.1</b>	<b>5.9</b>	<b>6.3</b>	<b>6.2</b>	<b>6.5</b>	<b>5.5</b>	<b>5.2</b>	<b>-23.2</b>	<b>-5.1</b>
Singleton	6.5	6.8	6.5	5.6	5.6	6.0	5.9	5.8	5.2	4.8	-26.1	-7.6
Multiple	16.8	12.0	17.2	17.6	15.0	14.9	15.0	22.5	11.5	15.9	-5.1	38.6

Notes: Percentage columns are subject to rounding.

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

## PERINATAL MORTALITY

Despite improvements in reducing perinatal mortality in recent decades, the perinatal period continues to be a time of relatively high risk.<sup>15</sup> Stillbirths account for 66.7 per cent of perinatal deaths in 2017.<sup>16,17</sup> Table 2.4 presents the numbers and rates for total births and perinatal deaths for Ireland from 2008 to 2017.

- In 2017 approximately 1 in every 287 births was stillborn and 1 in every 572 live births died in the first week of life.
- Over the decade 2008 to 2017, the perinatal mortality rate has fallen from 6.8 per 1,000 live births and stillbirths to 5.2 per 1,000 live births and stillbirths. This represents a 23.2 per cent decrease over the decade.
- The stillbirth rate has declined over the period from 4.7 per 1,000 live births and stillbirths in 2008 to 3.5 per 1,000 live births and stillbirths in 2017, a decline of 26.0 per cent over the decade.
- The early neonatal mortality rate has also declined from 2.1 per 1,000 live births in 2008 to 1.7 per 1,000 live births in 2017, a decline of 16.9 per cent over the decade (see Figure 2.1).

**TABLE 2.4**

Live Births, Stillbirths, Early Neonatal Deaths, and Perinatal Deaths, 2008–2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Change	
	Number of Births and Perinatal Deaths										2008– 2017	2016– 2017
<b>Total Births</b>	<b>75,587</b>	<b>76,023</b>	<b>75,600</b>	<b>74,377</b>	<b>71,986</b>	<b>69,267</b>	<b>67,610</b>	<b>65,869</b>	<b>64,097</b>	<b>62,070</b>	<b>-17.9</b>	<b>-3.2</b>
Live Births	75,229	75,651	75,245	74,080	71,705	68,990	67,324	65,607	63,870	61,854	-17.8	-3.2
Stillbirths	358	372	355	297	281	277	286	262	227	216	-39.7	-4.8
Early Neonatal Deaths	159	155	161	153	143	159	136	164	124	108	-32.1	-12.9
Perinatal Deaths	517	527	516	450	424	436	422	426	351	324	-37.3	-7.7
Adjusted Perinatal Deaths	384	381	368	308	309	297	304	287	234	217	-43.5	-7.3
	Rates <sup>a</sup>											
Stillbirth	4.7	4.9	4.7	4.0	3.9	4.0	4.2	4.0	3.5	3.5	-26.0	-0.6
Early Neonatal Deaths	2.1	2.0	2.1	2.1	2.0	2.3	2.0	2.5	1.9	1.7	-16.9	-8.1
Perinatal Mortality	6.8	6.9	6.8	6.1	5.9	6.3	6.2	6.5	5.5	5.2	-23.2	-5.1
Adjusted Perinatal Mortality	5.1	5.0	4.9	4.1	4.3	4.3	4.5	4.4	3.7	3.5	-31.3	-5.3

Notes: Percentage columns are subject to rounding.

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

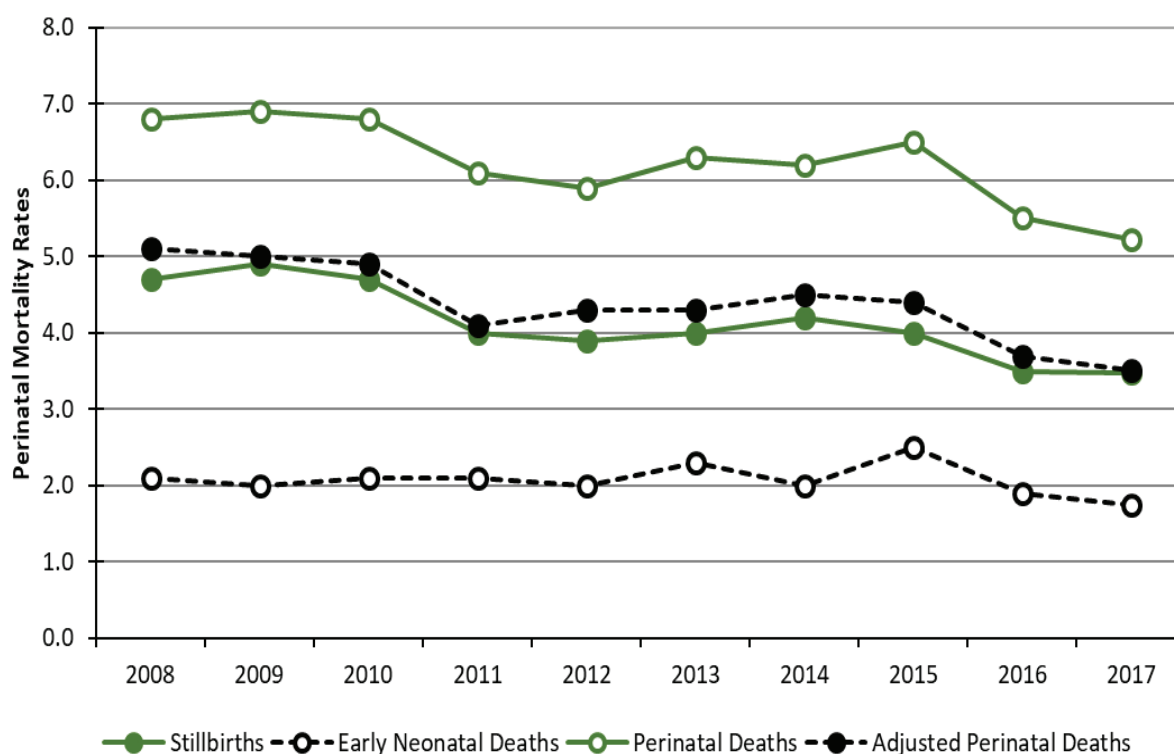
<sup>15</sup> EURO-PERISTAT Project with SCPE and EUROCAT. *European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010*. May 2013. Available at [www.europeristat.com](http://www.europeristat.com)

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

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

**FIGURE 2.1**

Stillbirth, Early Neonatal and Perinatal Mortality Rates, Ireland, 2008–2017



Note: See Table 2.4 for data.

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

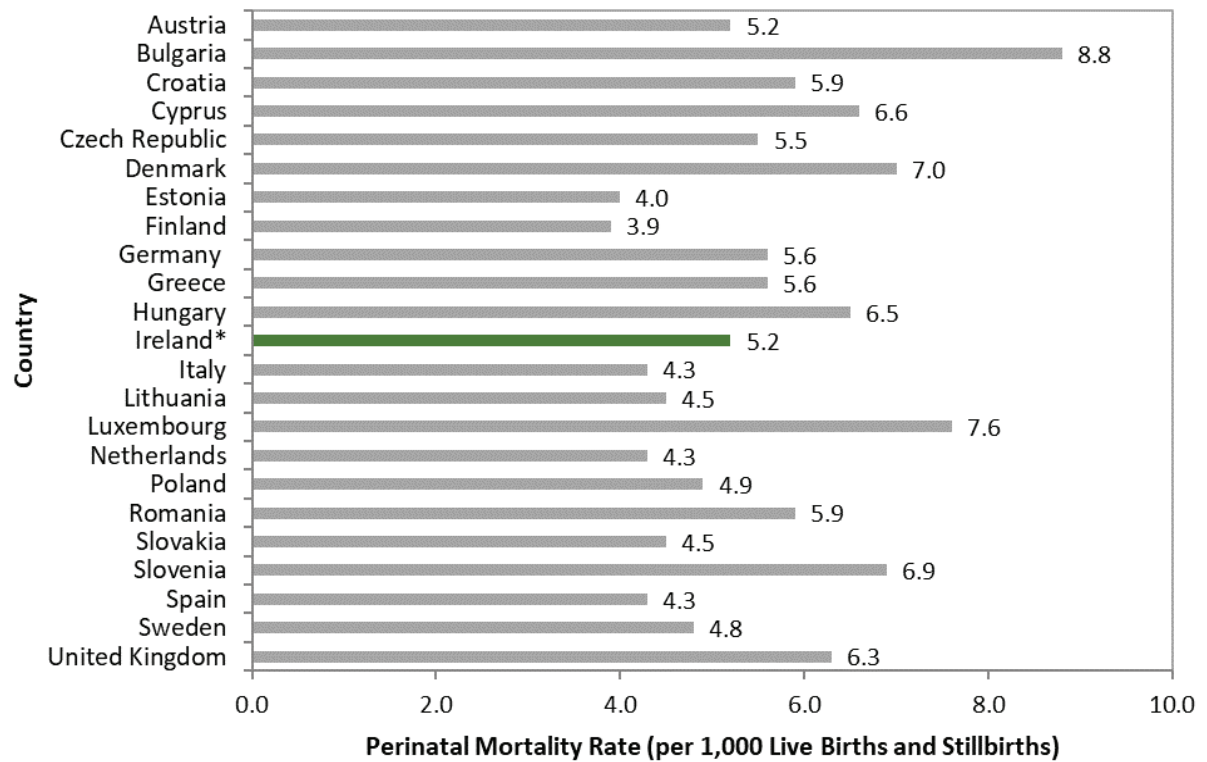
- Bulgaria recorded the highest perinatal mortality rate for 2017, at 8.8 per 1,000 live births and stillbirths.
- Finland had the lowest perinatal mortality rate recording 3.9 per 1,000 live births and stillbirths.
- In 2017, the perinatal mortality rate for Ireland was recorded at 5.2 per 1,000 live births and stillbirths.

<sup>18</sup> 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted March 2020. <http://epp.eurostat.ec.europa.eu>

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

**FIGURE 2.2**

Perinatal Mortality Rates for Selected EU Countries, Ireland, 2017



Sources: 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted March 2020.

<http://epp.eurostat.ec.europa.eu>

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



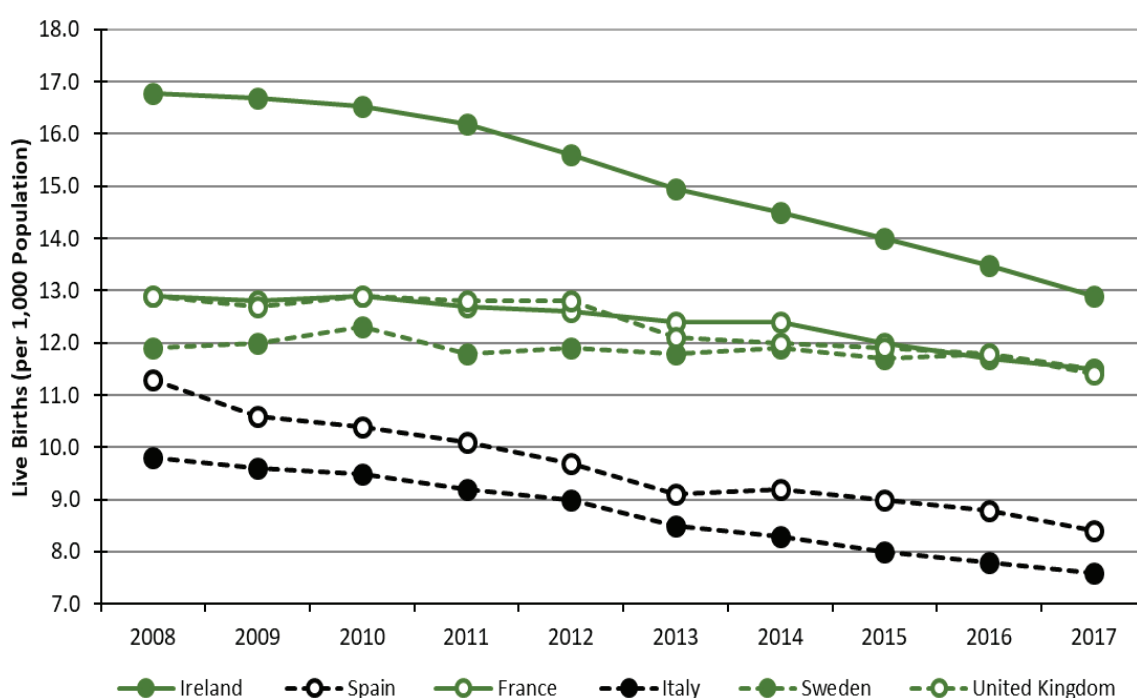
## BIRTH RATES<sup>19</sup>

The birth rate is based on the total number of live births per 1,000 population.<sup>20</sup> Figure 2.3 presents trends in birth rates for selected EU countries over the decade 2008 to 2017. Figure 2.4 presents birth rates in the 28 EU countries for 2017.

- Of the countries reviewed, Ireland has consistently had the highest birth rate over the period, and is recorded at 12.9 per 1,000 population in 2017 (see Figure 2.4).<sup>21</sup>
- The birth rate for Ireland has declined from a high of 16.8 per 1,000 population in 2008 to 12.9 per 1,000 population in 2017.
- After Ireland, the countries with the next highest birth rates in 2017 are Sweden and France (both recording 11.5) followed by the United Kingdom (11.4). In 2017, Italy had the lowest birth rate (7.6), followed by Greece (8.2). (see Figure 2.4).

**FIGURE 2.3**

Trends in Birth Rates for Selected EU Countries, 2008–2017



Sources: 'Population and social conditions', Eurostat, Data Navigation Tree, date consulted April 2020.  
<http://ec.europa.eu/eurostat/data/database>

Data for Ireland are based on NPRS data on live births from 2008 onwards. The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted April 2020.  
[www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0](http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA11&PLanguage=0)

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

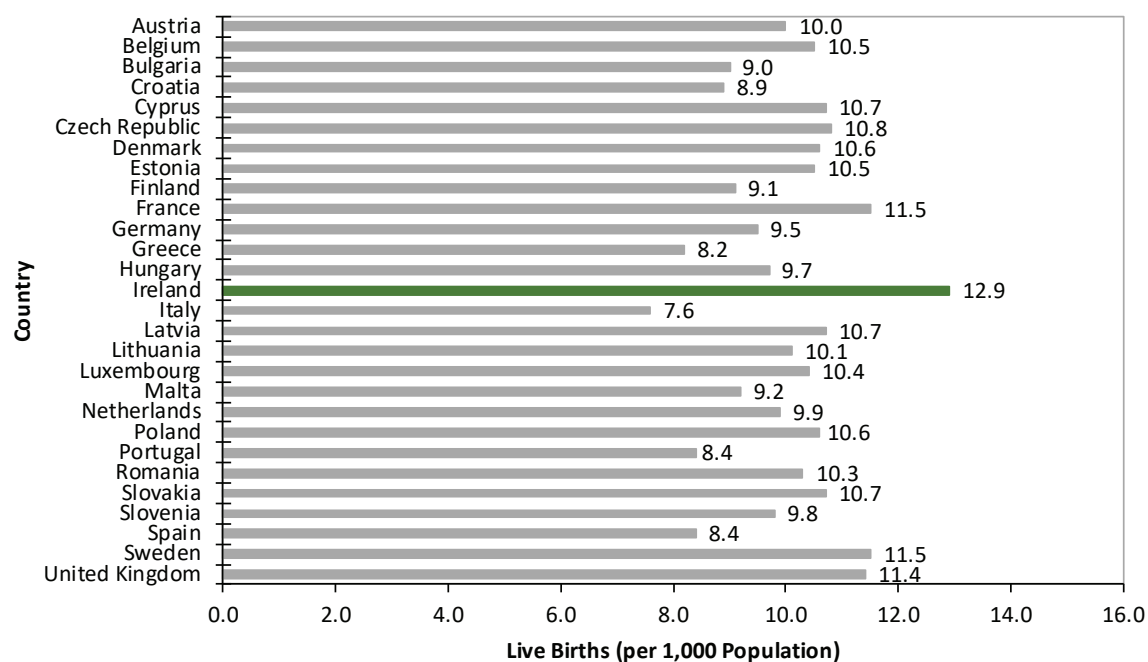
<sup>20</sup> The population estimates used in the denominator of the birth rate were calculated by the CSO Statistical Databases, date consulted April 2020.

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

<sup>21</sup> The CSO also estimates the Irish birth rate at 12.9 per 1,000 population for 2017. See Vital Statistics, Yearly Summary 2017, May 2018. CSO 2017 data are provisional and are based on the number of births registered within the year as opposed to births occurring in the year.

**FIGURE 2.4**

Birth Rates per 1,000 Population for EU Countries, 2017



Sources: 'Population and social conditions', Eurostat, Data Navigation Tree, date consulted April 2020.

<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 April 2020.

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

## FERTILITY

The Total Period Fertility Rate (TPFR) for a given year indicates the number of children a woman could expect to have if the Age-Specific Fertility Rates (ASFR) for that year applied throughout her fertile years.<sup>22</sup> The ASFR refers to the number of live births to women in a particular age group per 1,000 women. Figure 2.5 displays the trend in the ASFR and TPFR in Ireland from 2008–2017.

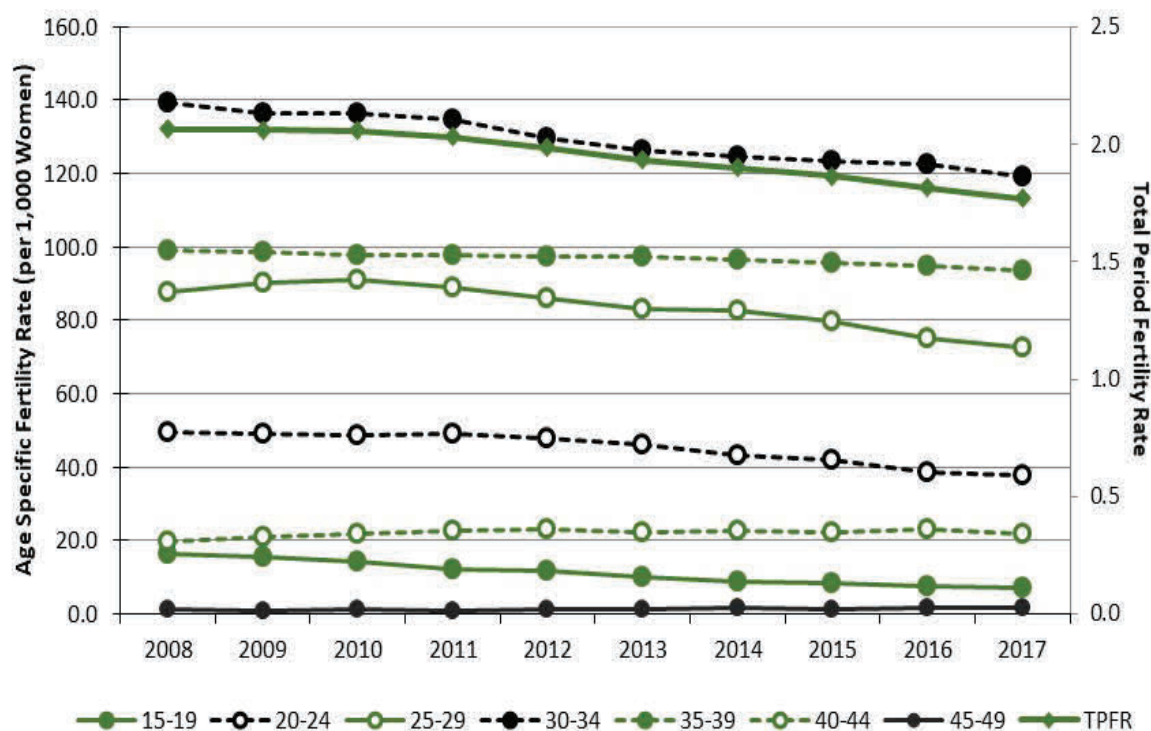
- The Irish TPFR was recorded at a high of 2.1 in 2008–2010 and is estimated at 1.8 in 2017, remaining at the same level as 2016.<sup>23</sup>
- Over the decade 2008–2017, the ASFRs for all age groups under 40 years has declined, while the rates in the 40 years and over age groups have remained relatively stable over the decade.
- In all years the 30–34 year age group recorded the highest ASFR when compared to other age groups, but has been declining since 2008.

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

<sup>23</sup> The CSO estimates the TPFR at 1.8 for 2017. See Vital Statistics, Yearly Summary 2017, May 2018. CSO 2017 data are provisional and are based on the number of births registered within the year as opposed to births occurring in the year.

**FIGURE 2.5**

Age-Specific Fertility Rates (ASFRs) and Total Period Fertility Rates (TPFRs), Ireland, 2008–2017



Sources: Total period fertility rates (TPFRs) and age-specific fertility rates (ASFRs) are calculated using NPRS data from 2008 onwards. Female population estimates from 2008 onwards were obtained from the CSO Statistical Databases, date consulted April 2020. <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0>

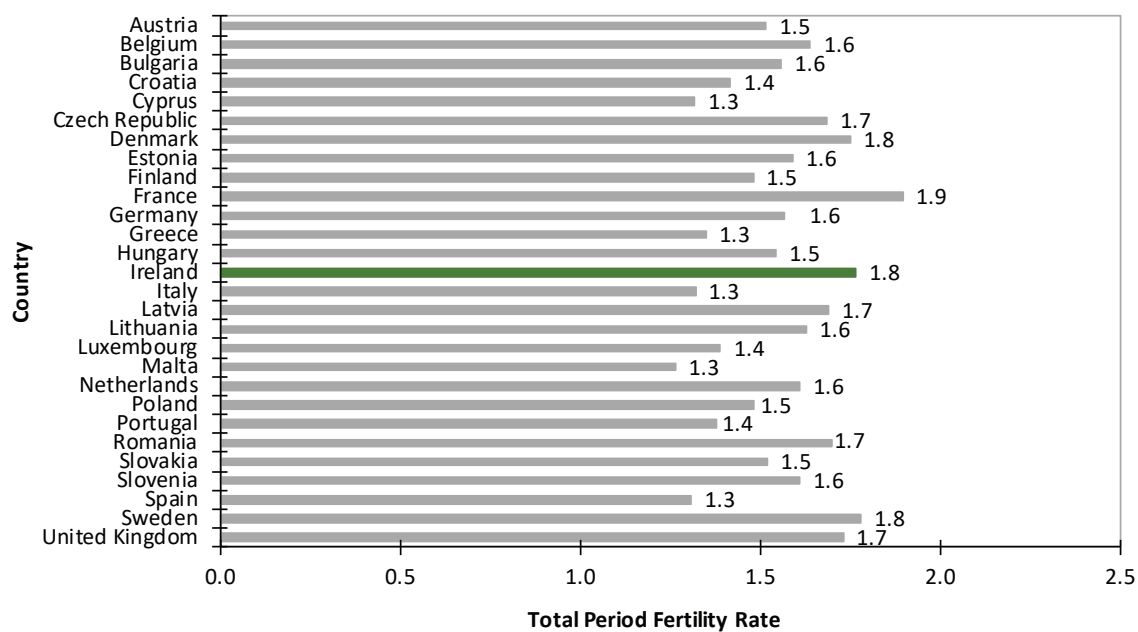
The TPFR for Ireland is based on population data for 2017, and at 1.8 is below the level required for the long-term replacement of the population in the absence of any net inward migration (2.1).<sup>24</sup> Figure 2.6 presents data on TPFRs for 2017 using data from Eurostat and the NPRS.

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

<sup>24</sup> See Vital Statistics, Yearly Summary 2017, May 2018.

**FIGURE 2.6**

Total Period Fertility Rates for EU Countries, 2017



Sources: 'Population and Social Conditions', Eurostat, Data Navigation Tree, date consulted April 2020.

<http://epp.eurostat.ec.europa.eu>

\*Data for Ireland are based on NPRS data on live births. Female population estimates for 2017 were obtained from the CSO Statistical Databases, date consulted April 2020.

[www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0](http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=PEA01&PLanguage=0)

# **SECTION THREE**

## **GENERAL CHARACTERISTICS**

## INTRODUCTION

This section presents more detailed analyses of data reported to the NPRS for 2017.

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 2017, the highest percentage of births were to women aged 30 to 34 years.
- Over 36 per cent of multiple births were to mothers aged 35 to 39 years.

**TABLE 3.1**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Under 20 Years	1,069	1.7	1,059	9.4	2.8	12.2	7.5	1,061
20-24 Years	5,139	8.3	5,113	5.1	2.5	7.6	5.3	5,090
25-29 Years	10,802	17.4	10,773	2.7	1.5	4.2	3.2	10,644
30-34 Years	21,723	35.0	21,657	3.0	1.4	4.5	3.1	21,354
35-39 Years	19,006	30.6	18,940	3.5	1.7	5.2	3.4	18,577
40-44 Years	4,009	6.5	3,991	4.5	3.3	7.7	3.3	3,892
45 Years and Over	*	^	*	3.1	-	3.1	3.1	*
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Under 20 Years	1,052	1.8	1,042	9.5	1.0	10.5	7.6	1,052
20-24 Years	5,042	8.4	5,016	5.2	2.4	7.5	5.2	5,042
25-29 Years	10,482	17.5	10,453	2.8	1.4	4.2	3.2	10,482
30-34 Years	20,982	35.1	20,921	2.9	1.1	4.0	2.9	20,982
35-39 Years	18,153	30.4	18,095	3.2	1.4	4.6	3.0	18,153
40-44 Years	3,775	6.3	3,759	4.2	2.7	6.9	2.7	3,775
45 Years and Over	*	^	*	-	-	-	-	*
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Under 20 Years	17	0.7	17	-	117.6	117.6	-	9
20-24 Years	97	4.2	97	-	10.3	10.3	10.3	48
25-29 Years	320	13.8	320	-	3.1	3.1	3.1	162
30-34 Years	741	31.9	736	6.7	10.9	17.5	10.9	372
35-39 Years	853	36.8	845	9.4	7.1	16.4	11.8	424
40-44 Years	234	10.1	232	8.5	12.9	21.4	12.9	117
45 Years and Over	59	2.5	58	16.9	-	16.9	16.9	29
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

**Notes:**

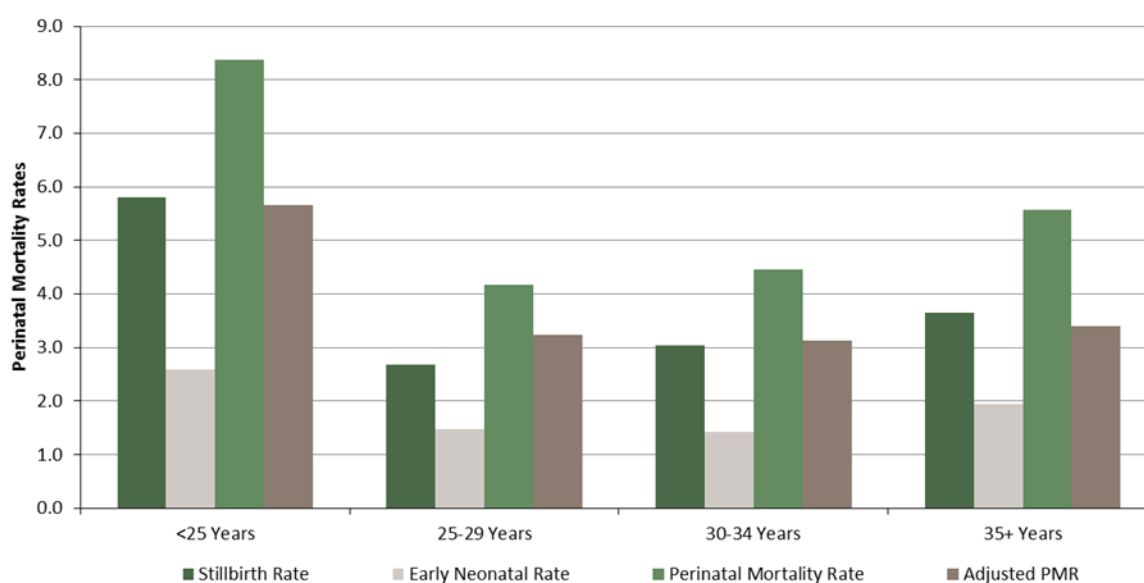
- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- ^ Percentage not provided to prevent disclosure of small numbers.
- a Rates are calculated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

Figure 3.1 presents perinatal mortality rates.

- At 4.2 and 3.2 per 1,000 live births and stillbirths, the perinatal and adjusted perinatal mortality rates were lowest for mothers aged in the 25 to 29 year age group, whilst the highest perinatal and adjusted perinatal mortality rates were recorded for mothers aged less than 25 years.
- The highest stillbirth rate was recorded for mothers aged less than 25 years (at 5.8 per 1,000 live births and stillbirths), while the lowest stillbirth rate was recorded for the 25 to 29 year age group (2.7 per 1,000 live births and stillbirths).
- The highest and lowest early neonatal rates were recorded for the less than 25 years age group and the 30 to 34 year age group respectively. Both early neonatal rates for mothers aged less than 30 years are based on 20 or fewer observations and should be interpreted with caution.

**FIGURE 3.1**

Age-Specific Stillbirth, Early Neonatal and Perinatal Mortality Rates



Notes: See Table 3.1 for data.

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



## MOTHER'S CIVIL STATUS

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

**TABLE 3.2**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Married	38,021	61.3	37,908	3.0	1.6	4.6	3.0	37,246
Single	23,138	37.3	23,042	4.1	1.9	6.0	4.2	22,774
Widowed	56	0.1	56	-	-	-	-	55
Separated	446	0.7	444	4.5	2.3	6.7	6.7	435
Divorced	374	0.6	373	2.7	5.4	8.0	2.7	367
Civil Partner*	17	0.0	16	58.8	-	58.8	58.8	16
Not Stated	18	0.0	15	166.7	66.7	222.2	125.0	17
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Married	36,470	61.0	36,369	2.8	1.4	4.2	2.7	36,470
Single	22,410	37.5	22,318	4.1	1.4	5.5	3.9	22,410
Widowed	*	^	*	-	-	-	-	*
Separated	424	0.7	422	4.7	2.4	7.1	7.1	424
Divorced	360	0.6	359	2.8	5.6	8.3	2.8	360
Civil Partner*	*	^	*	66.7	-	66.7	66.7	*
Not Stated	*	^	*	187.5	76.9	250.0	142.9	*
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Married	1,551	66.8	1,539	7.7	6.5	14.2	9.1	776
Single	728	31.4	724	5.5	15.2	20.6	13.8	364
Widowed	~	^	~	-	-	-	-	~
Separated	22	0.9	22	-	-	-	-	11
Divorced	14	0.6	14	-	-	-	-	7
Civil Partner*	~	^	~	-	-	-	-	~
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

**Notes:**

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

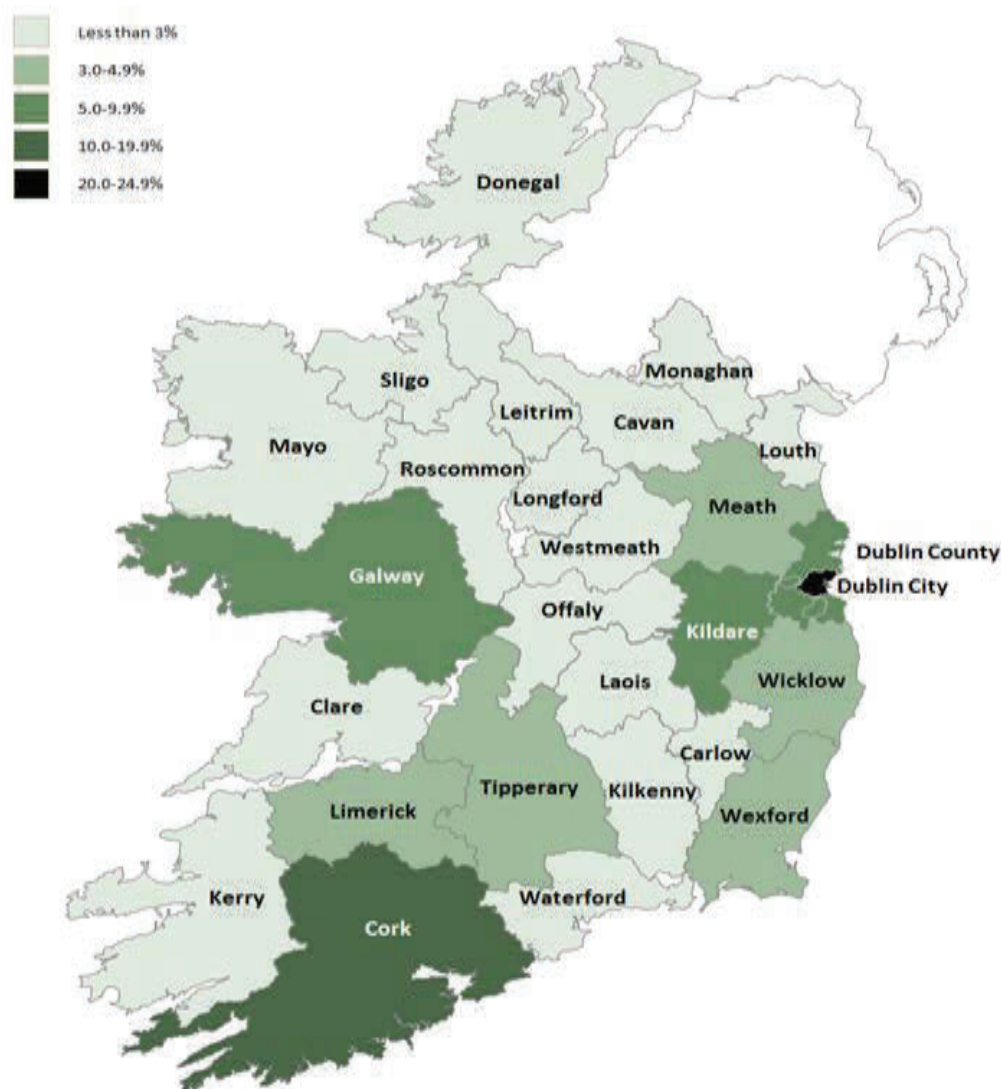
## MOTHER'S COUNTY OF RESIDENCE

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

- Over 22 per cent of births were to mothers resident in Dublin City, and 11.1 per cent were to mothers resident in Cork.
- There were less than 1 per cent of births to mothers resident in Leitrim.

**FIGURE 3.2**

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



Notes: See Appendix G, Table G1 for data.  
 Example: 1.3 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 'lower-professional' (19.9 per cent) or 'home duties' (18.7 per cent) and 'intermediate non-manual workers' (18.4 per cent).
- Mothers classified as 'other non-manual workers' accounted for a further 14.3 per cent of total births.
- Where rates are calculated on more than 20 perinatal deaths, the highest perinatal mortality rate of 8.2 per 1,000 live births and stillbirths was reported for mothers in the socio-economic group 'home duties' followed by 'lower professional' (4.6 per 1,000 live births and stillbirths) - see Figure 3.3.
- The lowest perinatal mortality rates were recorded for mothers in the 'intermediate non-manual workers' socio-economic group (3.5 per 1,000 live births and stillbirths).

**TABLE 3.3**

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

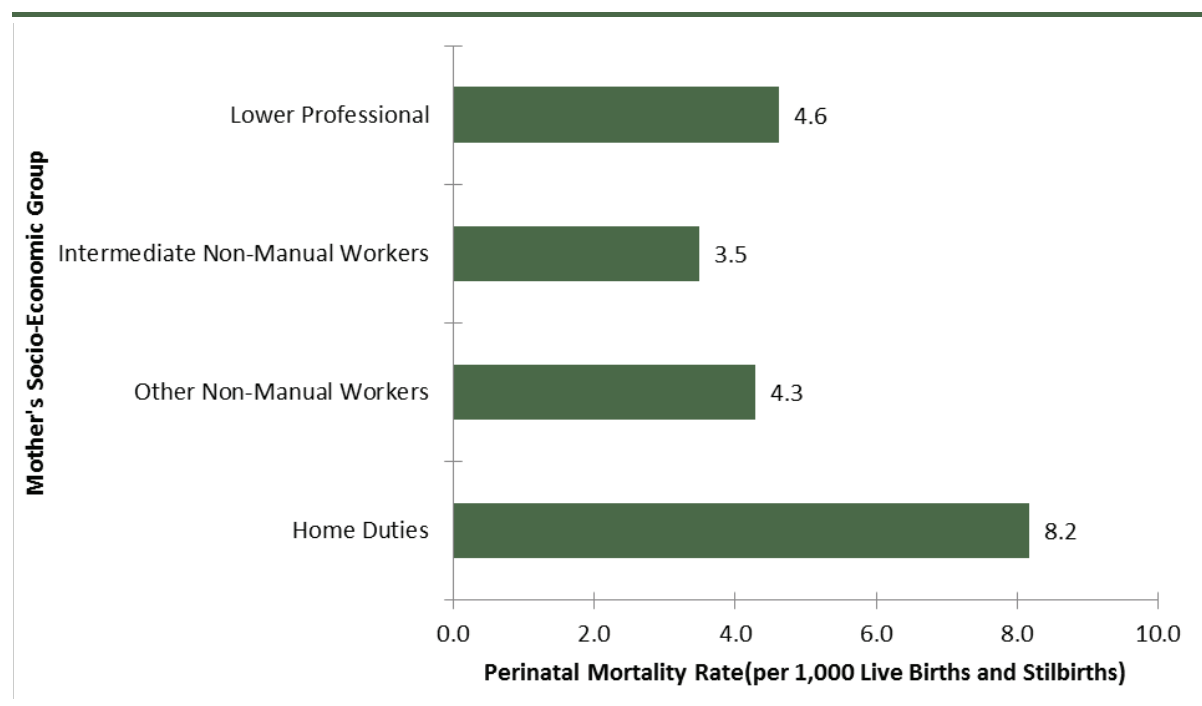
	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Farmers & Farm Managers	43	0.1	42	23.3	-	23.3	23.3	43
Other Agricultural Occupations & Fishermen	103	0.2	103	-	-	-	-	101
Higher Professional	4,569	7.4	4,556	2.8	1.3	4.2	2.2	4,487
Lower Professional	12,359	19.9	12,322	3.0	1.6	4.6	3.1	12,115
Employers & Managers	4,523	7.3	4,514	2.0	1.3	3.3	2.0	4,404
Salaried Employees	680	1.1	678	2.9	4.4	7.4	3.0	667
Intermediate Non-Manual Workers	11,445	18.4	11,419	2.3	1.2	3.5	2.3	11,224
Other Non-Manual Workers	8,884	14.3	8,857	3.0	1.2	4.3	2.8	8,735
Skilled Manual Workers	784	1.3	780	5.1	2.6	7.7	6.4	768
Semi-Skilled Manual Workers	1,766	2.8	1,761	2.8	0.6	3.4	1.7	1,744
Unskilled Manual Workers	15	0.0	15	-	-	-	-	15
Unemployed	2,902	4.7	2,889	4.5	1.7	6.2	4.5	2,857
Not Classifiable	2,091	3.4	2,078	6.2	2.4	8.6	6.2	2,062
Home Duties	11,617	18.7	11,556	5.3	2.9	8.2	5.8	11,402
Not Stated	289	0.5	284	17.3	3.5	20.8	17.4	286
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Farmers & Farm Managers	43	0.1	42	23.3	-	23.3	23.3	43
Other Agricultural Occupations & Fishermen	*	^	*	-	-	-	-	*
Higher Professional	4,407	7.4	4,395	2.7	1.1	3.9	2.0	4,407
Lower Professional	11,872	19.9	11,840	2.7	1.4	4.0	2.7	11,872
Employers & Managers	4,279	7.2	4,272	1.6	0.7	2.3	1.4	4,279
Salaried Employees	654	1.1	652	3.1	3.1	6.1	1.5	654
Intermediate Non-Manual Workers	11,006	18.4	10,982	2.2	1.1	3.3	2.1	11,006
Other Non-Manual Workers	8,583	14.4	8,558	2.9	1.2	4.1	2.7	8,583
Skilled Manual Workers	752	1.3	748	5.3	2.7	8.0	6.7	752
Semi-Skilled Manual Workers	1,719	2.9	1,714	2.9	0.6	3.5	1.7	1,719
Unskilled Manual Workers	15	0.0	15	-	-	-	-	15
Unemployed	2,813	4.7	2,800	4.6	1.1	5.7	4.6	2,813
Not Classifiable	2,035	3.4	2,022	6.4	1.5	7.9	5.9	2,035
Home Duties	11,190	18.7	11,133	5.1	2.6	7.7	5.4	11,190
Not Stated	*	^	*	17.7	3.6	21.3	17.8	*
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Farmers & Farm Managers	0	0.0	0	-	-	-	-	0
Other Agricultural Occupations & Fishermen	~	^	~	-	-	-	-	~
Higher Professional	162	7.0	161	6.2	6.2	12.3	6.2	80
Lower Professional	487	21.0	482	10.3	8.3	18.5	12.4	243
Employers & Managers	244	10.5	242	8.2	12.4	20.5	12.4	125
Salaried Employees	26	1.1	26	-	38.5	38.5	38.5	13
Intermediate Non-Manual Workers	439	18.9	437	4.6	4.6	9.1	6.8	218
Other Non-Manual Workers	301	13.0	299	6.6	3.3	10.0	6.7	152
Skilled Manual Workers	32	1.4	32	-	-	-	-	16
Semi-Skilled Manual Workers	47	2.0	47	-	-	-	-	25
Unskilled Manual Workers	0	0.0	0	-	-	-	-	0
Unemployed	89	3.8	89	-	22.5	22.5	-	44
Not Classifiable	56	2.4	56	-	35.7	35.7	18.2	27
Home Duties	427	18.4	423	9.4	11.8	21.1	16.5	212
Not Stated	*	^	*	-	-	-	-	~
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

**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.

#### 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.

- 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 8.6 per cent of total births.

TABLE 3.4

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Farmers & Farm Managers	1,601	2.6	1,597	2.5	-	2.5	1.3	1,576
Other Agricultural Occupations & Fishermen	507	0.8	507	-	-	-	-	500
Higher Professional	4,045	6.5	4,032	3.2	0.2	3.5	2.5	3,979
Lower Professional	4,606	7.4	4,591	3.3	1.7	5.0	2.8	4,523
Employers & Managers	4,404	7.1	4,392	2.7	1.6	4.3	3.2	4,315
Salaried Employees	777	1.3	775	2.6	1.3	3.9	2.6	758
Intermediate Non-Manual Workers	5,124	8.3	5,109	2.9	1.6	4.5	3.1	5,016
Other Non-Manual Workers	5,321	8.6	5,309	2.3	1.5	3.8	1.3	5,232
Skilled Manual Workers	11,191	18.0	11,159	2.9	1.7	4.6	3.1	10,977
Semi-Skilled Manual Workers	2,802	4.5	2,795	2.5	0.4	2.9	2.1	2,754
Unskilled Manual Workers	358	0.6	356	5.6	-	5.6	5.6	355
Unemployed	2,149	3.5	2,141	3.7	2.3	6.0	5.6	2,115
Not Classifiable	2,068	3.3	2,062	2.9	1.9	4.8	3.9	2,016
Home Duties	174	0.3	174	-	-	-	-	170
Not Stated/Not Applicable	16,943	27.3	16,855	5.2	2.7	7.9	5.3	16,624
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Farmers & Farm Managers	1,551	2.6	1,547	2.6	-	2.6	1.3	1,551
Other Agricultural Occupations & Fishermen	493	0.8	493	-	-	-	-	493
Higher Professional	3,911	6.5	3,898	3.3	0.3	3.6	2.6	3,911
Lower Professional	4,438	7.4	4,425	2.9	1.8	4.7	2.7	4,438
Employers & Managers	4,226	7.1	4,216	2.4	0.9	3.3	2.6	4,226
Salaried Employees	740	1.2	738	2.7	1.4	4.1	2.7	740
Intermediate Non-Manual Workers	4,908	8.2	4,893	3.1	1.4	4.5	3.3	4,908
Other Non-Manual Workers	5,144	8.6	5,132	2.3	1.2	3.5	1.4	5,144
Skilled Manual Workers	10,769	18.0	10,742	2.5	1.3	3.8	2.5	10,769
Semi-Skilled Manual Workers	2,705	4.5	2,699	2.2	0.4	2.6	1.8	2,705
Unskilled Manual Workers	351	0.6	349	5.7	-	5.7	5.7	*
Unemployed	2,082	3.5	2,074	3.8	2.4	6.2	5.8	2,082
Not Classifiable	1,961	3.3	1,957	2.0	2.0	4.1	3.1	1,961
Home Duties	167	0.3	167	-	-	-	-	*
Not Stated/Not Applicable	16,303	27.3	16,219	5.2	2.2	7.4	5.0	16,303
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Farmers & Farm Managers	50	2.2	50	-	-	-	-	25
Other Agricultural Occupations & Fishermen	14	0.6	14	-	-	-	-	7
Higher Professional	134	5.8	134	-	-	-	-	68
Lower Professional	168	7.2	166	11.9	-	11.9	6.0	85
Employers & Managers	178	7.7	176	11.2	17.0	28.1	17.0	89
Salaried Employees	37	1.6	37	-	-	-	-	18
Intermediate Non-Manual Workers	216	9.3	216	-	4.6	4.6	-	108
Other Non-Manual Workers	177	7.6	177	-	11.3	11.3	-	88
Skilled Manual Workers	422	18.2	417	11.8	12.0	23.7	19.0	208
Semi-Skilled Manual Workers	97	4.2	96	10.3	-	10.3	10.3	49
Unskilled Manual Workers	7	0.3	7	-	-	-	-	~
Unemployed	67	2.9	67	-	-	-	-	33
Not Classifiable	107	4.6	105	18.7	-	18.7	18.7	55
Home Duties	7	0.3	7	-	-	-	-	~
Not Stated/Not Applicable	640	27.6	636	6.3	15.7	21.9	14.2	321
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

**Notes:**

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

## NATIONALITY

### MOTHER'S NATIONALITY

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

- Almost 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 12.2 per cent.<sup>24</sup>
- Births to mothers from Asia accounted for 3.4 per cent of total births, followed by 2.3 per cent to mothers from Africa.
- The remainder of births were to mothers from the UK, Rest of Europe, America, Australia, New Zealand and Other Oceania and Multi-Nationality.

---

<sup>24</sup> See Appendix F for a description of the classification system for nationality.

TABLE 3.5

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Ireland	47,708	76.9	47,533	3.7	1.6	5.3	3.4	46,768
UK	1,360	2.2	1,356	2.9	2.2	5.1	3.7	1,338
EU15 (excluding Ireland & UK)	982	1.6	978	4.1	1.0	5.1	4.1	962
EU15 to EU28	6,584	10.6	6,576	1.2	1.4	2.6	1.4	6,484
Rest of Europe	630	1.0	629	1.6	-	1.6	1.6	618
Africa	1,435	2.3	1,426	6.3	3.5	9.8	7.0	1,407
Asia	2,104	3.4	2,099	2.4	2.4	4.8	3.8	2,083
America	839	1.4	835	4.8	3.6	8.3	7.2	827
Australia	74	0.1	74	-	-	-	-	73
New Zealand and Other Oceania	*	^	32	-	-	-	-	*
Multi-Nationality	~	^	0	1,000.0	-	1,000.0	1,000.0	~
Not Stated	321	0.5	316	15.6	12.7	28.0	28.0	319
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Ireland	45,828	76.7	45,668	3.5	1.3	4.8	3.1	45,828
UK	1,316	2.2	1,312	3.0	1.5	4.6	3.0	1,316
EU15 (excluding Ireland & UK)	943	1.6	940	3.2	1.1	4.2	3.2	943
EU15 to EU28	6,385	10.7	6,377	1.3	1.1	2.3	1.4	6,385
Rest of Europe	606	1.0	605	1.7	-	1.7	1.7	606
Africa	1,377	2.3	1,368	6.5	3.7	10.2	7.3	1,377
Asia	2,061	3.4	2,056	2.4	2.4	4.9	3.9	2,061
America	815	1.4	811	4.9	2.5	7.4	6.1	815
Australia	*	^	*	-	-	-	-	*
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Multi-Nationality	~	^	0	1,000.0	-	1,000.0	1,000.0	~
Not Stated	*	^	*	15.8	12.8	28.4	28.4	*
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Ireland	1,880	81.0	1,865	8.0	9.1	17.0	11.2	940
UK	44	1.9	44	-	22.7	22.7	22.7	22
EU15 (excluding Ireland & UK)	39	1.7	38	25.6	-	25.6	25.6	19
EU15 to EU28	199	8.6	199	-	10.1	10.1	-	99
Rest of Europe	24	1.0	24	-	-	-	-	12
Africa	58	2.5	58	-	-	-	-	30
Asia	43	1.9	43	-	-	-	-	22
America	24	1.0	24	-	41.7	41.7	41.7	12
Australia	~	^	~	-	-	-	-	~
New Zealand and Other Oceania	~	^	~	-	-	-	-	~
Multi-Nationality	0	0.0	0	-	-	-	-	0
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

## Notes:

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

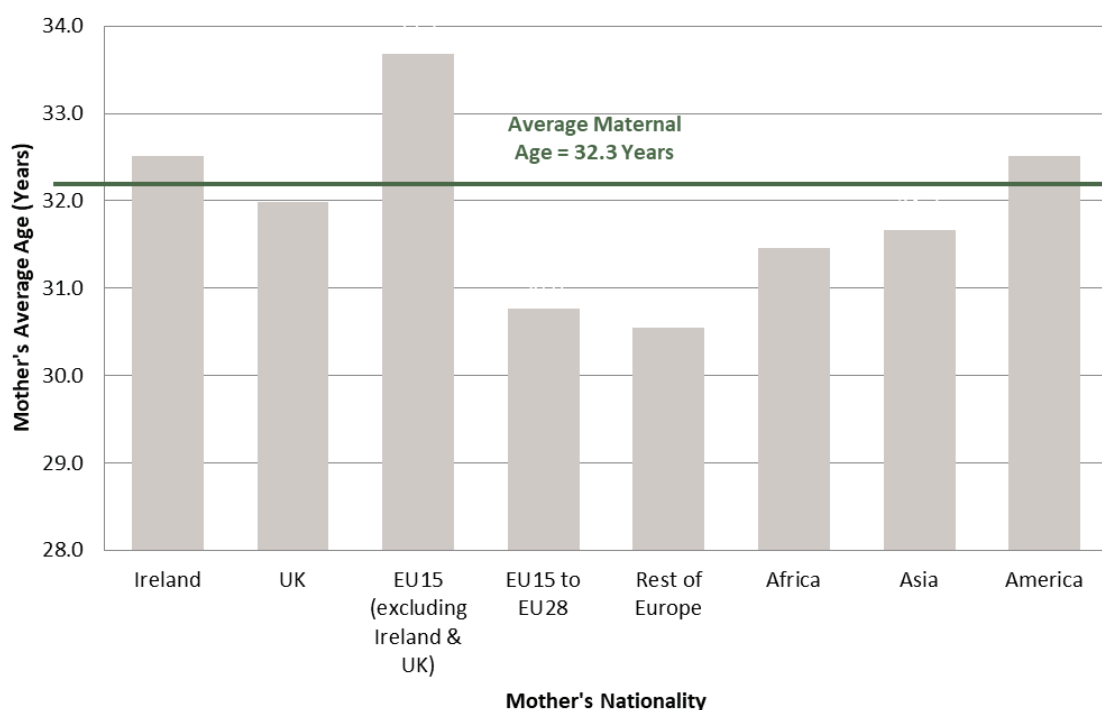


Figure 3.4 presents the average age of mother by mother's nationality for 2017.

- The average age of all mothers giving birth was 32.3 years and the average age of mothers from Ireland giving birth was slightly higher at 32.5 years.
- Mothers giving birth from the Rest of Europe were on average younger at 30.5 years, while mothers from the EU15 (excluding Ireland and United Kingdom) recorded the highest average maternal age at 33.7 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 59.1 per cent of total births.
- Births to fathers from the EU15 to EU28 and Asia accounted for 6.7 per cent and 2.6 per cent of total births respectively.

**TABLE 3.6**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Ireland	36,687	59.1	36,565	3.3	1.4	4.7	3.1	35,971
UK	974	1.6	973	1.0	-	1.0	1.0	957
EU15 (excluding Ireland & UK)	627	1.0	626	1.6	1.6	3.2	3.2	618
EU15 to EU28	4,142	6.7	4,137	1.2	1.2	2.4	1.4	4,082
Rest of Europe	384	0.6	383	2.6	-	2.6	2.6	376
Africa	925	1.5	919	6.5	5.4	11.9	9.8	914
Asia	1,606	2.6	1,601	3.1	1.9	5.0	3.1	1,587
America	411	0.7	410	2.4	-	2.4	2.4	402
Australia	*	^	*	-	-	-	-	59
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Multi-Nationality	~	^	0	1,000.0	-	1,000.0	1,000.0	~
Not Stated/Not Applicable	16,208	26.1	16,135	4.5	2.6	7.1	4.7	15,904
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Ireland	35,253	59.0	35,144	3.1	1.2	4.3	2.8	35,253
UK	943	1.6	942	1.1	-	1.1	1.1	943
EU15 (excluding Ireland & UK)	608	1.0	607	1.6	-	1.6	1.6	608
EU15 to EU28	4,023	6.7	4,018	1.2	1.0	2.2	1.2	4,023
Rest of Europe	368	0.6	367	2.7	-	2.7	2.7	368
Africa	903	1.5	897	6.6	5.6	12.2	10.0	903
Asia	1,566	2.6	1,561	3.2	1.9	5.1	3.2	1,566
America	393	0.7	392	2.5	-	2.5	2.5	393
Australia	*	^	*	-	-	-	-	*
New Zealand and Other Oceania	*	^	*	-	-	-	-	*
Multi-Nationality	~	^	0	1,000.0	-	1,000.0	1,000.0	~
Not Stated/Not Applicable	15,599	26.1	15,529	4.5	2.2	6.7	4.5	15,599
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Ireland	1,434	61.8	1,421	9.1	7.7	16.7	11.2	718
UK	31	1.3	31	-	-	-	-	14
EU15 (excluding Ireland & UK)	19	0.8	19	-	52.6	52.6	52.6	10
EU15 to EU28	119	5.1	119	-	8.4	8.4	8.4	59
Rest of Europe	16	0.7	16	-	-	-	-	8
Africa	22	0.9	22	-	-	-	-	11
Asia	40	1.7	40	-	-	-	-	21
America	18	0.8	18	-	-	-	-	9
Australia	*	^	*	-	-	-	-	~
New Zealand and Other Oceania	*	^	*	-	-	-	-	~
Multi-Nationality	0	0.0	0	-	-	-	-	0
Not Stated/Not Applicable	609	26.2	606	4.9	13.2	18.1	9.9	305
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

**Notes:**

- Percentage column is subject to rounding.
- ~ Denotes five or fewer births (or maternities) reported to NPRS.
- \* Further suppression required to prevent disclosure of five or fewer births (or maternities).
- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. See Appendix 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 38.5 per cent of all maternities, with 9.1 per cent of maternities having three or more previous live births or stillbirths.

**TABLE 3.7**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0	23,942	38.6	23,842	4.2	1.7	5.8	4.3	23,446
1	21,332	34.4	21,282	2.3	1.5	3.8	2.3	20,943
2	11,112	17.9	11,073	3.5	1.7	5.2	2.8	10,942
3	3,691	5.9	3,679	3.3	2.4	5.7	4.6	3,621
4	1,141	1.8	1,133	7.0	2.6	9.6	7.9	1,121
5	454	0.7	450	8.8	4.4	13.2	8.8	446
6	196	0.3	196	-	-	-	-	191
More than 6	174	0.3	173	5.7	11.6	17.2	11.6	172
Not stated	28	0.0	26	71.4	76.9	142.9	76.9	28
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
0	22,942	38.4	22,849	4.1	1.4	5.5	4.0	22,942
1	20,561	34.4	20,518	2.1	1.0	3.1	1.9	20,561
2	10,770	18.0	10,733	3.4	1.5	4.9	2.7	10,770
3	3,552	5.9	3,540	3.4	2.5	5.9	4.8	3,552
4	1,101	1.8	1,093	7.3	2.7	10.0	8.2	1,101
5	439	0.7	435	9.1	4.6	13.7	9.2	439
6	*	^	*	-	-	-	-	*
More than 6	*	^	*	5.9	11.8	17.6	11.8	*
Not stated	28	0.0	26	71.4	76.9	142.9	76.9	28
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
0	1,000	43.1	993	7.0	7.0	14.0	11.0	504
1	771	33.2	764	9.1	14.4	23.3	14.4	382
2	342	14.7	340	5.8	8.8	14.6	5.9	172
3	139	6.0	139	-	-	-	-	69
4	40	1.7	40	-	-	-	-	20
5	15	0.6	15	-	-	-	-	7
6	*	^	*	-	-	-	-	~
More than 6	~	^	~	-	-	-	-	~
Not stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

Notes:

Percentage column is subject to rounding.

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

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

^ Percentage not provided to prevent disclosure of small numbers.

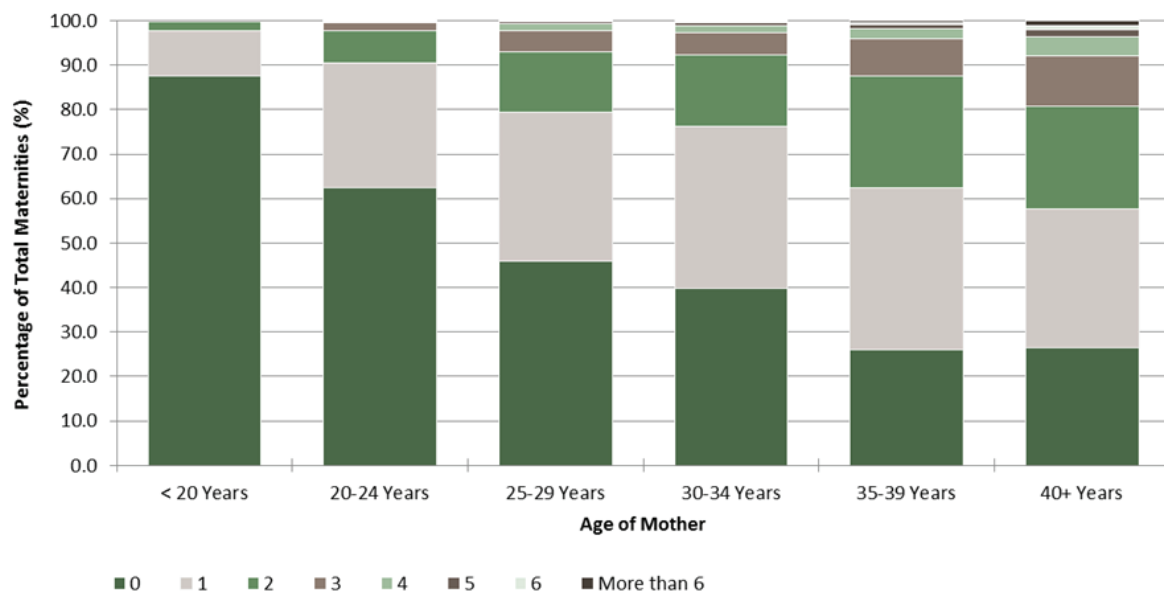
a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

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

- Of mothers aged less than 20 years, 87.6 per cent gave birth for the first time (see Figure 3.5).
- Just over 1 in 4 women aged 40 years or more gave birth for the first time and almost 1 in 3 women in this age group delivered for the second time.

**FIGURE 3.5**

Parity by Age of Mother, Total Maternities



Note: See Appendix G, Table G3 for data.

## NUMBER OF PREVIOUS STILLBIRTHS

In 2017, 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 <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0	37,557	98.6	37,446	3.0	1.8	4.7	2.9	36,906
1	496	1.3	493	6.0	2.0	8.1	8.1	485
2 and Over	47	0.1	47	-	-	-	-	45
<b>Total</b>	<b>38,100</b>	<b>100</b>	<b>37,986</b>	<b>3.0</b>	<b>1.8</b>	<b>4.7</b>	<b>2.9</b>	<b>37,436</b>
<b>Singleton Births</b>								
0	36,262	98.6	36,160	2.8	1.4	4.2	2.6	36,262
1	*	^	*	6.3	2.1	8.4	8.4	*
2 and Over	*	^	*	-	-	-	-	*
<b>Total</b>	<b>36,779</b>	<b>100</b>	<b>36,674</b>	<b>2.9</b>	<b>1.4</b>	<b>4.3</b>	<b>2.7</b>	<b>36,779</b>
<b>Multiple Births</b>								
0	1,295	98.0	1,286	6.9	10.9	17.8	10.1	644
1	*	^	*	-	-	-	-	*
2 and Over	~	^	~	-	-	-	-	~
<b>Total</b>	<b>1,321</b>	<b>100</b>	<b>1,312</b>	<b>6.8</b>	<b>10.7</b>	<b>17.4</b>	<b>9.9</b>	<b>657</b>

Notes: Percentage column is subject to rounding.

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

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

^ Percentage not provided to prevent disclosure of small numbers.

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

## INTERVAL SINCE LAST BIRTH

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

- An interval of 1 year or less was recorded for 1.0 per cent of all multiparous mothers.
- Over 25 per cent recorded an interval of between two and three years since the last birth.
- 17.0 per cent had their previous birth more than six years earlier.

**TABLE 3.9**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
1 year or less	391	1.0	390	2.6	10.3	12.8	7.7	380
>1 year to 2 years	8,390	22.0	8,364	3.1	2.5	5.6	3.9	8,253
>2 years to 3 years	9,794	25.7	9,765	3.0	1.4	4.4	2.5	9,640
>3 years to 4 years	6,155	16.2	6,139	2.6	1.1	3.7	2.1	6,048
>4 years to 5 years	3,898	10.2	3,887	2.8	0.8	3.6	2.6	3,831
>5 years to 6 years	2,638	6.9	2,629	3.4	1.9	5.3	3.0	2,586
More than 6 years	6,462	17.0	6,444	2.8	1.6	4.3	2.9	6,336
Not Stated	372	1.0	368	10.8	5.4	16.1	5.4	362
<b>Total</b>	<b>38,100</b>	<b>100</b>	<b>37,986</b>	<b>3.0</b>	<b>1.7</b>	<b>4.7</b>	<b>2.9</b>	<b>37,436</b>
<b>Singleton Births</b>								
1 year or less	370	1.0	369	2.7	10.8	13.5	8.2	370
>1 year to 2 years	8,121	22.1	8,098	2.8	2.2	5.0	3.7	8,121
>2 years to 3 years	9,487	25.8	9,460	2.8	1.3	4.1	2.2	9,487
>3 years to 4 years	5,941	16.2	5,927	2.4	0.8	3.2	1.9	5,941
>4 years to 5 years	3,764	10.2	3,755	2.4	0.3	2.7	1.6	3,764
>5 years to 6 years	2,534	6.9	2,525	3.6	0.8	4.3	3.2	2,534
More than 6 years	6,211	16.9	6,193	2.9	1.3	4.2	2.9	6,211
Not Stated	351	1.0	347	11.4	5.8	17.1	5.8	351
<b>Total</b>	<b>36,779</b>	<b>100</b>	<b>36,674</b>	<b>2.9</b>	<b>1.4</b>	<b>4.3</b>	<b>2.7</b>	<b>36,779</b>
<b>Multiple Births</b>								
1 year or less	21	1.6	21	-	-	-	-	10
>1 year to 2 years	269	20.4	266	11.2	11.3	22.3	11.3	132
>2 years to 3 years	307	23.2	305	6.5	6.6	13.0	9.8	153
>3 years to 4 years	214	16.2	212	9.3	9.4	18.7	9.4	107
>4 years to 5 years	134	10.1	132	14.9	15.2	29.9	29.9	67
>5 years to 6 years	104	7.9	104	-	28.8	28.8	-	52
More than 6 years	251	19.0	251	-	8.0	8.0	4.0	125
Not Stated	21	1.6	21	-	-	-	-	11
<b>Total</b>	<b>1,321</b>	<b>100</b>	<b>1,312</b>	<b>6.8</b>	<b>10.7</b>	<b>17.4</b>	<b>9.9</b>	<b>657</b>

Notes:

Percentage column is subject to rounding.

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

## BIRTHWEIGHT

The birthweight of a baby is widely used as a key indicator of health status. According to the World Health Organization (WHO), low birthweight babies are defined as weighing less than 2,500 grams. This is further divided into very low birthweight (weighing less than 1,500 grams) and extremely low birthweight (weighing less than 1,000 grams). Low birthweight babies are more likely to have poor perinatal outcomes with consequences for later life experience.<sup>25</sup>

- The average birthweight for live births was 3,482.4 grams for singletons, 2,412.4 grams for multiples, and 3,442.6 grams for total live births.
- The average birthweight for live births was 3,508.0 grams for males compared to 3,373.3 grams for females.

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

- The percentage of total live births classified as low birthweight was 5.7 per cent (4.0 per cent of singletons and 48.5 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 8.6 per cent for multiple births (see Figure 3.6).
- 92.2 per cent of total live births were in the healthy birthweight category weighing between 2,500 and 4,499 grams (see Figure 3.7).
- A smaller proportion of male live births were low birthweight (5.1 per cent) compared with female live births (6.3 per cent) (see Figure 3.8).
- The percentage of total live births weighing 4,500 grams and over was 2.1 per cent (2.9 per cent of males compared to 1.3 per cent of females) (see Figure 3.8).

<sup>25</sup> EURO-PERISTAT Project with SCPE and EUROCAT. *European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010*. May 2013. Available at [www.europeristat.com](http://www.europeristat.com)

**TABLE 3.10**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
500-749	*	^	*	322.6	226.2	475.8	429.8	*
750-999	138	0.2	119	137.7	58.8	188.4	125.0	119
1000-1249	173	0.3	154	109.8	71.4	173.4	138.6	153
1250-1499	213	0.3	204	42.3	34.3	75.1	52.9	167
1500-1999	733	1.2	697	49.1	25.8	73.7	36.9	579
2000-2499	2,276	3.7	2,256	8.8	8.0	16.7	8.4	1,951
2500-2999	7,552	12.2	7,518	4.5	1.7	6.2	4.4	7,128
3000-3499	20,224	32.6	20,204	1.0	0.4	1.4	1.0	20,086
3500-3999	21,471	34.6	21,459	0.6	0.3	0.8	0.7	21,455
4000-4499	7,842	12.6	7,837	0.6	0.1	0.8	0.4	7,841
4500 and Over	1,322	2.1	1,320	1.5	-	1.5	1.5	1,322
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
500-749	*	^	*	402.2	200.0	521.7	469.9	*
750-999	100	0.2	83	170.0	48.2	210.0	150.5	100
1000-1249	124	0.2	107	137.1	102.8	225.8	179.5	124
1250-1499	126	0.2	118	63.5	25.4	87.3	72.6	126
1500-1999	458	0.8	426	69.9	35.2	102.6	53.0	458
2000-2499	1,624	2.7	1,606	11.1	10.6	21.6	10.6	1,624
2500-2999	6,663	11.2	6,630	5.0	1.7	6.6	4.7	6,663
3000-3499	19,962	33.4	19,943	1.0	0.4	1.4	1.0	19,962
3500-3999	21,438	35.9	21,426	0.6	0.3	0.8	0.7	21,438
4000-4499	*	^	*	0.6	0.1	0.8	0.4	*
4500 and Over	1,322	2.2	1,320	1.5	-	1.5	1.5	1,322
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
500-749	32	1.4	29	93.8	275.9	343.8	322.6	*
750-999	38	1.6	36	52.6	83.3	131.6	57.1	19
1000-1249	49	2.1	47	40.8	-	40.8	40.8	29
1250-1499	87	3.7	86	11.5	46.5	57.5	23.8	41
1500-1999	275	11.8	271	14.5	11.1	25.5	11.1	121
2000-2499	652	28.1	650	3.1	1.5	4.6	3.1	327
2500-2999	889	38.3	888	1.1	2.3	3.4	2.3	465
3000-3499	262	11.3	261	3.8	-	3.8	3.8	124
3500-3999	33	1.4	33	-	-	-	-	17
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	0	0.0	0	-	-	-	-	0
Not Stated	~	^	~	-	-	-	-	0
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

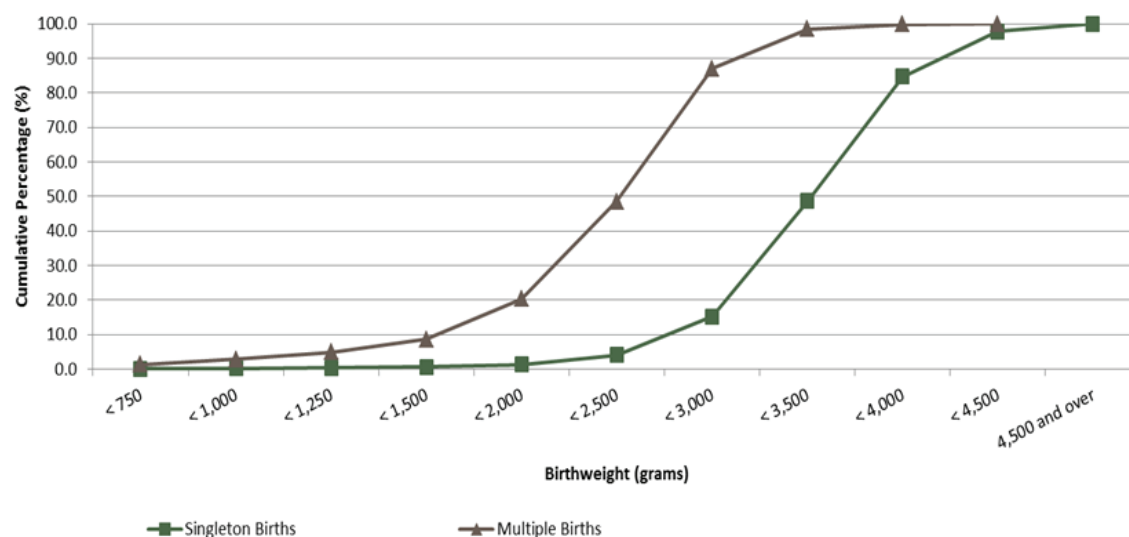
**Notes:**

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



**FIGURE 3.6**

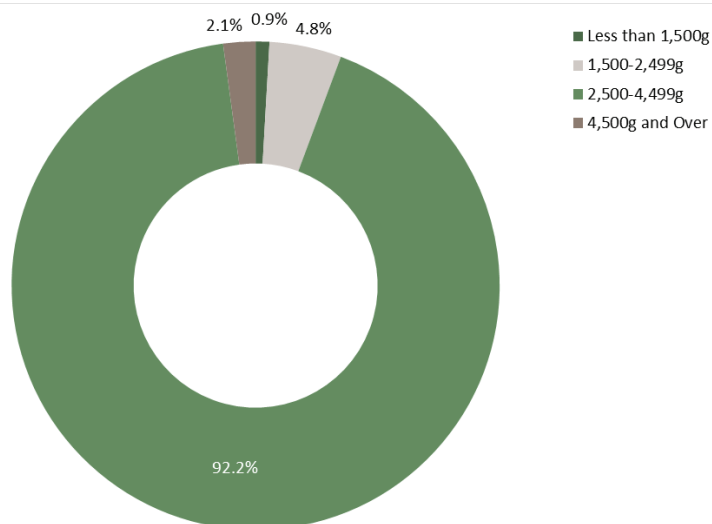
Birthweight: Cumulative Percentages of Total Live Births



Note: See Table 3.10 for data.

**FIGURE 3.7**

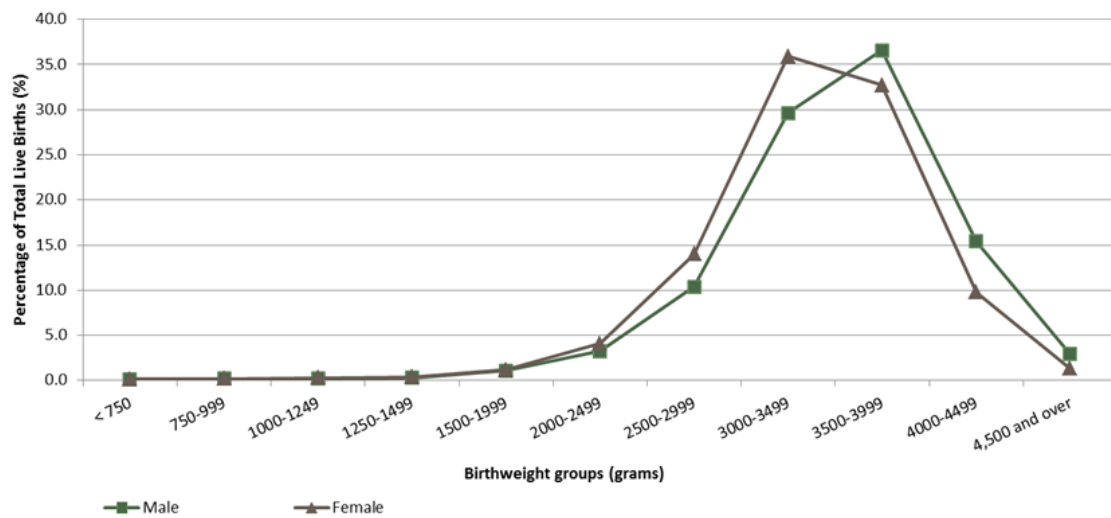
Percentage of Births by Birthweight Groups, Total Live Births



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 39.1 weeks. Live births reported an average gestational age of 39.0 weeks and stillbirths reported an average gestational age of 32.6 weeks. The average gestational age for singleton live births was 39.2 weeks compared with 35.4 weeks for live twin births and 32.0 weeks for higher-order multiple live births.

Table 3.11 presents data on gestational age.

- Almost 92 per cent of all babies were born at term (37 to 41 weeks).
- Preterm birth (born before 37 weeks) occurred in 6.7 per cent of live births (4.8 per cent for singleton births and 56.3 per cent for multiple births).

**TABLE 3.11**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Less than 28	250	0.4	197	212.0	162.4	340.0	297.9	223
28-31	490	0.8	455	71.4	30.8	100.0	77.4	405
32-36	3,550	5.7	3,494	15.8	8.6	24.2	12.0	3,006
37-41	56,975	91.8	56,905	1.2	0.5	1.8	1.2	56,471
42 and Over	783	1.3	781	2.6	1.3	3.8	2.6	783
Not Stated	22	0.0	22	-	-	-	-	22
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Less than 28	190	0.3	141	257.9	156.0	373.7	327.7	190
28-31	324	0.5	293	95.7	34.1	126.5	98.7	324
32-36	2,465	4.1	2,414	20.7	9.5	30.0	16.0	2,465
37-41	55,965	93.7	55,898	1.2	0.6	1.8	1.1	55,965
42 and Over	783	1.3	781	2.6	1.3	3.8	2.6	783
Not Stated	22	0.0	22	-	-	-	-	22
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Less than 28	60	2.6	56	66.7	178.6	233.3	206.9	33
28-31	166	7.2	162	24.1	24.7	48.2	36.6	81
32-36	1,085	46.7	1,080	4.6	6.5	11.1	2.8	541
37-41	1,010	43.5	1,007	3.0	-	3.0	3.0	506
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

Notes:

Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Birthweight tables by primiparous and multiparous women are provided in Appendix G, Tables G4 and G5.

## MONTH OF BIRTH

Table 3.12 presents data on the month of birth.

- Total births were fairly evenly spread throughout the year, with the lowest number of births occurring in February (7.7 per cent) and the highest occurring in August (8.7 per cent).
- August recorded the highest number of singleton births (8.8 per cent), while October recorded the highest number of multiple births (9.7 per cent) (see Figure 3.9).

**TABLE 3.12**

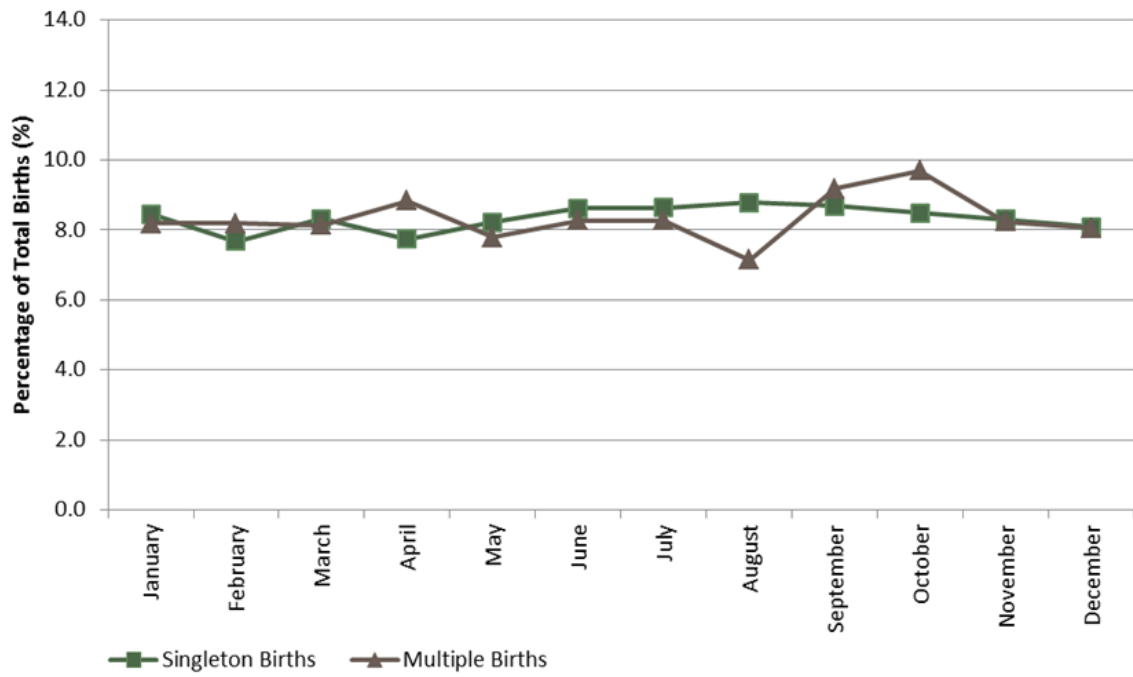
Month of Birth: Total Births, Live Births, Mortality Rates, and Maternities

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
January	5,238	8.4	5,213	4.8	0.8	5.5	4.0	5,143
February	4,772	7.7	4,748	5.0	1.3	6.3	5.2	4,678
March	5,160	8.3	5,143	3.3	2.9	6.2	4.7	5,066
April	4,826	7.8	4,818	1.7	1.2	2.9	1.9	4,723
May	5,089	8.2	5,068	4.1	2.6	6.7	3.5	4,998
June	5,343	8.6	5,331	2.2	1.5	3.7	2.2	5,247
July	5,352	8.6	5,328	4.5	2.3	6.7	4.1	5,258
August	5,411	8.7	5,394	3.1	1.9	5.0	3.9	5,329
September	5,406	8.7	5,386	3.7	2.0	5.7	4.3	5,298
October	5,299	8.5	5,280	3.6	2.1	5.7	3.2	5,187
November	5,153	8.3	5,140	2.5	1.2	3.7	2.1	5,056
December	5,021	8.1	5,005	3.2	1.2	4.4	2.8	4,927
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
January	5,048	8.4	5,025	4.6	0.6	5.2	3.8	5,048
February	4,582	7.7	4,561	4.6	1.1	5.7	4.6	4,582
March	4,971	8.3	4,954	3.4	2.6	6.0	4.6	4,971
April	4,621	7.7	4,614	1.5	1.1	2.6	1.7	4,621
May	4,908	8.2	4,890	3.7	1.6	5.3	2.7	4,908
June	5,151	8.6	5,140	2.1	1.4	3.5	2.3	5,151
July	5,160	8.6	5,138	4.3	2.1	6.4	4.1	5,160
August	5,245	8.8	5,229	3.1	1.3	4.4	3.2	5,245
September	5,193	8.7	5,174	3.7	1.9	5.6	4.1	5,193
October	5,074	8.5	5,057	3.4	1.4	4.7	2.6	5,074
November	4,962	8.3	4,949	2.6	1.2	3.8	2.2	4,962
December	4,834	8.1	4,818	3.3	1.0	4.3	2.9	4,834
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
January	190	8.2	188	10.5	5.3	15.8	10.6	95
February	190	8.2	187	15.8	5.3	21.1	21.1	96
March	189	8.1	189	-	10.6	10.6	5.3	95
April	205	8.8	204	4.9	4.9	9.8	4.9	102
May	181	7.8	178	16.6	28.1	44.2	28.1	90
June	192	8.3	191	5.2	5.2	10.4	-	96
July	192	8.3	190	10.4	5.3	15.6	5.3	98
August	166	7.2	165	6.0	18.2	24.1	24.1	84
September	213	9.2	212	4.7	4.7	9.4	9.4	105
October	225	9.7	223	8.9	17.9	26.7	17.9	113
November	191	8.2	191	-	-	-	-	94
December	187	8.1	187	-	5.3	5.3	-	93
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

Notes: Percentage column is subject to rounding.

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

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



Note: See Table 3.12 for data.



# SECTION FOUR

## PERINATAL CARE

## INTRODUCTION

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

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

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



## TYPE OF ANTENATAL CARE

Table 4.1 presents type of antenatal care.

- The preferred choice of antenatal care was combined hospital and G.P., which accounted for 81.3 per cent of total maternities.
- Hospital/Obstetrician care was more common for maternities delivering multiple births (33.0 per cent) than those delivering singleton births (18.0 per cent).

**TABLE 4.1**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Hospital/Obstetrician	11,551	18.6	11,502	4.2	2.7	6.9	4.3	11,167
General Practitioner only	135	0.2	133	14.8	-	14.8	-	134
Hospital & G.P. combined	50,294	81.0	50,130	3.3	1.5	4.7	3.2	49,520
None	82	0.1	81	12.2	37.0	48.8	48.8	81
Not Stated	8	0.0	8	-	125.0	125.0	125.0	8
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Hospital/Obstetrician	10,784	18.0	10,744	3.7	2.5	6.2	4.0	10,784
General Practitioner only	*	^	*	15.2	-	15.2	-	*
Hospital & G.P. combined	48,745	81.6	48,588	3.2	1.2	4.4	3.0	48,745
None	*	^	*	12.5	25.3	37.5	37.5	*
Not Stated	8	0.0	8	-	125.0	125.0	125.0	8
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Hospital/Obstetrician	767	33.0	758	11.7	5.3	16.9	7.9	383
General Practitioner only	~	^	~	-	-	-	-	~
Hospital & G.P. combined	1,549	66.7	1,542	4.5	10.4	14.8	11.0	775
None	~	^	~	-	500.0	500.0	500.0	~
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

**Notes:**

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

## DURATION OF PREGNANCY AT FIRST ANTENATAL VISIT

Table 4.2 presents the time of first antenatal visit.

- Almost 70 per cent of total maternities recorded their first antenatal visit within the first 12 weeks of pregnancy.
- Maternities recording a first antenatal visit at 20 weeks and over accounted for 4.9 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 <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0-12	43,321	69.8	43,182	3.2	1.3	4.5	3.0	42,515
13-19	14,554	23.4	14,508	3.2	1.7	4.8	3.1	14,300
20 and over	3,039	4.9	3,016	7.6	6.6	14.1	9.6	2,965
Not Stated	1,156	1.9	1,148	6.9	6.1	13.0	10.4	1,130
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
0-12	41,712	69.8	41,584	3.1	1.1	4.2	2.8	41,712
13-19	14,039	23.5	13,995	3.1	1.2	4.3	2.9	14,039
20 and over	2,892	4.8	2,872	6.9	5.6	12.4	8.0	2,892
Not Stated	1,106	1.9	1,098	7.2	6.4	13.6	10.9	1,106
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
0-12	1,609	69.3	1,598	6.8	6.3	13.1	8.1	803
13-19	515	22.2	513	3.9	13.6	17.5	9.8	261
20 and over	147	6.3	144	20.4	27.8	47.6	41.1	73
Not Stated	50	2.2	50	-	-	-	-	24
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Although 81.0 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 34.7 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

- 97.2 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 <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Booked	60,183	97.2	59,979	3.4	1.5	4.9	3.2	59,056
Not Booked	1,691	2.7	1,679	7.1	10.1	17.1	12.5	1,658
Not Stated	28	0.0	28	-	35.7	35.7	35.7	28
<b>Total</b>	<b>61,902</b>	<b>100</b>	<b>61,686</b>	<b>3.5</b>	<b>1.8</b>	<b>5.2</b>	<b>3.5</b>	<b>60,742</b>
<b>Singleton Births</b>								
Booked	57,930	97.2	57,740	3.3	1.3	4.5	3.1	57,930
Not Booked	1,623	2.7	1,613	6.2	8.1	14.2	9.3	1,623
Not Stated	28	0.0	28	-	35.7	35.7	35.7	28
<b>Total</b>	<b>59,581</b>	<b>100</b>	<b>59,381</b>	<b>3.4</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,581</b>
<b>Multiple Births</b>								
Booked	2,253	97.1	2,239	6.2	7.6	13.8	8.0	1,126
Not Booked	68	2.9	66	29.4	60.6	88.2	88.2	35
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Domiciliary births, of which there were 168, are excluded from this table. See Appendix H for detailed analysis.

## MOTHER'S ANTENATAL LENGTH OF STAY

The average antenatal length of stay was less than one day (0.8 days) for singleton births and 2.1 days for multiple births.

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

- 88.7 per cent of singleton births and 76.7 per cent of multiple births were delivered within a day of mother's admission to hospital.
- For total births, 2.0 per cent were delivered more than 5 days after mother's admission to hospital.

**TABLE 4.4**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0-1 Days	54,602	88.2	54,429	3.2	1.5	4.7	3.1	53,713
2 Days	4,044	6.5	4,023	5.2	1.7	6.9	4.5	3,964
3-5 Days	1,940	3.1	1,927	6.7	3.6	10.3	7.8	1,865
6-8 Days	466	0.8	464	4.3	8.6	12.9	8.6	426
9-11 Days	227	0.4	223	17.6	4.5	22.0	17.7	205
12-14 Days	147	0.2	145	13.6	13.8	27.2	27.2	132
More than 2 Weeks	427	0.7	426	2.3	11.7	14.1	4.7	388
Not Stated	49	0.1	49	-	20.4	20.4	20.4	49
<b>Total</b>	<b>61,902</b>	<b>100</b>	<b>61,686</b>	<b>3.5</b>	<b>1.8</b>	<b>5.2</b>	<b>3.5</b>	<b>60,742</b>
<b>Singleton Births</b>								
0-1 Days	52,822	88.7	52,660	3.1	1.3	4.4	2.9	52,822
2 Days	3,881	6.5	3,864	4.4	1.6	5.9	3.9	3,881
3-5 Days	1,793	3.0	1,780	7.3	2.8	10.0	7.3	1,793
6-8 Days	388	0.7	386	5.2	-	5.2	5.2	388
9-11 Days	181	0.3	177	22.1	5.6	27.6	22.2	181
12-14 Days	118	0.2	117	8.5	17.1	25.4	25.4	118
More than 2 Weeks	349	0.6	348	2.9	11.5	14.3	5.8	349
Not Stated	49	0.1	49	-	20.4	20.4	20.4	49
<b>Total</b>	<b>59,581</b>	<b>100</b>	<b>59,381</b>	<b>3.4</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,581</b>
<b>Multiple Births</b>								
0-1 Days	1,780	76.7	1,769	6.2	7.3	13.5	9.0	891
2 Days	163	7.0	159	24.5	6.3	30.7	18.6	83
3-5 Days	147	6.3	147	-	13.6	13.6	13.6	72
6-8 Days	78	3.4	78	-	51.3	51.3	26.3	38
9-11 Days	46	2.0	46	-	-	-	-	24
12-14 Days	29	1.2	28	34.5	-	34.5	34.5	14
More than 2 Weeks	78	3.4	78	-	12.8	12.8	0.0	39
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

Notes: Percentage column is subject to rounding.

- a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Domiciliary births, of which there were 168, are excluded from this table. See Appendix H for detailed analysis.

## MOTHER'S POSTNATAL LENGTH OF STAY

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

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

- 53.1 per cent of maternities delivering singleton births remained in hospital for up to 2 days following delivery, compared to 11.9 per cent of maternities delivering multiple births.
- For total maternities, 44.3 per cent of singleton births and 73.0 per cent of multiple births were discharged 3 to 5 days post delivery.
- 2.7 per cent of total maternities had a postnatal length of stay of 6 or more days (2.5 per cent of singleton births and 14.8 per cent of multiple births).

**TABLE 4.5**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
0-1 Days	13,364	21.6	13,265	7.4	1.6	9.0	6.5	13,344
2 Days	18,529	29.9	18,478	2.8	1.1	3.9	2.6	18,410
3-5 Days	28,065	45.3	28,011	1.9	1.9	3.8	2.3	27,222
6-8 Days	1,551	2.5	1,540	7.1	7.8	14.8	10.4	1,398
9-11 Days	212	0.3	212	-	-	-	-	198
12-14 Days	41	0.1	40	24.4	-	24.4	24.4	37
More than 2 Weeks	39	0.1	39	-	-	-	-	36
Not Stated	101	0.2	101	-	19.8	19.8	10.0	97
<b>Total</b>	<b>61,902</b>	<b>100</b>	<b>61,686</b>	<b>3.5</b>	<b>1.8</b>	<b>5.2</b>	<b>3.5</b>	<b>60,742</b>
<b>Singleton Births</b>								
0-1 Days	13,324	22.4	13,226	7.4	1.4	8.7	6.2	13,324
2 Days	18,292	30.7	18,242	2.7	1.0	3.8	2.5	18,292
3-5 Days	26,375	44.3	26,330	1.7	1.5	3.2	2.0	26,375
6-8 Days	1,247	2.1	1,241	4.8	7.3	12.0	8.1	1,247
9-11 Days	183	0.3	183	-	-	-	-	183
12-14 Days	*	^	*	30.3	-	30.3	30.3	*
More than 2 Weeks	*	^	*	-	-	-	-	*
Not Stated	*	^	*	-	21.5	21.5	10.9	*
<b>Total</b>	<b>59,581</b>	<b>100</b>	<b>59,381</b>	<b>3.4</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,581</b>
<b>Multiple Births</b>								
0-1 Days	40	1.7	39	25.0	76.9	100.0	100.0	20
2 Days	237	10.2	236	4.2	8.5	12.7	12.7	118
3-5 Days	1,690	72.8	1,681	5.3	7.7	13.0	6.6	847
6-8 Days	304	13.1	299	16.4	10.0	26.3	19.9	151
9-11 Days	29	1.2	29	-	-	-	-	15
12-14 Days	*	^	*	-	-	-	-	~
More than 2 Weeks	~	^	~	-	-	-	-	~
Not Stated	*	^	*	-	-	-	-	~
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

Notes:

Percentage column is subject to rounding.

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

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

^ Percentage not provided to prevent disclosure of small numbers.

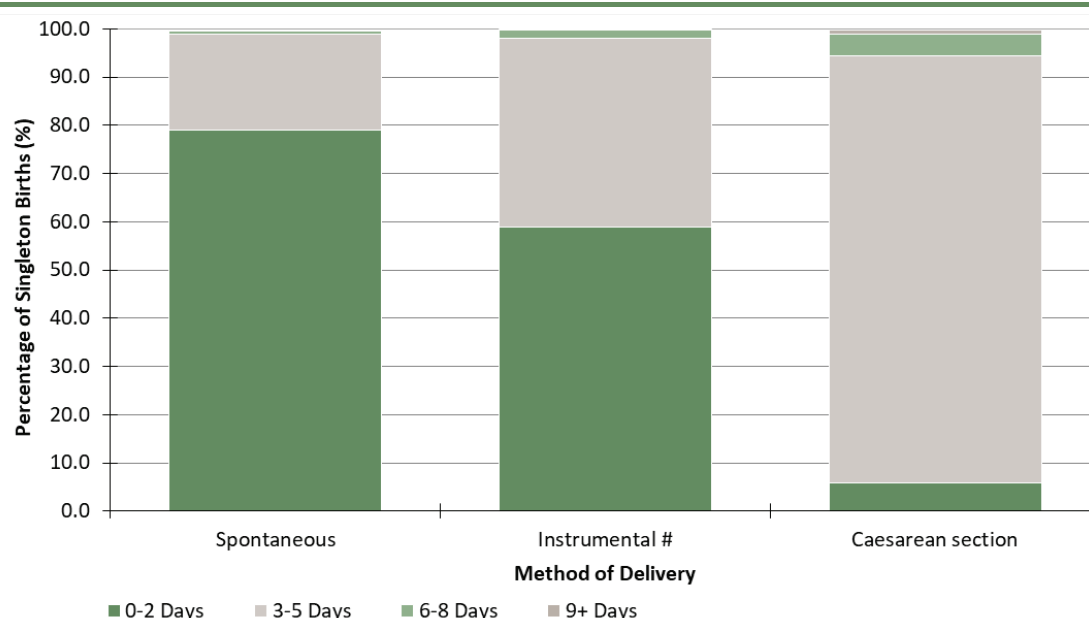
a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births.

Domiciliary births, of which there were 168, are excluded from this table. See Appendix H for detailed analysis.

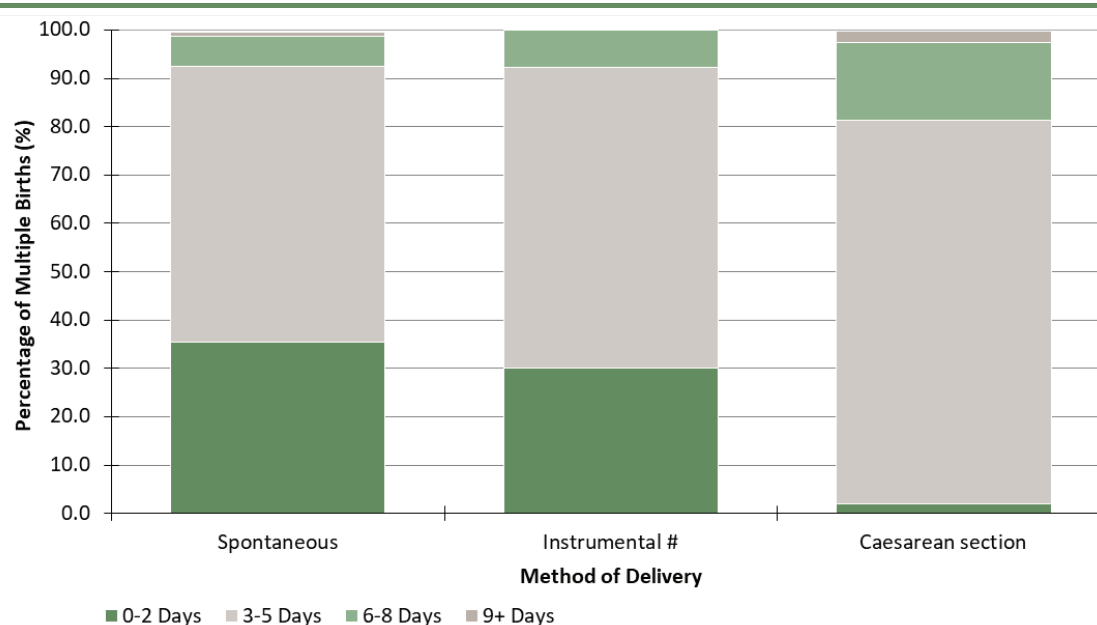
Figures 4.1 and 4.2 present data on mother's postnatal length of stay by method of delivery for singleton and multiple births.

- The postnatal length of stay for mothers differed by method of delivery and plurality.
- Mother's postnatal length of stay was 2 days or less for 79.1 per cent of singleton spontaneous deliveries compared to 35.4 per cent of multiple spontaneous deliveries.
- For Caesarean section deliveries, mother's postnatal length of stay was greater than 6 days for 5.5 per cent of singleton deliveries compared to 18.4 per cent for multiple deliveries.

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



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



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

## RUBELLA: IMMUNE STATUS OF MOTHER

The rubella immune status of the mother is presented in Table 4.6, 90.9 per cent of total maternities were rubella immune.<sup>26</sup>

**TABLE 4.6**

Rubella: Immune Status of Mother, Numbers and Percentages

Rubella Immunity	Number of Maternities	Per Cent
<b>Total Births</b>		
Immune	55,340	90.9
Not Immune	3,732	6.1
Not known	1,838	3.0
<b>Total</b>	<b>60,910</b>	<b>100</b>
<b>Singleton Births</b>		
Immune	54,263	90.8
Not Immune	3,686	6.2
Not known	1,800	3.0
<b>Total</b>	<b>59,749</b>	<b>100</b>
<b>Multiple Births</b>		
Immune	1,077	92.8
Not Immune	46	4.0
Not known	38	3.3
<b>Total</b>	<b>1,161</b>	<b>100</b>

Note: Percentage column is subject to rounding.

## METHOD OF DELIVERY<sup>27</sup>

### METHOD OF DELIVERY BY BIRTHS AND PLURALITY

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

- There were 20,276 live births delivered by Caesarean section, representing 32.8 per cent of total live births (31.4 per cent of live singleton births, and 68.5 per cent of live multiple births).
- 52.5 per cent of total live births delivered spontaneously (53.7 per cent of live singleton births and 21.3 per cent of live multiple births) (see Figure 4.3).
- Over 14 per cent of total live births were born by instrumental delivery (either breech/forceps, forceps or vacuum extraction) with higher percentages for live singleton births (14.8 per cent) compared with live multiple births (10.1 per cent).

<sup>26</sup> For further discussion and analysis on this issue see O'Dwyer V, Bonham S, Mulligan A, O'Connor C, Farah N, Kennelly MM, Turner MJ. *Antenatal rubella immunity in Ireland*. IMJ 2013;106:232-5

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

TABLE 4.7a

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

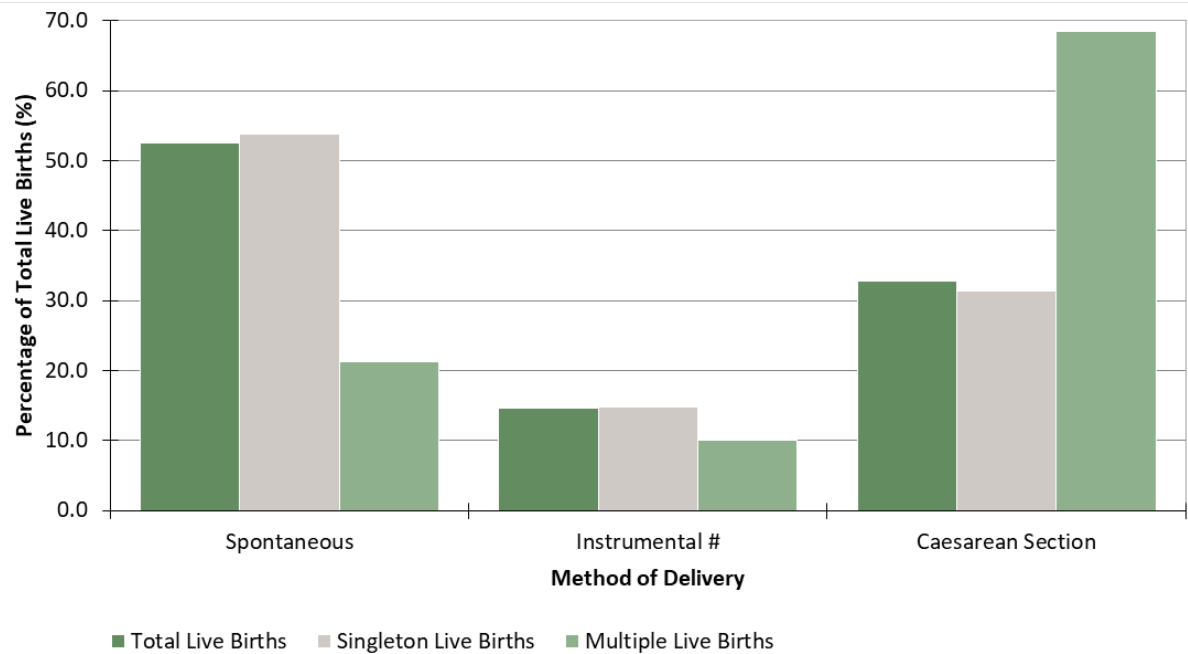
	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Spontaneous	32,642	52.6	32,492	4.6	1.2	5.8	4.3	32,423
Breech / Forceps	302	0.5	276	86.1	21.7	106.0	62.5	236
Forceps	2,195	3.5	2,194	0.5	0.9	1.4	0.9	2,181
Vacuum extraction	6,578	10.6	6,572	0.9	0.6	1.5	1.1	6,523
Caesarean section	20,309	32.7	20,276	1.6	2.7	4.3	2.5	19,504
Other specified & combined <sup>b</sup>	*	^	*	-	-	-	-	*
Not Stated	~	^	~	-	500.0	500.0	500.0	~
<b>Total</b>	<b>62,070</b>	<b>100</b>	<b>61,854</b>	<b>3.5</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>	<b>60,910</b>
<b>Singleton Births</b>								
Spontaneous	32,148	53.8	32,000	4.6	1.0	5.6	4.1	32,148
Breech / Forceps	*	^	*	110.1	24.8	132.2	75.1	*
Forceps	2,155	3.6	2,154	0.5	0.9	1.4	0.9	2,155
Vacuum extraction	6,460	10.8	6,454	0.9	0.5	1.4	1.1	6,460
Caesarean section	18,717	31.3	18,697	1.1	2.3	3.4	1.9	18,717
Other specified & combined <sup>b</sup>	*	^	*	-	-	-	-	*
Not Stated	~	^	~	-	500.0	500.0	500.0	~
<b>Total</b>	<b>59,749</b>	<b>100</b>	<b>59,549</b>	<b>3.3</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>	<b>59,749</b>
<b>Multiple Births</b>								
Spontaneous	494	21.3	492	4.0	14.2	18.2	16.2	275
Breech / Forceps	*	^	*	13.3	13.5	26.7	26.7	*
Forceps	40	1.7	40	-	-	-	-	26
Vacuum extraction	118	5.1	118	-	8.5	8.5	-	63
Caesarean section	1,592	68.6	1,579	8.2	7.6	15.7	8.9	787
Other specified & combined <sup>b</sup>	~	^	~	-	-	-	-	~
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>2,321</b>	<b>100</b>	<b>2,305</b>	<b>6.9</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>	<b>1,161</b>

**Notes:**

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



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



Notes: See Table 4.7a for data.  
# 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 59.6 per cent for mothers aged less than 20 years compared to 40.8 per cent to mothers aged 40 years and over.
- Caesarean section rates ranged from 19.4 per cent for mothers aged less than 20 years to 49.6 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	637 59.6	3,003 58.4	6,121 56.7	11,442 52.7	9,675 50.9	1,764 40.8	32,642 52.6
Breech/Forceps	9 0.8	* ^	52 0.5	121 0.6	83 0.4	* ^	302 0.5
Forceps	42 3.9	210 4.1	423 3.9	856 3.9	559 2.9	105 2.4	2,195 3.5
Vacuum extraction	174 16.3	684 13.3	1,233 11.4	2,501 11.5	1,691 8.9	295 6.8	6,578 10.6
Caesarean section	207 19.4	1,218 23.7	2,961 27.4	6,785 31.2	6,987 36.8	2,148 49.6	20,306 32.7
Other specified & combined <sup>a</sup>	0 0.0	~ ^	12 0.1	16 0.1	11 0.1	~ ^	42 0.1
<b>Total</b>	<b>1,069 100</b>	<b>5,139 100</b>	<b>10,802 100</b>	<b>21,721 100</b>	<b>19,006 100</b>	<b>4,328 100</b>	<b>62,065 100</b>

Notes: Percentage columns are subject to rounding.

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

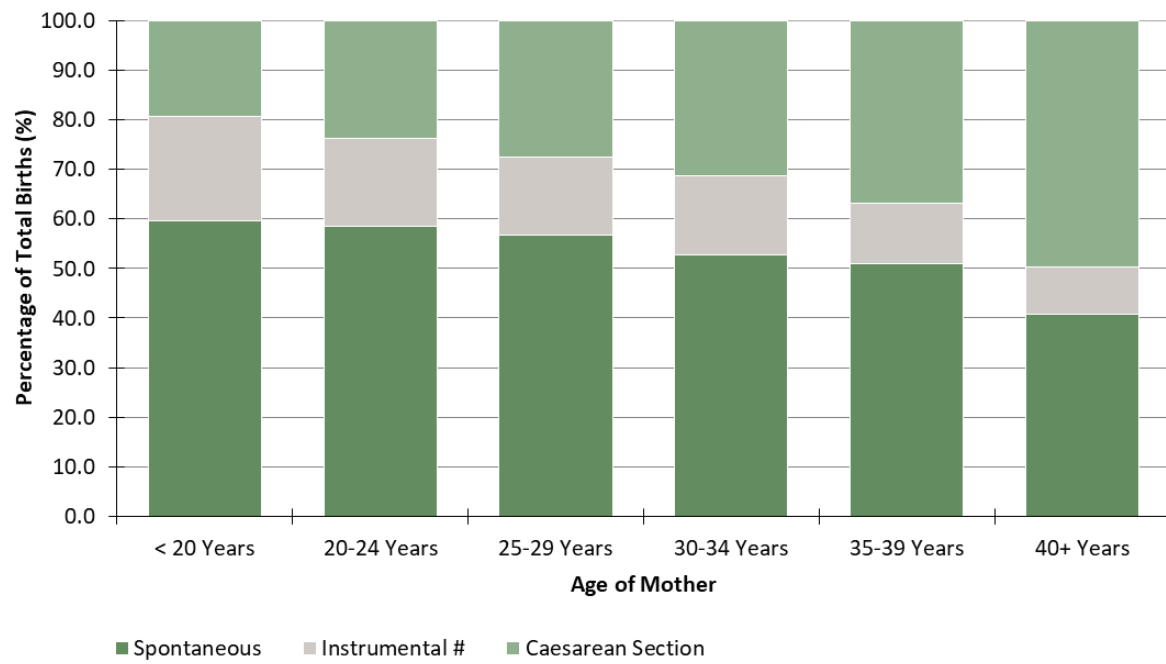
\* Further suppression required to prevent disclosure of five or fewer births (or maternities).

^ Percentage not provided to prevent disclosure of small numbers.

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

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

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



Notes: See Table 4.7b for data.  
# 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.

- Just over one quarter (25.7 per cent) of total births took place in 10 maternity units accommodating between 1,000 and 1,999 births each annually.
- Three maternity units each accommodated 8,000 or more births, accounting for 40.7 per cent of total births (see Figure 4.5).

**TABLE 4.8**

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

	Number of Units <sup>#</sup>	Total Births	Total Births %	Live Births	Stillbirths	Stillbirth Rate <sup>a</sup>	Early Neonatal Deaths	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>
Less than 999	1	981	1.6	972	9	9.2	~	^	12.2	10.2
1000-1999	10	15,889	25.7	15,841	48	3.0	14	0.9	3.9	2.9
2000-2999	2	4,968	8.0	4,946	22	4.4	6	1.2	5.6	4.2
3000-3999	1	3,059	4.9	3,053	6	2.0	~	^	3.3	2.3
4000-4999	1	4,424	7.1	4,413	11	2.5	8	1.8	4.3	2.5
7000-7999	1	7,387	11.9	7,362	25	3.4	12	1.6	5.0	3.8
8000 and Over	3	25,194	40.7	25,099	95	3.8	61	2.4	6.2	3.7
<b>Total</b>	<b>19</b>	<b>61,902</b>	<b>100</b>	<b>61,686</b>	<b>216</b>	<b>3.5</b>	<b>108</b>	<b>1.8</b>	<b>5.2</b>	<b>3.5</b>

Notes: Percentage column is subject to rounding.

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

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

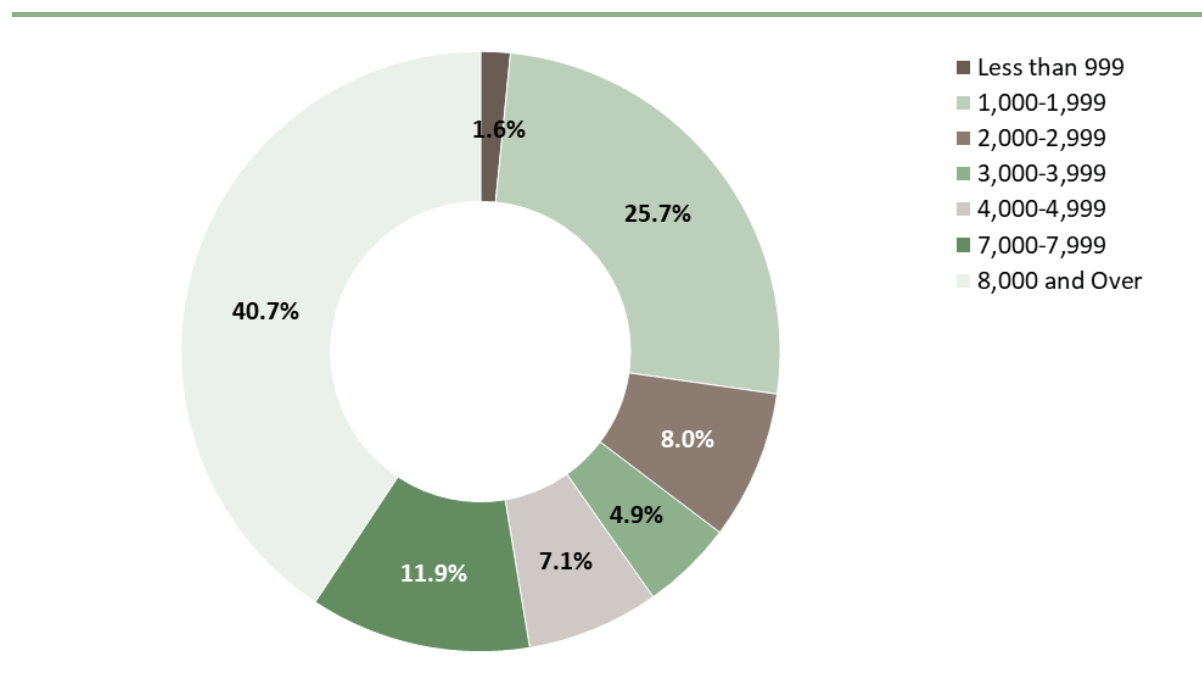
^ Rate not provided to prevent disclosure of small numbers.

a Rates are calculated per 1,000 births. For stillbirths, perinatal deaths and adjusted perinatal deaths, rates are calculated on total live births and stillbirths. For early neonatal deaths, rates are calculated on total live births. Domiciliary births, of which there were 168, are excluded from this table. See Appendix H for detailed analysis.

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

**FIGURE 4.5**

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



Notes: See Table 4.8 for data. The size of the maternity unit refers to the number of live births and stillbirths occurring in 2017.

## INTER-HOSPITAL TRANSFER OF INFANTS

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

- Over 96 per cent of infants remained in the hospital in which they were born until they were discharged.
- 3.0 per cent of multiple births were transferred to another hospital for medical reasons.

**TABLE 4.9**

Inter-Hospital Transfer of Infants

	Live Births	Per Cent Live Births
<b>Total Births</b>		
Transferred	442	0.7
Not Transferred	59,450	96.4
Not Stated	1,794	2.9
<b>Total</b>	<b>61,686</b>	<b>100</b>
<b>Singleton Births</b>		
Transferred	374	0.6
Not Transferred	57,289	96.5
Not Stated	1,718	2.9
<b>Total</b>	<b>59,381</b>	<b>100</b>
<b>Multiple Births</b>		
Transferred	68	3.0
Not Transferred	2,161	93.8
Not Stated	76	3.3
<b>Total</b>	<b>2,305</b>	<b>100</b>

*Notes:* Percentage column is subject to rounding.  
Domiciliary births, of which there were 168, are excluded from this table. See Appendix H for detailed analysis.

## INFANT'S LENGTH OF STAY

The mean length of stay for infants was 3.3 days. When analysed by birth weight, low birthweight babies (weighing less than 2,500 grams) recorded a mean length of stay of 14.1 days, while babies weighing 2,500 grams and over reported a mean length of stay of 2.7 days. Preterm births (born before 37 weeks) reported a mean length of stay of 12.6 days while babies born at term reported a mean length of stay of 2.7 days. Over 95 per cent of infants were discharged home within the perinatal period (before the 7<sup>th</sup> day of life).

Table 4.10 presents data relating to infant's length of stay in hospital.

- 52.0 per cent of singleton live births were discharged from hospital within 2 days, compared to just 10.0 per cent of multiple live births (see Figure 4.6).
- Over 94 per cent of singleton live births were discharged from hospital within 5 days of birth, compared to 64.7 per cent of multiple live births.
- 5.9 per cent of total live births had a length of stay of 6 or more days (4.8 per cent for singleton live births compared to 34.6 per cent for multiple births).

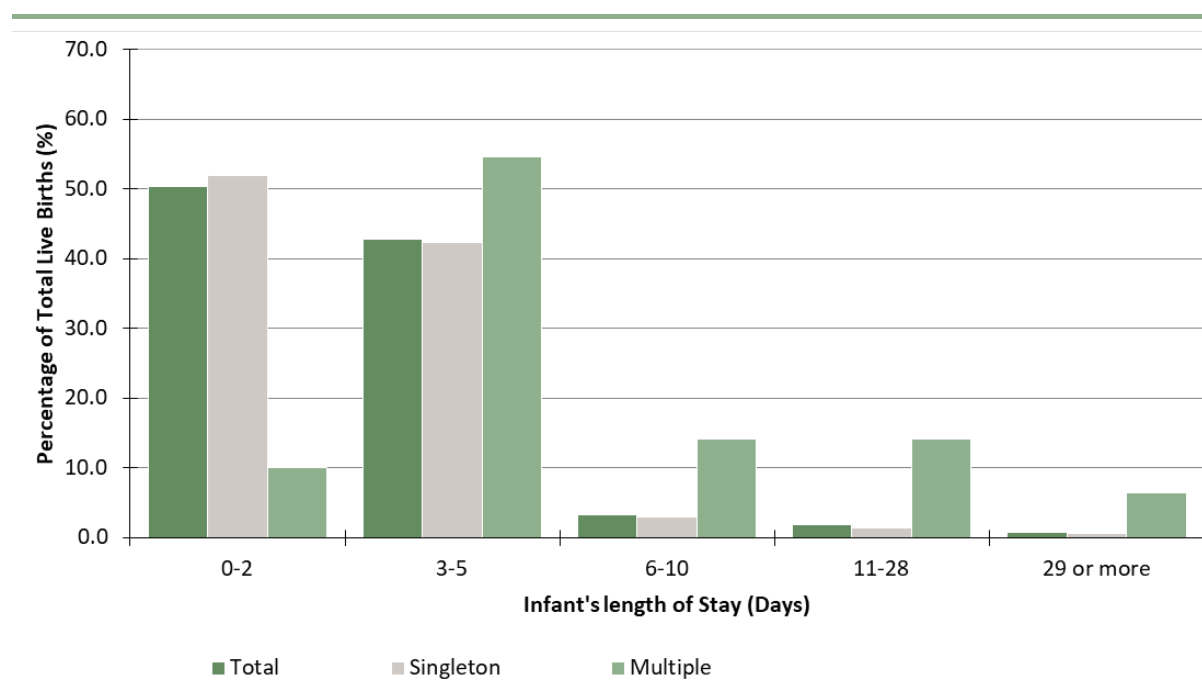
**TABLE 4.10**

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

	Live Births	Per Cent Live Births
<b>Total Births</b>		
0-2 Days	31,035	50.4
3-5 Days	26,329	42.8
6-10 Days	2,038	3.3
11-28 Days	1,129	1.8
29 Days or more	490	0.8
Not Stated	557	0.9
<b>Total</b>	<b>61,578</b>	<b>100</b>
<b>Singleton Births</b>		
0-2 Days	30,807	52.0
3-5 Days	25,080	42.3
6-10 Days	1,717	2.9
11-28 Days	806	1.4
29 Days or more	343	0.6
Not Stated	541	0.9
<b>Total</b>	<b>59,294</b>	<b>100</b>
<b>Multiple Births</b>		
0-2 Days	228	10.0
3-5 Days	1,249	54.7
6-10 Days	321	14.1
11-28 Days	323	14.1
29 Days or more	147	6.4
Not Stated	16	0.7
<b>Total</b>	<b>2,284</b>	<b>100</b>

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.<sup>28</sup>

- At 48.3 per cent, a higher proportion of total births were breastfed compared to 39.7 per cent reporting artificial feeding.
- Artificial and combined feeding was more common for multiple births (44.7 per cent and 22.2 per cent respectively) compared to singleton births (39.5 per cent and 11.0 per cent respectively), while breastfeeding was more common for singleton births (48.9 per cent for singleton births compared to 31.1 per cent for multiple births).
- Breastfeeding rates generally increased with mothers age. 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 53.4 per cent (see Figure 4.7).
- Just over one-fifth (21.3 per cent) of infants born to mothers aged under 20 years were exclusively breastfed.

<sup>28</sup> Throughout this section, discussion of breastfeeding refers to exclusive breastfeeding only.



TABLE 4.11

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

Frequency Row Per Cent Col. Per Cent	Total Births				Type of Feeding						Multiple Births			
	Artificial	Breast	Combined	Not Stated	Total	Singleton Births			Total	Artificial	Breast	Combined	Not Stated	Total
						Artificial	Breast	Combined						
Under 20 Years	765 72.4 3.1	225 21.3 0.8	* ^ ^	* ^ ^	1,056 100.0 1.7	758 72.8 3.2	221 21.2 0.8	* ^ ^	1,041 100.0 1.8	7 46.7 0.7	~ ^ ^	~ ^ ^	0 0.0 0.0	15 100.0 0.7
20-24 Years	3,159 61.9 12.9	1,551 30.4 5.2	349 6.8 4.9	41 0.8 11.6	5,100 100.0 8.3	3,105 62.1 13.2	1,527 30.5 5.2	331 6.6 5.0	5,004 100.0 8.4	54 56.3 5.3	24 25.0 3.4	18 18.8 3.5	0 0.0 0.0	96 100.0 4.2
25-29 Years	5,106 47.5 20.8	4,446 41.3 14.9	1,144 10.6 16.2	61 0.6 17.3	10,757 100.0 17.4	4,931 47.2 21.0	4,356 41.7 15.0	1,097 10.5 16.7	10,438 100.0 17.6	175 54.9 17.1	90 28.2 12.7	47 14.7 9.3	7 2.2 16.3	319 100.0 14.0
30-34 Years	7,683 35.5 31.3	11,291 52.2 37.9	2,541 11.7 36.0	111 0.5 31.5	21,626 100.0 35.0	7,360 35.2 31.3	11,057 52.9 38.0	2,379 11.4 36.3	20,898 100.0 35.1	323 44.4 31.6	234 32.1 32.9	162 22.3 31.9	9 1.2 20.9	728 100.0 31.9
35-39 Years	6,349 33.6 25.9	10,097 53.4 33.9	2,353 12.4 33.3	109 0.6 31.0	18,908 100.0 30.6	6,011 33.3 25.6	9,822 54.4 33.8	2,149 11.9 32.8	18,069 100.0 30.4	338 40.3 33.1	275 32.8 38.7	204 24.3 40.2	22 2.6 51.2	839 100.0 36.7
40-44 Years	1,359 34.2 5.5	2,048 51.5 6.9	551 13.9 7.8	20 0.5 5.7	3,978 100.0 6.4	1,254 33.4 5.3	1,982 52.9 6.8	496 13.2 7.6	3,749 100.0 6.3	105 45.9 10.3	66 28.8 9.3	* ^ ^	~ ^ ^	229 100.0 10.0
45 Years and Over	104 32.7 0.4	145 45.6 0.5	* ^ ^	~ ^ ^	318 100.0 0.5	84 32.3 0.4	127 48.8 0.4	* ^ ^	260 100.0 0.4	20 34.5 2.0	* ^ ^	18 31.0 3.5	~ ^ ^	58 100.0 2.5
Total	24,525 39.7 100	29,803 48.3 100	7,063 11.4 100	352 0.6 100	61,743 100.0 100	23,503 39.5 100	29,092 48.9 100	6,555 11.0 100	59,459 100.0 100	1,022 44.7 100	711 31.1 100	508 22.2 100	43 1.9 100	2,284 100.0 100

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).

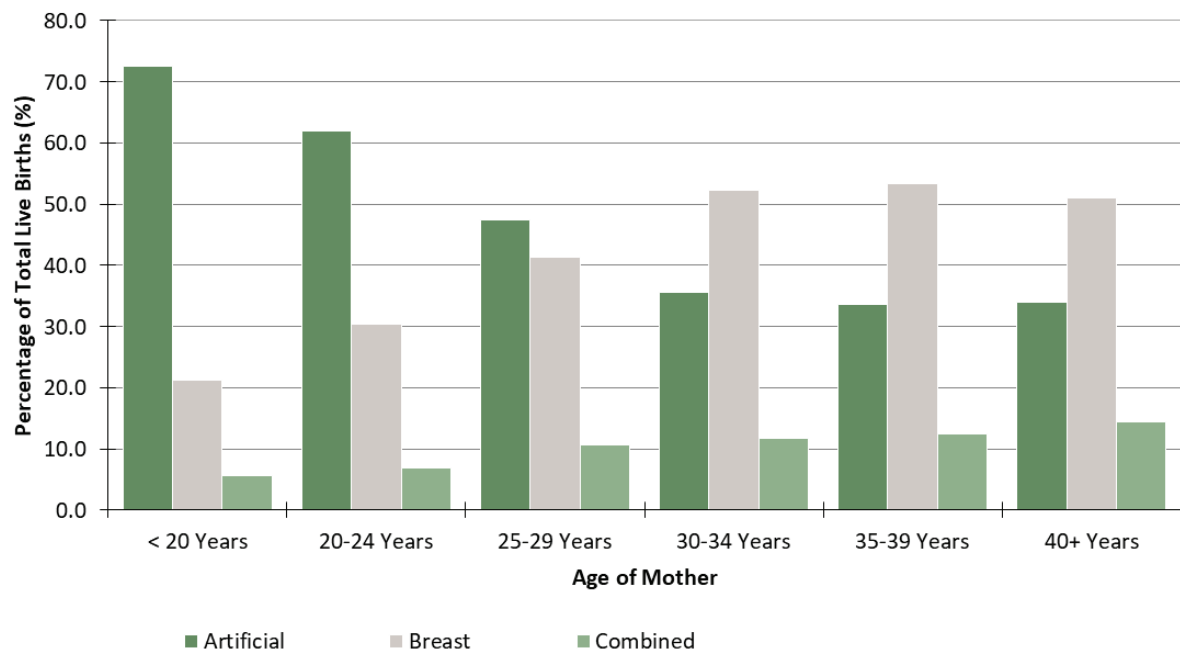
Percentage not provided to prevent disclosure of small numbers.

This table excludes early neonatal deaths.

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

**FIGURE 4.7**

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



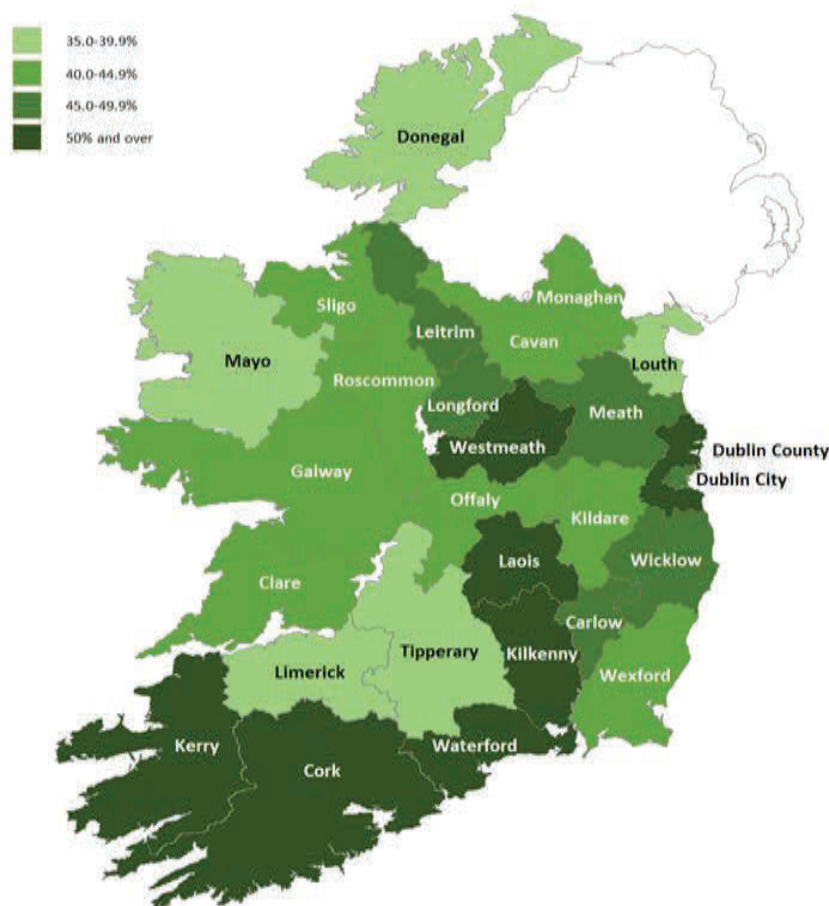
Note: See Table 4.11 for data.

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

- Infants born to mothers resident in Cork recorded the highest rate of breastfeeding at 63.2 per cent, with Kilkenny and Kerry reporting rates at 62.0 per cent and 57.7 per cent respectively.
- Other counties reporting exclusive breastfeeding rates higher than the national rate of 48.3 per cent include Waterford, Westmeath, Dublin County, Laois, Dublin City and Carlow.

**FIGURE 4.8**

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



Notes: See Appendix G, Table G10 for data.

Example: Of all live births to mothers resident in Westmeath, 53.4 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' (63.9 per cent) and 'lower professional' (61.5 per cent) socio-economic groups. Breastfeeding was least common among 'unemployed' mothers (28.5 per cent) (see Figure 4.9).
- Artificial feeding was most common among 'unemployed' mothers with a rate of 62.1 per cent, and mothers whose socio-economic group was recorded as 'home duties' (49.1 per cent).

**TABLE 4.12**

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

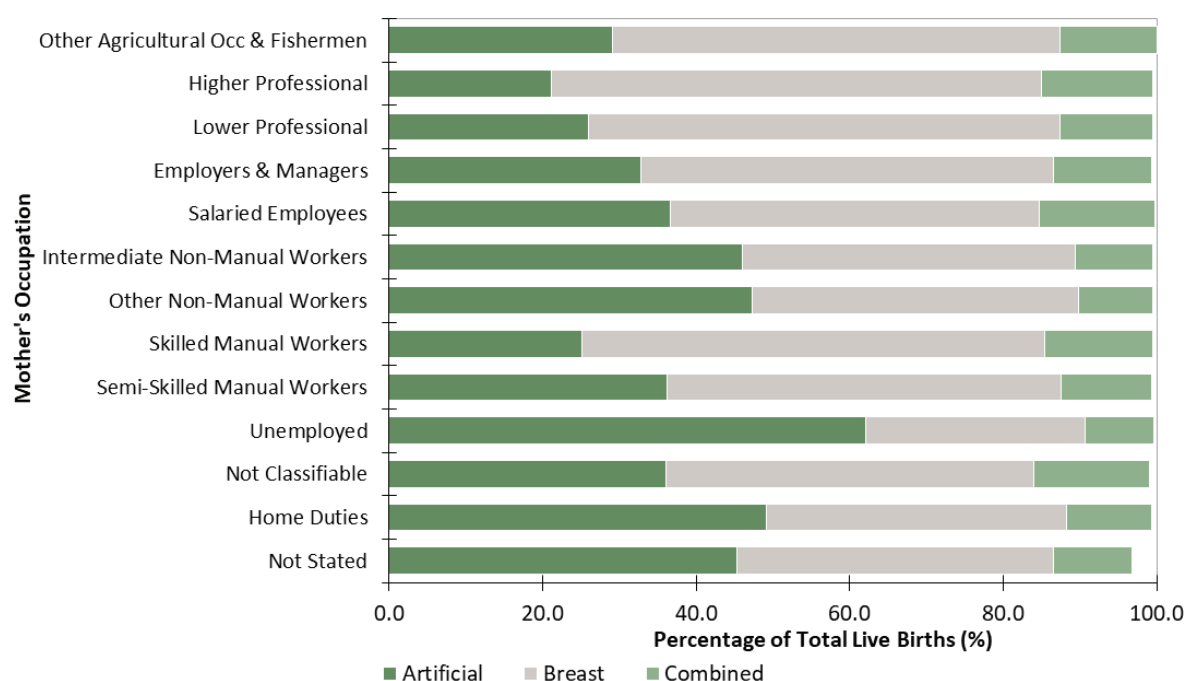
Frequency Row Per Cent	Type of Feeding				
	Artificial	Breast	Combined	Not Stated	Total
Farmers & Farm Managers	* ^	20 47.6	~ ^	0 0.0	42 100
Other Agricultural Occupations & Fishermen	30 29.1	60 58.3	13 12.6	0 0.0	103 100
Higher Professional	962 21.1	2,906 63.9	658 14.5	24 0.5	4,550 100
Lower Professional	3,188 25.9	7,560 61.5	1,492 12.1	62 0.5	12,302 100
Employers & Managers	1,480 32.8	2,422 53.7	573 12.7	33 0.7	4,508 100
Salaried Employees	247 36.6	325 48.1	* ^	~ ^	675 100
Intermediate Non-Manual Workers	5,249 46.0	4,937 43.3	1,161 10.2	58 0.5	11,405 100
Other Non-Manual Workers	4,186 47.3	3,755 42.4	861 9.7	44 0.5	8,846 100
Skilled Manual Workers	195 25.1	469 60.3	* ^	~ ^	778 100
Semi-Skilled Manual Workers	638 36.3	902 51.3	209 11.9	11 0.6	1,760 100
Unskilled Manual Workers	~ ^	8 53.3	~ ^	0 0.0	15 100
Unemployed	1,790 62.1	823 28.5	261 9.0	10 0.3	2,884 100
Not Classifiable	748 36.1	994 47.9	312 15.1	19 0.9	2,073 100
Home Duties	5,661 49.1	4,506 39.1	1,279 11.1	76 0.7	11,522 100
Not Stated	128 45.2	117 41.3	29 10.2	9 3.2	283 100
<b>Total</b>	<b>24,526 39.7</b>	<b>29,804 48.3</b>	<b>7,064 11.4</b>	<b>352 0.6</b>	<b>61,746 100</b>

**Notes:**

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

**FIGURE 4.9**

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



Notes: See Table 4.12 for data.

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

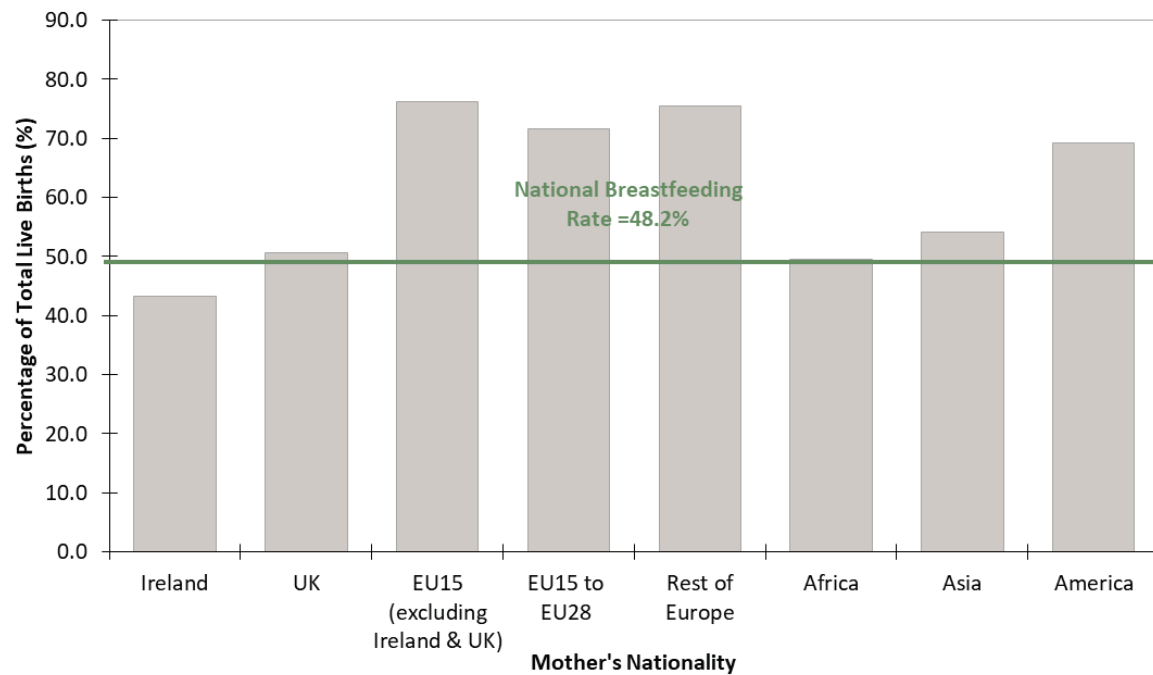
Figure 4.10 presents the rate of exclusive breastfeeding by mother's nationality.<sup>29</sup>

- At 43.3 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 76.2 per cent.
- Births to mothers from EU15 to EU28 and the Rest of Europe each recorded breastfeeding percentages of more than 70 per cent.
- Breastfeeding rates are reported at 50.6 per cent for mothers from the UK, 49.5 per cent for mothers from Africa and 54.2 per cent for mothers from Asia, while mothers from America reported a breastfeeding rate of 69.1 per cent.

<sup>29</sup> For further discussion and analysis on this issue see Brick, A. & Nolan, A. (2014) Maternal country of birth differences in breastfeeding at hospital discharge in Ireland. *The Economic and Social Review*, 45(4), 455-484 and Brick, A. & Nolan, A. (2014) Explaining the increase in breastfeeding at hospital discharge in Ireland, 2004–2010. *Irish Journal of Medical Science*, 183(3), 333-339.

**FIGURE 4.10**

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



Notes: See Appendix G, Table G11 for data.

Categories where percentages 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 classified and reported on using the International Classification of Diseases (ICD-10) and the associated guidelines as set out by the WHO for mortality coding in ICD-10.<sup>30</sup> A detailed description of the cause of death classification and the coding rules applied is available in Appendix D.

Of the 62,070 births reported in 2017, 216 were stillbirths and 108 were early neonatal deaths, giving a total of 324 perinatal deaths and a perinatal mortality rate of 5.2 per 1,000 live births and stillbirths.

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

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

## MORTALITY BY BIRTHWEIGHT AND PARITY

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

- Just over 69 per cent of total perinatal deaths weighed less than 2,500 grams, 66.4 per cent for primiparous women and 71.1 per cent for multiparous women (see Figure 5.1).
- The perinatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 60.5 per 1,000 live births and stillbirths (52.5 per 1,000 for primiparous women and 68.1 per 1,000 for multiparous women).
- The early neonatal mortality rate for low birthweight babies (weighing less than 2,500 grams) was 22.2 per 1,000 live births (15.2 per 1,000 for primiparous women and 28.8 per 1,000 for multiparous women).
- The stillbirth rate for low birthweight babies (weighing less than 2,500 grams) was 39.2 per 1,000 live births and stillbirths (37.8 per 1,000 for primiparous women and 40.4 per 1,000 for multiparous women).
- For births weighing 2,500 grams or more, the perinatal mortality rate was 1.7 per 1,000 live births and stillbirths (2.1 for primiparous women and 1.4 for multiparous women).
- Higher perinatal mortality rates for all births were recorded for births less than 1,500 grams at 202.8 per 1,000 live births and stillbirths and an adjusted perinatal mortality rate of 161.2 per 1,000 live births and stillbirths (see Figure 5.2).

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

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

<sup>32</sup> Figures presented in this section exclude cases for which parity was unknown.



TABLE 5.1

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

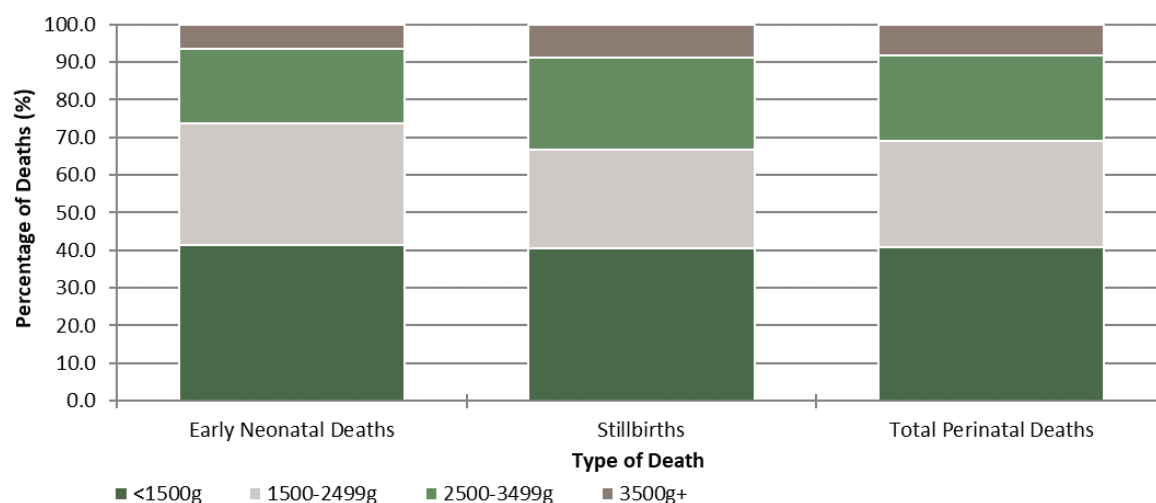
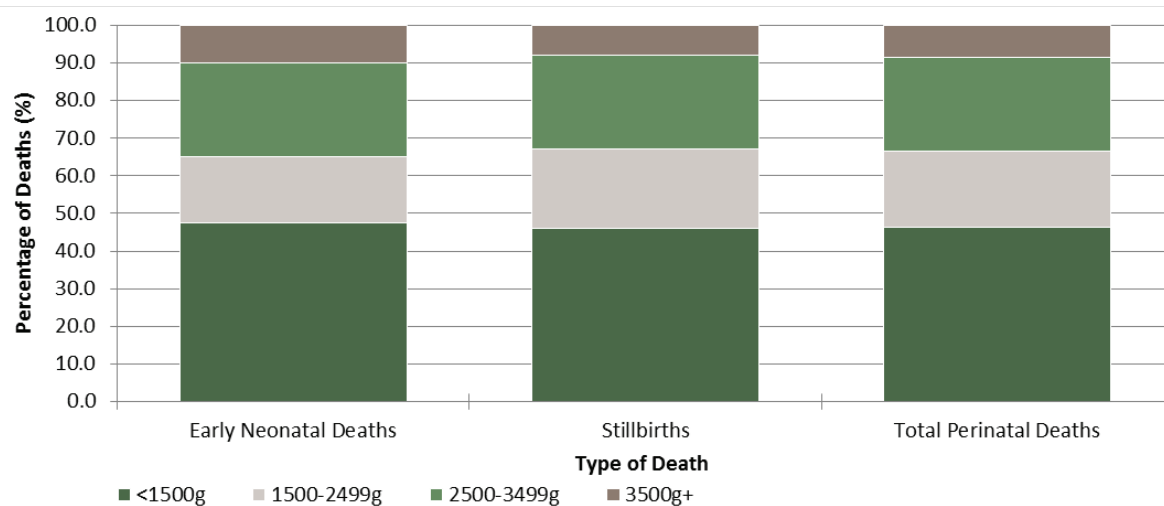
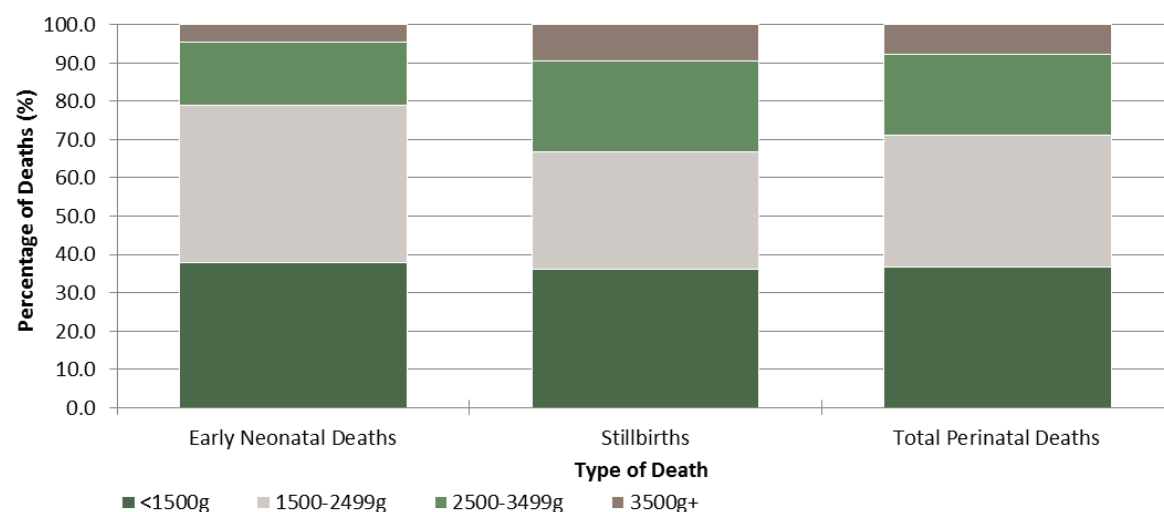
	Total Perinatal Deaths	Total Perinatal Deaths %	Ante-partum Stillbirths	Intra-Partum Stillbirths	Not Stated	Stillbirth Rate <sup>a</sup>	Early Neonatal Deaths	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adj. PMR <sup>a</sup>
<b>Total</b>										
500-749	59	18.4	33	~	~	322.6	19	226.2	475.8	429.8
750-999	26	8.1	17	~	0	137.7	7	58.8	188.4	125.0
1000-1249	30	9.4	16	~	~	109.8	11	71.4	173.4	138.6
1250-1499	16	5.0	9	0	0	42.7	7	34.7	75.8	53.4
1500-1999	54	16.9	31	~	0	49.1	18	25.8	73.7	36.9
2000-2499	36	11.3	17	~	~	8.8	16	7.1	15.8	8.0
2500-2999	46	14.4	31	~	~	4.4	13	1.7	6.1	4.2
3000-3499	27	8.4	18	0	~	0.9	8	0.4	1.3	1.0
3500-3999	18	5.6	10	~	0	0.6	*	0.3	0.8	0.7
4000-4499	*	^	~	0	0	0.6	~	0.1	0.8	0.4
4500 and over	~	^	~	~	0	1.5	0	0.0	1.5	1.5
<b>Total</b>	<b>320</b>	<b>100</b>	<b>188</b>	<b>18</b>	<b>8</b>	<b>3.4</b>	<b>106</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>
<b>Primiparous Women</b>										
500-749	31	22.1	17	~	~	304.3	10	208.3	449.3	415.4
750-999	9	6.4	6	~	0	98.6	~	31.3	126.8	88.2
1000-1249	17	12.1	10	~	~	125.0	~	59.5	177.1	141.3
1250-1499	*	^	*	0	0	53.6	~	18.9	71.4	45.9
1500-1999	18	12.9	10	~	0	34.9	~	13.9	48.4	27.5
2000-2499	10	7.1	6	~	~	7.6	~	1.9	9.5	7.6
2500-2999	21	15.0	14	~	~	4.8	~	1.5	6.3	4.5
3000-3499	14	10.0	9	0	0	1.1	~	0.6	1.7	1.2
3500-3999	10	7.1	~	~	0	0.8	~	0.5	1.3	0.9
4000-4499	~	^	~	0	0	0.9	0	0.0	0.9	0.9
4500 and over	0	0.0	0	0	0	-	0	0.0	-	-
<b>Total</b>	<b>140</b>	<b>100</b>	<b>85</b>	<b>10</b>	<b>~</b>	<b>4.2</b>	<b>40</b>	<b>1.7</b>	<b>5.8</b>	<b>4.3</b>
<b>Multiparous Women</b>										
500-749	28	15.6	16	~	0	345.5	9	250.0	509.1	449.0
750-999	17	9.4	11	~	0	179.1	~	90.9	253.7	166.7
1000-1249	13	7.2	6	0	~	90.9	*	85.7	168.8	135.1
1250-1499	*	^	~	0	0	30.3	~	52.1	80.8	61.9
1500-1999	36	20.0	21	~	0	63.7	*	38.5	99.7	46.9
2000-2499	26	14.4	11	0	~	9.8	*	11.6	21.3	8.3
2500-2999	25	13.9	17	0	0	4.1	*	1.9	6.0	4.1
3000-3499	13	7.2	9	0	~	0.8	~	0.3	1.1	0.9
3500-3999	8	4.4	~	~	0	0.4	~	0.1	0.6	0.5
4000-4499	~	^	~	0	0	0.5	~	0.2	0.7	0.2
4500 and over	~	^	~	~	0	2.1	0	0.0	2.1	2.1
<b>Total</b>	<b>180</b>	<b>100</b>	<b>103</b>	<b>8</b>	<b>~</b>	<b>3.0</b>	<b>66</b>	<b>1.7</b>	<b>4.7</b>	<b>2.9</b>

## Notes:

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

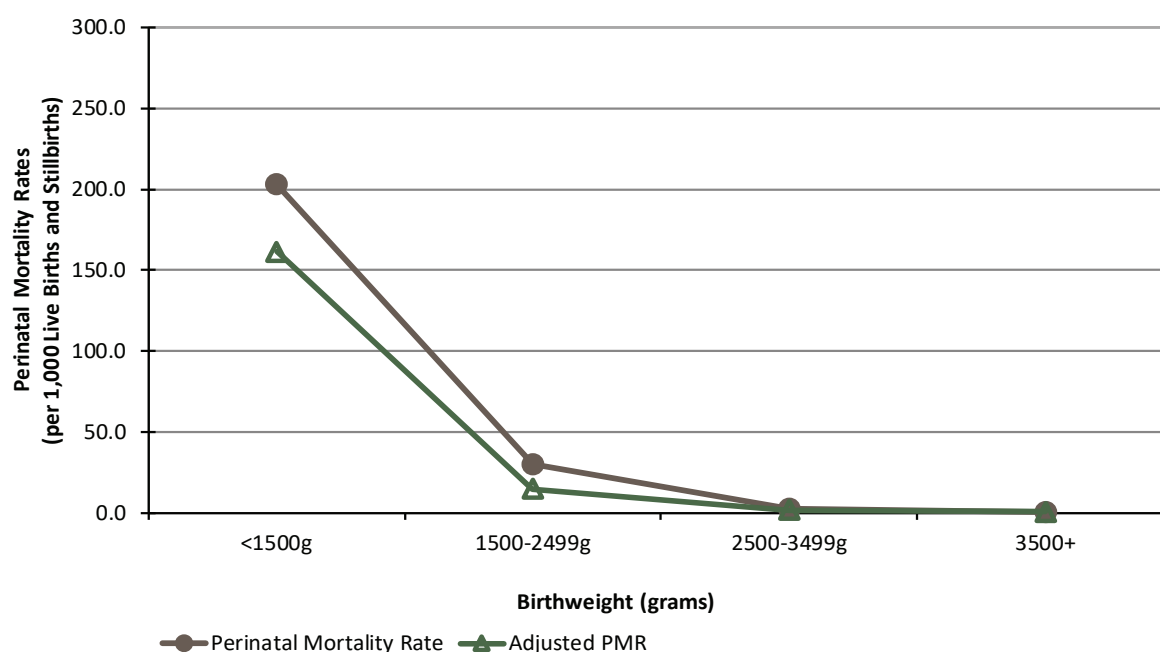
**FIGURE 5.1**

Perinatal Deaths by Birthweight Groups and Parity

**Total Perinatal Deaths****Perinatal Deaths: Primiparous Women****Perinatal Deaths: Multiparous Women**

Note: See Table 5.1 for data.

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



Note: See Table 5.1 for data.

### CAUSE OF DEATH BY BIRTHWEIGHT

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

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

- Congenital malformations (Q00-Q99) accounted for the largest proportion of total perinatal deaths (33.0 per cent) followed by maternal factors (P00-P04), which accounted for 22.2 per cent.
- Approximately 69 per cent of perinatal deaths weighed <2,500 grams, and of these 35.4 per cent were due to congenital malformations (Q00-Q99), followed by maternal factors (P00-P04) which accounted for 18.8 per cent (see Figure 5.3).
- Over 31 per cent of perinatal deaths weighed  $\geq 2,500$  grams. Cause of death due to maternal factors (P00-P04) accounted for 29.7 per cent of deaths, and 27.7 per cent were due to congenital malformations (Q00-Q99). (see Figure 5.4).

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

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

TABLE 5.2

Total Perinatal Deaths: Cause of Death by ICD-10 Diagnosis Codes by Birthweight, Perinatal Mortality Rate<sup>3</sup> and Numbers (Total)

ICD-10 Code	Birthweight (grams)												Total	PMR <sup>3</sup>
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	4500 and over	N		
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	80.6	29.0	40.5	19.0	17.7	1.8	1.2	0.6	0.3	0.3	0.8	72	1.2	
Disorders related to length of gestation and foetal growth	201.6	21.7	5.8	4.7	1.4	-	0.3	-	-	-	-	33	0.5	
Respiratory and cardiovascular disorders specific to the perinatal period	40.3	-	28.9	14.2	6.8	0.9	0.7	-	0.1	-	-	29	0.5	
Infections specific to the perinatal period	48.4	7.2	5.8	4.7	-	-	-	-	-	-	-	10	0.2	
Haemorrhagic and haematological disorders of foetus and newborn	8.1	14.5	-	-	-	0.4	0.4	-	-	-	-	9	0.1	
Transitory endocrine and metabolic disorders specific to foetus and newborn	-	-	-	-	-	-	-	-	-	-	-	~	0.0	
Digestive system disorders of foetus and newborn	-	-	5.8	-	-	-	-	-	-	-	-	~	0.0	
Conditions involving the integument and temperature regulation of foetus and newborn	16.1	29.0	17.3	9.5	2.7	-	0.4	-	-	-	0.8	17	0.3	
Other disorders originating in the perinatal period	-	-	-	-	-	-	-	-	0.1	-	-	~	0.0	
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	-	14.5	28.9	-	6.8	4.8	1.5	0.2	-	0.1	-	40	0.6	
Congenital malformations of the nervous system	-	14.5	11.6	4.7	6.8	1.3	-	-	-	0.1	-	15	0.2	
Congenital malformations of the circulatory system	8.1	14.5	-	-	5.5	0.4	0.3	-	0.1	0.3	-	16	0.3	
Congenital malformations of the respiratory system	-	7.2	-	-	1.4	-	0.3	-	-	-	-	~	0.1	
Other congenital malformations of the digestive system	-	-	-	-	-	-	0.1	-	-	-	-	~	0.0	
Congenital malformations of the urinary system	8.1	-	5.8	4.7	5.5	1.3	0.1	-	-	-	-	12	0.2	
Congenital malformations and deformations of the musculoskeletal system	8.1	-	-	-	-	-	0.3	-	-	-	-	~	0.1	
Other congenital malformations	16.1	21.7	5.8	4.7	1.4	0.9	0.1	-	-	-	-	11	0.2	
Chromosomal abnormalities, not elsewhere classified	40.3	14.5	17.3	9.5	17.7	4.4	0.7	-	-	-	-	41	0.7	
All other causes	-	-	-	-	-	0.4	-	-	-	-	-	~	0.0	
A00.0-099.9, R00.0-299.9														
Total	59 475.8	26 188.4	30 173.4	16 75.8	54 73.7	38 16.7	47 6.2	28 1.4	18 0.8	* 0.8	~ 1.5	324	5.2	

TABLE 5.2

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

ICD-10 Code	Birthweight (grams)												Total	PMR <sup>a</sup>
	500 - 749	750 - 999	1000 - 1249	1250 - 1499	1500 - 1999	2000 - 2499	2500 - 2999	3000 - 3499	3500 - 3999	4000 - 4499	4500 and over	N		
P00-P04 Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	87.0	40.0	40.3	23.8	21.8	2.5	1.4	0.6	0.3	0.3	0.8	64	1.1	
P05-P08 Disorders related to length of gestation and foetal growth	206.5	30.0	8.1	7.9	2.2	-	0.3	-	-	-	-	27	0.5	
P20-P29 Respiratory and cardiovascular disorders specific to the perinatal period	54.3	-	40.3	15.9	10.9	1.2	0.8	-	0.1	-	-	27	0.5	
P35-P39 Infections specific to the perinatal period	43.5	10.0	8.1	7.9	-	-	-	-	-	-	-	8	0.1	
P50-P61 Haemorrhagic and haematological disorders of foetus and newborn	10.9	20.0	-	-	-	0.6	0.5	0.1	-	-	-	9	0.2	
P70-P74 Transitory endocrine and metabolic disorders specific to foetus and newborn	-	-	-	-	-	-	-	0.1	-	-	-	~	0.0	
P75-P78 Digestive system disorders of foetus and newborn	-	-	8.1	-	-	-	-	-	-	-	-	~	0.0	
P80-P83 Conditions involving the integument and temperature regulation of foetus and newborn	21.7	30.0	24.2	15.9	4.4	-	0.3	-	-	-	-	15	0.3	
P900-P949 P960-P968 Other disorders originating in the perinatal period	-	-	-	-	-	-	-	0.1	0.1	-	-	~	0.1	
P95, P96.9 Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified	-	10.0	40.3	-	10.9	5.5	1.5	0.2	-	0.1	-	36	0.6	
Q00-Q07 Congenital malformations of the nervous system	-	10.0	16.1	7.9	8.7	1.2	-	0.1	-	0.1	-	12	0.2	
Q20-Q28 Congenital malformations of the circulatory system	-	20.0	-	-	4.4	0.6	0.3	0.1	0.1	0.3	-	13	0.2	
Q30-Q34 Congenital malformations of the respiratory system	-	-	-	-	2.2	-	0.3	0.1	-	-	-	~	0.1	
Q38-Q45 Other congenital malformations of the digestive system	-	-	-	-	-	-	0.2	0.1	-	-	-	~	0.1	
Q60-Q64 Congenital malformations of the urinary system	10.9	-	8.1	-	8.7	1.8	0.2	0.1	-	-	-	11	0.2	
Q65-Q79 Congenital malformations and deformations of the musculoskeletal system	10.9	-	-	-	-	-	0.3	0.1	-	-	-	~	0.1	
Q80-Q89 Other congenital malformations	21.7	30.0	8.1	-	2.2	1.2	0.2	-	-	-	-	10	0.2	
Q90-Q99 Chromosomal abnormalities, not elsewhere classified	54.3	10.0	24.2	7.9	26.2	6.2	0.6	0.1	-	-	-	37	0.6	
A00.0-Q99.9, R00.0-Z99.9 All other causes	-	-	-	-	-	0.6	-	0.1	-	-	-	~	0.0	
Total	48	21	28	11	47	35	44	27	18	*	~	287	4.8	
PMR	521.7	210.0	225.8	87.3	102.6	211.6	6.6	1.4	0.8	0.8	1.5			

TABLE 5.2

Multiple Perinatal Deaths: Cause of Death by ICD-10 Diagnosis Codes by Birthweight, Perinatal Mortality Rate<sup>a</sup> 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	PMR <sup>a</sup>	
P00-P04	62.5	-	40.8	11.5	10.9	-	-	-	-	-	-	8	3.4	
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery														
P05-P08	187.5	-	-	-	-	-	-	-	-	-	-	6	2.6	
Disorders related to length of gestation and foetal growth														
P20-P29	-	-	-	11.5	-	-	-	3.8	-	-	-	~	0.9	
Respiratory and cardiovascular disorders specific to the perinatal period														
P35-P39	62.5	-	-	-	-	-	-	-	-	-	-	~	0.9	
Infections specific to the perinatal period														
P80-P83	-	26.3	-	-	-	-	1.1	-	-	-	-	~	0.9	
Conditions involving the integument and temperature regulation of foetus and newborn														
P95, P96.9	-	26.3	-	-	-	3.1	1.1	-	-	-	-	~	1.7	
Foetal death of unspecified cause, Condition originating in the perinatal period, unspecified														
Q00-Q07	-	26.3	-	-	3.6	1.5	-	-	-	-	-	~	1.3	
Congenital malformations of the nervous system														
Q20-Q28	31.3	-	-	-	7.3	-	-	-	-	-	-	~	1.3	
Congenital malformations of the circulatory system														
Q30-Q34	-	26.3	-	-	-	-	-	-	-	-	-	~	0.4	
Congenital malformations of the respiratory system														
Q60-Q64	-	-	-	11.5	-	-	-	-	-	-	-	~	0.4	
Congenital malformations of the urinary system														
Q80-Q89	-	-	-	11.5	-	-	-	-	-	-	-	~	0.4	
Other congenital malformations														
Q90-Q99	-	26.3	-	11.5	3.6	-	1.1	-	-	-	-	~	1.7	
Chromosomal abnormalities, not elsewhere classified														
Total	11 343.8	~ 131.6	~ 40.8	~ 57.5	7 25.5	~ 4.6	~ 3.4	~ 3.8	0 -	0 -	0 -	37	15.9	
PMR														

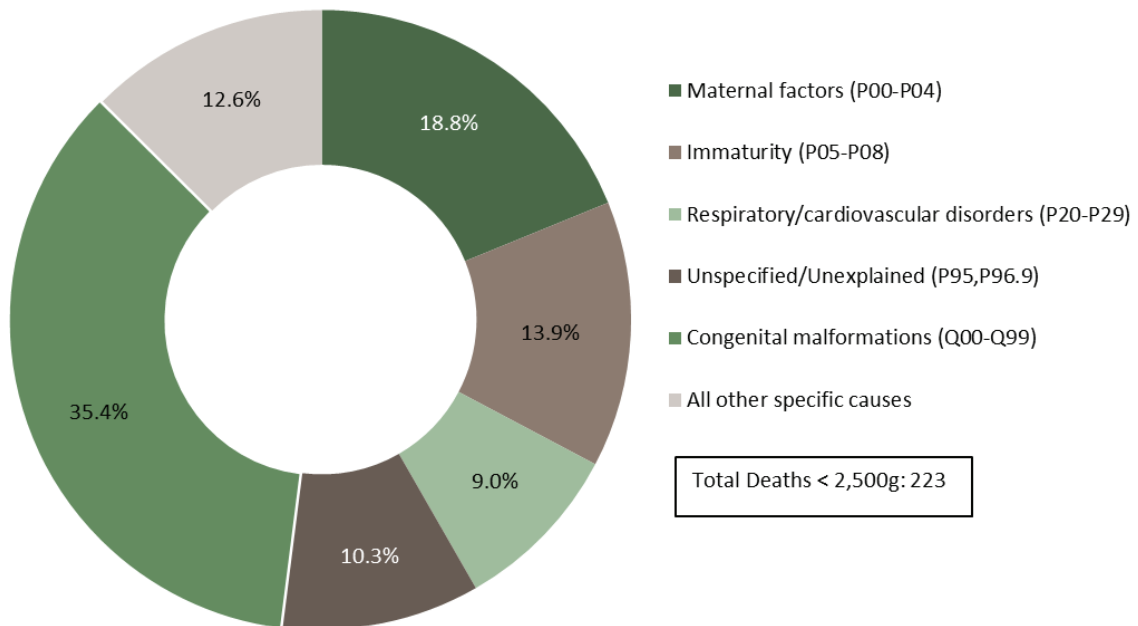
Notes: ~ Denotes five or fewer births reported to NPRS.

\* 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**

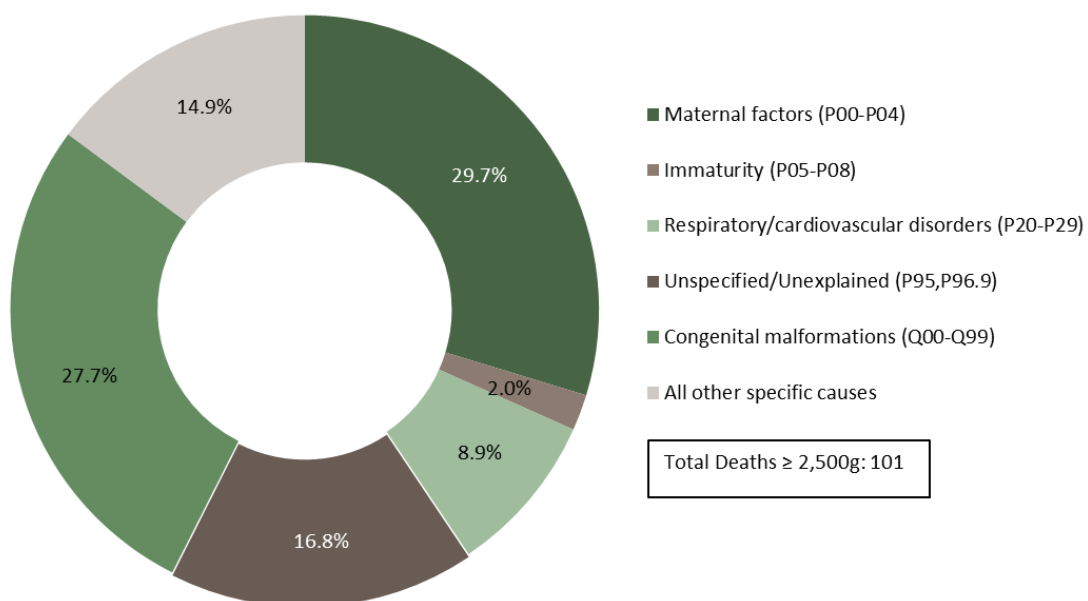
Total Perinatal Deaths with Birthweight &lt; 2,500 grams by Cause of Death



Note: See Table 5.2 for data.

**FIGURE 5.4**

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



Note: See Table 5.2 for data.

## MORTALITY BY GESTATIONAL AGE

Table 5.3 presents data on mortality by gestational age.

- Prematurity has a significant impact on stillbirth and early neonatal mortality rates with over two-thirds of total perinatal deaths born preterm.<sup>35,36</sup>
- Almost 65 per cent of singleton perinatal deaths and 91.9 per cent of multiple perinatal deaths were preterm.
- Almost 30 per cent of early neonatal deaths recorded a gestational age of less than 28 completed weeks compared to 24.5 per cent of stillbirths (see Figure 5.5).
- The perinatal mortality rate for babies born before 37 completed weeks of gestation was 51.3 per 1,000 live births and stillbirths (62.4 per 1,000 singleton births and 25.9 per 1,000 multiple births).
- For babies born at 37 or more completed weeks of gestation, the perinatal mortality rate was 1.8 per 1,000 live births and stillbirths.

**TABLE 5.3**

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

	Total Perinatal Deaths	Total Perinatal Deaths %	Ante- Partum Stillbirths	Intra- Partum Stillbirths	Not Stated	Stillbirth Rate <sup>a</sup>	Early Neonatal Deaths	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adj. PMR <sup>a</sup>
<b>Total Births</b>										
Less than 28	85	26.2	44	7	~	212.0	32	162.4	340.0	297.9
28-31	*	^	*	~	~	71.4	*	30.8	100.0	77.4
32-36	86	26.5	50	~	~	15.8	30	8.6	24.2	12.0
37-41	101	31.2	62	~	~	1.2	31	0.5	1.8	1.2
42 and Over	~	^	~	0	0	2.6	~	1.3	3.8	2.6
<b>Total</b>	<b>324</b>	<b>100</b>	<b>190</b>	<b>18</b>	<b>8</b>	<b>3.5</b>	<b>108</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>
<b>Singleton Births</b>										
Less than 28	71	24.7	*	~	~	257.9	22	156.0	373.7	327.7
28-31	*	^	28	~	~	95.7	*	34.1	126.5	98.7
32-36	74	25.8	*	~	~	20.7	*	9.5	30.0	16.0
37-41	*	^	*	~	~	1.2	31	0.6	1.8	1.1
42 and Over	~	^	~	0	0	2.6	~	1.3	3.8	2.6
<b>Total</b>	<b>287</b>	<b>100</b>	<b>178</b>	<b>*</b>	<b>*</b>	<b>3.3</b>	<b>87</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>
<b>Multiple Births</b>										
Less than 28	14	37.8	~	~	0	66.7	10	178.6	233.3	206.9
28-31	*	^	~	0	0	24.1	~	24.7	48.2	36.6
32-36	12	32.4	~	0	~	4.6	*	6.5	11.1	2.8
37-41	~	^	~	0	~	3.0	0	0.0	3.0	3.0
42 and Over	0	0.0	0	0	0	-	0	-	-	-
<b>Total</b>	<b>37</b>	<b>100</b>	<b>12</b>	<b>~</b>	<b>~</b>	<b>6.9</b>	<b>21</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>

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

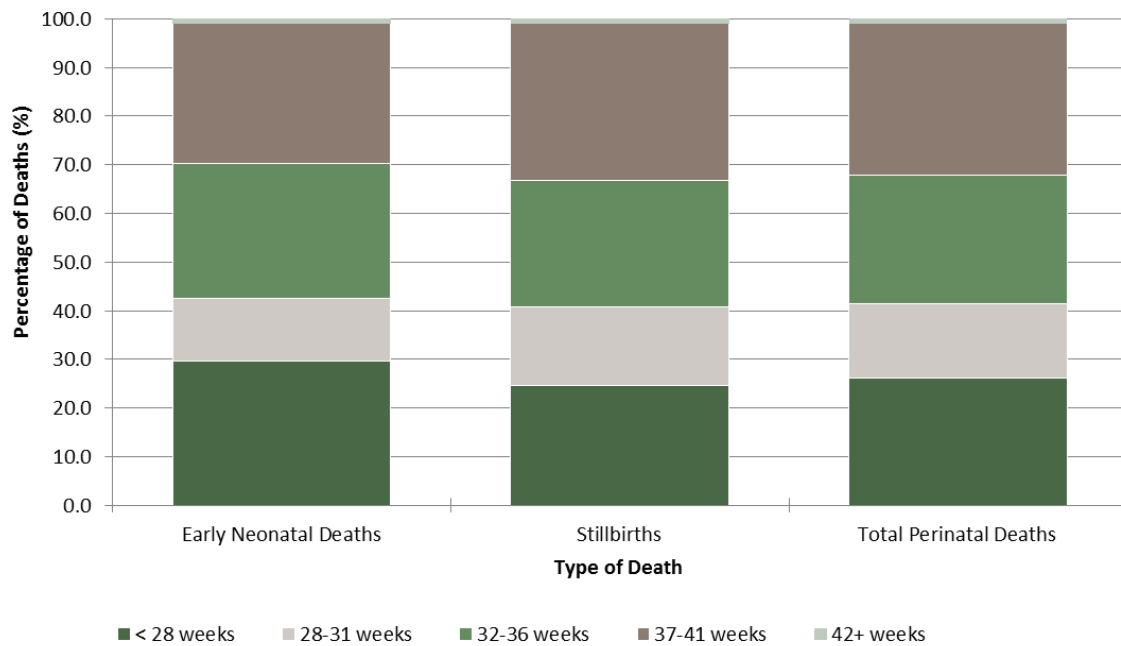
<sup>35</sup> Preterm is defined as less than 37 completed weeks of gestation.

<sup>36</sup> In 2017, 6.9 per cent of total births were preterm.



**FIGURE 5.5**

Total Perinatal Deaths by Gestational Age (weeks)

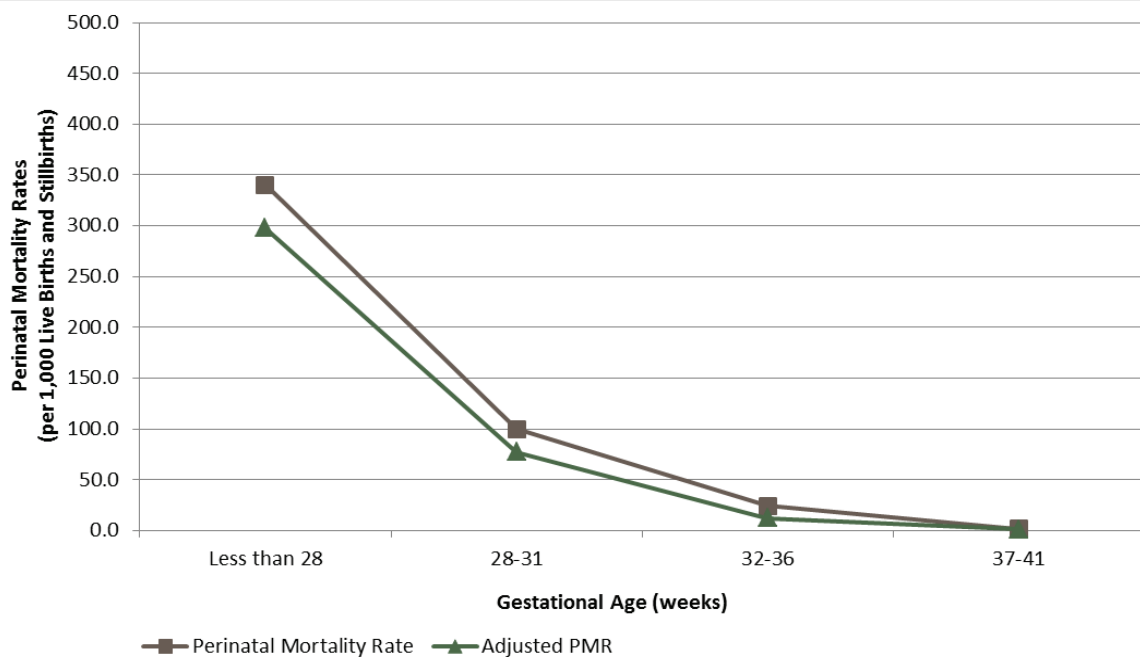


Note: See Table 5.3 for data.

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 12.3 per cent of total perinatal deaths were classified as 'unspecified/unexplained' (P95, P96.9). The fact that almost 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 Diagnosis Codes, Mortality Rates<sup>a</sup> and Numbers (Total)

ICD-10 Code	Total Deaths				Singleton Deaths				Multiple Deaths			
	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths		Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths		Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	
	Rate	Rate	N	Rate	Rate	Rate	N	Rate	Rate	Rate	N	Rate
<b>P00-P04</b>	<b>1.1</b>	<b>0.1</b>	<b>72</b>	<b>1.2</b>	<b>1.0</b>	<b>0.1</b>	<b>64</b>	<b>1.1</b>	<b>2.6</b>	<b>0.9</b>	<b>8</b>	<b>3.4</b>
<b>Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery</b>												
Foetus and newborn affected by maternal conditions that may be unrelated to present pregnancy	0.1	-	~	0.1	0.1	-	~	0.1	-	-	0	-
Foetus and newborn affected by maternal complications of pregnancy	0.0	0.0	~	0.1	0.0	0.0	~	0.1	0.4	-	~	0.4
Foetus and newborn affected by complications of placenta, cord and membranes	1.0	0.0	63	1.0	0.9	0.0	56	0.9	2.2	0.9	7	3.0
Foetus and newborn affected by other complications of labour and delivery	-	0.0	~	0.0	-	0.0	~	0.0	-	-	0	-
<b>P05-P08</b>	<b>0.3</b>	<b>0.2</b>	<b>33</b>	<b>0.5</b>	<b>0.3</b>	<b>0.1</b>	<b>27</b>	<b>0.5</b>	<b>0.4</b>	<b>2.2</b>	<b>6</b>	<b>2.6</b>
<b>Disorders related to length of gestation and foetal growth</b>												
Slow foetal growth and foetal malnutrition	0.1	0.0	7	0.1	0.1	0.0	7	0.1	-	-	0	-
Disorders related to short gestation and low birth weight, not elsewhere classified	0.2	0.2	26	0.4	0.2	0.1	20	0.3	0.4	2.2	6	2.6
<b>P20-P29</b>	<b>0.3</b>	<b>0.1</b>	<b>29</b>	<b>0.5</b>	<b>0.3</b>	<b>0.1</b>	<b>27</b>	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>~</b>	<b>0.9</b>
<b>Respiratory and cardiovascular disorders specific to the perinatal period</b>												
Intrauterine hypoxia	0.2	-	11	0.2	0.2	-	10	0.2	0.4	-	~	0.4
Birth asphyxia	-	0.0	~	0.0	-	-	0	-	-	0.4	~	0.4
Respiratory distress of newborn	-	0.1	~	0.1	-	0.1	~	0.1	-	-	0	-
Pulmonary haemorrhage originating in the perinatal period	-	0.0	~	0.0	-	0.0	~	0.0	-	-	0	-
Other respiratory conditions originating in the perinatal period	0.0	0.0	~	0.0	0.0	0.0	~	0.0	-	-	0	-
Cardiovascular disorders originating in the perinatal period	0.1	0.0	9	0.1	0.1	0.0	9	0.2	-	-	0	-
<b>P35-P39</b>	<b>0.1</b>	<b>0.0</b>	<b>10</b>	<b>0.2</b>	<b>0.1</b>	<b>0.0</b>	<b>8</b>	<b>0.1</b>	<b>0.4</b>	<b>0.4</b>	<b>~</b>	<b>0.9</b>
<b>Infections specific to the perinatal period</b>												
Bacterial sepsis of newborn	-	0.0	~	0.0	-	-	0	-	-	0.4	~	0.4
Other congenital infectious and parasitic diseases	-	0.0	~	0.0	-	0.0	~	0.0	-	-	0	-
Other infections specific to the perinatal period	0.1	-	8	0.1	0.1	-	7	0.1	0.4	-	~	0.4
<b>P50-P61</b>	<b>0.1</b>	<b>0.0</b>	<b>9</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>9</b>	<b>0.2</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>-</b>
<b>Haemorrhagic and haematological disorders of foetus and newborn</b>												
Foetal blood loss	0.1	0.0	7	0.1	0.1	0.0	7	0.1	-	-	0	-
Intracranial nontraumatic haemorrhage of foetus and newborn	0.0	0.0	~	0.0	0.0	0.0	~	0.0	-	-	0	-
<b>P70-P74</b>	<b>0.0</b>	<b>-</b>	<b>~</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>~</b>	<b>0.0</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>-</b>
<b>Transitory endocrine and metabolic disorders specific to foetus and newborn</b>												
Transitory disorders of carbohydrate metabolism specific to foetus and newborn	0.0	-	~	0.0	0.0	-	~	0.0	-	-	0	-

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

ICD-10 Code	Total Deaths				Singleton Deaths				Multiple Deaths			
	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths		Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths		Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	
	Rate	Rate	N	Rate	Rate	Rate	N	Rate	Rate	Rate	N	Rate
<b>Digestive system disorders of foetus and newborn</b>												
Necrotizing enterocolitis of foetus and newborn	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	-	-	<b>0</b>	-
	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	-	-	<b>0</b>	-
<b>Conditions involving the integument and temperature regulation of foetus and newborn</b>												
Other conditions of integument specific to foetus and newborn	<b>0.2</b>	<b>0.1</b>	<b>17</b>	<b>0.3</b>	<b>0.2</b>	<b>0.1</b>	<b>15</b>	<b>0.3</b>	-	<b>0.9</b>	~	<b>0.9</b>
<b>Other disorders originating in the perinatal period</b>												
Other disturbances of cerebral status of newborn	<b>0.5</b>	<b>0.2</b>	<b>43</b>	<b>0.7</b>	<b>0.5</b>	<b>0.2</b>	<b>39</b>	<b>0.7</b>	<b>1.7</b>	-	~	<b>1.7</b>
Other conditions originating in the perinatal period	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	-	-	<b>0</b>	-
Other conditions originating in the perinatal period	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	-	-	<b>0</b>	-
Foetal death of unspecified cause, Condition origination in the perinatal period, unspecified	<b>0.5</b>	<b>0.1</b>	<b>40</b>	<b>0.6</b>	<b>0.5</b>	<b>0.1</b>	<b>36</b>	<b>0.6</b>	<b>1.7</b>	-	~	<b>1.7</b>
<b>Congenital malformations of the nervous system</b>												
Anencephaly and similar malformations	<b>0.1</b>	<b>0.2</b>	<b>15</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>	<b>12</b>	<b>0.2</b>	<b>0.4</b>	<b>0.9</b>	~	<b>1.3</b>
Microcephaly	<b>0.0</b>	<b>0.1</b>	<b>8</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>7</b>	<b>0.1</b>	-	<b>0.4</b>	~	<b>0.4</b>
Congenital hydrocephalus	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	-	-	<b>0</b>	-
Other congenital malformations of the brain	<b>0.0</b>	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	<b>0.4</b>	-	~	<b>0.4</b>
Spina bifida	<b>0.0</b>	<b>0.0</b>	~	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.4</b>	~	<b>0.4</b>
	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	-	-	<b>0</b>	-
<b>Congenital malformations of the circulatory system</b>												
Congenital malformations of aortic and mitral valves	<b>0.1</b>	<b>0.1</b>	<b>16</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>	<b>13</b>	<b>0.2</b>	<b>0.4</b>	<b>0.9</b>	~	<b>1.3</b>
Other congenital malformations of heart	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.4</b>	~	<b>0.4</b>
Other congenital malformations of circulatory system	<b>0.0</b>	<b>0.1</b>	<b>9</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>8</b>	<b>0.1</b>	-	<b>0.4</b>	~	<b>0.4</b>
	<b>0.1</b>	-	~	<b>0.1</b>	<b>0.1</b>	-	~	<b>0.1</b>	<b>0.4</b>	-	~	<b>0.4</b>
<b>Congenital malformations of the respiratory system</b>												
Congenital malformations of lung	-	<b>0.1</b>	~	<b>0.1</b>	-	<b>0.1</b>	~	<b>0.1</b>	-	<b>0.4</b>	~	<b>0.4</b>
	-	<b>0.1</b>	~	<b>0.1</b>	-	<b>0.1</b>	~	<b>0.1</b>	-	<b>0.4</b>	~	<b>0.4</b>
<b>Other congenital malformations of the digestive system</b>												
Other congenital malformations of intestine	<b>0.0</b>	<b>0.0</b>	~	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	~	<b>0.1</b>	-	-	<b>0</b>	-
Congenital malformations of gallbladder, bile ducts and liver	-	<b>0.0</b>	~	<b>0.0</b>	-	<b>0.0</b>	~	<b>0.0</b>	-	-	<b>0</b>	-
Other congenital malformations of digestive system	<b>0.0</b>	-	~	<b>0.0</b>	<b>0.0</b>	-	~	<b>0.0</b>	-	-	<b>0</b>	-

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

	ICD-10 Code	Total Deaths			Singleton Deaths			Multiple Deaths		
		Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths	Stillbirths	Early Neonatal Deaths	Total Perinatal Deaths
		Rate	Rate	N	Rate	Rate	N	Rate	Rate	N
<b>Congenital malformations of the urinary system</b>	<b>Q60-Q64</b>	<b>0.1</b>	<b>0.1</b>	<b>12</b>	<b>0.1</b>	<b>0.1</b>	<b>11</b>	-	<b>0.4</b>	<b>~ 0.4</b>
Renal agenesis and other reduction defects of kidney	Q600 - Q606	0.0	0.1	6	0.0	0.1	6	-	-	0
Cystic kidney disease	Q610 - Q619	0.0	0.0	~	0.0	0.0	~	-	0.4	~ 0.4
Other congenital malformations of kidney	Q630 - Q639	0.0	-	~	0.0	-	~	-	-	0
<b>Congenital malformations and deformations of the musculoskeletal system</b>	<b>Q65-Q79</b>	<b>0.0</b>	<b>0.0</b>	<b>~</b>	<b>0.0</b>	<b>0.1</b>	<b>~</b>	<b>0.1</b>	<b>-</b>	<b>0</b>
Other osteochondrodysplasias	Q780 - Q789	-	0.0	~	-	0.0	~	0.0	-	0
Congenital malformations of musculoskeletal system, not elsewhere classified	Q790 - Q799	0.0	0.0	~	0.0	0.0	~	0.1	-	0
<b>Other congenital malformations</b>	<b>Q80-Q89</b>	<b>0.1</b>	<b>0.0</b>	<b>11</b>	<b>0.1</b>	<b>0.0</b>	<b>10</b>	<b>0.4</b>	<b>-</b>	<b>~ 0.4</b>
Other specified congenital malformation syndromes affecting multiple systems	Q870 - Q878	0.1	0.0	6	0.1	0.0	6	-	-	0
Other congenital malformations, not elsewhere classified	Q890 - Q899	0.1	0.0	~	0.1	0.0	~	0.4	-	~ 0.4
<b>Chromosomal abnormalities, not elsewhere classified</b>	<b>Q90-Q99</b>	<b>0.4</b>	<b>0.3</b>	<b>41</b>	<b>0.4</b>	<b>0.2</b>	<b>37</b>	<b>0.6</b>	<b>1.7</b>	<b>~ 1.7</b>
Downs syndrome	Q900 - Q909	0.1	-	6	0.1	-	6	0.1	-	0
Edwards syndrome and Patau's syndrome	Q910 - Q917	0.2	0.3	30	0.2	0.2	26	0.4	1.7	~ 1.7
Monosomies and deletions from the autosomes, not elsewhere classified	Q930 - Q939	0.0	0.0	~	0.0	0.0	~	0.0	-	0
Turner's syndrome	Q960 - Q969	0.0	-	~	0.1	-	~	0.1	-	0
<b>All other causes</b>	<b>A00.0-Q99.9, R00.0-Z99.9</b>	<b>-</b>	<b>0.0</b>	<b>~</b>	<b>-</b>	<b>0.0</b>	<b>~</b>	<b>0.0</b>	<b>-</b>	<b>0</b>
<b>Total</b>		<b>3.5</b>	<b>1.7</b>	<b>324</b>	<b>3.3</b>	<b>1.5</b>	<b>287</b>	<b>6.9</b>	<b>9.1</b>	<b>37</b>

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

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

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

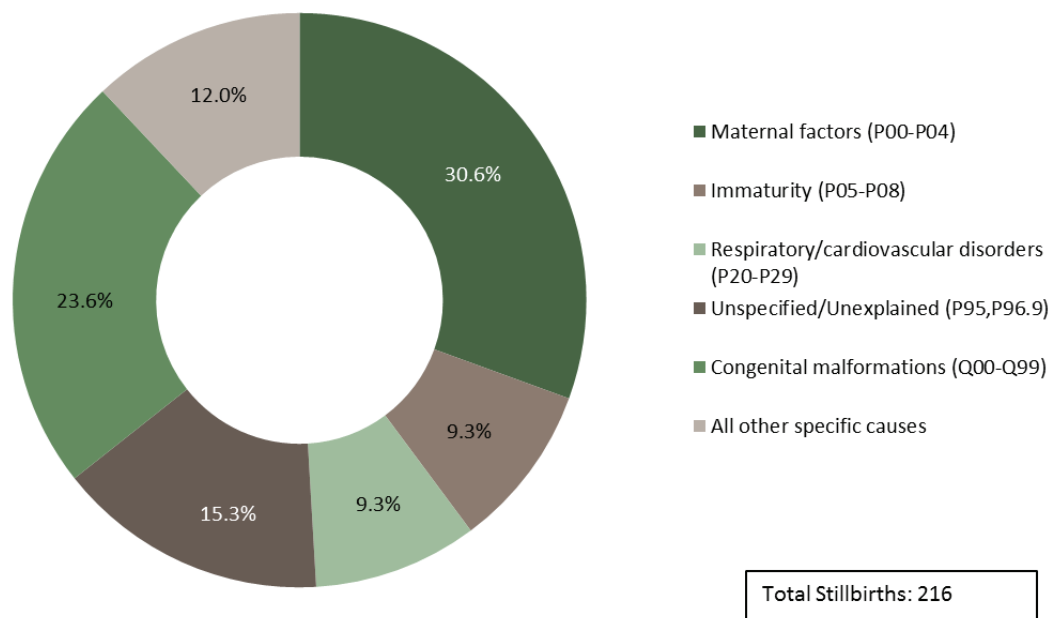
## STILLBIRTHS

Figure 5.7 presents the main cause of death for stillbirths.

- Maternal factors (P00-P04) were the leading cause of death for total stillbirths (30.6 per cent).
- The cause of death was congenital malformations (Q00-Q99) for 23.6 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.

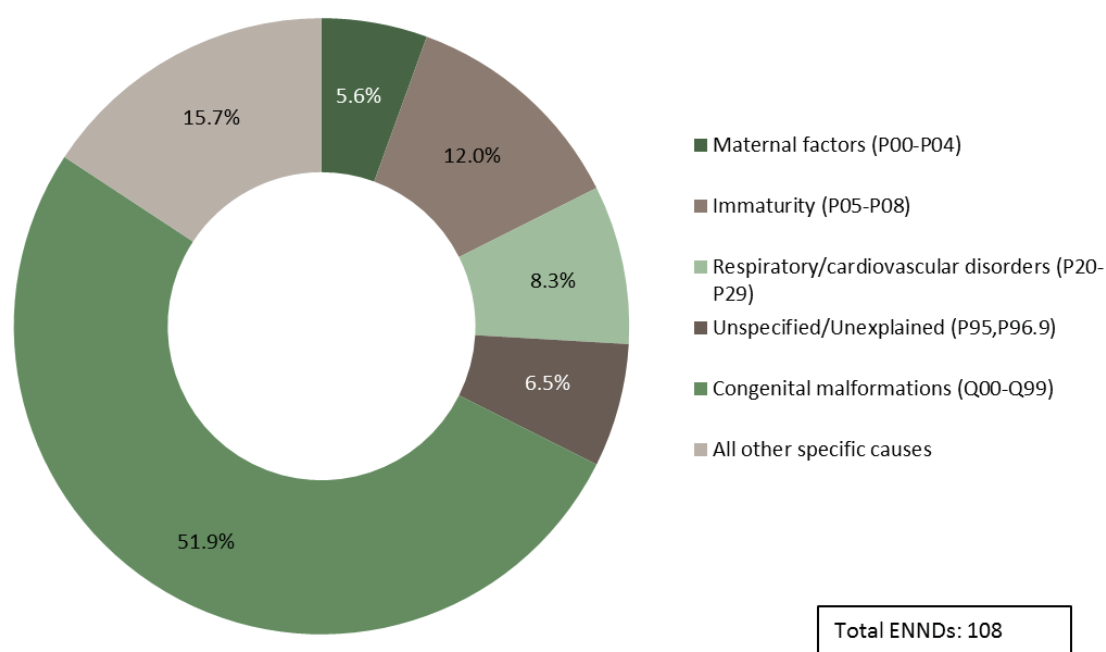
## EARLY NEONATAL DEATHS

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 (51.9 per cent).
- The cause of death was immaturity (P05-P08) for 12.0 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.

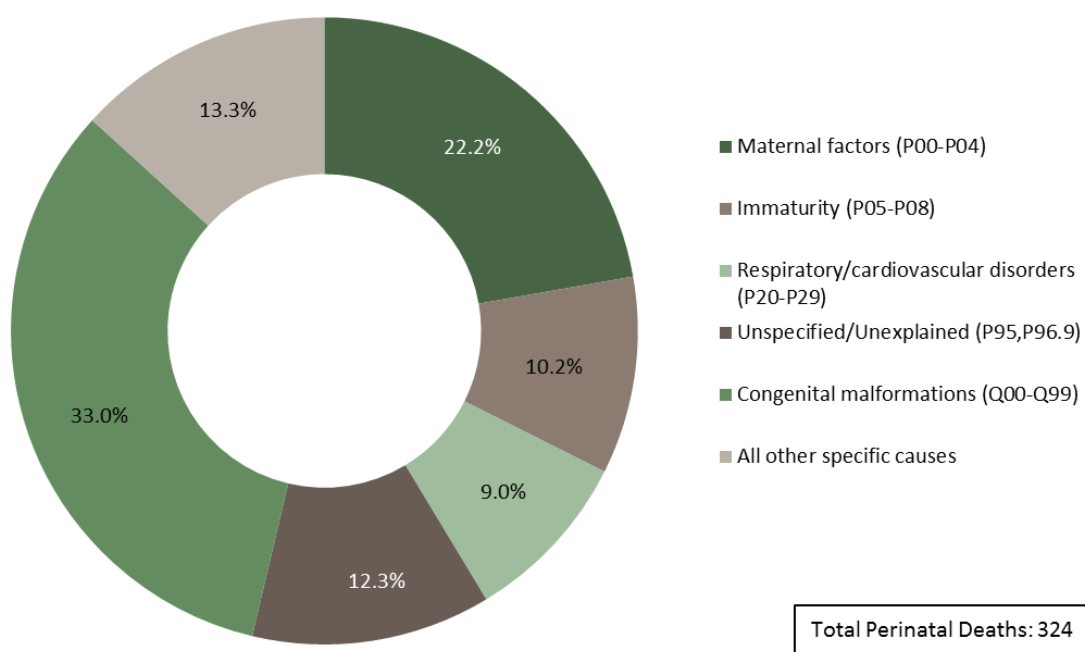
## TOTAL PERINATAL DEATHS

Figure 5.9 presents data on all perinatal deaths.

- Congenital malformations (Q00-Q99) accounted for approximately 1 in 3 total perinatal deaths (33.0 per cent).
- The cause of death was unspecified/unexplained (P95, P96.9) for 12.3 per cent of total perinatal deaths.
- Maternal factors (P00-P04) was reported for cause of death for 22.2 per cent of total perinatal deaths.

**FIGURE 5.9**

Total Perinatal Deaths by Cause of Death



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



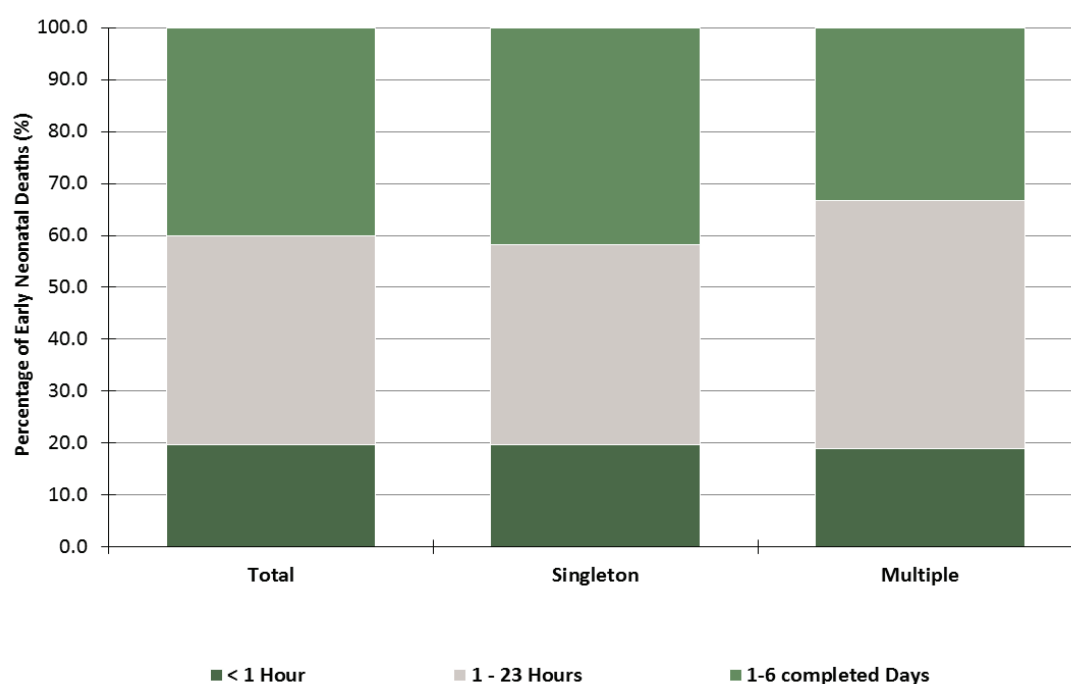
## AGE AT DEATH

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

- Approximately 1 in 5 total early neonatal deaths occurred within the first hour of life (19.8 per cent for singleton early neonatal deaths and 19.0 per cent for multiple early neonatal deaths).
- Almost 60 per cent of total early neonatal deaths occurred within the first day of life (58.1 per cent for singleton early neonatal deaths and 66.7 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 (41.9 per cent for singleton early neonatal deaths and 33.3 per cent for multiple early neonatal deaths).

**FIGURE 5.10**

Early Neonatal Deaths by Age at Death and Plurality



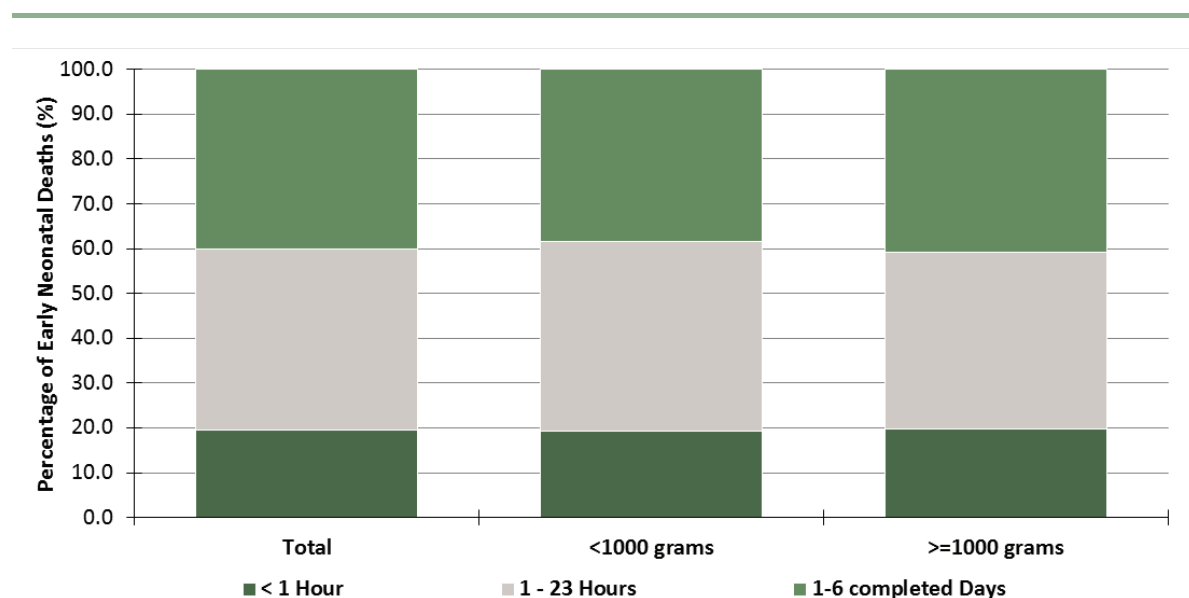
Notes: Percentages are subject to rounding  
See Appendix G, Table G14 for data.

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

- For early neonatal deaths recording a birthweight of less than 1,000 grams, 19.2 per cent died within the first hour of life compared to 19.8 per cent for early neonatal deaths with a birthweight of 1,000 grams or more.

**FIGURE 5.11**

Early Neonatal Deaths by Age at Death and Birthweight Groups



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

## POST-MORTEM EXAMINATIONS

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

- A post-mortem examination was undertaken for just under half of total perinatal deaths in 2017.
- 56.5 per cent of stillbirths underwent a post-mortem examination compared to 36.1 per cent of early neonatal deaths.

**TABLE 5.5**

Post-Mortem Examinations, Total Perinatal Deaths

Frequency Col. Per Cent	Type of Death		
	Stillbirths	Early Neonatal Deaths	Total
Post-Mortem	122 56.5	39 36.1	161 49.7
No Post-Mortem	* ^	* ^	152 46.9
Not Stated	~ ^	* ^	11 3.4
<b>Total</b>	<b>216 100</b>	<b>108 100</b>	<b>324 100</b>

Notes:

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

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



# APPENDICES

## APPENDIX A

### DEFINITIONS

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

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

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

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

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

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

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

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

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

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

1. Married
2. Single
3. Widowed

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

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

**Domiciliary Birth:** Domiciliary births are *planned* home births. The vast majority of these are attended by an independent midwife and are not associated with a hospital. In 2017, there were 41 births under hospital administered home birth schemes. For the purposes of this report these births are treated as hospital births due to their small numbers.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

# APPENDIX B

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

The following format was used for births in 2017.

Notification of Birth – To: National Perinatal Reporting System, Healthcare Pricing Office (HPO)			
TYPE OF BIRTH (Live = 1, Still = 2)		PLACE OF BIRTH (Hospital = 1, BHA = 2, Domiciliary = 3)	
NAME AND ADDRESS OF HOSPITAL		HOSPITAL NO.	
CASE NO.		DATE OF BIRTH (DDMM/YYYY)	
IF MULTIPLE BIRTH		ORDER OF BIRTH	
SEX (Male = 1, Female = 2, Indeterminate = 3)		BIRTHWEIGHT	
PERIOD OF GESTATION		WEEKS	
FATHER'S DETAILS			
COUNTRY			
NATIONALITY			
OCCUPATION			
DATE OF BIRTH (DDMM/YYYY)			
MOTHER'S DETAILS			
COUNTRY			
NATIONALITY			
OCCUPATION			
DATE OF BIRTH (DDMM/YYYY)			
CIVIL STATUS (Married = 1, Single = 2, Widowed = 3, Separated = 4, Divorced = 5, Civil Partner = 6, Former Civil Partner = 7, Surviving Civil Partner = 8)			
DATE OF PRESENT MARRIAGE/CIVIL PARTNERSHIP (DDMM/YYYY)			
DATE OF LAST BIRTH (live or still) (DDMM/YYYY)			
NO. OF PREVIOUS LIVE BIRTHS			
CHILDREN STILL LIVING			
STILLBIRTHS			
SPONTANEOUS ABORTIONS			
PERINATAL DEATH			
TYPE OF DEATH (Early Neonatal = 1, Stillbirth = 2)			
WAS AUTOPSY PERFORMED (Yes = 1, No = 2)			
AGE AT DEATH			
PLACE OF DEATH			
IF STILLBIRTH, DID DEATH OCCUR BEFORE LABOUR (1) DURING LABOUR (2) NOT KNOWN (3)			
CAUSE OF DEATH			
MAIN DISEASE OR CONDITION IN FETUS OR INFANT			
OTHER DISEASES OR CONDITIONS IN FETUS OR INFANT			
MOTHER'S HEALTH			
ANTENATAL CARE THIS PREGNANCY (Hospital / Obstetrician = 1, G.P. Only = 2, Combined = 3, None = 4, Midwife Only = 5)			
DATE OF FIRST VISIT TO DOCTOR DURING PREGNANCY (DDMM/YYYY)			
DATE OF FIRST VISIT TO HOSPITAL DURING PREGNANCY (DDMM/YYYY)			
WAS MOTHER IMMUNE TO RUBELLA (Yes = 1, No = 2, Not Known = 3)			
METHOD OF DELIVERY (Spontaneous = 1, Breech = Forceps = 2, Forceps = 3, Vac. Extraction = 4, Caesarean Sec. = 5, Other = 6)			
MAIN MATERNAL DISEASE OR CONDITION AFFECTING FETUS OR INFANT			
OTHER MATERNAL DISEASES OR CONDITIONS AFFECTING FETUS OR INFANT			
INFANT'S HEALTH			
TYPE OF FEEDING (Artificial = 1, Breast = 2, Combined = 3)			
WAS BCG ADMINISTERED (Yes = 1, No = 2)			
MAIN DISEASE OR CONGENITAL MALFORMATION AFFECTING INFANT			
OTHER DISEASES OR CONGENITAL MALFORMATIONS AFFECTING INFANT			
HOSPITAL			
WAS ADMISSION BOOKED (Yes = 1, No = 2)			
DATE OF MOTHER'S ADMISSION (DDMM/YYYY)			
DATE OF MOTHER'S DISCHARGE (DDMM/YYYY)			
DATE OF INFANT'S DISCHARGE (DDMM/YYYY)			
WAS INFANT TRANSFERRED TO OTHER HOSPITAL FOR MEDICAL REASONS (Yes = 1, No = 2)			
IF 'YES', NAME OF HOSPITAL			
GENERAL PRACTITIONER ATTENDED BY MOTHER			
SIGNATURE			
DATE			

## APPENDIX C

### CLASSIFICATION OF SOCIO-ECONOMIC GROUPS

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

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

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

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

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

## APPENDIX D

### CAUSE OF DEATH CLASSIFICATION

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

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

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

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

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

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

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

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

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

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

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

---

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

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

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

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

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

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

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

Table D1 summarises these rules.

**TABLE D1**  
Cause of Death Coding Rules

ICD-10 Rule	Cause of Death as recorded on the Birth Notification Form				Action
	Section A	Section B	Section C	Section D	
	Main disease or condition in foetus or infant	Other disease or condition in foetus or infant	Main maternal disease or condition affecting foetus or infant	Other maternal disease or condition affecting foetus or infant	
<b>Rule 1</b>	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.
<b>Rule 2</b>	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.
<b>Rule 3</b>	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.
	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.
<b>Rule 4</b>	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.
<b>Additional Rule</b>	No entry	No entry	Maternal condition (P00-P04)	No entry	Code maternal condition to section A.

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

**TABLE D2**

ICD 10, Cause of Death Codes

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

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



## APPENDIX E

### CLASSIFICATION OF COUNTY OF RESIDENCE

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

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

---

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

## APPENDIX F

### CLASSIFICATION OF NATIONALITY

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

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

**Ireland includes the following:**

Ireland  
Irish American  
Irish English  
Irish European  
Irish Other.

**UK includes the following:**

England  
Great Britain  
Northern Ireland  
Scotland  
Wales.

---

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

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

---

**EU 15 to EU 28 includes the following:**

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

---

**Rest of Europe includes the following:**

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

Isle of Man  
Jersey  
Kosovo

Ukraine  
Vatican City  
Yugoslavia, Federal Republic of.

Africa includes the following:

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

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

---

Asia includes the following:

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

---

America includes the following:

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

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

---

Australia includes the following:  
Australia.

---



---

New Zealand and Other Oceania includes the following:

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

---

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

---

No Nationality:  
Stated as so

---

Not Stated:  
Where nationality is not provided

---

Not Applicable:

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

---

All Other Nationalities:

Where nationality is not recorded to any category listed above

## APPENDIX G

### SOURCE NPRS DATA FOR FIGURES

- G1 Mother's County of Residence, Total Births
- G2 Mother's Average Age by Mother's Nationality, Total Maternities
- G3 Age of Mother by Maternal Parity, Total Maternities
- G4 Birthweight (grams) for Primiparous Women
- 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	796	1.3
Cavan	1,070	1.7
Clare	1,372	2.2
Cork	6,903	11.1
Donegal	1,828	2.9
Dublin City	13,726	22.1
Dublin County	4,603	7.4
Galway	3,365	5.4
Kerry	1,623	2.6
Kildare	3,197	5.2
Kilkenny	1,138	1.8
Laois	1,172	1.9
Leitrim	384	0.6
Limerick	2,617	4.2
Longford	549	0.9
Louth	1,753	2.8
Mayo	1,505	2.4
Meath	2,684	4.3
Monaghan	772	1.2
Offaly	1,006	1.6
Roscommon	724	1.2
Sligo	750	1.2
Tipperary	1,989	3.2
Waterford	1,456	2.3
Westmeath	1,307	2.1
Wexford	1,887	3.0
Wicklow	1,856	3.0
Other	32	0.1
<b>Total</b>	<b>62,064</b>	<b>100</b>

Notes: Percentage column is subject to rounding.  
 See Appendix E for details of county of residence classification.  
 There were 6 births where mother's county of residence was not stated; these were excluded from this table.

**TABLE G2**

Mother's Average Age by Mother's Nationality, Total Maternities

Mother's Nationality	Average Age in Years
Ireland	32.5
UK	32.0
EU15 (excluding Ireland & UK)	33.7
EU15 to EU28	30.8
Rest of Europe	30.5
Africa	31.5
Asia	31.7
America	32.5
<b>Total</b>	<b>32.3</b>

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

**TABLE G3**

Age of Mother by Maternal Parity, Total Maternities

Frequency Row Per Cent	Maternal Parity								Total
	0	1	2	3	4	5	6	More than 6	
Under 20 Years	928 87.6	110 10.4	21 2.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1,059 100
20-24 Years	3,181 62.5	1,430 28.1	365 7.2	91 1.8	10 0.2	8 0.2	~ ^	~ ^	5,088 100
25-29 Years	4,895 46.0	3,546 33.3	1,462 13.7	502 4.7	166 1.6	46 0.4	* ^	~ ^	10,636 100
30-34 Years	8,501 39.8	7,798 36.5	3,438 16.1	1,031 4.8	337 1.6	150 0.7	45 0.2	48 0.2	21,348 100
35-39 Years	4,839 26.1	6,748 36.3	4,696 25.3	1,522 8.2	426 2.3	180 1.0	88 0.5	74 0.4	18,573 100.0
40 Years and Over	1,102 26.4	1,311 31.4	960 23.0	475 11.4	182 4.4	62 1.5	42 1.0	44 1.1	4,178 100
<b>Total</b>	<b>23,446 38.5</b>	<b>20,943 34.4</b>	<b>10,942 18.0</b>	<b>3,621 5.9</b>	<b>1,121 1.8</b>	<b>446 0.7</b>	<b>191 0.3</b>	<b>172 0.3</b>	<b>60,882 100</b>

Notes: Percentage rows are subject to rounding.  
~ Denotes five or fewer births reported to NPRS.  
\* Further suppression required to prevent disclosure of five or fewer births.  
^ Percentage not provided to prevent disclosure of small numbers.  
There were 28 births to mothers with unknown maternal age or parity unknown; these were excluded from this table.



**TABLE G4**
**Birthweight (grams) for Primiparous Women: Total Births, Live Births, Mortality Rates, and Maternities**

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
500-749	*	^	*	304.3	208.3	449.3	415.4	*
750-999	71	0.3	64	98.6	31.3	126.8	88.2	59
1000-1249	96	0.4	84	125.0	59.5	177.1	141.3	87
1250-1499	112	0.5	106	53.6	18.9	71.4	45.9	82
1500-1999	372	1.6	359	34.9	13.9	48.4	27.5	285
2000-2499	1,053	4.4	1,045	7.6	1.9	9.5	7.6	919
2500-2999	3,355	14.0	3,339	4.8	1.5	6.3	4.5	3,194
3000-3499	8,287	34.6	8,278	1.1	0.6	1.7	1.2	8,239
3500-3999	7,802	32.6	7,796	0.8	0.5	1.3	0.9	7,797
4000-4499	2,333	9.7	2,331	-	-	0.9	0.9	2,333
4500 and Over	391	1.6	391	-	-	-	-	391
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>23,942</b>	<b>100</b>	<b>23,842</b>	<b>4.2</b>	<b>1.7</b>	<b>5.8</b>	<b>4.3</b>	<b>23,446</b>
<b>Singleton Births</b>								
500-749	*	^	*	400.0	166.7	500.0	456.5	*
750-999	51	0.2	44	137.3	45.5	176.5	125.0	*
1000-1249	72	0.3	61	152.8	82.0	222.2	176.5	72
1250-1499	55	0.2	50	90.9	-	90.9	74.1	55
1500-1999	221	1.0	209	54.3	23.9	76.9	46.7	221
2000-2499	757	3.3	751	7.9	2.7	10.6	7.9	757
2500-2999	3,022	13.2	3,007	5.0	1.7	6.6	4.6	3,022
3000-3499	8,196	35.7	8,187	1.1	0.6	1.7	1.2	8,196
3500-3999	7,793	34.0	7,787	0.8	0.5	1.3	0.9	*
4000-4499	2,333	10.2	2,331	0.9	-	0.9	0.9	2,333
4500 and Over	391	1.7	391	-	-	-	-	391
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>22,942</b>	<b>100</b>	<b>22,849</b>	<b>4.1</b>	<b>1.4</b>	<b>5.5</b>	<b>4.0</b>	<b>22,942</b>
<b>Multiple Births</b>								
500-749	19	1.9	18	52.6	277.8	315.8	315.8	9
750-999	20	2.0	20	-	-	-	-	*
1000-1249	24	2.4	23	41.7	-	41.7	41.7	15
1250-1499	57	5.7	56	17.5	35.7	52.6	18.2	27
1500-1999	151	15.1	150	6.6	-	6.6	-	64
2000-2499	296	29.6	294	6.8	-	6.8	6.8	162
2500-2999	333	33.3	332	3.0	-	3.0	3.0	172
3000-3499	91	9.1	91	-	-	-	-	43
3500-3999	9	0.9	9	-	-	-	-	~
4000-4499	0	-	0	-	-	-	-	0
4500 and Over	0	-	0	-	-	-	-	0
Not Stated	0	-	0	-	-	-	-	0
<b>Total</b>	<b>1,000</b>	<b>100</b>	<b>993</b>	<b>7.0</b>	<b>7.0</b>	<b>14.0</b>	<b>11.0</b>	<b>504</b>

Notes: Percentage column is subject to rounding.

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

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

^ Percentage not provided to prevent disclosure of small numbers.

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

TABLE G5

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
500-749	*	^	*	345.5	250.0	509.1	449.0	49
750-999	67	0.2	55	179.1	90.9	253.7	166.7	60
1000-1249	77	0.2	70	90.9	85.7	168.8	135.1	66
1250-1499	99	0.3	96	30.3	52.1	80.8	61.9	83
1500-1999	361	0.9	338	63.7	38.5	99.7	46.9	294
2000-2499	1,220	3.2	1,208	9.8	11.6	21.3	8.3	1,029
2500-2999	4,191	11.0	4,174	4.1	1.9	6.0	4.1	3,928
3000-3499	11,930	31.3	11,920	0.8	0.3	1.1	0.9	11,840
3500-3999	13,662	35.9	13,656	0.4	0.1	0.6	0.5	13,651
4000-4499	5,506	14.5	5,503	0.5	0.2	0.7	0.2	5,505
4500 and Over	931	2.4	929	2.1	-	2.1	2.1	931
Not Stated	~	^	~	-	-	-	-	0
<b>Total</b>	<b>38,100</b>	<b>100</b>	<b>37,986</b>	<b>3.0</b>	<b>1.7</b>	<b>4.7</b>	<b>2.9</b>	<b>37,436</b>
<b>Singleton Births</b>								
500-749	*	^	*	404.8	240.0	547.6	486.5	*
750-999	49	0.1	39	204.1	51.3	244.9	177.8	52
1000-1249	52	0.1	46	115.4	130.4	230.8	183.7	60
1250-1499	69	0.2	66	43.5	45.5	87.0	73.5	60
1500-1999	237	0.6	217	84.4	46.1	126.6	59.1	265
2000-2499	864	2.3	852	13.9	15.3	28.9	11.8	847
2500-2999	3,635	9.9	3,618	4.7	1.7	6.3	4.4	3,784
3000-3499	11,759	32.0	11,750	0.8	0.3	1.0	0.9	12,263
3500-3999	13,638	37.1	13,632	0.4	0.1	0.6	0.5	14,138
4000-4499	*	^	*	0.5	0.2	0.7	0.2	*
4500 and Over	931	2.5	929	2.1	-	2.1	2.1	1,015
Not Stated	0	-	0	-	-	-	-	0
<b>Total</b>	<b>36,779</b>	<b>100</b>	<b>36,674</b>	<b>2.9</b>	<b>1.4</b>	<b>4.3</b>	<b>2.7</b>	<b>38,320</b>
<b>Multiple Births</b>								
500-749	*	^	*	153.8	272.7	384.6	333.3	*
750-999	18	1.4	16	111.1	187.5	277.8	133.3	11
1000-1249	25	1.9	24	40.0	-	40.0	40.0	14
1250-1499	30	2.3	30	-	66.7	66.7	34.5	14
1500-1999	124	9.4	121	24.2	24.8	48.4	24.8	57
2000-2499	356	26.9	356	-	2.8	2.8	-	165
2500-2999	556	42.1	556	-	3.6	3.6	1.8	293
3000-3499	171	12.9	170	5.8	-	5.8	5.8	81
3500-3999	24	1.8	24	-	-	-	-	13
4000-4499	~	^	~	-	-	-	-	~
4500 and Over	13	1.0	11	153.8	-	-	-	0
Not Stated	~	^	~	-	-	-	-	0
<b>Total</b>	<b>1,321</b>	<b>100</b>	<b>1,312</b>	<b>6.8</b>	<b>10.7</b>	<b>17.4</b>	<b>9.9</b>	<b>657</b>

## Notes:

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

**TABLE G6**

Birthweight (grams) by Sex, Total Live Births

	Male		Female		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
500-749	38	0.1	46	0.2	84	0.1
750-999	59	0.2	60	0.2	119	0.2
1000-1249	68	0.2	86	0.3	154	0.2
1250-1499	94	0.3	110	0.4	204	0.3
1500-1999	340	1.1	357	1.2	697	1.1
2000-2499	1,025	3.2	1,230	4.1	2,255	3.6
2500-2999	3,308	10.4	4,209	14.0	7,517	12.2
3000-3499	9,420	29.6	10,784	35.9	20,204	32.7
3500-3999	11,636	36.6	9,823	32.7	21,459	34.7
4000-4499	4,899	15.4	2,938	9.8	7,837	12.7
4500 and Over	930	2.9	390	1.3	1,320	2.1
<b>Total</b>	<b>31,817</b>	<b>100</b>	<b>30,033</b>	<b>100</b>	<b>61,850</b>	<b>100</b>

Notes: Percentage columns are subject to rounding.

There were five or fewer births where sex was recorded as indeterminate; these were excluded from this table.

There were five or fewer births where birthweight was recorded as not stated; 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 <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Less than 28	*	^	*	195.3	145.6	312.5	284.6	*
28-31	254	1.1	238	63.0	16.8	78.7	64.0	201
32-36	1,520	6.3	1495	16.4	6.0	22.4	12.0	1,280
37-41	21,547	90.0	21514	1.5	0.6	2.1	1.5	21,357
42 and Over	492	2.1	491	2.0	-	2.0	2.0	492
Not Stated	~	^	~	-	-	-	0.0	~
<b>Total</b>	<b>23,942</b>	<b>100</b>	<b>23,842</b>	<b>4.2</b>	<b>1.7</b>	<b>5.8</b>	<b>4.3</b>	<b>23,446</b>
<b>Singleton Births</b>								
Less than 28	*	^	*	240.0	131.6	340.0	305.3	*
28-31	151	0.7	136	99.3	14.7	112.6	94.6	151
32-36	1,035	4.5	1,013	21.3	8.9	30.0	16.7	1,035
37-41	21,163	92.2	21,132	1.5	0.6	2.0	1.5	21,163
42 and Over	492	2.1	491	2.0	-	2.0	2.0	492
Not Stated	~	^	~	-	-	-	-	~
<b>Total</b>	<b>22,942</b>	<b>100</b>	<b>22,849</b>	<b>4.1</b>	<b>1.4</b>	<b>5.5</b>	<b>4.0</b>	<b>22,942</b>
<b>Multiple Births</b>								
Less than 28	28	2.8	27	35.7	185.2	214.3	214.3	15
28-31	103	10.3	102	9.7	19.6	29.1	19.6	50
32-36	485	48.5	482	6.2	-	6.2	2.1	245
37-41	384	38.4	382	5.2	-	5.2	5.2	194
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>1,000</b>	<b>100</b>	<b>993</b>	<b>7.0</b>	<b>7.0</b>	<b>14.0</b>	<b>11.0</b>	<b>504</b>

Notes: Percentage column is subject to rounding.

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

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

^ Percentage not provided to prevent disclosure of small numbers.

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

**TABLE G8**

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

	Total Births	Total Births %	Live Births	Stillbirth Rate <sup>a</sup>	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adjusted PMR <sup>a</sup>	Maternities
<b>Total Births</b>								
Less than 28	121	0.3	93	231.4	182.8	371.9	315.3	107
28-31	235	0.6	216	80.9	46.3	123.4	92.5	203
32-36	2,027	5.3	1,997	14.8	10.5	25.2	12.0	1,723
37-41	35,406	92.9	35,370	1.0	0.5	1.5	0.9	35,092
42 and Over	291	0.8	290	3.4	3.4	6.9	3.4	291
Not Stated	20	0.1	20	-	-	-	-	20
<b>Total</b>	<b>38,100</b>	<b>100</b>	<b>37,986</b>	<b>3.0</b>	<b>1.7</b>	<b>4.7</b>	<b>2.9</b>	<b>37,436</b>
<b>Singleton Births</b>								
Less than 28	89	0.2	64	280.9	187.5	415.7	358.0	89
28-31	172	0.5	156	93.0	51.3	139.5	103.0	172
32-36	1,427	3.9	1399	19.6	10.0	29.4	15.6	1,427
37-41	34,780	94.6	34,745	1.0	0.5	1.5	0.9	34,780
42 and Over	291	0.8	290	3.4	3.4	6.9	3.4	291
Not Stated	20	0.1	20	-	-	-	-	20
<b>Total</b>	<b>36,779</b>	<b>100</b>	<b>36,674</b>	<b>2.9</b>	<b>1.4</b>	<b>4.3</b>	<b>2.7</b>	<b>36,779</b>
<b>Multiple Births</b>								
Less than 28	32	2.4	29	93.8	172.4	250.0	200.0	18
28-31	63	4.8	60	47.6	33.3	79.4	64.5	31
32-36	600	45.4	598	3.3	11.7	15.0	3.4	296
37-41	626	47.4	625	1.6	-	1.6	1.6	312
42 and Over	0	0.0	0	-	-	-	-	0
Not Stated	0	0.0	0	-	-	-	-	0
<b>Total</b>	<b>1,321</b>	<b>100</b>	<b>1312</b>	<b>6.8</b>	<b>10.7</b>	<b>17.4</b>	<b>9.9</b>	<b>657</b>

Notes: Percentage column is subject to rounding.

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

**TABLE G9**

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

	Postnatal Length of Stay			
	0-2 Days	3-5 Days	6-8 Days	9+ Days
<b>Singleton Births</b>				
Spontaneous	79.3	19.8	0.7	0.2
Instrumental <sup>#</sup>	58.8	39.2	1.6	0.3
Caesarean section	5.8	88.7	4.6	0.9
<b>Multiple Births</b>				
Spontaneous	35.6	57.3	6.3	0.8
Instrumental <sup>#</sup>	30.0	62.2	7.7	0.0
Caesarean section	2.0	79.5	16.1	2.4

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	Not Stated	Total
Carlow	368	391	*	~	794
	46.3	49.2	^	^	100.0
	1.5	1.3	^	^	1.3
Cavan	522	446	*	~	1,062
	49.2	42.0	^	^	100.0
	2.1	1.5	^	^	1.7
Clare	652	547	167	0	1,366
	47.7	40.0	12.2	0.0	100.0
	2.7	1.8	2.4	0.0	2.2
Cork	2,377	4,344	*	~	6,872
	34.6	63.2	^	^	100.0
	9.7	14.6	^	^	11.1
Donegal	939	726	*	~	1,819
	51.6	39.9	^	^	100.0
	3.8	2.4	^	^	2.9
Dublin City	4,498	6,756	2,196	202	13,652
	32.9	49.5	16.1	1.5	100.0
	18.3	22.7	31.1	57.4	22.1
Dublin County	1,345	2,426	753	61	4,585
	29.3	52.9	16.4	1.3	100.0
	5.5	8.1	10.7	17.3	7.4
Galway	1,294	1,416	*	~	3,348
	38.6	42.3	^	^	100.0
	5.3	4.8	^	^	5.4
Kerry	617	932	*	~	1,615
	38.2	57.7	^	^	100.0
	2.5	3.1	^	^	2.6
Kildare	1,203	1,410	558	14	3,185
	37.8	44.3	17.5	0.4	100.0
	4.9	4.7	7.9	4.0	5.2
Kilkenny	413	703	*	~	1,134
	36.4	62.0	^	^	100.0
	1.7	2.4	^	^	1.8
Laois	465	609	*	~	1,164
	39.9	52.3	^	^	100.0
	1.9	2.0	^	^	1.9
Leitrim	158	173	52	0	383
	41.3	45.2	13.6	0.0	100.0
	0.6	0.6	0.7	0.0	0.6
Limerick	1,437	914	*	~	2,607
	55.1	35.1	^	^	100.0
	5.9	3.1	^	^	4.2
Longford	258	259	28	0	545
	47.3	47.5	5.1	0.0	100.0
	1.1	0.9	0.4	0.0	0.9
Louth	921	612	*	~	1,743
	52.8	35.1	^	^	100.0
	3.8	2.1	^	^	2.8
Mayo	647	599	254	0	1,500
	43.1	39.9	16.9	0.0	100.0
	2.6	2.0	3.6	0.0	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	Not Stated	Total
Meath	1,079 40.4 4.4	1,237 46.3 4.2	315 11.8 4.5	40 1.5 11.4	2,671 100.0 4.3
Monaghan	394 51.2 1.6	308 40.1 1.0	* ^ ^	~ ^ ^	769 100.0 1.2
Offaly	483 48.4 2.0	448 44.9 1.5	* ^ ^	~ ^ ^	997 100.0 1.6
Roscommon	345 47.7 1.4	292 40.4 1.0	* ^ ^	~ ^ ^	723 100.0 1.2
Sligo	326 43.8 1.3	323 43.4 1.1	96 12.9 1.4	0 0.0 0.0	745 100.0 1.2
Tipperary	1,076 54.6 4.4	724 36.7 2.4	171 8.7 2.4	0 0.0 0.0	1,971 100.0 3.2
Waterford	582 40.2 2.4	834 57.6 2.8	32 2.2 0.5	0 0.0 0.0	1,448 100.0 2.3
Westmeath	525 40.5 2.1	693 53.4 2.3	* ^ ^	~ ^ ^	1,297 100.0 2.1
Wexford	911 48.6 3.7	794 42.4 2.7	* ^ ^	~ ^ ^	1,874 100.0 3.0
Wicklow	678 36.8 2.8	878 47.7 2.9	* ^ ^	~ ^ ^	1,842 100.0 3.0
Other	11 36.7 0.0	9 30.0 0.0	10 33.3 0.1	0 0.0 0.0	30 100.0 0.0
<b>Total</b>	<b>24,524 39.7 100</b>	<b>29,803 48.3 100</b>	<b>7,063 11.4 100</b>	<b>351 0.6 100</b>	<b>61,741 100 100</b>

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

**TABLE G11**

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

Mother's Nationality	Breastfeeding (%)
Ireland	43.5
UK	50.7
EU15 (excluding Ireland & UK)	76.5
EU15 to EU28	72.2
Rest of Europe	76.0
Africa	49.9
Asia	54.7
America	70.0

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

**TABLE G12**

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

	Total Perinatal Deaths	Total Perinatal Deaths %	Ante-partum Stillbirths	Intra-partum Stillbirths	Not Stated	Stillbirth Rate <sup>a</sup>	Early Neonatal Deaths	Early Neonatal Mortality Rate <sup>a</sup>	Perinatal Mortality Rate <sup>a</sup>	Adj. PMR <sup>a</sup>
<b>Total Births</b>										
500-749	59	18.2	33	~	~	322.6	19	226.2	475.8	429.8
750-999	26	8.0	17	~	~	137.7	7	58.8	188.4	125.0
1000-1249	30	9.3	16	~	~	109.8	11	71.4	173.4	138.6
1250-1499	16	4.9	9	0	~	42.3	7	34.3	75.1	52.9
1500-1999	54	16.7	31	~	0	49.1	18	25.8	73.7	36.9
2000-2499	38	11.7	17	~	~	8.8	18	8.0	16.7	8.4
2500-2999	47	14.5	32	~	~	4.5	13	1.7	6.2	4.4
3000-3499	28	8.6	19	0	~	1.0	8	0.4	1.4	1.0
3500-3999	18	5.6	10	~	0	0.6	*	0.3	0.8	0.7
4000-4499	*	^	~	~	0	0.6	~	0.1	0.8	0.4
4500 and over	~	^	~	~	0	1.5	0	0.0	1.5	-
<b>Total</b>	<b>324</b>	<b>100</b>	<b>190</b>	<b>18</b>	<b>8</b>	<b>3.5</b>	<b>108</b>	<b>1.7</b>	<b>5.2</b>	<b>3.5</b>
<b>Singleton Births</b>										
500-749	48	16.7	*	~	~	402.2	11	200.0	521.7	469.9
750-999	*	^	*	~	0	170.0	~	48.2	210.0	150.5
1000-1249	*	^	*	~	~	137.1	11	102.8	225.8	179.5
1250-1499	*	^	*	0	0	63.5	~	25.4	87.3	72.6
1500-1999	47	16.4	*	~	0	69.9	*	35.2	102.6	53.0
2000-2499	*	^	*	~	~	11.1	*	10.6	21.6	10.6
2500-2999	*	^	*	~	~	5.0	*	1.7	6.6	4.7
3000-3499	*	^	19	0	0	1.0	8	0.4	1.4	1.0
3500-3999	18	6.3	10	~	0	0.6	6	0.3	0.8	0.7
4000-4499	*	^	~	0	0	0.6	~	0.1	0.8	0.4
4500 and over	~	^	~	~	0	1.5	0	0.0	1.5	-
<b>Total</b>	<b>287</b>	<b>100</b>	<b>178</b>	<b>*</b>	<b>*</b>	<b>3.3</b>	<b>87</b>	<b>1.5</b>	<b>4.8</b>	<b>3.2</b>
<b>Multiple Births</b>										
500-749	11	29.7	~	~	0	93.8	8	275.9	343.8	322.6
750-999	~	13.5	~	0	0	52.6	~	83.3	131.6	57.1
1000-1249	~	5.4	~	0	0	40.8	0	0.0	40.8	-
1250-1499	~	13.5	~	0	0	11.5	~	46.5	57.5	23.8
1500-1999	7	18.9	~	0	0	14.5	~	11.1	25.5	11.1
2000-2499	~	8.1	~	0	~	3.1	~	1.5	4.6	3.1
2500-2999	~	8.1	~	0	0	1.1	~	2.3	3.4	2.3
3000-3499	~	2.7	0	0	~	3.8	0	-	-	-
3500-3999	0	0.0	0	0	0	-	0	-	-	-
4000-4499	0	0.0	0	0	0	-	0	-	-	-
4500 and over	0	0.0	0	0	0	-	0	-	-	-
<b>Total</b>	<b>37</b>	<b>100</b>	<b>12</b>	<b>~</b>	<b>~</b>	<b>6.9</b>	<b>21</b>	<b>9.1</b>	<b>15.9</b>	<b>10.4</b>

**Notes:**

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

**TABLE G13**

Cause of Death: Total Perinatal Deaths

	Stillbirth		Early Neonatal Death		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Maternal factors (P00-P04)	66	30.6	6	5.6	72	22.2
Immaturity (P05-P08)	20	9.3	13	12.0	33	10.2
Respiratory/cardiovascular disorders (P20-P29)	20	9.3	9	8.3	29	9.0
Unspecified/Unexplained (P95,P96.9)	33	15.3	7	6.5	40	12.3
Congenital malformations (Q00-Q99)	51	23.6	56	51.9	107	33.0
All other specific causes	26	12.0	17	15.7	43	13.3
<b>Total</b>	<b>216</b>	<b>100</b>	<b>108</b>	<b>100</b>	<b>324</b>	<b>100</b>

Note: Percentage columns are subject to rounding.

**TABLE G14**

Age at Death by Plurality, Early Neonatal Deaths

	Total Births	Singleton Births	Multiple Births
	Per Cent	Per Cent	Per Cent
<b>Completed Hours</b>			
<1 hour	19.6	19.8	19.0
1-23 hours	40.2	38.4	47.6
<b>Total under 1 day</b>	<b>59.8</b>	<b>58.1</b>	<b>66.7</b>
1-6 completed days	40.2	41.9	33.3
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Note: Percentages are subject to rounding.

**TABLE G15**

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

	Total Births	Birthweight < 1,000g	Birthweight ≥ 1,000g
	Per Cent	Per Cent	Per Cent
<b>Completed Hours</b>			
<1 hour	19.6	19.2	19.8
1-23 hours	40.2	42.3	39.5
<b>Total under 1 day</b>	<b>59.8</b>	<b>61.5</b>	<b>59.3</b>
1-6 completed days	40.2	38.5	40.7
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Note: Percentages are subject to rounding.



## APPENDIX H

### DOMICILIARY BIRTHS, 2008–2017

#### INTRODUCTION

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

Table H1 presents selected statistics for domiciliary births for the period 2008–2017.

- There were 168 domiciliary births in 2017 representing 0.3 per cent of all births.
- The number of domiciliary births has increased by 6.3 per cent over the decade while the number remained the same from 2016 to 2017. The lowest number of domiciliary births over the 10-year period was reported for 2009 at 148 and the highest number was reported in 2015 at 206 (see Figure H1).
- The average age of mothers having domiciliary births has remained stable, ranging from 33.2 years in 2011 to 34.5 years in 2009 and is recorded as 34.3 years in 2017.
- Women choosing a domiciliary delivery in 2017 had an average maternal parity of 1.5 previous births.
- The percentage of women recording any breastfeeding was 95.6 per cent in 2008; this increased to 99.4 per cent in 2011 and is reported at 92.3 per cent in 2017.
- Exclusive breastfeeding was reported for 90.5 per cent of domiciliary births in 2017.
- The average birthweight for domiciliary births in 2017 was 3,687.5 grams.

TABLE H1

Trends in Domiciliary Births—Selected Statistics, 2008–2017

General Characteristics		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Change	
												2008-2017	2016-2017
<b>Total Domiciliary Births</b>		<b>158</b>	<b>148</b>	<b>177</b>	<b>168</b>	<b>176</b>	<b>162</b>	<b>186</b>	<b>206</b>	<b>168</b>	<b>168</b>	<b>6.3</b>	<b>0.0</b>
Age of mother (years) <sup>1,2</sup>	Avg	33.7	34.5	33.4	33.2	33.8	33.3	34.1	33.7	34.0	34.3	1.8	0.9
Single mothers <sup>1</sup>	%	25.3	22.3	24.3	29.2	27.3	24.1	24.7	28.2	29.2	25.0	-1.2	-14.4
Maternal parity <sup>1</sup>	Avg	1.5	1.7	1.4	1.5	1.5	1.5	1.6	1.5	1.4	1.5	0.0	7.1
Gestational age at delivery in weeks <sup>1</sup>	Avg	40.1	40	40	40	39.9	39.8	40.0	39.9	39.8	39.9	-0.5	0.3
Interval since last birth (years) <sup>2,3</sup>	Avg	3.1	3.2	2.9	2.7	2.9	2.6	2.5	2.9	2.6	2.9	-6.5	11.5
Immunity to Rubella <sup>1</sup>	%	96.2	98.0	97.2	97.0	96.6	95.1	96.2	92.7	92.9	96.4	0.2	3.8
Any Breastfeeding <sup>4,5</sup>	%	95.6	96.6	97.2	99.4	98.3	96.3	93.5	96.1	95.2	92.3	-3.5	-3.0
Exclusive Breastfeeding <sup>4</sup>	%	95.6	96.6	96.6	98.2	96.6	93.8	91.4	95.1	94.0	90.5	-5.3	-3.7
Combined Antenatal Care – Midwife and G.P./Hospital <sup>6</sup>	%	77.8	99.3	98.9	93.5	86.9	96.9	93.0	99.5	97.6	100.0	28.5	2.5
Birthweight (grams) <sup>7</sup>	Avg	3,667.1	3,764.9	3,833.9	3,679.6	3,713.1	3,720.1	3,767.7	3,712.8	3,753.1	3,687.5	0.6	-1.7

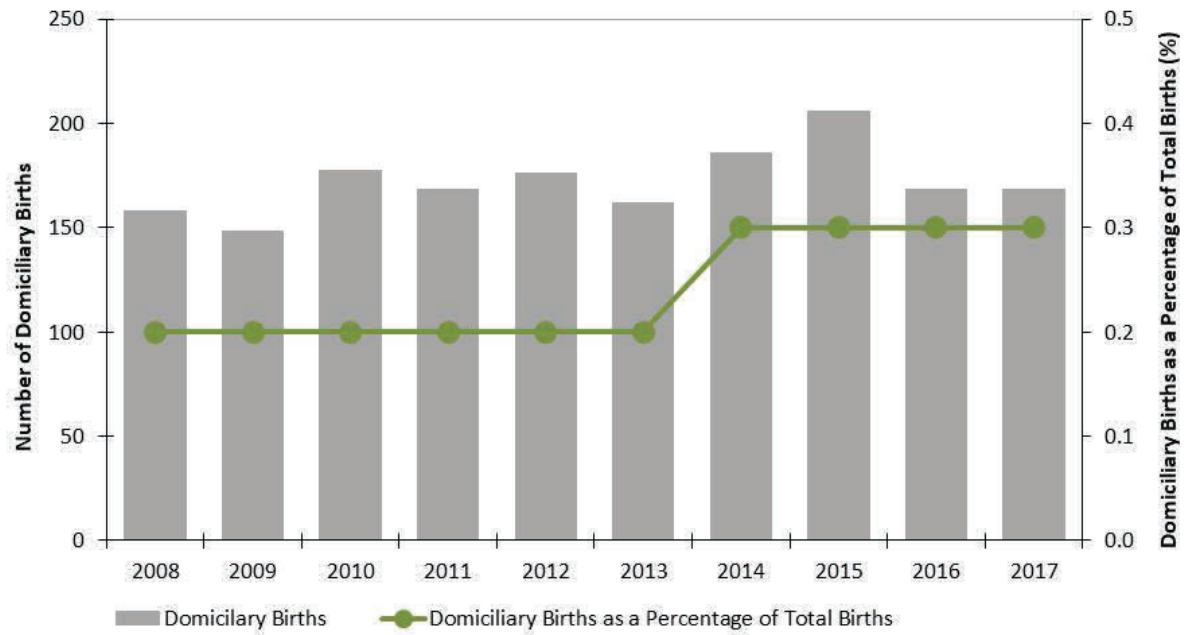
Notes: Percentages are subject to rounding.

There were no domiciliary multiple births in the years 2008–2017.

<sup>1</sup> Based on maternities.<sup>2</sup> For reports from 2014 onwards the calculation of average number of years has been revised, therefore caution should be exercised when comparing this with data reported in previous publications.<sup>3</sup> Based on multiparous maternities.<sup>4</sup> Based on maternities with live births. Excludes early neonatal deaths.<sup>5</sup> Any breastfeeding includes type of feeding recorded as either breast or combined.<sup>6</sup> Based on maternities. This figure applies to the percentage of home births where antenatal care is stated as 'combined', rather than 'midwife only'.<sup>7</sup> Based on live births.

**FIGURE H1**

Number and Percentage of Domiciliary Births Reported, 2008–2017



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 2008 to 2017.

- The proportion of women having a spontaneous delivery has fallen from 57.4 per cent in 2008 to 53.2 per cent in 2017, with the rate of decrease higher for primiparous than multiparous women.
- For total maternities, the percentage of deliveries by Caesarean section has increased from 25.9 per cent in 2008 to 32.0 per cent in 2017.
- 34.3 per cent of primiparous women delivered by Caesarean section in 2017 compared to 27.3 per cent in 2008, with a similar rate of increase for Caesarean section delivery for multiparous women, increasing from 24.8 per cent in 2008 to 30.6 per cent in 2017 (see Figure I1).

**TABLE I1**

Percentage Distribution of Maternities by Method of Delivery, Primiparous and Multiparous Women, 2008–2017

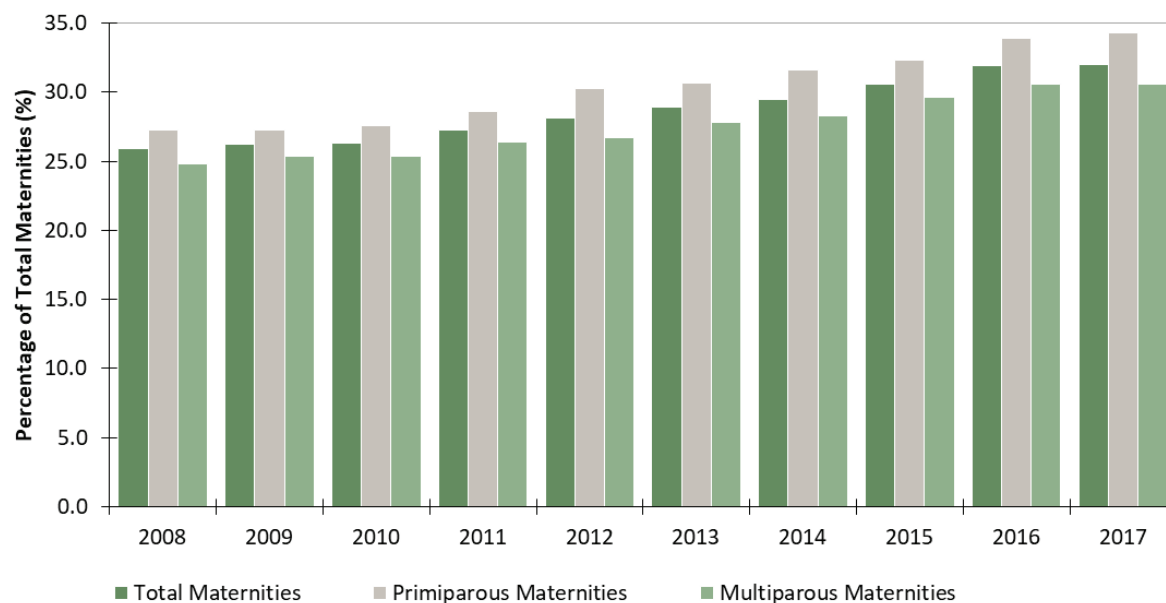
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Change	
											2008–2017	2016–2017
<b>Total Maternities</b>												
Spontaneous	57.4	57.0	57.2	56.6	56.3	55.9	55.0	54.2	52.9	53.2	-7.3	0.6
Breech/forceps	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.0	0.0
Forceps	3.7	4.1	4.0	4.1	3.9	3.9	3.8	3.5	3.6	3.6	-2.7	0.0
Vacuum extraction	12.6	12.2	11.9	11.5	11.3	10.9	11.3	11.3	11.2	10.7	-15.1	-4.5
Caesarean section	25.9	26.2	26.3	27.3	28.1	28.9	29.5	30.6	31.9	32.0	23.6	0.3
Other specified & combined	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>		
<b>Primiparous</b>												
Spontaneous	43.5	42.7	42.7	41.2	40.5	40.2	39.0	38.4	36.6	37.4	-14.0	2.2
Breech/forceps	0.5	0.5	0.7	0.6	0.4	0.4	0.4	0.4	0.6	0.6	20.0	0.0
Forceps	7.2	8.2	8.0	8.6	8.3	8.4	8.2	7.9	7.9	7.8	8.3	-1.3
Vacuum extraction	21.4	21.2	21.0	21.0	20.5	20.3	20.8	21.0	21.0	19.9	-7.0	-5.2
Caesarean section	27.3	27.3	27.6	28.6	30.3	30.7	31.6	32.3	33.9	34.3	25.6	1.2
Other specified & combined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>		
<b>Multiparous</b>												
Spontaneous	67.6	67.4	67.5	66.8	66.4	65.7	65.0	64.1	62.9	63.2	-6.5	0.5
Breech/forceps	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.0	0.0
Forceps	1.1	1.1	1.2	1.1	1.1	1.0	1.0	0.8	1.0	0.9	-18.2	-10.0
Vacuum extraction	6.0	5.7	5.4	5.2	5.4	5.1	5.4	5.3	5.2	4.9	-18.3	-5.8
Caesarean section	24.8	25.4	25.4	26.4	26.7	27.8	28.3	29.6	30.6	30.6	23.4	0.0
Other specified & combined	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>		

Note: Percentage columns are subject to rounding.

There were five or fewer births where method of delivery was recorded as not stated; these were excluded from this table.

**FIGURE I1**

Percentage Distribution of Maternities Delivering by Caesarean Section for Total, Primiparous and Multiparous Women, 2008–2017



Note: See Table I1 for data.





---

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

[www.hpo.ie](http://www.hpo.ie)  
978-1-78602-159-5

---



Building a  
Better Health  
Service

Seirbhís Sláinte  
Níos Fearr  
á Forbairt

**H**EALTHCARE  
**P**RICING  
**O**FFICE

---