

# NSW Mothers and Babies 2009



Health

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## Data collection

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NSW Register of Congenital Conditions	Susan Travis, Christine Erratt NSW Register of Congenital Conditions Advisory Committee NSW hospitals' midwives, doctors, and cytogenetic laboratories Medical record departments, particularly at The Children's Hospital at Westmead, The Sydney Children's Hospital and The John Hunter Hospital
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## 2. Executive Summary

This is the thirteenth annual report on mothers and babies in NSW. The report draws information from a variety of sources, including the NSW Perinatal Data Collection (formerly known as the Midwives Data Collection), the NSW Register of Congenital Conditions, the NSW Admitted Patient Data Collection and birth registration data from the NSW Registry of Births, Deaths and Marriages. Information on causes of maternal deaths in NSW was obtained through the work of the NSW Maternal and Perinatal Committee. From 1 January 2006, confidential reviews of perinatal deaths among all live born babies, and stillbirths of at least 20 weeks gestation or 400 grams birth weight are also carried out by the Committee.

### Trends in NSW

The number of births in NSW rose from 90,610 in 2005 to 96,030 in 2007 and 96,439 in 2009, an overall rise of 6.4%. The increase in births occurred mainly in the metropolitan areas. The largest increase occurred in the Western Sydney Local Health District, where the number of births increased from 12,037 to 13,573 between 2005 and 2009.

The percentage of mothers who were teenagers fell from 3.9% in 2005 to 3.5% in 2009. Over the same period the percentage of mothers aged 35 years increased from 20.7% to 23.8% of all mothers giving birth. The mean maternal age rose from 30.4 to 30.7 years, rising from 28.8 to 29.1 years among mothers giving birth for the first time, and from 31.5 to 32.0 years for mothers who had given birth previously.

Between 2005 and 2009, the proportion of mothers starting antenatal care at 20-plus weeks gestation declined from 11.4% to 7.1%, and the proportion of mothers starting antenatal care at less than 14 weeks gestation rose from 68.1% to 78.9%.

Between 2005 and 2009, the vast majority of women gave birth in a hospital labour ward. The proportion of mothers planning to give birth in a birth centre remained stable at 3–4%. The total number of reported planned homebirths rose from 152 in 2005 to 266 in 2009, while the reported number of planned homebirths that occurred at home rose from 112 in 2005 to 231 in 2009.

The rate of normal vaginal birth decreased from 61.2% in 2005 to 58.2% in 2009. The caesarean section rate increased from 28.1% to 30.2% and the rate of instrumental birth remained steady at 10% to 11%. Operative births are more common among privately than publicly insured mothers. Among privately insured mothers the rate of normal vaginal birth fell from 49.8% in 2004 to 46.7% in 2008 and the

caesarean section rate increased from 35.2% to 38.4%. Among publicly insured mothers the rate of normal vaginal birth fell from 66.0% to 65.6% and the caesarean section rate rose from 24.4% to 25.0%.

Since 2004, the pattern of birth weight has remained stable, with the rate of low birth weight (less than 2,500 grams) at about 6% each year. The rate of low birth weight was 6.0% in 2009. The percentage of babies born prematurely (less than 37 weeks gestation) has remained stable at about 7% and was 7.3% in 2009. The perinatal mortality rate varied from 8.7 to 9.0 per 1,000 births over the 5-year period, and was 8.7 per 1,000 in 2009.

In the period 1990–2008, 183 deaths were reported among pregnant women or women who gave birth less than 6 weeks previously. Of these, 56 (30.6%) died of incidental causes not related to the pregnancy or its management, 77 (42.1%) deaths were found to be directly due to pregnancy or its management, and 47 (25.7%) deaths were found to result from pre-existing disease or disease which developed during pregnancy (not due to direct obstetric causes), but which may have been aggravated by the physiologic effects of pregnancy.

### Aboriginal and Torres Strait Islander Mothers and Babies

Between 2005 and 2009, the number of reported births to Aboriginal or Torres Strait Islander mothers rose from 2,507 to 2,931, representing 2.8% and 3.0% respectively of all babies born in NSW.

Births to teenage mothers followed the same pattern as for non-Aboriginal mothers. The percentage of Aboriginal or Torres Strait Islander mothers who were teenagers fell from 20.4% in 2005 to 18.9% in 2009. The percentage of mothers giving birth at 35 years of age or more has been stable at about 9%.

Between 2005 and 2009, the proportion of Aboriginal or Torres Strait Islander mothers who commenced antenatal care at less than 14 weeks gestation rose from 56.4% to 69.2%, and the proportion who commenced antenatal care at less than 20 weeks gestation rose from 74.9% to 83.4%.

In 2009, 50.5% of Aboriginal or Torres Strait Islander mothers reported smoking at some time during pregnancy, compared to 55.3% in 2005. This compares with 10.5% of non-Aboriginal or Torres Strait Islander mothers who reported smoking at some time during pregnancy in 2009.

Since 2005, the rate of low birth weight (less than 2,500 grams) in Aboriginal or Torres Strait Islander babies has been over 10% and was 10.8% in 2009. This is about twice the rate for babies born to non-Aboriginal or Torres Strait Islander mothers, which was 5.8% in 2009. Over the same period, over 10% of Aboriginal or Torres Strait Islander babies have been premature (less than 37 weeks gestation). The rate of prematurity was 10.5% in 2009—compared with a rate of 7.2% for babies born to non-Aboriginal or Torres Strait Islander mothers.

Since 2005, the perinatal mortality rate among Aboriginal or Torres Strait Islander babies has varied from 12.1 to 22.6 per 1,000 births. The rate of 12.6 per 1,000 in 2009 is substantially higher than the rate of 8.5 per 1,000 experienced by babies born to non-Aboriginal or Torres Strait Islander mothers.

Aboriginal mothers and babies are under-reported to the NSW Perinatal Data Collection (PDC). Between 2006 and 2008 the estimated percentage of births to Aboriginal or Torres Strait Islander mothers that were reported to the PDC ranged from 63% to 68%. In 2008, reporting varied markedly between Local Health Districts, ranging from 14% in the Northern Sydney Local Health District to 93% in the Mid North Coast Local Health District, with reporting generally better in rural compared to urban areas.

## Country of birth

Between 2005 and 2009, the percentage of mothers who were born in non-English speaking countries rose from 20.8% to 24.3%. The increase was mainly among mothers born in Asian countries and the Middle East and Africa. There was a decline in the percentage of mothers born in Southern European countries and Melanesia, Micronesia and Polynesia.

In 2009, 91.9% of all mothers commenced antenatal care before 20 weeks gestation and 78.9% commenced antenatal care before 14 weeks gestation. There was some variation between country of birth groups, with 93.2% of mothers born in English speaking countries commencing antenatal care before 20 weeks gestation, compared with 79.6% of mothers born in Melanesia, Micronesia, and Polynesia, and 85.5% of mothers born in North East Asia.

In 2009, smoking at any time during pregnancy was more common among mothers born in English speaking countries than mothers born in non-English speaking countries. About one in seven mothers born in English speaking countries smoked at some time during pregnancy, compared to fewer than one in nine mothers born in other country of birth groups.

The highest rates of low birth weight were in babies of mothers born in Southern Asia (9.6%) and South East Asia (6.2%). Babies of mothers born in Western and Northern Europe were least likely to be low birth weight. The highest rate of prematurity was among babies of mothers born in English-speaking countries (7.5%). Babies of mothers born in Western and Northern Europe were least likely to be premature. The perinatal mortality rate was highest among babies of mothers born in Southern Asia (14.5 per 1,000) and lowest among babies of mothers born in Central and South America (5.7 per 1,000).

## Congenital conditions

About 2% of infants are born with congenital conditions each year in NSW. In 2003–2009, anomalies of the cardiovascular system were most commonly reported, followed by anomalies of the musculoskeletal system and the genito-urinary system. This is a similar pattern to previous years.

Congenital conditions were more common among premature infants compared to full term infants, and among male infants compared to female infants. The rate of congenital conditions increases with increasing maternal age, especially after age 35. However, as most babies are born to mothers aged less than 35 years, the majority of babies with congenital conditions were born to younger mothers.

## Perinatal deaths

Confidential reports on 827 perinatal deaths in 2009 were reviewed. Overall, 185 (22.4%) of these deaths were unexplained stillbirths. The most common obstetric antecedent of perinatal death was congenital anomaly (23.9%). The other major obstetric antecedents of perinatal death were spontaneous preterm labour (16.2%) and perinatal infection (10.8%). The most common cause of neonatal death was extreme prematurity (51.4%), followed by congenital anomalies (18.6%). Post-mortem examinations were carried out in 30.1% of all perinatal deaths.

## 3. Methods

### Data sources

#### *The New South Wales Perinatal Data Collection*

The New South Wales Perinatal Data Collection (PDC), formerly known as the Midwives Data Collection, is a population-based surveillance system covering all births in NSW public and private hospitals, as well as home births. It encompasses all live births, and stillbirths of at least 20 weeks gestation or at least 400 grams birth weight.

The PDC relies on the attending midwife or doctor to complete a notification form when a birth occurs. The form, a copy of which is shown at Appendix 4, includes demographic items and items on maternal health, the pregnancy, labour, birth, and perinatal outcomes. Completed forms are sent to the Data Collections and Reporting Unit in the Demand and Performance Evaluation Branch of the NSW Ministry of Health, where they are compiled into the PDC database.

In 2009, 76% of PDC notifications were received electronically from hospital obstetric information systems. These notifications were received by secure upload to the state database or encrypted via email. There are several source systems that generate the PDC data. The largest source is the ObstetriX database, which supplies 44.4% of all PDC records and is used by all public hospitals in the following Local Health Districts: Northern Sydney, Central Coast, South Eastern Sydney, Illawarra Shoalhaven, Western Sydney; as well as some hospitals in the Hunter New England Local Health District, Southern Local Health District and Murrumbidgee Local Health District. The following systems also supply records to the PDC: Cerner (South Western Sydney Local Health District and Sydney Local Health District)—18.0%; Meditech, which supplies data for six Ramsay Private Hospitals (North Shore Private Hospital, Westmead Private Hospital, St George Private Hospital, Kareena Private Hospital, Figtree Private Hospital and Tamara Private Hospital), 9.1%; Sydney Adventist Hospital database, 2.0%; and Newcastle Private Hospital database, 2.0%.

The PDC receives notifications of women whose usual place of residence is outside NSW and who give birth in NSW. However, the PDC does not receive notifications of births outside NSW to women usually resident in NSW.

#### *The New South Wales Register of Congenital Conditions*

The NSW Register of Congenital Conditions, formerly known as the NSW Birth Defects Register, is a population based surveillance system established to monitor congenital conditions detected during pregnancy, at birth, or diagnosed in infants up to one year of age. The Register was established in 1990

and, under *NSW Public Health Act 1991*, from 1 January 1998 doctors, hospitals, and laboratories have been required to notify certain congenital conditions detected during pregnancy, at birth, or up to one year of life. The Register is administered by the Centre for Epidemiology and Research of the NSW Ministry of Health.

There are three types of conditions that are reported to the Register:

- Conditions that affect the growth, development and health of the baby that are present before birth, such as cleft lip, dislocated hip and problems with the development of the heart, lungs or other organs
- Conditions due to changes in the number of the baby's chromosomes, such as Down Syndrome
- Four conditions due to changes in the baby's inherited genetic information: cystic fibrosis, phenylketonuria, congenital hypothyroidism and thalassemia major.

The activities of the Register include: annual publication of information on congenital conditions in NSW; provision of information to health services to assist in service planning and monitoring of child health, and investigation of specific issues; provision of information in response to specific requests from the public, health professionals, and other government departments; and provision of data to the AIHW National Perinatal Epidemiology and Statistics Unit (NPESU) for monitoring of congenital conditions at a national level.

Sources of notifications to the Register include: the PDC, specialist paediatric hospitals, cytogenetic laboratories, and individual health care providers. The Register is supported by an advisory committee, comprising a panel of clinical experts representing the following specialities: genetics, dysmorphology, neonatology, obstetrics and gynaecology, midwifery, bioethics, and epidemiology; and a community representative from the Association of Genetic Support of Australasia.

Data for research purposes may be provided in 2 formats: aggregate information similar to that contained in this report, and data concerning individuals with identifying information removed. All requests for data should be submitted in writing to the Director, Centre for Epidemiology and Research. Requests for data concerning individuals for sufficiently important research purposes will be referred to the NSW Population and Health Services Research Ethics Committee. Procedures for release of personal information are described in the Ministry's Policy Directive PD2006-077 *Data Collections—Disclosure of unit record data held for research or management of health services* which is available on the NSW Ministry of Health's website at [www.health.nsw.gov.au](http://www.health.nsw.gov.au).

### *The NSW Admitted Patient Data Collection*

For this report data from the NSW Admitted Patient Data Collection (APDC) for public and private hospitals in NSW was linked to PDC data to produce information on type of birth according to mother's health insurance status. Approval for the linkage was obtained from the NSW Population and Health Services Research Ethics Committee. Record linkage was carried out by the Centre for Health Record Linkage ([www.cherel.org.au](http://www.cherel.org.au)).

The APDC covers demographic and episode related data for every inpatient that is separated from any public, private, and repatriation hospital, private day procedure centre, or public nursing home in NSW. Separation can result from discharge, transfer, death, or change in service category. The APDC is maintained by the Data Collections and Reporting Unit in the Demand and Performance Evaluation Branch of the NSW Ministry of Health.

### *NSW Maternal and Perinatal Committee*

The NSW Maternal and Perinatal Committee is a quality assurance committee established under the *NSW Health Administration Act 1982*, and is privileged under the Act to carry out confidential reviews of both maternal and perinatal deaths. Members are appointed by the Minister for Health.

The Committee reviews each maternal death to identify any possible avoidable factors and to determine whether the death was related to pregnancy (or its management) or whether it was incidental. The Committee also reviews perinatal deaths among live born babies, and stillbirths of at least 20 weeks gestation or at least 400 grams birth weight. The information obtained from these reviews assists in the development of policies aimed at improving the health of mothers and newborns in NSW. Information considered by the Committee is confidential.

### **Method for estimating level of reporting of Aboriginality among mothers and babies**

In 2009, the Aboriginality of the mother, rather than the baby, was reported to the PDC. Consequently, maternal Aboriginality was used for this analysis. The number of births reported to Torres Strait Islander mothers is quite small in NSW. Aboriginal and Torres Strait Islander mothers were therefore combined for this analysis.

Records of births reported to the PDC were linked to birth registration records of the NSW Registry of Births, Deaths and Marriages for births occurring in the 3-year period 2006–2008. Record linkage was carried out at the Centre for Health Record Linkage. The overall linkage rate was 91.3% of PDC records and 97.7% of birth registration records.

Capture–recapture methods are used to adjust estimates of counts to reflect ascertainment level or undercounting. Capture–recapture was carried out using the method described by McCarty et al.<sup>1</sup> Analysis was carried out using

SAS version 9.2. Analyses concerning geographic location were based on Local Health District of residence as reported to the PDC.

### *References*

1. McCarty DJ, Tull ES, Moy CS, Kwok CK, LaPorte RE. Ascertainment corrected rates: Applications of Capture–Recapture Methods. *Int J Epidemiol* 1993; 22(3): 559–565.

### **Definitions**

#### *Aboriginal and Torres Strait Islander*

Women who identify themselves as Australian Aboriginal or Torres Strait Islander.

#### *Apgar score*

A numerical scoring system routinely administered one and five minutes after birth to evaluate the condition of the baby. The score ranges from 0–10 (10 being perfect). It takes account of 5 physical signs, each of which is assigned a component score of 0, 1 or 2: heart rate, respiration, muscle tone, reflexes, and colour.

#### *Augmentation*

Artificial rupture of the membranes or use of oxytocic drugs after spontaneous onset of labour.

#### *Birth weight*

The newborn infant's first bare weight in grams.

**Low birth weight:** birth weight less than 2,500 grams.

**Very low birth weight:** birth weight less than 1,500 grams.

**Extremely low birth weight:** birth weight less than 1,000 grams.

#### *Caesarean section*

Birth of the fetus through an abdominal incision. Elective caesarean section: a caesarean section (planned or unplanned) performed before the onset of labour. Emergency caesarean section: a caesarean section performed after the onset of labour, whether or not the onset of labour was spontaneous.

#### *Confinement*

Refers to a woman having given birth. In a multiple pregnancy, one confinement will result in more than one birth.

#### *Epidural*

Injection of analgesic agent outside the dura mater which covers the spinal canal; includes lumbar, spinal, and epidural anaesthetics.

#### *Episiotomy*

An incision of the perineum and vagina to enlarge the vulval orifice.

#### *Gestational age*

The duration of pregnancy in completed weeks from the first day of the last normal menstrual period. Where accurate

information on the date of the last menstrual period is not available, a clinical estimate of gestational age may be obtained from ultrasound during the first half of pregnancy or by examination of the newborn infant. The 'best estimate' is used in this report.

### *Induction of labour*

**Oxytocics–prostaglandins:** the initiation of labour by the use of oxytocic agents, prostaglandins, or their derivatives (oral, intravaginal or intravenous).

**ARM only:** the initiation of labour by artificial rupture of membranes.

**Oxytocics–prostaglandins and ARM:** both medical and surgical induction as defined above (combined medical and surgical induction).

### *Live birth*

The complete expulsion or extraction from its mother of a baby who, after being born, breathes or shows any evidence of life such as a heartbeat.

### *Neonatal death*

The death of a live born infant within 28 days of birth.

### *Neonatal mortality rate*

The number of neonatal deaths per 1,000 live births.

### *Parity*

The total number of live births and stillbirths of the mother before the pregnancy or birth under consideration.

### *Perinatal death*

A stillbirth or neonatal death.

### *Perinatal mortality rate*

The number of perinatal deaths (stillbirths and neonatal deaths) per 1,000 total births in a year (live births and stillbirths combined).

### *Perineal status*

**1st degree tear:** a perineal graze–laceration–tear involving: the fourchette, hymen, labia, skin, vagina, or vulva.

**2nd degree tear:** a perineal laceration or tear involving the pelvic floor or perineal muscles or vaginal muscles.

**3rd degree tear:** a perineal laceration–tear involving the anal sphincter or rectovaginal septum.

**4th degree tear:** a third degree perineal laceration or tear which also involves the anal mucosa or rectal mucosa.

### *Plurality*

The number of fetuses in utero at 20 weeks gestation that are subsequently born separately. On this basis pregnancy may be classified as single or multiple.

### *Premature infant*

An infant born before 37 completed weeks gestation.

### *Spontaneous abortion*

The spontaneous expulsion of a fetus less than 20 weeks gestation and less than 400 grams birth weight.

### *Stillbirth*

The complete expulsion or extraction from its mother of a product of conception of at least 20 weeks gestation or 400 grams birth weight who did not, at any time after birth, breathe, or show any evidence of life such as a heartbeat.

### *Termination of pregnancy*

A procedure intentionally performed to terminate a pregnancy before 20 completed weeks gestation.

## **Explanatory notes**

### *Breastfeeding*

From 2007, the PDC has collected information on infant feeding at the time of discharge from hospital (or discharge from care for home births) for all infants born in NSW. Infant feeding is reported via three tick-box categories: breastfeeding, expressed breastmilk and infant formula. More than one type of feeding may be reported by ticking multiple boxes. In this report, infant feeding is classified into three categories: full breastfeeding, which includes babies who were reported to be breastfed or to be receiving expressed breastmilk; any breastfeeding, which includes babies who were reported to be receiving breastmilk and infant formula; and no breastfeeding.

### *Rates of congenital conditions*

The Register of Congenital Conditions collects data pertaining to congenital conditions regardless of the outcome of pregnancy. This includes notifications of live births, stillbirths, terminations of pregnancy and spontaneous abortions. Rates are calculated using births (that is, live births and stillbirths) as the denominator, because denominator populations for pregnancies less than 20 weeks gestation are unknown. The numerators are described in the relevant sections.

The source of denominator population data on births is the PDC. The PDC was selected because its definitions are consistent with those applied by the Register of Congenital Conditions.

Differences in rates of conditions published by the Register of Congenital Conditions compared to interstate registers may be due to differences in coding practices, in categories of conditions included in each register and differences in the upper age limit for notification of cases.

### *Place of residence of mother*

The mother's usual residence was the basis for coding to statistical local areas and NSW Local Health Districts.

### *Labour*

The category *labour—spontaneous with oxytocics–prostaglandins* was used where labour was augmented with artificial rupture of membranes as well as oxytocics or prostaglandins.



### *Maternity service role delineation levels*

In NSW, role delineation forms part of service planning to assist in describing the complexity of services required for the needs of the population. Local Health Districts are responsible for determining the appropriate role delineation of services for health care facilities within the network of services in that Local Health District. The process of role delineation is part of the process which responds to the needs of the population and takes into account the clinical networks within the Local Health Districts.

Role delineation levels are determined for a range of services provided at a health facility including; emergency, medical, surgical, maternity, integrated community and hospital, community based services, as well as support services; such as pharmacy, diagnostic imaging and pathology. The process determines the support services, staff profile, safety standards and requirements to ensure that clinical services are provided safely and with appropriate support. Accordingly, the criteria for each role level listed below are used in conjunction with requirements for a range of support services.

**Level 1:** Postnatal only. Normal post-partum mothers and babies delivered elsewhere returned for post-natal care provided there are no complications. Mothercraft nurses and RNs with post-graduate qualifications and/or experience specific to the needs of the service. Access to midwives with current clinical experience preferable. Nursing and midwifery education programs available, specific to the needs of the service. Has Level 1 Neonatal Service. Quality improvement activities. Interpreters as per Circular 94/10.

**Level 2:** Normal risk delivery only. As Level 1. Plus able to cope with sudden unexpected complications until transfer. Has 24 hour access to Medical Officers on site or available within 10 minutes. NUM is desirable for general ward. Midwives available. Continual education programs for all clinical staff in neonatal and adult resuscitation methods and the management of obstetric emergencies (as per Circular 99/86). Has Level 2 Neonatal Service. Links with units at higher levels of service, for referrals and transfers, consistent protocols and continuing education. Strategies in place to ensure ongoing competency of all providers of maternity care. Has more than 80 deliveries per year, or has Medical Practitioners complying with the RACGP/RACOG "Recommended Guidelines relating to Hospital Access and Delineation of Clinical Privileges in Obstetrics for GPs". (If minimum caseload cannot be achieved, considerations may be made for the degree of geographic isolation). Has Level 2 General Surgery. Formal quality improvement program. Formal protocols and referral links to allied health and psychiatry services. Has established referral links to higher levels of care and expertise, including specialist medical, nursing and midwifery services.

**Level 3:** As Level 2 plus may deliver selected moderate risk pregnancies (>36 week gestation) in consultation. Access to obstetrician/s for consultation. Has Accredited Medical Practitioners to provide simultaneous care of mother and neonate in theatre.

Specialist anaesthetist (may be GP anaesthetist credentialed for obstetric anaesthesia) and an additional Accredited Medical Practitioner in new born paediatrics. Sufficient Accredited Medical Practitioners (may be GP anaesthetist credentialed for obstetric anaesthesia) and General Surgeon (may be accredited Medical Practitioner in obstetrics) credentialed for lower segment caesarean section (LSCS). Has NUM. Midwives on all shifts. Some RNs with experience in neonatal care and/or having or undertaking relevant post-basic studies.

**Level 4:** As Level 3 plus care for mothers and babies (>34 weeks gestation) at moderate risk and elective LSCS. Obstetricians, Paediatricians and Specialist Anaesthetists on call 24 hours. Accredited Medical Practitioners on site 24 hours. Has NUM and experienced RNs. Experienced midwives on all shifts. Established links with CNC and/or CNE in midwifery and neonatal nursing. Has a minimum of Level 3 Neonatal Service. Allied health professionals and liaison psychiatry available.

**Level 5:** As Level 4 plus may deliver selected high risk pregnancies. Has Level 4 Neonatal Service. CNCs and/or CNE in midwifery on site.

**Level 6:** Care of normal, moderate and high risk deliveries. Obstetric Registrar on site 24 hours. Anaesthetic Registrar on site 24 hours and available exclusively for obstetrics for hospitals with more than 3000 births per year. Obstetricians may have specific subspecialties/skills/training. Access to foeto-maternal specialist. May participate on High Risk Pregnancy and Foeto-Maternal Advisory Line (PAL) roster. Experienced midwives on all shifts. Capacity to provide high ratio of nurse/patient care for women with acute complications with pregnancy or birth. 24 hour access to ultrasound services and reporting. CTG monitoring available with capacity to carry out fetal scalp pH in labour ward. Operating suite staff on site. Capacity to carry out caesarean section within 30 minutes. Usually a specialist supra regional unit or statewide role. The lead hospital within a defined network, in which the combined total is at least 3000 births per year. Has Level 5 Neonatal Service. 24 hour access to liaison psychiatry and allied health services. Full-time CNC and/or CNE in midwifery.

Note: Minimum levels of support services as well as definitions of risk and staff details are outlined in the Guide to the Role Delineation of Health Services Third Edition (2002).

### *Type of birth*

The 'vaginal breech' category covers all forms of vaginal breech birth, including forceps to the after coming head.

### *Perinatal mortality rate*

Perinatal deaths include deaths reported to the PDC only. As the PDC form is completed at discharge or transfer of the baby, deaths occurring after this time may not be reported to the PDC. Birth and perinatal death registration data held by the Australian Bureau of Statistics (ABS) give the most complete ascertainment of perinatal deaths for calculation of rates.

## Map of NSW Local Health Districts





## 4. Trends in New South Wales

### Confinements and births by plurality

The number of births in NSW rose from 90,610 in 2005 to 96,439 in 2009, a rise of 6.4% (Table 1). Most of this rise occurred in 2006 and 2007. In 2009, 96,439 births to 95,043

mothers were reported. The number of multiple (twin and triplet) pregnancies has remained fairly stable over recent years.

**Table 1. Plurality, NSW 2005–2009**

Plurality	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Confinements</b>										
Singleton	87699	98.4	89890	98.4	93194	98.5	93411	98.5	93677	98.6
Twins	1413	1.6	1386	1.5	1388	1.5	1428	1.5	1339	1.4
Triplets	27	0.0	37	0.0	20	0.0	24	0.0	24	0.0
Quadruplets	1	0.0	2	0.0	0	0.0	1	0.0	3	0.0
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>
<b>Births</b>										
Singleton	87699	96.8	89890	96.9	93194	97.0	93411	97.0	93677	97.1
Twins	2826	3.1	2772	3.0	2776	2.9	2856	3.0	2678	2.8
Triplets	81	0.1	111	0.1	60	0.1	72	0.1	72	0.1
Quadruplets	4	0.0	8	0.0	0	0.0	4	0.0	12	0.0
<b>TOTAL</b>	<b>90610</b>	<b>100.0</b>	<b>92781</b>	<b>100.0</b>	<b>96030</b>	<b>100.0</b>	<b>96343</b>	<b>100.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

### Local Health District of residence

The increase in births occurred mainly in the metropolitan areas, with the Sydney, South Eastern Sydney and Western Sydney Local Health Districts reporting over 1,000 more mothers giving birth in 2009 compared to 2005 (Table 2).

In 2009, similar to previous years, 28% of mothers giving birth were resident in South Western Sydney and Western Sydney Local Health Districts.

**Table 2. Maternal Local Health District of residence, NSW 2005–2009**

Local Health District	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	7385	8.3	7859	8.6	8194	8.7	8472	8.9	8473	8.9
South Western Sydney	12462	14.0	12712	13.9	13156	13.9	12989	13.7	12743	13.4
South Eastern Sydney	10142	11.4	10422	11.4	10889	11.5	10972	11.6	11278	11.9
Illawarra Shoalhaven	4246	4.8	4373	4.8	4452	4.7	4439	4.7	4420	4.7
Western Sydney	12037	13.5	12311	13.5	13059	13.8	13312	14.0	13573	14.3
Nepean Blue Mountains	4822	5.4	4756	5.2	4867	5.1	4767	5.0	4819	5.1
Northern Sydney	9908	11.1	10254	11.2	10567	11.2	10397	11.0	10372	10.9
Central Coast	3761	4.2	3829	4.2	3905	4.1	3955	4.2	3949	4.2
Hunter New England	10309	11.6	10513	11.5	10830	11.4	10680	11.3	10559	11.1
Northern NSW	2769	3.1	2798	3.1	2992	3.2	2990	3.2	2940	3.1
Mid North Coast	2118	2.4	2178	2.4	2208	2.3	2333	2.5	2252	2.4
Southern NSW	1393	1.6	1435	1.6	1405	1.5	1453	1.5	1421	1.5
Murrumbidgee	2608	2.9	2622	2.9	2685	2.8	2593	2.7	2616	2.8
Western NSW	3647	4.1	3807	4.2	3755	4.0	3788	4.0	3708	3.9
Far West	277	0.3	239	0.3	270	0.3	272	0.3	243	0.3
Other-not stated	1256	1.4	1207	1.3	1368	1.4	1452	1.5	1677	1.8
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

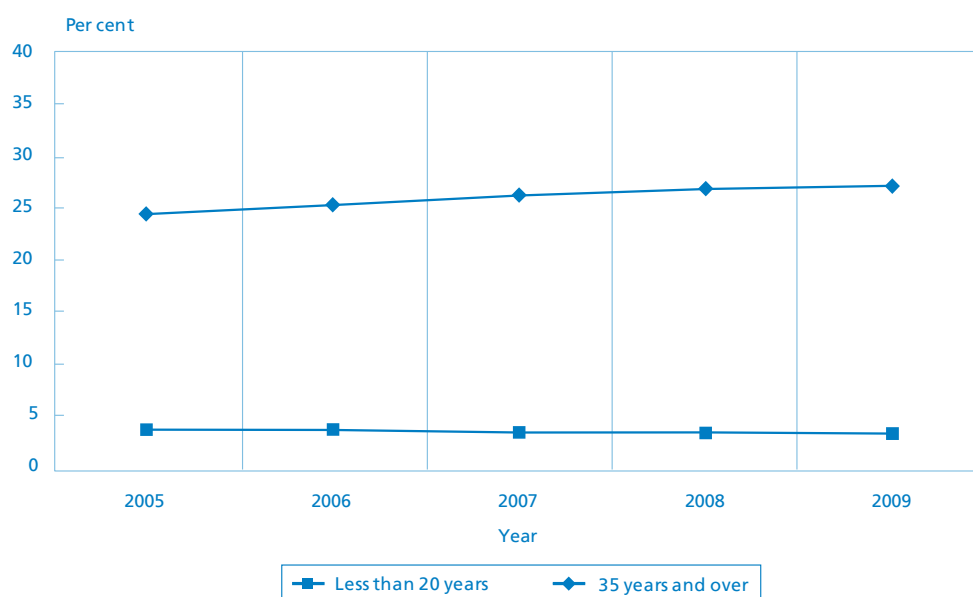
## Maternal age

The percentage of mothers who were teenagers fell from 3.9% in 2005 to 3.5% in 2009. Over the same period the percentage of mothers aged 35 years increased from 20.7% to 23.8% of all mothers giving birth (Figure 1, Table 3).

The mean maternal age rose from 30.4 to 30.7 years over the 5 years 2005 to 2009. The trend towards later childbirth is evident among both primiparous and multiparous mothers:

the proportion of mothers giving birth for the first time who were aged 35 years or more increased from 13.6% to 15.4% over the 5 year period, and the proportion of multiparous mothers who were aged 35 years or more increased from 25.7% to 30.1%. The mean maternal age rose from 28.8 to 29.1 years for primiparous mothers and from 31.5 to 32.0 years for multiparous mothers.

**Figure 1. Mothers aged less than 20 years and 35 years and over, NSW 2005–2009**



Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research. NSW Ministry of Health.

**Table 3. Maternal age, NSW 2005–2009**

Maternal age (years)	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 15	30	0.0	18	0.0	20	0.0	29	0.0	23	0.0
15–19	3410	3.8	3453	3.8	3342	3.5	3331	3.5	3271	3.4
20–24	12739	14.3	12686	13.9	13150	13.9	13118	13.8	12649	13.3
25–29	24006	26.9	24553	26.9	25361	26.8	25405	26.8	25836	27.2
30–34	30502	34.2	30785	33.7	31124	32.9	30649	32.3	30590	32.2
35–39	15275	17.1	16526	18.1	18047	19.1	18582	19.6	18726	19.7
40–44	3017	3.4	3073	3.4	3375	3.6	3581	3.8	3743	3.9
45+	149	0.2	163	0.2	166	0.2	158	0.2	190	0.2
Not stated	12	0.0	58	0.1	17	0.0	11	0.0	15	0.0
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Maternal country of birth

In the period 2005–2009, 68.3% of mothers were born in Australia. In 2009, mothers born in the United Kingdom, China, New Zealand, India and Vietnam together accounted

for 12.2% of all mothers (Table 4). Further information on maternal country of birth is shown in Chapter 8.

**Table 4. Maternal country of birth, NSW 2005–2009#**

Country of birth	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Australia	64246	72.1	65226	71.4	66526	70.3	65700	69.3	64884	68.3
United Kingdom	2172	2.4	2288	2.5	2494	2.6	2532	2.7	2587	2.7
China	1767	2.0	1787	2.0	2354	2.5	2321	2.4	2586	2.7
New Zealand	2233	2.5	2343	2.6	2450	2.6	2388	2.5	2378	2.5
India	1094	1.2	1294	1.4	1580	1.7	1940	2.0	2342	2.5
Vietnam	1652	1.9	1720	1.9	1752	1.9	1699	1.8	1661	1.7
Philippines	1160	1.3	1220	1.3	1359	1.4	1373	1.4	1417	1.5
Lebanon	1608	1.8	1547	1.7	1505	1.6	1557	1.6	1391	1.5
Iraq	681	0.8	743	0.8	821	0.9	925	1.0	869	0.9
Indonesia	541	0.6	578	0.6	653	0.7	743	0.8	731	0.8
South Africa	579	0.6	598	0.7	599	0.6	687	0.7	718	0.8
Fiji	670	0.8	697	0.8	749	0.8	681	0.7	657	0.7
South Korea	419	0.5	485	0.5	564	0.6	609	0.6	623	0.7
Pakistan	345	0.4	396	0.4	440	0.5	468	0.5	528	0.6
Bangladesh	293	0.3	327	0.4	376	0.4	511	0.5	510	0.5
Thailand	290	0.3	309	0.3	382	0.4	421	0.4	472	0.5
United States of America	359	0.4	428	0.5	407	0.4	417	0.4	454	0.5
Hong Kong	332	0.4	338	0.4	392	0.4	414	0.4	432	0.5
Malaysia	339	0.4	315	0.3	386	0.4	371	0.4	392	0.4
Sri Lanka	320	0.4	324	0.4	339	0.4	362	0.4	384	0.4
Japan	339	0.4	288	0.3	352	0.4	378	0.4	376	0.4
Ireland	325	0.4	299	0.3	367	0.4	361	0.4	340	0.4
Afghanistan	263	0.3	335	0.4	334	0.4	336	0.4	322	0.3
Sudan	226	0.3	283	0.3	299	0.3	318	0.3	303	0.3
Germany	211	0.2	240	0.3	236	0.2	262	0.3	284	0.3
Canada	227	0.3	262	0.3	250	0.3	267	0.3	274	0.3
Western Samoa	306	0.3	298	0.3	299	0.3	277	0.3	254	0.3
Cambodia	268	0.3	276	0.3	300	0.3	295	0.3	251	0.3
Nepal	75	0.1	78	0.1	119	0.1	137	0.1	217	0.2
Turkey	251	0.3	269	0.3	231	0.2	213	0.2	215	0.2
Iran	176	0.2	181	0.2	164	0.2	199	0.2	202	0.2
Poland	127	0.1	163	0.2	152	0.2	175	0.2	200	0.2
Tonga	222	0.2	212	0.2	187	0.2	191	0.2	184	0.2
Chile	194	0.2	189	0.2	218	0.2	174	0.2	178	0.2
Egypt	177	0.2	162	0.2	162	0.2	164	0.2	176	0.2
France	122	0.1	138	0.2	149	0.2	161	0.2	167	0.2
Singapore	146	0.2	121	0.1	144	0.2	164	0.2	163	0.2
Syria	147	0.2	132	0.1	163	0.2	132	0.1	162	0.2
Russian Federation (not USSR)	151	0.2	121	0.1	144	0.2	153	0.2	157	0.2
Brazil	86	0.1	81	0.1	117	0.1	128	0.1	152	0.2
Serbia and Montenegro	168	0.2	163	0.2	137	0.1	144	0.2	151	0.2
North Korea	140	0.2	124	0.1	169	0.2	152	0.2	149	0.2
Taiwan	107	0.1	102	0.1	122	0.1	129	0.1	143	0.2
Inadequately Described	58	0.1	10	0.0	36	0.0	37	0.0	136	0.1
Saudi Arabia	24	0.0	40	0.0	56	0.1	86	0.1	135	0.1
Netherlands	87	0.1	99	0.1	132	0.1	116	0.1	115	0.1
Former Yugoslavia	135	0.2	132	0.1	115	0.1	103	0.1	113	0.1
Macedonia	106	0.1	105	0.1	108	0.1	106	0.1	112	0.1
Laos	108	0.1	92	0.1	127	0.1	92	0.1	111	0.1
Zimbabwe	68	0.1	88	0.1	101	0.1	125	0.1	110	0.1
Italy	119	0.1	95	0.1	95	0.1	92	0.1	109	0.1
Bosnia–Herzegovina	98	0.1	96	0.1	114	0.1	97	0.1	109	0.1
Colombia	49	0.1	74	0.1	63	0.1	83	0.1	104	0.1
Papua New Guinea	106	0.1	126	0.1	136	0.1	122	0.1	101	0.1
Peru	73	0.1	97	0.1	80	0.1	86	0.1	101	0.1
Other/Not stated	2555	2.9	2781	3.0	2496	2.6	2690	2.8	2651	2.8
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Countries of birth for which 100 or more women gave birth in 2009.

## Aboriginal and Torres Strait Islander mothers

The reported number of Aboriginal or Torres Strait Islander mothers giving birth increased from 2,474 in 2005 to 2,904 in 2009, an increase from 2.8% to 3.1% of all mothers (Table 5).

Further information on Aboriginal and Torres Strait Islander mothers and babies is shown in Chapter 7.

**Table 5. Aboriginal and Torres Strait Islander mothers, NSW 2005–2009**

Aboriginal or Torres Strait Islander	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Aboriginal or Torres Strait Islander	2474	2.8	2611	2.9	2888	3.1	2976	3.1	2904	3.1
Non-Aboriginal or Torres Strait Islander	86570	97.1	88176	96.6	91519	96.7	91675	96.6	91963	96.8
Not stated	96	0.1	528	0.6	195	0.2	213	0.2	176	0.2
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Previous pregnancies

In recent years there were no substantial changes in the reported number of previous pregnancies greater than 20 weeks gestation (Table 6). The proportion of mothers giving birth for the first time has been stable at 41% to 42%, while the proportion of mothers giving birth to a second to fifth

baby has been stable at about 56%. The number of women giving birth for the fifth or subsequent time rose by 18.0% from 1,441 in 2005 to 1,701 in 2009—however, these mothers comprised only 1.8% of all mothers in 2009.

**Table 6. Previous pregnancies, NSW 2005–2009**

No. previous pregnancies (>20 weeks gestation)	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
0	37073	41.6	37855	41.5	39188	41.4	39451	41.6	40349	42.5
1–4	50566	56.7	51443	56.3	53496	56.5	53637	56.5	52975	55.7
5+	1441	1.6	1579	1.7	1483	1.6	1713	1.8	1701	1.8
Not stated	60	0.1	438	0.5	435	0.5	63	0.1	18	0.0
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Duration of pregnancy at first antenatal visit

Between 2005 and 2009, the proportion of mothers starting antenatal care at 20-plus weeks gestation declined from 11.4% to 7.1% (Table 7). This has been accompanied by an

increase in the proportion of mothers starting antenatal care at less than 14 weeks gestation from 68.1% to 78.9% over the 5-year period.

**Table 7. Duration of pregnancy at first antenatal visit, NSW 2005–2009**

Duration of pregnancy (weeks)	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
0–13	60681	68.1	62757	68.7	72269	76.4	77647	81.9	74947	78.9
14–19	17775	19.9	17117	18.7	13512	14.3	10853	11.4	12437	13.1
20+	10169	11.4	10218	11.2	6827	7.2	5374	5.7	6744	7.1
Not stated	515	0.6	1223	1.3	1994	2.1	990	1.0	915	1.0
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Smoking in pregnancy

The proportion of mothers reporting any smoking during pregnancy declined between 2005 and 2009: 12,738 (14.3%) mothers reported smoking in pregnancy in 2005, 12,307 (13.5%) in 2006, 12,068 (12.8%) in 2007, 12,094 (12.7%) in 2008, and 11,434 (12.0%) in 2009.

Of mothers who smoked during pregnancy in 2009, 16.1% stopped smoking before the second half of pregnancy. Over the 5-year period, among those who smoked in the second half of pregnancy, there was a trend towards smoking fewer cigarettes per day (Table 8).

**Table 8. Mothers who smoked at all during pregnancy by number of cigarettes smoked in the second half of pregnancy, NSW 2005–2009**

Cigarettes smoked in the second half of the pregnancy	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
None	552	4.3	514	4.2	672	5.6	1227	10.1	1842	16.1
1–10 per day	6483	50.9	6243	50.7	6334	52.5	5929	49.0	4995	43.7
More than 10 per day	5129	40.3	5016	40.8	4430	36.7	4110	34.0	3580	31.3
Smoked, amount not stated	572	4.5	455	3.7	631	5.2	825	6.8	1015	8.9
Not stated	2	0.0	79	0.6	1	0.0	3	0.0	2	0.0
<b>TOTAL</b>	<b>12738</b>	<b>100.0</b>	<b>12307</b>	<b>100.0</b>	<b>12068</b>	<b>100.0</b>	<b>12094</b>	<b>100.0</b>	<b>11434</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Place of birth

In 2009, the majority of mothers planned to give birth in a hospital labour ward, and 3.9% of mothers planned to give birth in a birth centre (Table 9). Seventy-three per cent of mothers who planned to give birth in a birth centre actually

did so. The total number of reported planned homebirths rose from 152 in 2005 to 266 in 2009, while the reported number of planned homebirths that occurred at home rose from 112 in 2005 to 231 in 2009.

**Table 9. Maternal place of birth, NSW 2005–2009**

Place of birth	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Hospital	85660	96.1	87567	95.9	90015	95.2	90143	95.0	90525	95.2
Birth centre	1830	2.1	1878	2.1	2714	2.9	2911	3.1	2736	2.9
Planned birth centre/hospital admission	1128	1.3	1240	1.4	1205	1.3	1063	1.1	1004	1.1
Planned homebirth	112	0.1	125	0.1	144	0.2	200	0.2	231	0.2
Planned homebirth/hospital admission	40	0.0	47	0.1	31	0.0	43	0.0	35	0.0
Born before arrival	369	0.4	388	0.4	490	0.5	497	0.5	512	0.5
Not stated	1	0.0	70	0.1	3	0.0	7	0.0	0	0.0
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Hypertension and diabetes

The reported rate of gestational diabetes rose slightly to 5.4% in 2009, while rates of diabetes mellitus have remained stable at 0.6% over the 5-year period (Table 10). During 2006, there was a change in the format for reporting hypertension in pregnancy where reporting of pre-eclampsia was replaced

with reporting of proteinuric and non-proteinuric pregnancy induced hypertension. Overall, hypertension in pregnancy was reported among 7.3% of mothers in 2009, compared to 6.1% in 2005.

**Table 10. Maternal hypertension or diabetes, NSW 2005–2009#**

Condition	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Diabetes mellitus	503	0.6	541	0.6	546	0.6	601	0.6	525	0.6
Gestational diabetes	4165	4.7	4375	4.8	4091	4.3	4509	4.8	5157	5.4
Essential hypertension	842	0.9	804	0.9	721	0.8	833	0.9	756	0.8
Pre-eclampsia#	4553	5.1	3198	3.5	–	–	–	–	–	–
Pregnancy induced hypertension#										
– proteinuric	–	–	612	0.7	1625	1.7	1766	1.9	1902	2.0
– non-proteinuric	–	–	626	0.7	3904	4.1	4216	4.4	4251	4.5
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# During 2006, the reporting format changed so that reporting of pre-eclampsia ceased and reporting of pregnancy induced hypertension commenced. This transition meant that in 2006, pre-eclampsia was reported in 3,198 of 55,078 mothers; and pregnancy induced hypertension was reported in 1,238 of 36,237 mothers.

## Labour

The rate of spontaneous onset of labour fell from 58.3% in 2005 to 56.7% in 2009 (Table 11). The rate of induction of labour was 25.8% in 2009, similar to previous years. The most common reported reason for induction of labour in 2009 was prolonged pregnancy (41 or more weeks) (26.1%), followed

by prelabour rupture of membranes (12.6%), hypertensive disease (10.0%), diabetes (6.9%), suspected intrauterine growth retardation (4.2%), fetal distress (1.6%) and fetal death (1.0%).

**Table 11. Onset and augmentation of labour, NSW 2005–2009**

Onset of labour	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Spontaneous	38027	42.7	38706	42.4	38291	40.5	39076	41.2	38697	40.7
Spontaneous augmented with ARM	6152	6.9	6318	6.9	7339	7.8	7069	7.5	6840	7.2
Spontaneous augmented with oxytocics/ prostaglandins#	7812	8.8	8146	8.9	8553	9.0	8591	9.1	8382	8.8
No labour	14467	16.2	15516	17.0	15878	16.8	16120	17.0	16649	17.5
Induced – oxytocics/ prostaglandins	7417	8.3	7306	8.0	8607	9.1	8576	9.0	8680	9.1
Induced – ARM only	1595	1.8	1447	1.6	1648	1.7	1680	1.8	1710	1.8
Induced – ARM+oxytocics/ prostaglandins	13273	14.9	13389	14.7	14003	14.8	13577	14.3	13904	14.6
Induced – other#	384	0.4	417	0.5	263	0.3	164	0.2	181	0.2
Not stated	13	0.0	70	0.1	20	0.0	11	0.0	0	0.0
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

\* ARM: artificial rupture of membranes.

# This category includes other forms of induction such as Foley's catheter.

## Birth

Among NSW mothers, the rate of normal vaginal birth decreased from 61.2% in 2005 to 58.2% in 2009 (Table 12). The caesarean section rate increased from 28.1% to 30.2%. The rate of instrumental birth remained steady at 10% to 11%.

Operative and instrumental births are more common among privately than publicly insured mothers (Table 13). Among

privately insured mothers the rate of normal vaginal birth fell from 49.8% in 2004 to 46.7% in 2008 and the caesarean section rate increased from 35.2% to 38.4%. Among publicly insured mothers the rate of normal vaginal birth fell from 66.0% to 65.6% and the caesarean section rate rose from 24.4% to 25.0%.

**Table 12. Type of birth, 2005–2009**

Type of delivery	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Normal vaginal	54568	61.2	55187	60.4	56648	59.9	56173	59.2	55359	58.2
Forceps	2801	3.1	2885	3.2	3273	3.5	3486	3.7	3383	3.6
Vacuum extraction	6372	7.1	6332	6.9	6779	7.2	6830	7.2	7232	7.6
Vaginal breech	322	0.4	366	0.4	381	0.4	387	0.4	355	0.4
Elective caesarean section	14467	16.2	15507	17.0	15878	16.8	16120	17.0	16649	17.5
Emergency caesarean section#	10610	11.9	10827	11.9	11572	12.2	11854	12.5	12065	12.7
Not stated	0	0.0	211	0.2	71	0.1	14	0.0	0	0.0
<b>TOTAL</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Emergency caesarean section includes caesarean sections where the onset of labour was not stated.

**Table 13. Maternal health insurance status by type of birth, NSW 2004–2008#**

Insurance status – type of birth	2004		2005		Year 2006		2007		2008	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Public</b>										
Normal vaginal	31757	66.0	34132	65.6	37344	65.6	40245	65.7	39996	65.6
Forceps	1342	2.8	1324	2.5	1520	2.7	1791	2.9	1881	3.1
Vacuum extraction	3071	6.4	3345	6.4	3448	6.1	3694	6.0	3591	5.9
Vaginal breech	220	0.5	197	0.4	245	0.4	250	0.4	278	0.5
Elective caesarean section	5852	12.2	6761	13.0	7714	13.6	8045	13.1	8008	13.1
Emergency caesarean section##	5887	12.2	6288	12.1	6586	11.6	7177	11.7	7227	11.8
Not stated	0	0.0	0	0.0	64	0.1	36	0.1	10	0.0
<b>TOTAL</b>	<b>48129</b>	<b>100.0</b>	<b>52047</b>	<b>100.0</b>	<b>56921</b>	<b>100.0</b>	<b>61238</b>	<b>100.0</b>	<b>60991</b>	<b>100.0</b>
<b>Private</b>										
Normal vaginal	13304	49.8	13777	48.5	13961	47.5	14601	47.1	15082	46.7
Forceps	1321	4.9	1380	4.9	1323	4.5	1453	4.7	1556	4.8
Vacuum extraction	2599	9.7	2772	9.8	2746	9.3	2995	9.7	3134	9.7
Vaginal breech	60	0.2	62	0.2	67	0.2	88	0.3	99	0.3
Elective caesarean section	5935	22.2	6642	23.4	7253	24.7	7614	24.5	7941	24.6
Emergency caesarean section##	3468	13.0	3753	13.2	3919	13.3	4242	13.7	4452	13.8
Not stated	7	0.0	0	0.0	138	0.5	32	0.1	4	0.0
<b>TOTAL</b>	<b>26694</b>	<b>100.0</b>	<b>28386</b>	<b>100.0</b>	<b>29407</b>	<b>100.0</b>	<b>31025</b>	<b>100.0</b>	<b>32268</b>	<b>100.0</b>
<b>TOTAL###</b>										
Normal vaginal	52366	62.1	54568	61.2	55187	60.4	56648	59.9	56173	59.2
Forceps	2762	3.3	2801	3.1	2885	3.2	3273	3.5	3486	3.7
Vacuum extraction	5902	7.0	6372	7.1	6332	6.9	6779	7.2	6830	7.2
Vaginal breech	347	0.4	322	0.4	366	0.4	381	0.4	387	0.4
Elective caesarean section	12930	15.3	14467	16.2	15507	17.0	15878	16.8	16120	17.0
Emergency caesarean section##	9974	11.8	10610	11.9	10827	11.9	11572	12.2	11854	12.5
Not stated	7	0.0	0	0.0	211	0.2	71	0.1	14	0.0
<b>TOTAL</b>	<b>84288</b>	<b>100.0</b>	<b>89140</b>	<b>100.0</b>	<b>91315</b>	<b>100.0</b>	<b>94602</b>	<b>100.0</b>	<b>94864</b>	<b>100.0</b>

Source: Linked data of the NSW Perinatal Data Collection and NSW Admitted Patient Data Collection. Centre for Epidemiology and Research, NSW Ministry of Health.

# Figures for 2004 to 2007 differ to those reported previously as the linkage has been updated.

## Emergency caesarean section includes cases where caesarean section was reported but type of onset of labour was not reported.

### Total includes mothers where type of health insurance was not stated.

## Baby sex

There was no significant change in the pattern of baby sex since 2005, with slightly more male babies born than females in each year. In 2009, 49,362 (51.2%) babies were male, 47,063 (48.8%) were female, and 14 were of indeterminate sex. This compares with babies born in 2005, when 46,580 (51.4%) babies were male, 43,932 (48.5%) were female, 18 were of indeterminate sex, and sex was not reported for 80 babies.

## Gestational age

In 2009, 7.3% of babies were born prematurely (less than 37 weeks gestation), compared to 7.2% in 2005 (Table 14). Over the 5 year period, 91% to 92% of babies were born at term (37–41 weeks gestation). The percentage of postmature babies (42-plus weeks gestation) fell from 1.9% in 2005 to 0.8% in 2009.

**Table 14. Gestational age, NSW 2005–2009**

Gestational age (weeks)	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
< 28	622	0.7	674	0.7	707	0.7	732	0.8	705	0.7
28–31	654	0.7	675	0.7	660	0.7	683	0.7	660	0.7
32–36	5248	5.8	5490	5.9	5703	5.9	5794	6.0	5697	5.9
37–41	82367	90.9	84424	91.0	88011	91.6	88353	91.7	88596	91.9
42+	1709	1.9	1499	1.6	907	0.9	764	0.8	773	0.8
Not stated	10	0.0	19	0.0	42	0.0	17	0.0	8	0.0
<b>TOTAL</b>	<b>90610</b>	<b>100.0</b>	<b>92781</b>	<b>100.0</b>	<b>96030</b>	<b>100.0</b>	<b>96343</b>	<b>100.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Birth weight

Since 2005, the pattern of birth weights has remained stable, with the rate of low birth weight (less than 2,500 grams) at

6.0% to 6.4% (Table 15). The rate of low birth weight was 6.0% in 2009.

**Table 15. Birth weight, NSW 2005–2009**

Birth weight (grams)	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 500	227	0.3	239	0.3	255	0.3	266	0.3	259	0.3
500–999	392	0.4	411	0.4	422	0.4	422	0.4	402	0.4
1000–1499	513	0.6	562	0.6	512	0.5	525	0.5	501	0.5
1500–1999	1100	1.2	1167	1.3	1119	1.2	1230	1.3	1081	1.1
2000–2499	3452	3.8	3554	3.8	3541	3.7	3551	3.7	3541	3.7
2500–2999	13675	15.1	13906	15.0	14265	14.9	14157	14.7	14316	14.8
3000–3499	32451	35.8	33074	35.6	34790	36.2	34612	35.9	34902	36.2
3500–3999	27822	30.7	28705	30.9	29648	30.9	29891	31.0	29884	31.0
4000–4499	9298	10.3	9389	10.1	9717	10.1	9889	10.3	9787	10.1
4500+	1613	1.8	1649	1.8	1653	1.7	1716	1.8	1692	1.8
Not stated	67	0.1	125	0.1	108	0.1	84	0.1	74	0.1
<b>TOTAL</b>	<b>90610</b>	<b>100.0</b>	<b>92781</b>	<b>100.0</b>	<b>96030</b>	<b>100.0</b>	<b>96343</b>	<b>100.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.



## Apgar score

In 2009, 2.1% of babies were born with an Apgar score of less than 7 at 5 minutes and 1.1% were born with an Apgar score

of less than 4 (Table 16). These rates are similar to those of previous years.

**Table 16. Apgar score at 5 minutes, NSW 2005–2009#**

Apgar score	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
0–4	963	1.1	1007	1.1	1093	1.1	1093	1.1	1088	1.1
5–6	833	0.9	890	1.0	910	0.9	900	0.9	901	0.9
7+	88621	97.8	90645	97.7	93685	97.6	94077	97.6	94175	97.7
Not stated	193	0.2	239	0.3	342	0.4	273	0.3	275	0.3
<b>TOTAL</b>	<b>90610</b>	<b>100.0</b>	<b>92781</b>	<b>100.0</b>	<b>96030</b>	<b>100.0</b>	<b>96343</b>	<b>100.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Includes stillbirths and live births.

## Perinatal outcome

In the period 2005–2009 the perinatal mortality rate varied from 8.7 to 9.0 per 1,000 (Table 17). In 2009, 71.4% of all reported perinatal deaths were stillbirths and 28.6% were neonatal deaths.

In 2009, of the 838 perinatal deaths in NSW, 799 (95.3%) were reported among planned hospital births, 24 (2.9%) among planned birth centre births, and 15 were among babies born before arrival at hospital. No perinatal deaths were reported among planned home births.

**Table 17. Perinatal outcomes, NSW 2005–2009#**

Year	Liveborn surviving		Stillborn		Neonatal death		Death – age not stated		Not stated		Total births		Perinatal death rate/ 1,000 births##
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
2005	89786	99.1	535	0.6	257	0.3	0	0.0	32	0.0	90610	100.0	8.7
2006	91840	99.0	592	0.6	229	0.2	6	0.0	114	0.1	92781	100.0	8.8
2007	94973	98.9	629	0.7	239	0.2	8	0.0	181	0.2	96030	100.0	9.0
2008	95440	99.1	585	0.6	256	0.3	7	0.0	55	0.1	96343	100.0	8.7
2009	95595	99.1	598	0.6	240	0.2	2	0.0	4	0.0	96439	100.0	8.7

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Perinatal deaths include deaths reported to the PDC only. As the PDC form is completed at discharge or transfer of the baby, deaths occurring after this time may not be reported to the PDC.  
##The perinatal death rate excludes deaths where the age at death was not stated.

## Maternal deaths

In the period 1990–2008, 183 deaths were reported among pregnant women or women who gave birth less than 6 weeks previously. Of these, 56 (30.6%) died of incidental causes not related to the pregnancy or its management, 77 (42.1%) deaths were found to be directly due to pregnancy or its management, and 47 (25.7%) deaths were found to result

from pre-existing disease or disease which developed during pregnancy (not due to direct obstetric causes), but which may have been aggravated by the physiologic effects of pregnancy (Table 18). Table 19 shows maternal deaths by cause in NSW for 2008.

**Table 18. Maternal deaths by year, NSW 1990–2008#**

Year	Classification									
	Direct		Indirect		Total: direct and indirect		Incidental		Total	
	No.	Ratio/ 100,000	No.	Ratio/ 100,000	No.	Ratio/ 100,000	No.	Ratio/ 100,000	No.	Ratio/ 100,000
1990	4	4.6	6	6.9	10	11.6	2	2.3	12	13.9
1991	4	4.7	1	1.2	5	5.8	1	1.2	6	7.0
1992	5	5.7	1	1.1	6	6.8	5	5.7	11	12.5
1993	6	6.9	1	1.2	7	8.1	6	6.9	13	15.0
1994	8	9.2	1	1.2	9	10.4	3	3.5	12	13.8
1995	7	8.1	2	2.3	9	10.4	6	7.0	15	17.4
1996	6	7.0	1	1.2	7	8.2	5	5.9	12	14.1
1997	7	8.1	2	2.3	9	10.5	5	5.8	14	16.1
1998	4	4.7	4	4.7	8	9.4	3	3.5	11	12.9
1999##	4	4.7	1	1.2	5	5.8	6	7.0	12	14.0
2000	4	4.7	5	5.9	9	10.7	1	1.2	10	11.9
2001	4	4.7	4	4.7	8	9.5	1	1.2	9	10.7
2002	2	2.4	2	2.4	4	4.7	1	1.2	5	5.9
2003	1	1.2	3	3.5	4	4.7	3	3.5	7	8.2
2004###	2	2.3	2	2.3	4	4.7	2	2.3	7	8.2
2005##	4	4.5	4	4.5	8	9.0	2	2.2	11	12.3
2006	4	4.4	3	3.3	7	7.7	3	3.3	10	11.0
2007	1	1.1	0	0.0	1	1.1	0	0.0	1	1.1
2008	0	0.0	4	4.2	4	4.2	1	1.1	5	5.3

Source: NSW Maternal and Perinatal Committee.

# Includes all deaths of women who were pregnant at the time of death, or who died within 42 days of childbirth. Direct deaths include those resulting from obstetric complications of the pregnant state, including its management. Indirect deaths include those resulting from pre-existing disease or disease which developed during pregnancy and was not due to direct obstetric causes but which may have been aggravated by the physiological effects of pregnancy. Incidental deaths are those where the pregnancy is unlikely to have contributed significantly to the death.<sup>1</sup>

## Totals for 1999 and 2005 each include one death that was unable to be classified.

### Total for 2004 includes one open coronial case.

**Table 19. Maternal deaths by cause, NSW 2008#**

Classification	Cause	No.
Indirect	Coronary artery atherosclerosis	1
Indirect	Rupture of splenic artery	1
Indirect	Acute on chronic intrapulmonary haemorrhage	1
Indirect	Positional asphyxia	1
Incidental	Ruptured aortic aneurysm	1

Source: NSW Maternal and Perinatal Committee.

# Includes all deaths of women who were pregnant at the time of death, or who died within 42 days of childbirth. Indirect deaths include those resulting from pre-existing disease or disease which developed during pregnancy and was not due to direct obstetric causes but which may have been aggravated by the physiological effects of pregnancy. Incidental deaths are those where the pregnancy is unlikely to have contributed significantly to the death.<sup>1</sup>

## Reference

1. Sullivan EA, Hall B and King, JF. *Maternal deaths in Australia 2003–2005*. Maternal deaths series no. 3 Cat. No. PER 42. Sydney: AIHW National Perinatal Statistics Unit, 2007.

## 5. Local Health Districts

Information on the health of Aboriginal and Torres Strait Islander mothers and mothers born in non-English speaking countries is shown in Chapters 7 and 8 respectively.

### Confinements

The largest numbers of mothers who gave birth in 2009 were resident in the Western Sydney Local Health District ( $n = 13,573$ , 14.3%), followed by the South Western Sydney Local Health District ( $n = 12,743$ , 13.4%) and the South Eastern Sydney Local Health District ( $n = 11,278$ , 11.9%) (Table 20).

### Maternal age

The proportion of women giving birth at less than 20 years of age varied from 0.5% in the Northern Sydney Local Health District to 11.9% in the Far West Local Health District, while the proportion of mothers giving birth at 35 years of age or more ranged from 10.7% in the Greater Far West Local Health District to 39.5% in the Northern Sydney Local Health District (Table 20).

### Maternal country of birth

Seventy-six per cent of women who gave birth in NSW in 2009 were born in English speaking countries, 14.7% were born in Asian countries, and 4.8% were born in the Middle East or Africa (Table 21). The highest proportions of mothers born in non-English speaking countries were resident in the Western Sydney, South Western Sydney and Sydney Local Health Districts.

### Aboriginal and Torres Strait Islander mothers

In 2009, 3.1% of mothers were reported to be Aboriginal or Torres Strait Islander (Table 22). The proportion of mothers who were Aboriginal or Torres Strait Islander varied from 0.3% in the Northern Sydney Local Health District to 14.9% in the Western NSW Local Health District.

**Table 20. Maternal age by Local Health District of residence, NSW 2009**

Local Health District	Maternal age (years)																	
	12–19		20–24		25–29		30–34		35–39		40–44		45 +		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	99	1.2	610	7.2	1833	21.6	3120	36.8	2316	27.3	475	5.6	20	0.2	0	0.0	8473	100.0
South Western Sydney	417	3.3	2117	16.6	3988	31.3	3827	30.0	1945	15.3	422	3.3	27	0.2	0	0.0	12743	100.0
South Eastern Sydney	120	1.1	694	6.2	2490	22.1	4291	38.0	3066	27.2	590	5.2	27	0.2	0	0.0	11278	100.0
Illawarra Shoalhaven	196	4.4	714	16.2	1311	29.7	1347	30.5	712	16.1	133	3.0	6	0.1	1	0.0	4420	100.0
Western Sydney	397	2.9	1881	13.9	4304	31.7	4382	32.3	2172	16.0	420	3.1	16	0.1	1	0.0	13573	100.0
Nepean Blue Mountains	237	4.9	823	17.1	1474	30.6	1430	29.7	704	14.6	140	2.9	11	0.2	0	0.0	4819	100.0
Northern Sydney	57	0.5	302	2.9	1673	16.1	4246	40.9	3367	32.5	695	6.7	31	0.3	1	0.0	10372	100.0
Central Coast	175	4.4	646	16.4	1183	30.0	1129	28.6	679	17.2	126	3.2	11	0.3	0	0.0	3949	100.0
Hunter New England	631	6.0	1942	18.4	3136	29.7	2931	27.8	1593	15.1	308	2.9	18	0.2	0	0.0	10559	100.0
Northern NSW	180	6.1	576	19.6	800	27.2	760	25.9	504	17.1	117	4.0	3	0.1	0	0.0	2940	100.0
Mid North Coast	172	7.6	485	21.5	630	28.0	578	25.7	318	14.1	66	2.9	2	0.1	1	0.0	2252	100.0
Southern NSW	82	5.8	265	18.6	412	29.0	411	28.9	218	15.3	32	2.3	1	0.1	0	0.0	1421	100.0
Murrumbidgee	156	6.0	482	18.4	846	32.3	710	27.1	352	13.5	64	2.4	5	0.2	1	0.0	2616	100.0
Western NSW	293	7.9	801	21.6	1106	29.8	927	25.0	475	12.8	97	2.6	9	0.2	0	0.0	3708	100.0
Far West	29	11.9	59	24.3	76	31.3	53	21.8	24	9.9	2	0.8	0	0.0	0	0.0	243	100.0
Other-not stated	53	3.2	252	15.0	574	34.2	448	26.7	281	16.8	56	3.3	3	0.2	10	0.6	1677	100.0
TOTAL	3294	3.5	12649	13.3	25836	27.2	30590	32.2	18726	19.7	3743	3.9	190	0.2	15	0.0	95043	100.0
Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.																		

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

**Table 21 Maternal country of birth by Local Health District of residence, NSW 2009#**

Local Health District	Country of birth group																					
	English speaking		Central and South America		Melanesia, Micronesia, and Polynesia		Southern Europe		Western and Northern Europe		Eastern Europe, Russia, Central Asian and Baltic States		Middle East and Africa		South East Asia		North East Asia		Southern Asia		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	5160	61.2	98	1.2	108	1.3	115	1.4	94	1.1	87	1.0	556	6.6	669	7.9	887	10.5	664	7.9	8438	100.0
South Western Sydney	7596	59.9	172	1.4	479	3.8	256	2.0	46	0.4	58	0.5	1593	12.6	1731	13.6	292	2.3	466	3.7	12689	100.0
South Eastern Sydney	7966	71.2	186	1.7	101	0.9	172	1.5	213	1.9	207	1.9	419	3.7	709	6.3	839	7.5	373	3.3	11185	100.0
Illawarra Shoalhaven	4032	91.4	25	0.6	14	0.3	55	1.2	24	0.5	19	0.4	82	1.9	81	1.8	47	1.1	34	0.8	4413	100.0
Western Sydney	7393	54.6	121	0.9	408	3.0	102	0.8	34	0.3	102	0.8	1322	9.8	1046	7.7	1014	7.5	2004	14.8	13546	100.0
Nepean Blue Mountains	4351	90.6	19	0.4	45	0.9	35	0.7	15	0.3	15	0.3	91	1.9	116	2.4	41	0.9	74	1.5	4802	100.0
Northern Sydney	7546	73.0	161	1.6	82	0.8	72	0.7	242	2.3	173	1.7	210	2.0	516	5.0	958	9.3	373	3.6	10333	100.0
Central Coast	3727	94.6	20	0.5	15	0.4	8	0.2	25	0.6	22	0.6	19	0.5	47	1.2	32	0.8	24	0.6	3939	100.0
Hunter New England	10087	95.6	17	0.2	31	0.3	27	0.3	51	0.5	24	0.2	75	0.7	101	1.0	70	0.7	72	0.7	10555	100.0
Northern NSW	2785	94.7	11	0.4	10	0.3	5	0.2	28	1.0	4	0.1	20	0.7	43	1.5	17	0.6	17	0.6	2940	100.0
Mid North Coast	2126	94.5	5	0.2	6	0.3	2	0.1	9	0.4	10	0.4	13	0.6	37	1.6	11	0.5	30	1.3	2249	100.0
Southern NSW	1356	95.6	0	0.0	7	0.5	2	0.1	7	0.5	3	0.2	9	0.6	21	1.5	8	0.6	6	0.4	1419	100.0
Murrumbidgee	2473	94.6	0	0.0	17	0.7	1	0.0	9	0.3	2	0.1	27	1.0	21	0.8	17	0.7	48	1.8	2615	100.0
Western NSW	3587	96.8	7	0.2	8	0.2	2	0.1	7	0.2	7	0.2	20	0.5	36	1.0	16	0.4	15	0.4	3705	100.0
Far West	235	96.7	2	0.8	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	3	1.2	0	0.0	2	0.8	243	100.0
Other—not stated	1223	73.2	23	1.4	19	1.1	11	0.7	30	1.8	16	1.0	47	2.8	109	6.5	84	5.0	108	6.5	1670	100.0
<b>TOTAL</b>	<b>71643</b>	<b>75.6</b>	<b>867</b>	<b>0.9</b>	<b>1351</b>	<b>1.4</b>	<b>865</b>	<b>0.9</b>	<b>834</b>	<b>0.9</b>	<b>749</b>	<b>0.8</b>	<b>4503</b>	<b>4.8</b>	<b>5286</b>	<b>5.6</b>	<b>4333</b>	<b>4.6</b>	<b>4310</b>	<b>4.5</b>	<b>94741</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Excludes 302 mothers for which country of birth was not stated. Maternal countries of birth and country of birth groups are shown in Appendix 3.

**Table 22. Aboriginal and Torres Strait Islander mothers by Local Health District of residence, NSW 2009**

Local Health District	Aboriginality							
	Aboriginal – Torres Strait Islander		Non-Aboriginal or Torres Strait Islander		Not Stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Sydney	105	1.2	8364	98.7	4	0.0	8473	100.0
South Western Sydney	170	1.3	12552	98.5	21	0.2	12743	100.0
South Eastern Sydney	64	0.6	11210	99.4	4	0.0	11278	100.0
Illawarra Shoalhaven	170	3.8	4242	96.0	8	0.2	4420	100.0
Western Sydney	203	1.5	13358	98.4	12	0.1	13573	100.0
Nepean Blue Mountains	113	2.3	4696	97.4	10	0.2	4819	100.0
Northern Sydney	28	0.3	10295	99.3	49	0.5	10372	100.0
Central Coast	110	2.8	3798	96.2	41	1.0	3949	100.0
Hunter New England	654	6.2	9892	93.7	13	0.1	10559	100.0
Northern NSW	203	6.9	2735	93.0	2	0.1	2940	100.0
Mid North Coast	234	10.4	2013	89.4	5	0.2	2252	100.0
Southern NSW	68	4.8	1351	95.1	2	0.1	1421	100.0
Murrumbidgee	156	6.0	2460	94.0	0	0.0	2616	100.0
Western NSW	553	14.9	3155	85.1	0	0.0	3708	100.0
Far West	35	14.4	208	85.6	0	0.0	243	100.0
Other—not stated	38	2.3	1634	97.4	5	0.3	1677	100.0
<b>TOTAL</b>	<b>2904</b>	<b>3.1</b>	<b>91963</b>	<b>96.8</b>	<b>176</b>	<b>0.2</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Duration of pregnancy at first antenatal visit

In 2009, 91.9% of mothers commenced antenatal care prior to 20 weeks gestation and 78.9% commenced antenatal care prior to 14 weeks gestation. The percentage of mothers commencing

antenatal care prior to 20 weeks gestation varied from 82.6% in the South Western Sydney Local Health District to 97.7% in the Northern Sydney Local Health District (Table 23).

**Table 23. Duration of pregnancy at first antenatal visit by Local Health District of residence, NSW 2009**

Local Health District	Duration of pregnancy at first antenatal visit (weeks)									
	0–13		14–19		20–plus		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	5150	60.8	1918	22.6	1250	14.8	155	1.8	8473	100.0
South Western Sydney	7225	56.7	3296	25.9	1815	14.2	407	3.2	12743	100.0
South Eastern Sydney	8369	74.2	2139	19.0	732	6.5	38	0.3	11278	100.0
Illawarra Shoalhaven	3516	79.5	611	13.8	286	6.5	7	0.2	4420	100.0
Western Sydney	12474	91.9	645	4.8	402	3.0	52	0.4	13573	100.0
Nepean Blue Mountains	4291	89.0	376	7.8	140	2.9	12	0.2	4819	100.0
Northern Sydney	9453	91.1	683	6.6	214	2.1	22	0.2	10372	100.0
Central Coast	3478	88.1	290	7.3	162	4.1	19	0.5	3949	100.0
Hunter New England	8723	82.6	1026	9.7	740	7.0	70	0.7	10559	100.0
Northern NSW	2550	86.7	256	8.7	117	4.0	17	0.6	2940	100.0
Mid North Coast	1835	81.5	272	12.1	126	5.6	19	0.8	2252	100.0
Southern NSW	1161	81.7	139	9.8	113	8.0	8	0.6	1421	100.0
Murrumbidgee	2267	86.7	199	7.6	136	5.2	14	0.5	2616	100.0
Western NSW	3039	82.0	348	9.4	283	7.6	38	1.0	3708	100.0
Far West	178	73.3	49	20.2	15	6.2	1	0.4	243	100.0
Other—not stated	1238	73.8	190	11.3	213	12.7	36	2.1	1677	100.0
<b>TOTAL</b>	<b>74947</b>	<b>78.9</b>	<b>12437</b>	<b>13.1</b>	<b>6744</b>	<b>7.1</b>	<b>915</b>	<b>1.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Smoking in pregnancy

In 2009, 10.1% of mothers reported smoking in the second half of pregnancy (Table 24). The lowest rate was reported among mothers resident in the Northern Sydney Local Health

District (1.5%) and the highest rate was reported among residents of the Far West Local Health District (31.3%).

**Table 24. Cigarettes smoked in the second half of pregnancy by Local Health District of residence, NSW 2009**

Local Health District	Cigarettes smoked in the second half of pregnancy									
	None		1–10 per day		More than 10 per day		Smoked – amount not stated		Not stated	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	8208	96.9	128	1.5	62	0.7	75	0.9	0	0.0
South Western Sydney	11532	90.5	427	3.4	348	2.7	436	3.4	0	0.0
South Eastern Sydney	10925	96.9	223	2.0	96	0.9	34	0.3	0	0.0
Illawarra Shoalhaven	3840	86.9	300	6.8	213	4.8	67	1.5	0	0.0
Western Sydney	12532	92.3	582	4.3	368	2.7	90	0.7	1	0.0
Nepean Blue Mountains	4129	85.7	378	7.8	251	5.2	61	1.3	0	0.0
Northern Sydney	10216	98.5	104	1.0	26	0.3	26	0.3	0	0.0
Central Coast	3392	85.9	301	7.6	218	5.5	38	1.0	0	0.0
Hunter New England	8723	82.6	1061	10.0	675	6.4	100	0.9	0	0.0
Northern NSW	2401	81.7	314	10.7	216	7.3	6	0.2	3	0.1
Mid North Coast	1792	79.6	233	10.3	200	8.9	27	1.2	0	0.0
Southern NSW	1119	78.7	155	10.9	143	10.1	4	0.3	0	0.0
Murrumbidgee	2136	81.7	247	9.4	223	8.5	9	0.3	1	0.0
Western NSW	2844	76.7	398	10.7	429	11.6	36	1.0	1	0.0
Far West	167	68.7	31	12.8	43	17.7	2	0.8	0	0.0
Other—not stated	1491	88.9	113	6.7	69	4.1	4	0.2	0	0.0
<b>TOTAL</b>	<b>85447</b>	<b>89.9</b>	<b>4995</b>	<b>5.3</b>	<b>3580</b>	<b>3.8</b>	<b>1015</b>	<b>1.1</b>	<b>6</b>	<b>0.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Place of birth

Ninety-five per cent of mothers chose to give birth in a hospital birthing suite in 2009, compared to 3.9% who planned a birth centre birth and 0.3% who planned a home birth (Table 25). Planned birth centre births were most commonly reported in the Hunter New England and Western Sydney Local Health Districts.

## Labour

In 2009, the onset of labour was spontaneous in 56.7% of confinements (Table 26). Labour was induced in 25.8% of confinements and no labour (elective caesarean section) was reported in 17.5%. The rate of spontaneous onset of labour was highest among residents of the Northern NSW Local Health District (66.6%). The highest rate of induction of labour was among residents of the Illawarra Shoalhaven Local Health District (32.7%).

**Table 25. Place of birth by Local Health District of residence, NSW 2009**

Local Health District	Place of birth													
	Hospital		Birth Centre		Planned birth centre/ hospital admission		Planned homebirth		Planned homebirth / hospital admission		Born before arrival		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	7908	93.3	497	5.9	15	0.2	12	0.1	1	0.0	40	0.5	8473	100.0
South Western Sydney	12490	98.0	137	1.1	14	0.1	19	0.1	0	0.0	83	0.7	12743	100.0
South Eastern Sydney	10571	93.7	505	4.5	119	1.1	30	0.3	3	0.0	50	0.4	11278	100.0
Illawarra Shoalhaven	4328	97.9	58	1.3	8	0.2	7	0.2	0	0.0	19	0.4	4420	100.0
Western Sydney	12842	94.6	363	2.7	298	2.2	13	0.1	2	0.0	55	0.4	13573	100.0
Nepean Blue Mountains	4699	97.5	53	1.1	20	0.4	16	0.3	1	0.0	30	0.6	4819	100.0
Northern Sydney	10167	98.0	139	1.3	11	0.1	21	0.2	4	0.0	30	0.3	10372	100.0
Central Coast	3851	97.5	45	1.1	19	0.5	2	0.1	0	0.0	32	0.8	3949	100.0
Hunter New England	9144	86.6	873	8.3	417	3.9	36	0.3	3	0.0	86	0.8	10559	100.0
Northern NSW	2833	96.4	7	0.2	24	0.8	37	1.3	15	0.5	24	0.8	2940	100.0
Mid North Coast	2210	98.1	1	0.0	19	0.8	11	0.5	1	0.0	10	0.4	2252	100.0
Southern NSW	1399	98.5	1	0.1	4	0.3	3	0.2	2	0.1	12	0.8	1421	100.0
Murrumbidgee	2576	98.5	10	0.4	8	0.3	9	0.3	0	0.0	13	0.5	2616	100.0
Western NSW	3648	98.4	17	0.5	17	0.5	3	0.1	2	0.1	21	0.6	3708	100.0
Far West	240	98.8	1	0.4	0	0.0	0	0.0	0	0.0	2	0.8	243	100.0
Other—not stated	1619	96.5	29	1.7	11	0.7	12	0.7	1	0.1	5	0.3	1677	100.0
TOTAL	90525	95.2	2736	2.9	1004	1.1	231	0.2	35	0.0	512	0.5	95043	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

**Table 26. Onset and augmentation of labour by Local Health District of residence, NSW 2009**

Local Health District	Onset of labour																	
	Spontaneous		Spontaneous augmented with ARM*		Spontaneous augmented with oxytocics prostaglandins#		No labour		Induced oxytocics/ prostaglandins		Induced –ARM* only		Induced – ARM* + oxytocics/ prostaglandins		Induced – other##		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	3517	41.5	362	4.3	1227	14.5	1530	18.1	712	8.4	128	1.5	989	11.7	8	0.1	8473	100.0
South Western Sydney	5330	41.8	1149	9.0	1266	9.9	2040	16.0	1102	8.6	155	1.2	1666	13.1	35	0.3	12743	100.0
South Eastern Sydney	4041	35.8	864	7.7	1133	10.0	2308	20.5	1055	9.4	191	1.7	1672	14.8	14	0.1	11278	100.0
Illawarra Shoalhaven	1638	37.1	322	7.3	298	6.7	719	16.3	376	8.5	117	2.6	937	21.2	13	0.3	4420	100.0
Western Sydney	5272	38.8	1038	7.6	1212	8.9	2083	15.3	1282	9.4	155	1.1	2518	18.6	13	0.1	13573	100.0
Nepean Blue Mountains	2009	41.7	308	6.4	274	5.7	828	17.2	478	9.9	88	1.8	826	17.1	8	0.2	4819	100.0
Northern Sydney	3803	36.7	644	6.2	897	8.6	2396	23.1	871	8.4	228	2.2	1521	14.7	12	0.1	10372	100.0
Central Coast	1471	37.2	200	5.1	336	8.5	868	22.0	397	10.1	64	1.6	605	15.3	8	0.2	3949	100.0
Hunter New England	4894	46.3	477	4.5	665	6.3	1548	14.7	1006	9.5	253	2.4	1671	15.8	45	0.4	10559	100.0
Northern NSW	1480	50.3	257	8.7	221	7.5	403	13.7	289	9.8	45	1.5	236	8.0	9	0.3	2940	100.0
Mid North Coast	987	43.8	281	12.5	186	8.3	333	14.8	189	8.4	44	2.0	228	10.1	4	0.2	2252	100.0
Southern NSW	716	50.4	152	10.7	109	7.7	186	13.1	129	9.1	26	1.8	103	7.2	0	0.0	1421	100.0
Murrumbidgee	1176	45.0	209	8.0	140	5.4	493	18.8	319	12.2	72	2.8	204	7.8	3	0.1	2616	100.0
Western NSW	1551	41.8	416	11.2	218	5.9	640	17.3	281	7.6	110	3.0	487	13.1	5	0.1	3708	100.0
Far West	121	49.8	21	8.6	18	7.4	37	15.2	35	14.4	2	0.8	9	3.7	0	0.0	243	100.0
Other—not stated	691	41.2	140	8.3	182	10.9	237	14.1	159	9.5	32	1.9	232	13.8	4	0.2	1677	100.0
TOTAL	38697	40.7	6840	7.2	8382	8.8	16649	17.5	8680	9.1	1710	1.8	13904	14.6	181	0.2	95043	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

\*ARM: artificial rupture of membranes.

# May include artificial rupture of membranes.

## This category includes other forms of induction such as Foley's catheter.

## Birth

Fifty-eight percent of births were normal vaginal births, 11.2% were instrumental and 30.2% were by caesarean section (Table 27). The highest rate of normal vaginal birth was among residents of the Northern NSW Local Health District (68.0%), while the highest rates of instrumental birth were among residents of the South Eastern Sydney Local Health District (15.0%). The caesarean section rate varied from 23.2% among mothers resident in the Southern NSW Local Health District to 37.7% in the Northern Sydney Local Health District.

## Birth weight

In 2009, 6.0% of births were low birth weight (less than 2,500 grams). These comprised 0.7% of birth weight less than 1,000 grams, 0.5% in the 1,000 to 1,499 gram range and 4.8% in the 1,500 to 2,499 gram range (Table 28). Rates of low birth weight ranged from 3.7% in the Southern NSW Local Health District to 6.6% in the Nepean Blue Mountains Local Health District.

**Table 27. Type of birth by Local Health District of residence, NSW 2009**

Local Health District	Type of birth													
	Normal vaginal		Forceps		Vacuum extraction		Vaginal breech		Elective caesarean section		Emergency caesarean section#		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	4548	53.7	400	4.7	755	8.9	23	0.3	1530	18.1	1217	14.4	8473	100.0
South Western Sydney	8259	64.8	229	1.8	951	7.5	43	0.3	2040	16.0	1221	9.6	12743	100.0
South Eastern Sydney	5685	50.4	558	4.9	1131	10.0	29	0.3	2308	20.5	1567	13.9	11278	100.0
Illawarra Shoalhaven	2693	60.9	79	1.8	370	8.4	15	0.3	719	16.3	544	12.3	4420	100.0
Western Sydney	8014	59.0	606	4.5	1038	7.6	66	0.5	2083	15.3	1766	13.0	13573	100.0
Nepean Blue Mountains	2783	57.8	127	2.6	368	7.6	20	0.4	828	17.2	693	14.4	4819	100.0
Northern Sydney	5063	48.8	455	4.4	919	8.9	23	0.2	2396	23.1	1516	14.6	10372	100.0
Central Coast	2078	52.6	150	3.8	263	6.7	18	0.5	868	22.0	572	14.5	3949	100.0
Hunter New England	6682	63.3	345	3.3	659	6.2	59	0.6	1548	14.7	1266	12.0	10559	100.0
Northern NSW	1998	68.0	89	3.0	106	3.6	16	0.5	403	13.7	328	11.2	2940	100.0
Mid North Coast	1458	64.7	54	2.4	149	6.6	10	0.4	333	14.8	248	11.0	2252	100.0
Southern NSW	953	67.1	74	5.2	65	4.6	0	0.0	186	13.1	143	10.1	1421	100.0
Murrumbidgee	1566	59.9	75	2.9	182	7.0	7	0.3	493	18.8	293	11.2	2616	100.0
Western NSW	2365	63.8	100	2.7	155	4.2	12	0.3	640	17.3	436	11.8	3708	100.0
Far West	144	59.3	8	3.3	6	2.5	0	0.0	37	15.2	48	19.8	243	100.0
Other—not stated	1070	63.8	34	2.0	115	6.9	14	0.8	237	14.1	207	12.3	1677	100.0
<b>TOTAL</b>	<b>55359</b>	<b>58.2</b>	<b>3383</b>	<b>3.6</b>	<b>7232</b>	<b>7.6</b>	<b>355</b>	<b>0.4</b>	<b>16649</b>	<b>17.5</b>	<b>12065</b>	<b>12.7</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Emergency caesarean section includes caesarean section where the onset of labour was not stated.

**Table 28. Birth weight by Local Health District of residence, NSW 2009**

Local Health District	Birth weight (grams)																				TOTAL			
	Less than 500		500–999		1000–1499		1500–1999		2000–2499		2500–2999		3000–3499		3500–3999		4000–4499		4500+				Not stated	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Sydney	18	0.2	29	0.3	44	0.5	90	1.0	295	3.4	1343	15.7	3231	37.7	2623	30.6	770	9.0	126	1.5	10	0.1	8579	100.0
South Western Sydney	37	0.3	57	0.4	83	0.6	131	1.0	499	3.9	2082	16.1	4828	37.3	3798	29.4	1204	9.3	208	1.6	10	0.1	12937	100.0
South Eastern Sydney	30	0.3	43	0.4	55	0.5	129	1.1	407	3.5	1708	14.9	4376	38.2	3490	30.4	1061	9.3	160	1.4	7	0.1	11466	100.0
Illawarra Shoalhaven	15	0.3	19	0.4	22	0.5	62	1.4	156	3.5	628	14.0	1582	35.2	1474	32.8	461	10.3	69	1.5	4	0.1	4492	100.0
Western Sydney	43	0.3	73	0.5	72	0.5	151	1.1	522	3.8	2323	16.8	5131	37.2	4039	29.3	1204	8.7	219	1.6	10	0.1	13787	100.0
Nepean Blue Mountains	18	0.4	16	0.3	35	0.7	67	1.4	189	3.9	725	14.8	1735	35.4	1496	30.5	517	10.6	99	2.0	2	0.0	4899	100.0
Northern Sydney	20	0.2	38	0.4	42	0.4	102	1.0	336	3.2	1406	13.3	3945	37.5	3373	32.0	1096	10.4	168	1.6	7	0.1	10533	100.0
Central Coast	11	0.3	23	0.6	28	0.7	46	1.1	144	3.6	514	12.8	1341	33.5	1339	33.4	469	11.7	82	2.0	6	0.1	4003	100.0
Hunter New England	22	0.2	57	0.5	55	0.5	149	1.4	421	3.9	1498	14.0	3578	33.4	3460	32.3	1234	11.5	223	2.1	9	0.1	10706	100.0
Northern NSW	9	0.3	5	0.2	8	0.3	24	0.8	115	3.9	389	13.1	1012	34.0	967	32.5	382	12.8	65	2.2	0	0.0	2976	100.0
Mid North Coast	6	0.3	8	0.4	14	0.6	31	1.4	84	3.7	300	13.2	731	32.1	765	33.6	283	12.4	52	2.3	2	0.1	2276	100.0
Southern NSW	1	0.1	3	0.2	4	0.3	6	0.4	39	2.7	207	14.6	488	34.3	450	31.6	180	12.7	44	3.1	0	0.0	1422	100.0
Murrumbidgee	6	0.2	5	0.2	6	0.2	26	1.0	80	3.0	342	12.9	909	34.3	891	33.7	327	12.4	54	2.0	1	0.0	2647	100.0
Western NSW	4	0.1	14	0.4	25	0.7	45	1.2	153	4.1	560	14.9	1332	35.4	1119	29.7	416	11.1	90	2.4	5	0.1	3763	100.0
Far West	0	0.0	1	0.4	0	0.0	3	1.2	12	4.9	47	19.0	84	34.0	82	33.2	16	6.5	2	0.8	0	0.0	247	100.0
Other—not stated	19	1.1	11	0.6	8	0.5	19	1.1	89	5.2	244	14.3	599	35.1	518	30.4	167	9.8	31	1.8	1	0.1	1706	100.0
TOTAL	259	0.3	402	0.4	501	0.5	1081	1.1	3541	3.7	14316	14.8	34902	36.2	29884	31.0	9787	10.1	1692	1.8	74	0.1	96439	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Gestational age

The majority of births (91.9%) were at term, and 0.8% were post-term (42-plus weeks). The 7.3% of preterm births comprised 0.7% born at less than 28 weeks, 0.7% at 28–31 weeks, and 5.9% at 32–36 weeks. The highest rate of preterm

birth was in the Far West Local Health District (8.5%), while the lowest was 4.4% in the Southern NSW Local Health District (Table 29).

**Table 29. Gestational age by Local Health District of residence, NSW 2009**

Local Health District	Gestational age (weeks)													
	< 28		28–31		32–36		37–41		42+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	54	0.6	51	0.6	451	5.3	7948	92.6	75	0.9	0	0.0	8579	100.0
South Western Sydney	96	0.7	113	0.9	752	5.8	11925	92.2	50	0.4	1	0.0	12937	100.0
South Eastern Sydney	75	0.7	75	0.7	705	6.1	10508	91.6	101	0.9	2	0.0	11466	100.0
Illawarra Shoalhaven	35	0.8	36	0.8	308	6.9	4075	90.7	37	0.8	1	0.0	4492	100.0
Western Sydney	118	0.9	91	0.7	782	5.7	12744	92.4	51	0.4	1	0.0	13787	100.0
Nepean Blue Mountains	44	0.9	39	0.8	322	6.6	4471	91.3	22	0.4	1	0.0	4899	100.0
Northern Sydney	64	0.6	54	0.5	549	5.2	9795	93.0	69	0.7	2	0.0	10533	100.0
Central Coast	37	0.9	29	0.7	265	6.6	3650	91.2	22	0.5	0	0.0	4003	100.0
Hunter New England	79	0.7	96	0.9	730	6.8	9649	90.1	152	1.4	0	0.0	10706	100.0
Northern NSW	15	0.5	7	0.2	165	5.5	2724	91.5	65	2.2	0	0.0	2976	100.0
Mid North Coast	15	0.7	17	0.7	136	6.0	2077	91.3	31	1.4	0	0.0	2276	100.0
Southern NSW	4	0.3	6	0.4	52	3.7	1337	94.0	23	1.6	0	0.0	1422	100.0
Murrumbidgee	8	0.3	13	0.5	139	5.3	2462	93.0	25	0.9	0	0.0	2647	100.0
Western NSW	28	0.7	23	0.6	227	6.0	3455	91.8	30	0.8	0	0.0	3763	100.0
Far West	0	0.0	0	0.0	21	8.5	224	90.7	2	0.8	0	0.0	247	100.0
Other-not stated	33	1.9	10	0.6	93	5.5	1552	91.0	18	1.1	0	0.0	1706	100.0
TOTAL	705	0.7	660	0.7	5697	5.9	88596	91.9	773	0.8	8	0.0	96439	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Infant feeding

In 2009, infant feeding on discharge from hospital was reported for 95,835 liveborn babies (Table 30). The majority of babies (80.5%) were reported to be fully breastfed, 12.1% were receiving infant formula only, and a further 6.7% were

being partially breastfed. Rates of full breastfeeding varied from 71.3% in the South Western Sydney Local Health District to 87.7% in the Northern NSW Local Health District.

**Table 30. Live births by infant feeding on discharge and Local Health District of residence, NSW 2009**

Local Health District	Infant feeding									
	Full breast-feeding		Any breast-feeding		Infant formula only		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	7017	82.3	938	11.0	516	6.1	53	0.6	8524	100.0
South Western Sydney	9168	71.3	1335	10.4	2266	17.6	91	0.7	12860	100.0
South Eastern Sydney	9503	83.3	1010	8.9	826	7.2	67	0.6	11406	100.0
Illawarra Shoalhaven	3471	77.8	115	2.6	828	18.6	47	1.1	4461	100.0
Western Sydney	10752	78.5	1138	8.3	1669	12.2	131	1.0	13690	100.0
Nepean Blue Mountains	3707	76.1	307	6.3	819	16.8	39	0.8	4872	100.0
Northern Sydney	9154	87.3	681	6.5	593	5.7	55	0.5	10483	100.0
Central Coast	3283	82.5	141	3.5	505	12.7	51	1.3	3980	100.0
Hunter New England	8679	81.7	286	2.7	1595	15.0	69	0.6	10629	100.0
Northern NSW	2594	87.7	104	3.5	232	7.8	29	1.0	2959	100.0
Mid North Coast	1950	86.3	80	3.5	218	9.7	11	0.5	2259	100.0
Southern NSW	1212	85.8	33	2.3	160	11.3	7	0.5	1412	100.0
Murrumbidgee	2038	77.4	81	3.1	505	19.2	9	0.3	2633	100.0
Western NSW	2990	79.8	80	2.1	654	17.5	21	0.6	3745	100.0
Far West	188	76.4	12	4.9	46	18.7	0	0.0	246	100.0
Other—not stated	1449	86.4	82	4.9	127	7.6	20	1.2	1678	100.0
TOTAL	77155	80.5	6423	6.7	11559	12.1	700	0.7	95837	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.



## Perinatal outcomes

The perinatal mortality rate in 2009 was 8.7 per 1,000 births. This rate includes all live births, and stillbirths of at least 400 grams birth weight or at least 20 weeks gestation (Table 31).

The perinatal mortality rate varied from 4.0 per 1,000 in the Far West Local Health District to 10.5 per 1,000 in the Mid North Coast Local Health District.

**Table 31. Perinatal outcomes by Local Health District of residence, NSW 2009#**

Local Health District	Perinatal outcome												
	Liveborn surviving		Stillborn		Neonatal death		Not stated		Death – age not stated		Total births		Perinatal mortality rate/1000 births
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Sydney	8506	99.1	55	0.6	18	0.2	0	0.0	0	0.0	8579	100.0	8.5
South Western Sydney	12818	99.1	77	0.6	42	0.3	0	0.0	0	0.0	12937	100.0	9.2
South Eastern Sydney	11372	99.2	58	0.5	34	0.3	2	0.0	0	0.0	11466	100.0	8.0
Illawarra Shoalhaven	4448	99.0	31	0.7	13	0.3	0	0.0	0	0.0	4492	100.0	9.8
Western Sydney	13655	99.0	97	0.7	35	0.3	0	0.0	0	0.0	13787	100.0	9.6
Nepean Blue Mountains	4862	99.2	27	0.6	9	0.2	0	0.0	1	0.0	4899	100.0	7.3
Northern Sydney	10467	99.4	50	0.5	16	0.2	0	0.0	0	0.0	10533	100.0	6.3
Central Coast	3968	99.1	23	0.6	12	0.3	0	0.0	0	0.0	4003	100.0	8.7
Hunter New England	10600	99.0	77	0.7	28	0.3	0	0.0	1	0.0	10706	100.0	9.8
Northern NSW	2951	99.2	15	0.5	8	0.3	2	0.1	0	0.0	2976	100.0	7.7
Mid North Coast	2252	98.9	17	0.7	7	0.3	0	0.0	0	0.0	2276	100.0	10.5
Southern NSW	1411	99.2	10	0.7	1	0.1	0	0.0	0	0.0	1422	100.0	7.7
Murrumbidgee	2631	99.4	14	0.5	2	0.1	0	0.0	0	0.0	2647	100.0	6.0
Western NSW	3738	99.3	18	0.5	7	0.2	0	0.0	0	0.0	3763	100.0	6.6
Far West	246	99.6	1	0.4	0	0.0	0	0.0	0	0.0	247	100.0	4.0
Other—not stated	1670	97.9	28	1.6	8	0.5	0	0.0	0	0.0	1706	100.0	–
TOTAL	95595	99.1	598	0.6	240	0.2	4	0.0	2	0.0	96439	100.0	8.7

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Perinatal deaths include deaths reported to the PDC only. As the PDC form is completed at discharge or transfer of the baby, deaths occurring after this time may not be reported to the PDC.

## Live births by statistical local areas

**Table 32. Live births by Local Health District and statistical local area of residence, NSW 2009**

Local Health District – statistical local area	No.	%	Local Health District – statistical local area	No.	%
<b>Sydney</b>			Holroyd	1945	14.2
Ashfield	574	6.7	Parramatta – Inner	1040	7.6
Burwood	388	4.6	Parramatta – North-East	642	4.7
Canada Bay – Concord	526	6.2	Parramatta – North-West	580	4.2
Canada Bay – Drummoyne	626	7.3	Parramatta – South	687	5.0
Canterbury	2320	27.2	TOTAL	13699	100.0
Leichhardt	1123	13.2	<b>Blue Mountains</b>	890	18.3
Marrickville	1285	15.1	Hawkesbury	892	18.3
Strathfield	431	5.1	Lithgow	240	4.9
Sydney – South	795	9.3	Penrith – East	1491	30.6
Sydney – West	458	5.4	Penrith – West	1359	27.9
TOTAL	8526	100.0	TOTAL	4872	100.0
<b>South Western Sydney</b>			<b>Northern Sydney</b>		
Bankstown – North-East	1199	9.3	Hornsby – North	729	7.0
Bankstown – North-West	988	7.7	Hornsby – South	1066	10.2
Bankstown – South	738	5.7	Hunters Hill	154	1.5
Camden	854	6.6	Ku-ring-gai	850	8.1
Campbelltown – North	1190	9.3	Lane Cove	470	4.5
Campbelltown – South	1176	9.1	Manly	698	6.7
Fairfield – East	1794	14.0	Mosman	357	3.4
Fairfield – West	814	6.3	North Sydney	1014	9.7
Liverpool – East	1900	14.8	Pittwater	724	6.9
Liverpool – West	1169	9.1	Ryde	1354	12.9
Wingecarribee	464	3.6	Warringah	2027	19.3
Wollondilly	571	4.4	Willoughby	1033	9.9
TOTAL	12857	100.0	TOTAL	10476	100.0
<b>South Eastern Sydney</b>			<b>Central Coast</b>		
Botany	611	5.4	Gosford – East	718	18.0
Hurstville	1076	9.4	Gosford – West	1313	33.0
Kogarah	758	6.6	Wyong – North-East	950	23.9
Randwick	1917	16.8	Wyong – South and West	1000	25.1
Rockdale	1547	13.6	TOTAL	3981	100.0
Sutherland Shire – East	1511	13.2	<b>Hunter New England</b>		
Sutherland Shire – West	1549	13.6	Armidale Dumaresq – City	240	2.3
Sydney – Inner	192	1.7	Armidale Dumaresq – Balance	25	0.2
Sydney (SESAHS)	427	3.7	Cessnock	729	6.9
Waverley	1084	9.5	Dungog	89	0.8
Woollahra	731	6.4	Glen Innes Severn	125	1.2
Other/Not stated	2	0.0	Gloucester	38	0.4
TOTAL	11405	100.0	Greater Taree	516	4.9
<b>Illawarra Shoalhaven</b>			Great Lakes	326	3.1
Kiama	175	3.9	Gunnedah	183	1.7
Shellharbour	864	19.4	Guyra	65	0.6
Shoalhaven – Pt A	457	10.2	Gwydir	53	0.5
Shoalhaven – Pt B	512	11.5	Inverell – Pt A	41	0.4
Wollongong – Inner	1244	27.9	Inverell – Pt B	167	1.6
Wollongong – Balance	1205	27.0	Lake Macquarie – East	682	6.4
Other/Not stated	4	0.1	Lake Macquarie – North	1011	9.5
TOTAL	4461	100.0	Lake Macquarie – West	571	5.4
<b>Western Sydney</b>			Liverpool Plains	97	0.9
Auburn	1378	10.1	Maitland	962	9.0
Baulkham Hills – Central	909	6.6	Moree Plains	181	1.7
Baulkham Hills – North	702	5.1	Muswellbrook	253	2.4
Baulkham Hills – South	428	3.1	Narrabri	225	2.1
Blacktown – North	1761	12.9	Newcastle – Inner City	627	5.9
Blacktown – South-East	1708	12.5	Newcastle – Outer West	573	5.4
Blacktown – South-West	1919	14.0	Newcastle – Throsby	702	6.6

Table 32. (Continued)

Local Health District – statistical local area	No.	%	Local Health District – statistical local area	No.	%
Port Stephens	746	7.0	Greater Hume Shire	27	1.0
Singleton	305	2.9	Griffith	363	13.9
Tamworth Regional – Pt A	645	6.1	Gundagai	34	1.3
Tamworth Regional – Pt B	126	1.2	Harden	26	1.0
Tenterfield	29	0.3	Hay	32	1.2
Upper Hunter Shire	193	1.8	Jerilderie	8	0.3
Uralla	70	0.7	Junee	80	3.1
Walcha	38	0.4	Leeton	145	5.6
Other/Not stated	2	0.0	Lockhart	37	1.4
TOTAL	10635	100.0	Murray	6	0.2
<b>Northern NSW</b>			Murrumbidgee	31	1.2
Ballina	381	12.9	Narrandera	87	3.3
Byron	287	9.7	Temora	60	2.3
Clarence Valley – Coast	175	5.9	Tumbarumba	29	1.1
Clarence Valley – Grafton	327	11.1	Tumut	164	6.3
Clarence Valley – Balance	65	2.2	Urana	9	0.3
Kyogle	131	4.4	Wagga Wagga – Pt A	868	33.3
Lismore – Pt A	437	14.8	Wagga Wagga – Pt B	53	2.0
Lismore – Pt B	104	3.5	Young	156	6.0
Richmond Valley – Casino	169	5.7	Other/Not stated	5	0.2
Richmond Valley Bal	109	3.7	TOTAL	2605	100.0
Tweed – Tweed-Heads	440	14.9	<b>Western NSW</b>		
Tweed – Tweed Coast	129	4.4	Bathurst Regional – Pt A	465	12.3
Tweed – Pt B	203	6.9	Bathurst Regional – Pt B	24	0.6
TOTAL	2957	100.0	Blayney	106	2.8
<b>Mid North Coast</b>			Bogan	48	1.3
Bellingen	106	4.7	Bourke	57	1.5
Coffs Harbour – Pt A	639	28.3	Brewarrina	45	1.2
Coffs Harbour – Pt B	182	8.1	Cabonne	151	4.0
Hastings – Pt A	446	19.8	Cobar	66	1.8
Hastings – Pt B	306	13.6	Coonamble	56	1.5
Kempsey	369	16.3	Cowra	157	4.2
Nambucca	209	9.3	Dubbo – Pt A	618	16.4
TOTAL	2257	100.0	Dubbo – Pt B	29	0.8
<b>Southern NSW</b>			Forbes	132	3.5
Bega Valley	299	21.2	Gilgandra	64	1.7
Bombala	21	1.5	Lachlan	98	2.6
Cooma-Monaro	99	7.0	Mid-Western Regional – Pt A	235	6.2
Eurobodalla	315	22.3	Mid-Western Regional – Pt B	29	0.8
Greater Argyle – Goulburn	231	16.3	Narromine	98	2.6
Greater Argyle – Balance	45	3.2	Oberon	59	1.6
Palerang – Pt A	37	2.6	Orange	602	16.0
Queanbeyan	215	15.2	Parkes	212	5.6
Snowy River	73	5.2	Walgett	113	3.0
Upper Lachlan	51	3.6	Warren	37	1.0
Yass Valley	9	0.6	Warrumbungle Shire	106	2.8
Other/Not stated	18	1.3	Weddin	38	1.0
TOTAL	1413	100.0	Wellington	124	3.3
<b>Murrumbidgee</b>			TOTAL	3769	100.0
Berrigan	14	0.5	<b>Far West</b>		
Bland	84	3.2	Broken Hill	215	87.4
Boorowa	19	0.7	Central Darling	21	8.5
Carrathool	38	1.5	Other/Not stated	10	4.1
Conargo	10	0.4	TOTAL	246	100.0
Coolamon	49	1.9	<b>Other-not stated</b>	1678	100.0
Cootamundra	74	2.8	<b>TOTAL NSW</b>	95837	100.0
Deniliquin	97	3.7			

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## 6. NSW Hospitals

### Onset and augmentation of labour

Table 33 shows onset or augmentation of labour for Local Health Districts, and Table 34 for individual hospitals by

maternity service level where at least 200 mothers gave birth in 2009.

**Table 33. Onset and augmentation of labour by Local Health District of hospital, NSW 2009**

Local Health District	Onset and augmentation of labour																	
	Spontaneous		Spontaneous augmented with ARM		Spontaneous augmented with oxytocics/ prostagland#		No labour		Induced oxytocics/ prosta- glandins		Induced – ARM only		Induced – ARM + oxytocics/ prostaglandins		Induced – other##		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	3042	45.3	131	2.0	1079	16.1	1075	16.0	570	8.5	84	1.3	730	10.9	4	0.1	6715	100.0
South Western Sydney	4620	44.6	1003	9.7	1003	9.7	1471	14.2	885	8.5	110	1.1	1230	11.9	35	0.3	10357	100.0
South Eastern Sydney	3427	43.5	546	6.9	715	9.1	1175	14.9	812	10.3	129	1.6	1055	13.4	14	0.2	7873	100.0
Illawarra Shoalhaven	1414	42.9	243	7.4	202	6.1	424	12.9	298	9.0	84	2.6	622	18.9	6	0.2	3293	100.0
Western Sydney	3811	41.8	632	6.9	774	8.5	1271	13.9	980	10.7	101	1.1	1550	17.0	5	0.1	9124	100.0
Nepean Blue Mountains	2219	45.6	299	6.1	242	5.0	781	16.0	447	9.2	85	1.7	790	16.2	8	0.2	4871	100.0
Northern Sydney	1997	41.6	306	6.4	499	10.4	754	15.7	506	10.5	85	1.8	651	13.6	1	0.0	4799	100.0
Central Coast	1191	42.5	145	5.2	253	9.0	492	17.6	289	10.3	39	1.4	390	13.9	3	0.1	2802	100.0
Hunter New England	4242	48.4	377	4.3	559	6.4	1094	12.5	940	10.7	217	2.5	1284	14.7	44	0.5	8757	100.0
Northern NSW	1795	48.4	342	9.2	313	8.4	492	13.3	357	9.6	61	1.6	342	9.2	10	0.3	3712	100.0
Mid North Coast	978	44.1	286	12.9	190	8.6	310	14.0	190	8.6	45	2.0	217	9.8	3	0.1	2219	100.0
Southern NSW	719	51.0	154	10.9	112	7.9	177	12.5	126	8.9	26	1.8	97	6.9	0	0.0	1411	100.0
Murrumbidgee	937	47.4	183	9.3	95	4.8	306	15.5	222	11.2	64	3.2	167	8.4	3	0.2	1977	100.0
Western NSW	1490	43.6	403	11.8	213	6.2	511	15.0	251	7.3	107	3.1	437	12.8	4	0.1	3416	100.0
Far West	119	50.0	21	8.8	17	7.1	36	15.1	35	14.7	2	0.8	8	3.4	0	0.0	238	100.0
Private Hospitals	6533	28.0	1767	7.6	2116	9.1	6280	26.9	1772	7.6	471	2.0	4334	18.6	41	0.2	23314	100.0
TOTAL*	38697	40.7	6840	7.2	8382	8.8	16649	17.5	8680	9.1	1710	1.8	13904	14.6	181	0.2	95043	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# May include artificial rupture of membranes.

## This category includes other forms of induction such as Foley's catheter.

\* Total includes births at home assisted by independent midwives.

**Table 34. Onset and augmentation of labour by hospital and maternity service level, NSW 2009#**

Maternity service level– hospital	Onset and augmentation of labour																	
	Spontaneous		Spontaneous augmented with ARM		Spontaneous augmented with oxytocics/prosta-glandins##		No labour		Induced oxytocics/prosta-glandins		Induced – ARM only		Induced – ARM + oxytocics/prosta-glandins		Induced – other###		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Level 6</b>																		
Royal Prince Alfred	2249	44.8	0	0.0	841	16.7	845	16.8	447	8.9	73	1.5	566	11.3	1	0.0	5022	100.0
Royal North Shore	748	36.2	133	6.4	247	12.0	376	18.2	211	10.2	32	1.5	319	15.4	0	0.0	2066	100.0
Royal Hospital for Women	1757	43.0	301	7.4	293	7.2	712	17.4	408	10.0	83	2.0	522	12.8	11	0.3	4087	100.0
Liverpool	1328	43.6	312	10.2	308	10.1	472	15.5	261	8.6	27	0.9	330	10.8	10	0.3	3048	100.0
Nepean	1648	46.1	218	6.1	182	5.1	573	16.0	304	8.5	47	1.3	596	16.7	8	0.2	3576	100.0
Westmead	1695	37.0	367	8.0	431	9.4	734	16.0	533	11.6	58	1.3	768	16.7	1	0.0	4587	100.0
John Hunter	1751	47.2	163	4.4	296	8.0	413	11.1	343	9.2	88	2.4	627	16.9	30	0.8	3711	100.0
TOTAL	11176	42.8	1494	5.7	2598	10.0	4125	15.8	2507	9.6	408	1.6	3728	14.3	61	0.2	26097	100.0
<b>Level 5</b>																		
Gosford	978	38.1	125	4.9	253	9.9	492	19.2	289	11.3	38	1.5	390	15.2	3	0.1	2568	100.0
St. George	1073	42.9	158	6.3	282	11.3	309	12.3	290	11.6	26	1.0	364	14.5	2	0.1	2504	100.0
Blacktown	1443	45.1	173	5.4	207	6.5	399	12.5	307	9.6	36	1.1	628	19.6	4	0.1	3197	100.0
Lismore Base	670	50.8	95	7.2	79	6.0	202	15.3	135	10.2	26	2.0	108	8.2	4	0.3	1319	100.0
Tweed Heads	637	42.6	150	10.0	177	11.8	172	11.5	124	8.3	31	2.1	200	13.4	4	0.3	1495	100.0
Port Macquarie Base	369	47.1	66	8.4	80	10.2	101	12.9	67	8.6	7	0.9	93	11.9	0	0.0	783	100.0
Wollongong	965	41.4	180	7.7	156	6.7	256	11.0	203	8.7	51	2.2	512	22.0	6	0.3	2329	100.0
Maitland	736	48.2	43	2.8	106	6.9	214	14.0	189	12.4	23	1.5	209	13.7	6	0.4	1526	100.0
Wagga Wagga Base	381	50.4	38	5.0	30	4.0	121	16.0	77	10.2	21	2.8	86	11.4	2	0.3	756	100.0
TOTAL	7252	44.0	1028	6.2	1370	8.3	2266	13.8	1681	10.2	259	1.6	2590	15.7	31	0.2	16477	100.0
<b>Level 4</b>																		
Canterbury	793	46.8	131	7.7	238	14.1	230	13.6	123	7.3	11	0.6	164	9.7	3	0.2	1693	100.0
Hornsby	526	45.4	81	7.0	109	9.4	158	13.6	116	10.0	21	1.8	146	12.6	1	0.1	1158	100.0
Manly	480	42.1	67	5.9	132	11.6	166	14.6	135	11.9	25	2.2	134	11.8	0	0.0	1139	100.0
Mona Vale	138	43.8	10	3.2	11	3.5	54	17.1	44	14.0	6	1.9	52	16.5	0	0.0	315	100.0
Sutherland	597	46.6	87	6.8	140	10.9	154	12.0	114	8.9	20	1.6	169	13.2	1	0.1	1282	100.0
Auburn	673	50.2	92	6.9	136	10.1	138	10.3	140	10.4	7	0.5	154	11.5	0	0.0	1340	100.0
Fairfield	896	47.6	232	12.3	216	11.5	224	11.9	120	6.4	7	0.4	179	9.5	7	0.4	1881	100.0
Campbelltown	1232	45.7	237	8.8	167	6.2	420	15.6	260	9.7	47	1.7	317	11.8	13	0.5	2693	100.0
Bankstown-Lidcombe	931	42.9	167	7.7	243	11.2	274	12.6	205	9.4	22	1.0	324	14.9	5	0.2	2171	100.0
Hawkesbury	386	44.8	45	5.2	28	3.3	132	15.3	98	11.4	31	3.6	141	16.4	0	0.0	861	100.0
Coffs Harbour	414	38.4	171	15.8	94	8.7	180	16.7	78	7.2	32	3.0	107	9.9	3	0.3	1079	100.0
Grafton Base	199	40.4	51	10.4	50	10.2	70	14.2	88	17.9	1	0.2	31	6.3	2	0.4	492	100.0
Tamworth Base	367	44.0	41	4.9	52	6.2	120	14.4	101	12.1	13	1.6	134	16.0	7	0.8	835	100.0
Manning Base	383	50.9	34	4.5	25	3.3	108	14.3	84	11.2	27	3.6	92	12.2	0	0.0	753	100.0
Dubbo Base	454	37.9	185	15.4	90	7.5	163	13.6	68	5.7	51	4.3	188	15.7	0	0.0	1199	100.0
Orange Base	324	36.5	96	10.8	41	4.6	169	19.1	58	6.5	36	4.1	160	18.0	3	0.3	887	100.0
Goulburn Base	127	42.1	34	11.3	60	19.9	44	14.6	20	6.6	0	0.0	17	5.6	0	0.0	302	100.0
Shoalhaven	415	47.5	56	6.4	38	4.4	160	18.3	75	8.6	30	3.4	99	11.3	0	0.0	873	100.0
Griffith Base	206	50.2	38	9.3	26	6.3	58	14.1	38	9.3	22	5.4	22	5.4	0	0.0	410	100.0
TOTAL	9541	44.7	1855	8.7	1896	8.9	3022	14.1	1965	9.2	409	1.9	2630	12.3	45	0.2	21363	100.0
<b>Level 3</b>																		
Blue Mountains	121	49.4	14	5.7	10	4.1	45	18.4	17	6.9	6	2.4	32	13.1	0	0.0	245	100.0
Kempsey	153	50.0	40	13.1	16	5.2	29	9.5	45	14.7	6	2.0	17	5.6	0	0.0	306	100.0
Murwillumbah	119	57.2	18	8.7	7	3.4	48	23.1	10	4.8	3	1.4	3	1.4	0	0.0	208	100.0
Armidale	232	53.0	16	3.7	16	3.7	60	13.7	61	13.9	19	4.3	33	7.5	1	0.2	438	100.0
Inverell	51	20.0	3	1.2	27	10.6	62	24.3	55	21.6	4	1.6	53	20.8	0	0.0	255	100.0
Mudgee	120	52.9	15	6.6	14	6.2	32	14.1	24	10.6	3	1.3	19	8.4	0	0.0	227	100.0
Bathurst Base	307	54.8	53	9.5	35	6.3	77	13.8	55	9.8	7	1.3	25	4.5	1	0.2	560	100.0
Bega	152	54.1	37	13.2	14	5.0	24	8.5	27	9.6	11	3.9	16	5.7	0	0.0	281	100.0
Moruya	154	47.4	32	9.8	13	4.0	57	17.5	38	11.7	12	3.7	19	5.8	0	0.0	325	100.0
Queanbeyan	180	58.3	37	12.0	14	4.5	28	9.1	29	9.4	3	1.0	18	5.8	0	0.0	309	100.0
Bowral	232	41.2	55	9.8	69	12.3	81	14.4	39	6.9	7	1.2	80	14.2	0	0.0	563	100.0

Table 34. (Continued)

Maternity service level– hospital	Onset and augmentation of labour																	
	Spontaneous		Spontaneous augmented with ARM		Spontaneous augmented with oxytocics/ prostaglandins##		No labour		Induced oxytocics/ prostaglandins		Induced – ARM only		Induced – ARM + oxytocics/ prostaglandins		Induced – other###		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Broken Hill Base	119	50.0	21	8.8	17	7.1	36	15.1	35	14.7	2	0.8	8	3.4	0	0.0	238	100.0
Other hospitals	1237	48.7	264	10.4	131	5.2	342	13.5	267	10.5	60	2.4	238	9.4	1	0.0	2540	100.0
TOTAL	3177	48.9	605	9.3	383	5.9	921	14.2	702	10.8	143	2.2	561	8.6	3	0.0	6495	100.0
Level 2																		
Wyong	213	91.0	20	8.5	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	0	0.0	234	100.0
Other hospitals	603	70.6	65	7.6	18	2.1	35	4.1	53	6.2	19	2.2	61	7.1	0	0.0	854	100.0
TOTAL	816	75.0	85	7.8	18	1.7	35	3.2	53	4.9	20	1.8	61	5.6	0	0.0	1088	100.0
Private																		
Mater, North Sydney	728	29.1	198	7.9	185	7.4	826	33.1	211	8.4	83	3.3	265	10.6	3	0.1	2499	100.0
North Shore Private	634	24.1	224	8.5	321	12.2	794	30.2	123	4.7	85	3.2	435	16.6	10	0.4	2626	100.0
Sydney Adventist	1106	49.2	0	0.0	0	0.0	496	22.1	124	5.5	26	1.2	494	22.0	2	0.1	2248	100.0
North Gosford Private	194	23.2	46	5.5	66	7.9	287	34.3	81	9.7	20	2.4	141	16.9	1	0.1	836	100.0
Hurstville Private	239	24.8	82	8.5	137	14.2	244	25.3	93	9.7	11	1.1	156	16.2	1	0.1	963	100.0
Kareena Private	129	18.9	30	4.4	55	8.1	241	35.3	34	5.0	11	1.6	182	26.6	1	0.1	683	100.0
St. George Private	410	22.6	148	8.1	237	13.0	491	27.0	158	8.7	33	1.8	336	18.5	4	0.2	1817	100.0
Prince of Wales Private	554	24.4	282	12.4	198	8.7	708	31.2	201	8.9	49	2.2	275	12.1	1	0.0	2268	100.0
Norwest Private	269	22.0	100	8.2	137	11.2	201	16.4	76	6.2	9	0.7	431	35.2	2	0.2	1225	100.0
Sydney Southwest Private	301	28.5	60	5.7	124	11.7	238	22.5	97	9.2	26	2.5	209	19.8	2	0.2	1057	100.0
Nepean Private	269	28.9	74	7.9	50	5.4	237	25.4	101	10.8	14	1.5	186	20.0	1	0.1	932	100.0
Westmead Private	545	23.0	295	12.5	343	14.5	540	22.8	198	8.4	23	1.0	419	17.7	5	0.2	2368	100.0
Figtree Private	174	17.2	80	7.9	88	8.7	258	25.5	65	6.4	35	3.5	310	30.6	3	0.3	1013	100.0
Newcastle Private	683	36.3	96	5.1	108	5.7	451	24.0	85	4.5	36	1.9	419	22.3	5	0.3	1883	100.0
Calvary, Wagga Wagga	235	37.5	28	4.5	41	6.5	175	27.9	102	16.3	9	1.4	37	5.9	0	0.0	627	100.0
Other hospitals	63	23.4	24	8.9	26	9.7	93	34.6	23	8.6	1	0.4	39	14.5	0	0.0	269	100.0
TOTAL	6533	28.0	1767	7.6	2116	9.1	6280	26.9	1772	7.6	471	2.0	4334	18.6	41	0.2	23314	100.0
TOTAL NSW**	38697	40.7	6840	7.2	8382	8.8	16649	17.5	8680	9.1	1710	1.8	13904	14.6	181	0.2	95043	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

## May include artificial rupture of membranes.

### This category includes other forms of induction such as Foleys catheter.

\* Royal Prince Alfred Hospital reports augmentation by oxytocin/prostaglandin only.

\*\* Total NSW includes births at home assisted by independent midwives and births at level 1 hospitals.

## Type of birth

Table 35 shows type of birth for Local Health Districts, and Table 36 for individual hospitals by maternity service level where at least 200 mothers gave birth in 2009.

**Table 35. Type of birth by Local Health District of hospital, NSW 2009**

Local Health District	Type of birth													
	Normal vaginal		Forceps		Vacuum extraction		Vaginal breech		Elective caesarean section		Emergency caesarean section#		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	3800	56.6	331	4.9	542	8.1	27	0.4	1075	16.0	940	14.0	6715	100.0
South Western Sydney	7049	68.1	133	1.3	733	7.1	45	0.4	1471	14.2	926	8.9	10357	100.0
South Eastern Sydney	4546	57.7	395	5.0	701	8.9	27	0.3	1175	14.9	1029	13.1	7873	100.0
Illawarra Shoalhaven	2183	66.3	62	1.9	225	6.8	5	0.2	424	12.9	394	12.0	3293	100.0
Western Sydney	5612	61.5	353	3.9	682	7.5	59	0.6	1271	13.9	1147	12.6	9124	100.0
Nepean Blue Mountains	2926	60.1	95	2.0	351	7.2	22	0.5	781	16.0	696	14.3	4871	100.0
Northern Sydney	2714	56.6	272	5.7	319	6.6	15	0.3	754	15.7	725	15.1	4799	100.0
Central Coast	1583	56.5	121	4.3	165	5.9	10	0.4	492	17.6	431	15.4	2802	100.0
Hunter New England	5773	65.9	295	3.4	444	5.1	68	0.8	1094	12.5	1083	12.4	8757	100.0
Northern NSW	2525	68.0	97	2.6	146	3.9	19	0.5	492	13.3	433	11.7	3712	100.0
Mid North Coast	1460	65.8	52	2.3	147	6.6	8	0.4	310	14.0	242	10.9	2219	100.0
Southern NSW	952	67.5	71	5.0	68	4.8	0	0.0	177	12.5	143	10.1	1411	100.0
Murrumbidgee	1279	64.7	37	1.9	118	6.0	6	0.3	306	15.5	231	11.7	1977	100.0
Western NSW	2253	66.0	94	2.8	140	4.1	7	0.2	511	15.0	411	12.0	3416	100.0
Far West	140	58.8	8	3.4	6	2.5	0	0.0	36	15.1	48	20.2	238	100.0
Private Hospitals	10400	44.6	967	4.1	2445	10.5	36	0.2	6280	26.9	3186	13.7	23314	100.0
<b>TOTAL*</b>	<b>55359</b>	<b>58.2</b>	<b>3383</b>	<b>3.6</b>	<b>7232</b>	<b>7.6</b>	<b>355</b>	<b>0.4</b>	<b>16649</b>	<b>17.5</b>	<b>12065</b>	<b>12.7</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Emergency caesarean section includes caesarean section where the onset of labour was not stated.  
\* Total includes births at home assisted by independent midwives.

**Table 36. Type of birth by hospital and maternity service level, NSW, 2009#**

Maternity service level-hospital	Type of birth													
	Normal vaginal		Forceps		Vacuum extraction		Vaginal breech		Elective caesarean section		Emergency caesarean section##		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Level 6</b>														
Royal Prince Alfred	2720	54.2	283	5.6	411	8.2	27	0.5	845	16.8	736	14.7	5022	100.0
Royal North Shore	1053	51.0	176	8.5	74	3.6	10	0.5	376	18.2	377	18.2	2066	100.0
Royal Hospital for Women	2141	52.4	308	7.5	310	7.6	18	0.4	712	17.4	598	14.6	4087	100.0
Liverpool	2028	66.5	57	1.9	167	5.5	22	0.7	472	15.5	302	9.9	3048	100.0
Nepean	2135	59.7	60	1.7	291	8.1	19	0.5	573	16.0	498	13.9	3576	100.0
Westmead	2626	57.2	218	4.8	365	8.0	44	1.0	734	16.0	600	13.1	4587	100.0
John Hunter	2378	64.1	194	5.2	153	4.1	52	1.4	413	11.1	521	14.0	3711	100.0
<b>TOTAL</b>	<b>15081</b>	<b>57.8</b>	<b>1296</b>	<b>5.0</b>	<b>1771</b>	<b>6.8</b>	<b>192</b>	<b>0.7</b>	<b>4125</b>	<b>15.8</b>	<b>3632</b>	<b>13.9</b>	<b>26097</b>	<b>100.0</b>
<b>Level 5</b>														
Gosford	1350	52.6	121	4.7	165	6.4	10	0.4	492	19.2	430	16.7	2568	100.0
St. George	1566	62.5	77	3.1	238	9.5	6	0.2	309	12.3	308	12.3	2504	100.0
Blacktown	2011	62.9	112	3.5	241	7.5	12	0.4	399	12.5	422	13.2	3197	100.0
Lismore Base	846	64.1	51	3.9	40	3.0	9	0.7	202	15.3	171	13.0	1319	100.0
Tweed Heads	1024	68.5	30	2.0	73	4.9	9	0.6	172	11.5	187	12.5	1495	100.0
Port Macquarie Base	502	64.1	23	2.9	60	7.7	2	0.3	101	12.9	95	12.1	783	100.0
Wollongong	1580	67.8	25	1.1	185	7.9	1	0.0	256	11.0	282	12.1	2329	100.0
Maitland	953	62.5	35	2.3	89	5.8	9	0.6	214	14.0	226	14.8	1526	100.0
Wagga Wagga Base	460	60.8	15	2.0	48	6.3	4	0.5	121	16.0	108	14.3	756	100.0
<b>TOTAL</b>	<b>10292</b>	<b>62.5</b>	<b>489</b>	<b>3.0</b>	<b>1139</b>	<b>6.9</b>	<b>62</b>	<b>0.4</b>	<b>2266</b>	<b>13.8</b>	<b>2229</b>	<b>13.5</b>	<b>16477</b>	<b>100.0</b>
<b>Level 4</b>														
Canterbury	1080	63.8	48	2.8	131	7.7	0	0.0	230	13.6	204	12.0	1693	100.0
Hornsby	703	60.7	67	5.8	73	6.3	2	0.2	158	13.6	155	13.4	1158	100.0
Manly	655	57.5	25	2.2	131	11.5	2	0.2	166	14.6	160	14.0	1139	100.0

Table 36. (Continued)

Maternity service level-hospital	Type of birth													
	Normal vaginal		Forceps		Vacuum extraction		Vaginal breech		Elective caesarean section		Emergency caesarean section##		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mona Vale	182	57.8	4	1.3	41	13.0	1	0.3	54	17.1	33	10.5	315	100.0
Sutherland	839	65.4	10	0.8	153	11.9	3	0.2	154	12.0	123	9.6	1282	100.0
Auburn	975	72.8	23	1.7	76	5.7	3	0.2	138	10.3	125	9.3	1340	100.0
Fairfield	1373	73.0	15	0.8	126	6.7	5	0.3	224	11.9	138	7.3	1881	100.0
Campbelltown	1807	67.1	14	0.5	194	7.2	7	0.3	420	15.6	251	9.3	2693	100.0
Bankstown-Lidcombe	1496	68.9	14	0.6	201	9.3	9	0.4	274	12.6	177	8.2	2171	100.0
Hawkesbury	515	59.8	30	3.5	43	5.0	2	0.2	132	15.3	139	16.1	861	100.0
Coffs Harbour	665	61.6	28	2.6	76	7.0	3	0.3	180	16.7	127	11.8	1079	100.0
Grafton Base	318	64.6	10	2.0	25	5.1	0	0.0	70	14.2	69	14.0	492	100.0
Tamworth Base	512	61.3	41	4.9	70	8.4	0	0.0	120	14.4	92	11.0	835	100.0
Manning Base	493	65.5	4	0.5	56	7.4	1	0.1	108	14.3	91	12.1	753	100.0
Dubbo Base	831	69.3	40	3.3	41	3.4	3	0.3	163	13.6	121	10.1	1199	100.0
Orange Base	512	57.7	28	3.2	57	6.4	1	0.1	169	19.1	120	13.5	887	100.0
Goulburn Base	178	58.9	32	10.6	14	4.6	0	0.0	44	14.6	34	11.3	302	100.0
Shoalhaven	541	62.0	33	3.8	27	3.1	4	0.5	160	18.3	108	12.4	873	100.0
Griffith Base	275	67.1	14	3.4	14	3.4	0	0	58	14.1	49	12.0	410	100.0
TOTAL	13950	65.3	480	2.2	1549	7.3	46	0.2	3022	14.1	2316	10.8	21363	100.0
<b>Level 3</b>														
Blue Mountains	152	62.0	3	1.2	15	6.1	0	0.0	45	18.4	30	12.2	245	100.0
Kempsey	245	80.1	1	0.3	9	2.9	2	0.7	29	9.5	20	6.5	306	100.0
Murwillumbah	149	71.6	1	0.5	4	1.9	0	0.0	48	23.1	6	2.9	208	100.0
Armidale	307	70.1	3	0.7	18	4.1	2	0.5	60	13.7	48	11.0	438	100.0
Inverell	155	60.8	16	6.3	3	1.2	1	0.4	62	24.3	18	7.1	255	100.0
Mudgee	162	71.4	1	0.4	14	6.2	2	0.9	32	14.1	16	7.0	227	100.0
Bathurst Base	355	63.4	23	4.1	14	2.5	1	0.2	77	13.8	90	16.1	560	100.0
Bega	210	74.7	5	1.8	13	4.6	0	0.0	24	8.5	29	10.3	281	100.0
Moruya	202	62.2	18	5.5	12	3.7	0	0.0	57	17.5	36	11.1	325	100.0
Queanbeyan	219	70.9	14	4.5	21	6.8	0	0.0	28	9.1	27	8.7	309	100.0
Bowral	344	61.1	33	5.9	45	8.0	2	0.4	81	14.4	58	10.3	563	100.0
Broken Hill Base	140	58.8	8	3.4	6	2.5	0	0.0	36	15.1	48	20.2	238	100.0
Other hospitals	1797	70.7	19	0.7	121	4.8	6	0.2	342	13.5	255	10.0	2540	100.0
TOTAL	4437	68.3	145	2.2	295	4.5	16	0.2	921	14.2	681	10.5	6495	100.0
<b>Level 2</b>														
Wyong	233	99.6	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4	234	100.0
Other hospitals	759	88.9	6	0.7	32	3.7	2	0.2	35	4.1	20	2.3	854	100.0
TOTAL	992	91.2	6	0.6	32	2.9	2	0.2	35	3.2	21	1.9	1088	100.0
<b>Private</b>														
Mater, North Sydney	899	36.0	83	3.3	322	12.9	1	0.0	826	33.1	368	14.7	2499	100.0
North Shore Private	1128	43.0	57	2.2	264	10.1	5	0.2	794	30.2	378	14.4	2626	100.0
Sydney Adventist	1169	52.0	99	4.4	182	8.1	3	0.1	496	22.1	299	13.3	2248	100.0
North Gosford Private	343	41.0	11	1.3	89	10.6	1	0.1	287	34.3	105	12.6	836	100.0
Hurstville Private	419	43.5	17	1.8	117	12.1	0	0	244	25.3	166	17.2	963	100.0
Kareena Private	252	36.9	48	7.0	74	10.8	1	0.1	241	35.3	67	9.8	683	100.0
St. George Private	682	37.5	100	5.5	213	11.7	1	0.1	491	27.0	330	18.2	1817	100.0
Prince of Wales Private	841	37.1	101	4.5	235	10.4	3	0.1	708	31.2	380	16.8	2268	100.0
Norwest Private	653	53.3	93	7.6	133	10.9	4	0.3	201	16.4	141	11.5	1225	100.0
Sydney Southwest Private	575	54.4	35	3.3	116	11.0	0	0	238	22.5	93	8.8	1057	100.0
Nepean Private	466	50.0	38	4.1	66	7.1	2	0.2	237	25.4	123	13.2	932	100.0
Westmead Private	1162	49.1	166	7.0	196	8.3	3	0.1	540	22.8	301	12.7	2368	100.0
Figtree Private	458	45.2	15	1.5	137	13.5	6	0.6	258	25.5	139	13.7	1013	100.0
Newcastle Private	960	51.0	48	2.5	209	11.1	6	0.3	451	24.0	209	11.1	1883	100.0
Calvary, Wagga Wagga	283	45.1	38	6.1	67	10.7	0	0	175	27.9	64	10.2	627	100.0
Other hospitals	110	40.9	18	6.7	25	9.3	0	0	93	34.6	23	8.6	269	100.0
TOTAL	10400	44.6	967	4.1	2445	10.5	36	0.2	6280	26.9	3186	13.7	23314	100.0
<b>TOTAL NSW**</b>	<b>55359</b>	<b>58.2</b>	<b>3383</b>	<b>3.6</b>	<b>7232</b>	<b>7.6</b>	<b>355</b>	<b>0.4</b>	<b>16649</b>	<b>17.5</b>	<b>12065</b>	<b>12.7</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

# Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

## Emergency caesarean section includes caesarean sections where the onset of labour was not stated.

\*\* Total NSW includes births at home assisted by independent midwives and births at level 1 hospitals.



## Pain relief

Table 37 shows type of pain relief provided to women during labour or delivery for Local Health Districts, and Table 38 for individual hospitals by maternity service level where at least 200 mothers gave birth in 2009.

In addition to the types of pain relief shown in the tables, in 2009 a further 23,492 (24.7%) women were reported to have received local anaesthetic to the perineum, and 747 (0.8%) received a pudendal block.

**Table 37. Pain relief by Local Health District of hospital, NSW 2009**

Local Health District	Pain relief											
	Epidural – spinal##		General anaesthetic		IM narcotics		Nitrous oxide		Nil		TOTAL#	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	3264	48.6	288	4.3	650	9.7	2739	40.8	838	12.5	6715	100.0
South Western Sydney	2915	28.1	546	5.3	2867	27.7	4998	48.3	1491	14.4	10357	100.0
South Eastern Sydney	3828	48.6	190	2.4	1003	12.7	3338	42.4	877	11.1	7873	100.0
Illawarra Shoalhaven	1202	36.5	111	3.4	499	15.2	1744	53.0	413	12.5	3293	100.0
Western Sydney	3746	41.1	421	4.6	1355	14.9	4312	47.3	675	7.4	9124	100.0
Nepean Blue Mountains	2082	42.7	313	6.4	920	18.9	2499	51.3	386	7.9	4871	100.0
Northern Sydney	2346	48.9	149	3.1	714	14.9	2000	41.7	427	8.9	4799	100.0
Central Coast	1234	44.0	127	4.5	555	19.8	1223	43.6	339	12.1	2802	100.0
Hunter New England	2752	31.4	492	5.6	1837	21.0	4087	46.7	1137	13.0	8757	100.0
Northern NSW	1326	35.7	102	2.7	618	16.6	1780	48.0	733	19.7	3712	100.0
Mid North Coast	761	34.3	59	2.7	502	22.6	1106	49.8	412	18.6	2219	100.0
Southern NSW	377	26.7	55	3.9	252	17.9	771	54.6	309	21.9	1411	100.0
Murrumbidgee	635	32.1	51	2.6	602	30.5	1042	52.7	317	16.0	1977	100.0
Western NSW	1124	32.9	178	5.2	784	23.0	1712	50.1	580	17.0	3416	100.0
Far West	95	39.9	11	4.6	43	18.1	126	52.9	31	13.0	238	100.0
Private Hospitals	15933	68.3	733	3.1	2072	8.9	7546	32.4	994	4.3	23314	100.0
TOTAL*	43620	45.9	3826	4.0	15273	16.1	41023	43.2	10113	10.6	95043	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Row percentages do not sum to 100 per cent as one woman may have more than one type of analgesia.

## The category 'Epidural-spinal' includes epidural, spinal, combined epidural and spinal, and caudal pain relief.

\* Total includes births at home assisted by independent midwives.

**Table 38. Pain relief by hospital and maternity service level, NSW, 2009#**

Maternity service level–hospital	Pain relief											
	Epidural – spinal*		General anaesthetic		IM narcotics		Nitrous oxide		Nil		TOTAL##	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Level 6												
Royal Prince Alfred	2640	52.6	211	4.2	466	9.3	1949	38.8	636	12.7	5022	100.0
Royal North Shore	1156	56.0	76	3.7	229	11.1	904	43.8	99	4.8	2066	100.0
Royal Hospital for Women	2253	55.1	80	2.0	575	14.1	1492	36.5	411	10.1	4087	100.0
Liverpool	1133	37.2	177	5.8	1122	36.8	1175	38.5	280	9.2	3048	100.0
Nepean	1586	44.4	253	7.1	671	18.8	1900	53.1	237	6.6	3576	100.0
Westmead	2237	48.8	241	5.3	621	13.5	2058	44.9	151	3.3	4587	100.0
John Hunter	1284	34.6	250	6.7	968	26.1	1726	46.5	390	10.5	3711	100.0
TOTAL	12289	47.1	1288	4.9	4652	17.8	11204	42.9	2204	8.4	26097	100.0
Level 5												
Gosford	1234	48.1	124	4.8	534	20.8	1144	44.5	260	10.1	2568	100.0
St. George	1067	42.6	71	2.8	293	11.7	1175	46.9	326	13.0	2504	100.0
Blacktown	1179	36.9	130	4.1	541	16.9	1553	48.6	288	9.0	3197	100.0
Lismore Base	572	43.4	38	2.9	197	14.9	594	45.0	171	13.0	1319	100.0
Tweed Heads	534	35.7	39	2.6	287	19.2	772	51.6	310	20.7	1495	100.0
Port Macquarie Base	298	38.1	20	2.6	211	26.9	389	49.7	128	16.3	783	100.0
Wollongong	859	36.9	72	3.1	236	10.1	1297	55.7	285	12.2	2329	100.0
Maitland	520	34.1	78	5.1	196	12.8	739	48.4	210	13.8	1526	100.0
Wagga Wagga Base	302	39.9	16	2.1	189	25.0	336	44.4	137	18.1	756	100.0
TOTAL	6565	39.8	588	3.6	2684	16.3	7999	48.5	2115	12.8	16477	100.0
Level 4												
Canterbury	624	36.9	77	4.5	184	10.9	790	46.7	202	11.9	1693	100.0
Hornsby	530	45.8	36	3.1	189	16.3	539	46.5	83	7.2	1158	100.0
Manly	523	45.9	28	2.5	190	16.7	401	35.2	150	13.2	1139	100.0

Table 38. (Continued)

Maternity service level-hospital	Pain relief											
	Epidural – spinal*		General anaesthetic		IM narcotics		Nitrous oxide		Nil		TOTAL##	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mona Vale	137	43.5	8	2.5	102	32.4	122	38.7	35	11.1	315	100.0
Sutherland	508	39.6	39	3.0	135	10.5	671	52.3	140	10.9	1282	100.0
Auburn	330	24.6	50	3.7	193	14.4	701	52.3	236	17.6	1340	100.0
Fairfield	259	13.8	143	7.6	429	22.8	955	50.8	333	17.7	1881	100.0
Campbelltown	747	27.7	128	4.8	632	23.5	1374	51.0	524	19.5	2693	100.0
Bankstown-Lidcombe	580	26.7	81	3.7	485	22.3	1230	56.7	271	12.5	2171	100.0
Hawkesbury	327	38.0	45	5.2	174	20.2	409	47.5	86	10.0	861	100.0
Coffs Harbour	399	37.0	31	2.9	180	16.7	523	48.5	188	17.4	1079	100.0
Grafton Base	157	31.9	23	4.7	92	18.7	271	55.1	94	19.1	492	100.0
Tamworth Base	371	44.4	37	4.4	52	6.2	422	50.5	84	10.1	835	100.0
Manning Base	198	26.3	53	7.0	228	30.3	377	50.1	97	12.9	753	100.0
Dubbo Base	399	33.3	59	4.9	359	29.9	610	50.9	172	14.3	1199	100.0
Orange Base	360	40.6	55	6.2	182	20.5	442	49.8	102	11.5	887	100.0
Goulburn Base	91	30.1	19	6.3	59	19.5	206	68.2	18	6.0	302	100.0
Shoalhaven	325	37.2	38	4.4	227	26.0	391	44.8	120	13.7	873	100.0
Griffith Base	131	32.0	13	3.2	198	48.3	238	58.0	48	11.7	410	100.0
TOTAL	6996	32.7	963	4.5	4290	20.1	10672	50.0	2983	14.0	21363	100.0
<b>Level 3</b>												
Blue Mountains	89	36.3	13	5.3	34	13.9	98	40.0	42	17.1	245	100.0
Kempsey	64	20.9	8	2.6	104	34.0	174	56.9	73	23.9	306	100.0
Murwillumbah	63	30.3	2	1.0	35	16.8	83	39.9	44	21.2	208	100.0
Armidale	122	27.9	15	3.4	94	21.5	210	47.9	47	10.7	438	100.0
Inverell	81	31.8	1	0.4	60	23.5	96	37.6	43	16.9	255	100.0
Mudgee	46	20.3	5	2.2	62	27.3	142	62.6	33	14.5	227	100.0
Bathurst Base	193	34.5	25	4.5	61	10.9	265	47.3	127	22.7	560	100.0
Bega	62	22.1	8	2.8	67	23.8	176	62.6	50	17.8	281	100.0
Moruya	103	31.7	17	5.2	68	20.9	151	46.5	73	22.5	325	100.0
Queanbeyan	67	21.7	9	2.9	45	14.6	136	44.0	113	36.6	309	100.0
Bowral	196	34.8	17	3.0	199	35.3	264	46.9	82	14.6	563	100.0
Broken Hill Base	95	39.9	11	4.6	43	18.1	126	52.9	31	13.0	238	100.0
Other hospitals	584	23.0	114	4.5	563	22.2	1275	50.2	513	20.2	2540	100.0
TOTAL	1765	27.2	245	3.8	1435	22.1	3196	49.2	1271	19.6	6495	100.0
<b>Level 2</b>												
Wyong	0	0.0	3	1.3	21	9.0	79	33.8	79	33.8	234	100.0
Other hospitals	72	8.4	6	0.7	114	13.3	319	37.4	281	32.9	854	100.0
TOTAL	72	6.6	9	0.8	135	12.4	398	36.6	360	33.1	1088	100.0
<b>Private</b>												
Mater, North Sydney	1801	72.1	36	1.4	234	9.4	821	32.9	97	3.9	2499	100.0
North Shore Private	1907	72.6	36	1.4	113	4.3	752	28.6	75	2.9	2626	100.0
Sydney Adventist	1564	69.6	30	1.3	187	8.3	716	31.9	62	2.8	2248	100.0
North Gosford Private	462	55.3	74	8.9	68	8.1	242	28.9	95	11.4	836	100.0
Hurstville Private	740	76.8	17	1.8	66	6.9	228	23.7	41	4.3	963	100.0
Kareena Private	577	84.5	8	1.2	23	3.4	99	14.5	29	4.2	683	100.0
St. George Private	1490	82.0	40	2.2	94	5.2	444	24.4	63	3.5	1817	100.0
Prince of Wales Private	1667	73.5	282	12.4	51	2.2	541	23.9	94	4.1	2268	100.0
Norwest Private	789	64.4	47	3.8	96	7.8	339	27.7	71	5.8	1225	100.0
Sydney Southwest Private	514	48.6	15	1.4	333	31.5	549	51.9	37	3.5	1057	100.0
Nepean Private	499	53.5	22	2.4	193	20.7	482	51.7	57	6.1	932	100.0
Westmead Private	1528	64.5	56	2.4	173	7.3	925	39.1	83	3.5	2368	100.0
Figtree Private	709	70.0	22	2.2	27	2.7	313	30.9	42	4.1	1013	100.0
Newcastle Private	1159	61.6	24	1.3	274	14.6	782	41.5	61	3.2	1883	100.0
Calvary, Wagga Wagga	364	58.1	12	1.9	129	20.6	215	34.3	65	10.4	627	100.0
Other hospitals	163	60.6	12	4.5	11	4.1	98	36.4	22	8.2	269	100.0
TOTAL	15933	68.3	733	3.1	2072	8.9	7546	32.4	994	4.3	23314	100.0
<b>TOTAL NSW**</b>	<b>43620</b>	<b>45.9</b>	<b>3826</b>	<b>4.0</b>	<b>15269</b>	<b>16.1</b>	<b>41017</b>	<b>43.2</b>	<b>10101</b>	<b>10.6</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

## Row percentages do not sum to 100 per cent as one woman may have more than one type of analgesia.

\* The category 'Epidural-spinal' includes epidural, spinal, combined epidural and spinal, and caudal pain relief.

\*\* Total NSW includes births at home assisted by independent midwives and births at level 1 hospitals.

## Perineal status

Table 39 shows the perineal status in vaginal births for Local Health Districts, and Table 40 for individual hospitals by maternity service level where at least 200 mothers gave birth in 2009.

In 2009, there were 1,560 cases of third degree tear and 116 cases of fourth degree tear reported among women who gave birth vaginally in 2009, including tears associated with an episiotomy.

**Table 39. Perineal status among vaginal births by Local Health District of hospital, NSW 2009**

Local Health District	Perineal status																	
	Intact		1st degree tear/ graze		2nd degree tear		3rd or 4th degree tear		Episiotomy		Combined tear and episiotomy		Other		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	836	17.8	1178	25.1	1750	37.2	120	2.6	524	11.1	111	2.4	181	3.9	0	0.0	4700	100.0
South Western Sydney	2263	28.4	1875	23.6	2029	25.5	121	1.5	1184	14.9	149	1.9	339	4.3	0	0.0	7960	100.0
South Eastern Sydney	1157	20.4	1657	29.2	1610	28.4	155	2.7	759	13.4	262	4.6	69	1.2	0	0.0	5669	100.0
Illawarra Shoalhaven	743	30.0	903	36.5	539	21.8	30	1.2	159	6.4	64	2.6	37	1.5	0	0.0	2475	100.0
Western Sydney	1458	21.7	2012	30.0	1702	25.4	80	1.2	1023	15.3	341	5.1	90	1.3	0	0.0	6706	100.0
Nepean Blue Mountains	852	25.1	1276	37.6	719	21.2	49	1.4	325	9.6	133	3.9	40	1.2	0	0.0	3394	100.0
Northern Sydney	601	18.1	1128	34.0	918	27.7	73	2.2	362	10.9	212	6.4	26	0.8	0	0.0	3320	100.0
Central Coast	397	21.1	805	42.8	419	22.3	31	1.6	103	5.5	93	4.9	31	1.6	0	0.0	1879	100.0
Hunter New England	1637	24.9	2709	41.2	1334	20.3	144	2.2	468	7.1	204	3.1	84	1.3	0	0.0	6580	100.0
Northern NSW	895	32.1	779	28.0	742	26.6	52	1.9	220	7.9	30	1.1	69	2.5	0	0.0	2787	100.0
Mid North Coast	633	38.0	366	22.0	434	26.0	30	1.8	124	7.4	40	2.4	40	2.4	0	0.0	1667	100.0
Southern NSW	430	39.4	247	22.6	238	21.8	11	1.0	125	11.5	18	1.6	22	2.0	0	0.0	1091	100.0
Murrumbidgee	578	40.1	426	29.6	244	16.9	18	1.3	131	9.1	25	1.7	18	1.3	0	0.0	1440	100.0
Western NSW	901	36.1	701	28.1	525	21.1	36	1.4	193	7.7	72	2.9	65	2.6	1	0.0	2494	100.0
Far West	75	48.7	38	24.7	21	13.6	1	0.6	17	11.0	0	0.0	2	1.3	0	0.0	154	100.0
Private Hospitals	2739	19.8	2724	19.7	4285	30.9	122	0.9	3417	24.7	285	2.1	276	2.0	0	0.0	13848	100.0
TOTAL*	16301	24.6	18857	28.4	17528	26.4	1074	1.6	9134	13.8	2040	3.1	1392	2.1	3	0.0	66329	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
\*Total includes births at home assisted by independent midwives.

**Table 40. Perineal status among vaginal births by hospital and maternity service level, NSW, 2009#**

Maternity service level-hospital	Perineal status																	
	Intact		1st degree tear/ graze		2nd degree tear		3rd or 4th degree tear		Episiotomy		Combined tear and episiotomy		Other		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Level 6																		
Royal Prince Alfred	528	15.3	914	26.6	1342	39.0	105	3.1	356	10.3	80	2.3	116	3.4	0	0.0	3441	100.0
Royal North Shore	189	14.4	399	30.4	363	27.6	33	2.5	201	15.3	117	8.9	11	0.8	0	0.0	1313	100.0
Royal Hospital for Women	472	17.0	812	29.2	775	27.9	73	2.6	485	17.5	119	4.3	41	1.5	0	0.0	2777	100.0
Liverpool	603	26.5	514	22.6	540	23.7	39	1.7	377	16.6	56	2.5	145	6.4	0	0.0	2274	100.0
Nepean	595	23.8	957	38.2	535	21.4	40	1.6	250	10.0	98	3.9	30	1.2	0	0.0	2505	100.0
Westmead	666	20.5	806	24.8	883	27.1	33	1.0	609	18.7	192	5.9	64	2.0	0	0.0	3253	100.0
John Hunter	558	20.1	1212	43.6	580	20.9	86	3.1	201	7.2	113	4.1	27	1.0	0	0.0	2777	100.0
TOTAL	3611	19.7	5614	30.6	5018	27.4	409	2.2	2479	13.5	775	4.2	434	2.4	0	0.0	18340	100.0
Level 5																		
Gosford	343	20.8	688	41.8	367	22.3	30	1.8	100	6.1	90	5.5	28	1.7	0	0.0	1646	100.0
St. George	429	22.7	520	27.6	561	29.7	67	3.6	181	9.6	114	6.0	15	0.8	0	0.0	1887	100.0
Blacktown	436	18.4	866	36.4	605	25.5	39	1.6	305	12.8	112	4.7	13	0.5	0	0.0	2376	100.0
Lismore Base	261	27.6	293	31.0	277	29.3	10	1.1	82	8.7	14	1.5	9	1.0	0	0.0	946	100.0
Tweed Heads	342	30.1	296	26.1	327	28.8	35	3.1	83	7.3	12	1.1	41	3.6	0	0.0	1136	100.0
Port Macquarie Base	250	42.6	112	19.1	159	27.1	11	1.9	37	6.3	16	2.7	2	0.3	0	0.0	587	100.0
Wollongong	530	29.6	626	35.0	431	24.1	22	1.2	108	6.0	49	2.7	25	1.4	0	0.0	1791	100.0
Maitland	246	22.7	453	41.7	242	22.3	39	3.6	55	5.1	33	3.0	18	1.7	0	0.0	1086	100.0
Wagga Wagga Base	187	35.5	186	35.3	89	16.9	5	0.9	44	8.3	11	2.1	5	0.9	0	0.0	527	100.0
TOTAL	3024	25.2	4040	33.7	3058	25.5	258	2.2	995	8.3	451	3.8	156	1.3	0	0.0	11982	100.0
Level 4																		
Canterbury	308	24.5	264	21.0	408	32.4	15	1.2	168	13.3	31	2.5	65	5.2	0	0.0	1259	100.0
Hornsby	154	18.2	303	35.9	245	29.0	20	2.4	87	10.3	28	3.3	8	0.9	0	0.0	845	100.0
Manly	163	20.0	284	34.9	224	27.6	16	2.0	62	7.6	58	7.1	6	0.7	0	0.0	813	100.0

Table 40. (Continued)

Maternity service level–hospital	Perineal status																	
	Intact		1st degree tear/ graze		2nd degree tear		3rd or 4th degree tear		Episiotomy		Combined tear and episiotomy		Other		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mona Vale	56	24.6	86	37.7	61	26.8	3	1.3	12	5.3	9	3.9	1	0.4	0	0.0	228	100.0
Sutherland	256	25.5	325	32.3	274	27.3	15	1.5	93	9.3	29	2.9	13	1.3	0	0.0	1005	100.0
Auburn	356	33.1	340	31.6	214	19.9	8	0.7	109	10.1	37	3.4	13	1.2	0	0.0	1077	100.0
Fairfield	452	29.8	364	24.0	407	26.8	23	1.5	230	15.1	17	1.1	26	1.7	0	0.0	1519	100.0
Campbelltown	601	29.7	521	25.8	543	26.9	29	1.4	234	11.6	18	0.9	76	3.8	0	0.0	2022	100.0
Bankstown-Lidcombe	463	26.9	359	20.9	437	25.4	26	1.5	297	17.3	54	3.1	84	4.9	0	0.0	1720	100.0
Hawkesbury	154	26.1	232	39.3	111	18.8	7	1.2	52	8.8	30	5.1	4	0.7	0	0.0	590	100.0
Coffs Harbour	237	30.7	182	23.6	201	26.0	19	2.5	78	10.1	21	2.7	34	4.4	0	0.0	772	100.0
Grafton Base	147	41.6	84	23.8	69	19.5	6	1.7	32	9.1	0	0	15	4.2	0	0.0	353	100.0
Tamworth Base	135	21.7	274	44.0	117	18.8	9	1.4	66	10.6	19	3.0	3	0.5	0	0.0	623	100.0
Manning Base	185	33.4	203	36.6	116	20.9	1	0.2	28	5.1	10	1.8	11	2.0	0	0.0	554	100.0
Dubbo Base	340	37.2	232	25.4	171	18.7	14	1.5	95	10.4	27	3.0	35	3.8	1	0.1	915	100.0
Orange Base	171	28.6	198	33.1	142	23.7	9	1.5	41	6.9	30	5.0	7	1.2	0	0.0	598	100.0
Goulburn Base	70	31.3	25	11.2	36	16.1	4	1.8	80	35.7	5	2.2	4	1.8	0	0.0	224	100.0
Shoalhaven	180	29.8	254	42.0	92	15.2	6	1.0	49	8.1	13	2.1	11	1.8	0	0.0	605	100.0
Griffith Base	116	38.3	108	35.6	41	13.5	10	3.3	22	7.3	3	1.0	3	1.0	0	0.0	303	100.0
TOTAL	4544	28.4	4638	28.9	3909	24.4	240	1.5	1835	11.5	439	2.7	419	2.6	1	0.0	16025	100.0
<b>Level 3</b>																		
Blue Mountains	48	28.2	61	35.9	46	27.1	2	1.2	8	4.7	3	1.8	2	1.2	0	0.0	170	100.0
Kempsey	121	47.1	57	22.2	65	25.3	0	0.0	9	3.5	3	1.2	2	0.8	0	0.0	257	100.0
Murwillumbah	71	46.1	38	24.7	30	19.5	1	0.6	9	5.8	1	0.6	4	2.6	0	0.0	154	100.0
Armidale	114	34.5	111	33.6	62	18.8	1	0.3	28	8.5	11	3.3	3	0.9	0	0.0	330	100.0
Inverell	64	36.6	47	26.9	16	9.1	0	0.0	36	20.6	5	2.9	7	4.0	0	0.0	175	100.0
Mudgee	78	43.6	46	25.7	43	24.0	0	0.0	6	3.4	5	2.8	1	0.6	0	0.0	179	100.0
Bathurst Base	139	35.4	124	31.6	65	16.5	7	1.8	41	10.4	3	0.8	14	3.6	0	0.0	393	100.0
Bega	102	44.7	50	21.9	51	22.4	1	0.4	14	6.1	4	1.8	6	2.6	0	0.0	228	100.0
Moruya	98	42.2	54	23.3	54	23.3	2	0.9	17	7.3	1	0.4	6	2.6	0	0.0	232	100.0
Queanbeyan	87	34.3	82	32.3	59	23.2	2	0.8	10	3.9	8	3.1	6	2.4	0	0.0	254	100.0
Bowral	143	33.7	117	27.6	102	24.1	4	0.9	46	10.8	4	0.9	8	1.9	0	0.0	424	100.0
Broken Hill Base	75	48.7	38	24.7	21	13.6	1	0.6	17	11.0	0	0	2	1.3	0	0.0	154	100.0
Other hospitals	778	40.0	534	27.5	407	20.9	13	0.7	148	7.6	29	1.5	34	1.7	0	0.0	1943	100.0
TOTAL	1918	39.2	1359	27.8	1021	20.9	34	0.7	389	8.0	77	1.6	95	1.9	0	0.0	4893	100.0
<b>Level 2</b>																		
Wyong	54	23.2	117	50.2	52	22.3	1	0.4	3	1.3	3	1.3	3	1.3	0	0.0	233	100.0
Other hospitals	276	34.5	321	40.2	164	20.5	9	1.1	14	1.8	9	1.1	6	0.8	0	0.0	799	100.0
TOTAL	330	32.0	438	42.4	216	20.9	10	1.0	17	1.6	12	1.2	9	0.9	0	0.0	1032	100.0
<b>Private</b>																		
Mater, North Sydney	184	14.1	236	18.1	354	27.1	11	0.8	397	30.4	69	5.3	54	4.1	0	0.0	1305	100.0
North Shore Private	251	17.3	306	21.0	496	34.1	13	0.9	373	25.7	5	0.3	10	0.7	0	0.0	1454	100.0
Sydney Adventist	259	17.8	394	27.1	443	30.5	13	0.9	316	21.7	23	1.6	5	0.3	0	0.0	1453	100.0
North Gosford Private	143	32.2	99	22.3	115	25.9	3	0.7	65	14.6	8	1.8	11	2.5	0	0.0	444	100.0
Hurstville Private	84	15.2	114	20.6	142	25.7	6	1.1	164	29.7	26	4.7	17	3.1	0	0.0	553	100.0
Kareena Private	76	20.3	83	22.1	129	34.4	5	1.3	76	20.3	3	0.8	3	0.8	0	0.0	375	100.0
St. George Private	235	23.6	213	21.4	318	31.9	17	1.7	194	19.5	4	0.4	15	1.5	0	0.0	996	100.0
Prince of Wales Private	245	20.8	242	20.5	310	26.3	2	0.2	277	23.5	55	4.7	49	4.2	0	0.0	1180	100.0
Norwest Private	211	23.9	154	17.4	328	37.1	6	0.7	147	16.6	16	1.8	21	2.4	0	0.0	883	100.0
Sydney Southwest Private	141	19.4	128	17.6	167	23.0	6	0.8	235	32.4	21	2.9	28	3.9	0	0.0	726	100.0
Nepean Private	119	20.8	43	7.5	185	32.3	4	0.7	183	32.0	7	1.2	31	5.4	0	0.0	572	100.0
Westmead Private	270	17.7	295	19.3	452	29.6	3	0.2	493	32.3	4	0.3	10	0.7	0	0.0	1527	100.0
Figtree Private	129	20.9	96	15.6	191	31.0	3	0.5	195	31.7	1	0.2	1	0.2	0	0.0	616	100.0
Newcastle Private	303	24.8	240	19.6	455	37.2	18	1.5	196	16.0	2	0.2	9	0.7	0	0.0	1223	100.0
Calvary, Wagga Wagga	63	16.2	55	14.2	158	40.7	12	3.1	60	15.5	33	8.5	7	1.8	0	0.0	388	100.0
Other hospitals	26	17.0	26	17.0	42	27.5	0	0	46	30.1	8	5.2	5	3.3	0	0.0	153	100.0
TOTAL	2739	19.8	2724	19.7	4285	30.9	122	0.9	3417	24.7	285	2.1	276	2.0	0	0.0	13848	100.0
<b>TOTAL NSW*</b>	16301	24.6	18857	28.4	17528	26.4	1074	1.6	9134	13.8	2040	3.1	1392	2.1	3	0.0	66329	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

\* Total NSW includes births at home assisted by independent midwives and births at level 1 hospitals.

## Birth weight

Table 41 shows the birth weight of babies for Local Health Districts, and Table 42 for individual hospitals by maternity service level where at least 200 mothers gave birth in 2009.

**Table 41. Births by birth weight and Local Health District of hospital, NSW 2009**

Local Health District	Birth weight (grams)											
	Less than 1000		1000–1499		1500–2499		2500+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	71	1.0	57	0.8	362	5.3	6314	92.7	9	0.1	6813	100.0
South Western Sydney	93	0.9	76	0.7	551	5.2	9781	93.1	8	0.1	10509	100.0
South Eastern Sydney	83	1.0	71	0.9	462	5.7	7416	92.2	9	0.1	8041	100.0
Illawarra Shoalhaven	18	0.5	8	0.2	173	5.2	3142	94.0	3	0.1	3344	100.0
Western Sydney	99	1.1	79	0.8	540	5.8	8575	92.2	11	0.1	9304	100.0
Nepean Blue Mountains	50	1.0	43	0.9	308	6.2	4555	91.9	1	0.0	4957	100.0
Northern Sydney	53	1.1	43	0.9	209	4.3	4548	93.7	1	0.0	4854	100.0
Central Coast	13	0.5	5	0.2	127	4.5	2678	94.7	5	0.2	2828	100.0
Hunter New England	89	1.0	74	0.8	550	6.2	8164	91.9	9	0.1	8886	100.0
Northern NSW	19	0.5	8	0.2	173	4.6	3556	94.6	1	0.0	3757	100.0
Mid North Coast	14	0.6	3	0.1	91	4.1	2131	95.1	2	0.1	2241	100.0
Southern NSW	1	0.1	3	0.2	39	2.8	1368	97.0	0	0.0	1411	100.0
Murrumbidgee	8	0.4	6	0.3	84	4.2	1896	95.1	0	0.0	1994	100.0
Western NSW	6	0.2	11	0.3	161	4.7	3280	94.7	4	0.1	3462	100.0
Far West	1	0.4	0	0.0	15	6.2	226	93.4	0	0.0	242	100.0
Private Hospitals	43	0.2	14	0.1	777	3.3	22787	96.4	9	0.0	23630	100.0
Other	0	0.0	0	0.0	0	0.0	164	98.8	2	1.2	166	100.0
TOTAL*	661	0.7	501	0.5	4622	4.8	90581	93.9	74	0.1	96439	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
\* Total includes births at home assisted by independent midwives.

**Table 42. Births by birth weight, hospital and maternity service level, NSW 2009\***

Maternity service level–hospital	Birth weight (grams)											
	Less than 1000		1000–1499		1500–2499		2500+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Level 6												
Royal Prince Alfred	65	1.3	56	1.1	302	5.9	4681	91.6	7	0.1	5111	100.0
Royal North Shore	48	2.3	42	2.0	130	6.2	1885	89.5	1	0.0	2106	100.0
Royal Hospital for Women	64	1.5	61	1.5	281	6.7	3792	90.2	5	0.1	4203	100.0
Liverpool	63	2.0	69	2.2	270	8.6	2739	87.2	0	0.0	3141	100.0
Nepean	47	1.3	43	1.2	259	7.1	3303	90.4	1	0.0	3653	100.0
Westmead	80	1.7	75	1.6	349	7.4	4210	89.1	10	0.2	4724	100.0
John Hunter	73	1.9	64	1.7	317	8.4	3332	87.9	6	0.2	3792	100.0
TOTAL	440	1.6	410	1.5	1908	7.1	23942	89.6	30	0.1	26730	100.0
Level 5												
Gosford	13	0.5	5	0.2	126	4.9	2445	94.3	5	0.2	2594	100.0
St. George	15	0.6	9	0.4	146	5.7	2382	93.2	4	0.2	2556	100.0
Blacktown	15	0.5	4	0.1	153	4.7	3064	94.7	0	0.0	3236	100.0
Lismore Base	6	0.4	5	0.4	65	4.8	1265	94.3	0	0.0	1341	100.0
Tweed Heads	11	0.7	3	0.2	72	4.8	1428	94.3	1	0.1	1515	100.0
Port Macquarie Base	8	1.0	1	0.1	39	4.9	748	93.9	1	0.1	797	100.0
Wollongong	8	0.3	5	0.2	137	5.8	2213	93.5	3	0.1	2366	100.0
Maitland	4	0.3	2	0.1	73	4.7	1466	94.8	1	0.1	1546	100.0
Wagga Wagga Base	7	0.9	5	0.7	39	5.1	714	93.3	0	0.0	765	100.0
TOTAL	87	0.5	39	0.2	850	5.1	15725	94.1	15	0.1	16716	100.0
Level 4												
Canterbury	6	0.4	1	0.1	60	3.5	1633	95.9	2	0.1	1702	100.0
Hornsby	3	0.3	0	0.0	39	3.3	1125	96.4	0	0.0	1167	100.0
Manly	1	0.1	1	0.1	28	2.4	1114	97.4	0	0.0	1144	100.0

Table 42. (Continued)

Maternity service level–hospital	Birth weight (grams)											
	Less than 1000		1000–1499		1500–2499		2500+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mona Vale	1	0.3	0	0.0	11	3.5	304	96.2	0	0.0	316	100.0
Sutherland	4	0.3	1	0.1	35	2.7	1242	96.9	0	0.0	1282	100.0
Auburn	4	0.3	0	0.0	38	2.8	1301	96.8	1	0.1	1344	100.0
Fairfield	6	0.3	3	0.2	75	4.0	1809	95.5	1	0.1	1894	100.0
Campbelltown	10	0.4	2	0.1	118	4.4	2577	95.1	3	0.1	2710	100.0
Bankstown-Lidcombe	14	0.6	2	0.1	76	3.5	2098	95.6	4	0.2	2194	100.0
Hawkesbury	3	0.3	0	0.0	28	3.2	837	96.4	0	0.0	868	100.0
Coffs Harbour	5	0.5	2	0.2	37	3.4	1041	95.9	1	0.1	1086	100.0
Grafton Base	2	0.4	0	0.0	28	5.7	464	93.9	0	0.0	494	100.0
Tamworth Base	3	0.4	5	0.6	54	6.4	782	92.7	0	0.0	844	100.0
Manning Base	3	0.4	0	0.0	47	6.2	709	93.3	1	0.1	760	100.0
Dubbo Base	3	0.2	5	0.4	64	5.2	1149	94.1	0	0.0	1221	100.0
Orange Base	1	0.1	3	0.3	58	6.4	838	92.8	3	0.3	903	100.0
Goulburn Base	0	0.0	1	0.3	10	3.3	291	96.4	0	0.0	302	100.0
Shoalhaven	10	1.1	3	0.3	34	3.8	840	94.7	0	0.0	887	100.0
Griffith Base	1	0.2	0	0.0	19	4.6	395	95.2	0	0.0	415	100.0
TOTAL	80	0.4	29	0.1	859	4.0	20549	95.4	16	0.1	21533	100.0
<b>Level 3</b>												
Blue Mountains	0	0.0	0	0.0	6	2.4	240	97.6	0	0.0	246	100.0
Kempsey	1	0.3	0	0.0	11	3.6	295	96.1	0	0.0	307	100.0
Murwillumbah	0	0.0	0	0.0	8	3.8	201	96.2	0	0.0	209	100.0
Armidale	2	0.4	1	0.2	27	6.0	417	93.3	0	0.0	447	100.0
Inverell	0	0.0	2	0.8	9	3.5	245	95.3	1	0.4	257	100.0
Mudgee	0	0.0	0	0.0	4	1.7	225	98.3	0	0.0	229	100.0
Bathurst Base	2	0.4	2	0.4	24	4.2	538	95.1	0	0.0	566	100.0
Bega	1	0.4	1	0.4	9	3.2	270	96.1	0	0.0	281	100.0
Moruya	0	0.0	1	0.3	10	3.1	314	96.6	0	0.0	325	100.0
Queanbeyan	0	0.0	0	0.0	3	1.0	306	99.0	0	0.0	309	100.0
Bowral	0	0.0	0	0.0	12	2.1	557	97.9	0	0.0	569	100.0
Broken Hill Base	1	0.4	0	0.0	15	6.2	226	93.4	0	0.0	242	100.0
Other hospitals	2	0.1	2	0.1	72	2.8	2469	97.0	0	0.0	2545	100.0
TOTAL	9	0.1	9	0.1	210	3.2	6303	96.5	1	0.0	6532	100.0
<b>Level 2</b>												
Wyong	0	0.0	0	0.0	1	0.4	233	99.6	0	0.0	234	100.0
Other hospitals	2	0.2	0	0.0	15	1.8	837	98.0	0	0.0	854	100.0
TOTAL	2	0.2	0	0.0	16	1.5	1070	98.3	0	0.0	1088	100.0
<b>Private</b>												
Mater, North Sydney	1	0.0	0	0.0	84	3.3	2449	96.6	2	0.1	2536	100.0
North Shore Private	5	0.2	7	0.3	118	4.4	2541	95.1	0	0.0	2671	100.0
Sydney Adventist	6	0.3	2	0.1	78	3.4	2198	96.2	2	0.1	2286	100.0
North Gosford Private	2	0.2	0	0.0	27	3.2	819	96.6	0	0.0	848	100.0
Hurstville Private	1	0.1	1	0.1	45	4.6	928	95.2	0	0.0	975	100.0
Kareena Private	2	0.3	0	0.0	23	3.3	664	96.4	0	0.0	689	100.0
St. George Private	1	0.1	0	0.0	71	3.8	1772	96.0	1	0.1	1845	100.0
Prince of Wales Private	1	0.0	0	0.0	59	2.6	2231	97.4	0	0.0	2291	100.0
Norwest Private	6	0.5	1	0.1	43	3.5	1189	95.8	2	0.2	1241	100.0
Sydney Southwest Private	0	0.0	0	0.0	23	2.2	1046	97.8	0	0.0	1069	100.0
Nepean Private	0	0.0	1	0.1	19	2.0	920	97.9	0	0.0	940	100.0
Westmead Private	7	0.3	2	0.1	89	3.7	2295	95.9	0	0.0	2393	100.0
Figtree Private	5	0.5	0	0.0	27	2.6	1000	96.8	1	0.1	1033	100.0
Newcastle Private	4	0.2	0	0.0	53	2.8	1845	97.0	1	0.1	1903	100.0
Calvary, Wagga Wagga	2	0.3	0	0.0	15	2.3	622	97.3	0	0.0	639	100.0
Other hospitals	0	0.0	0	0.0	3	1.1	268	98.9	0	0.0	271	100.0
TOTAL	43	0.2	14	0.1	777	3.3	22787	96.4	9	0.0	23630	100.0
<b>TOTAL NSW *</b>	<b>661</b>	<b>0.7</b>	<b>501</b>	<b>0.5</b>	<b>4622</b>	<b>4.8</b>	<b>90581</b>	<b>93.9</b>	<b>74</b>	<b>0.1</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

\* Total NSW includes births at home assisted by independent midwives and births at level 1 hospitals.

## Gestational age

Table 43 shows the gestational age of babies for Local Health Districts, and Table 44 for individual hospitals by maternity service level where at least 200 mothers gave birth in 2009.

**Table 43. Births by gestational age and Local Health District of hospital, NSW 2009**

Local Health District	Gestational age (weeks)											
	< 32		32–33		34–36		37+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	150	2.2	90	1.3	320	4.7	6253	91.8	0	0.0	6813	100.0
South Western Sydney	190	1.8	94	0.9	516	4.9	9708	92.4	1	0.0	10509	100.0
South Eastern Sydney	190	2.4	100	1.2	450	5.6	7299	90.8	2	0.0	8041	100.0
Illawarra Shoalhaven	32	1.0	39	1.2	215	6.4	3058	91.4	0	0.0	3344	100.0
Western Sydney	197	2.1	102	1.1	485	5.2	8520	91.6	0	0.0	9304	100.0
Nepean Blue Mountains	122	2.5	73	1.5	284	5.7	4477	90.3	1	0.0	4957	100.0
Northern Sydney	103	2.1	43	0.9	201	4.1	4506	92.8	1	0.0	4854	100.0
Central Coast	24	0.8	16	0.6	150	5.3	2638	93.3	0	0.0	2828	100.0
Hunter New England	205	2.3	113	1.3	575	6.5	7993	90.0	0	0.0	8886	100.0
Northern NSW	29	0.8	23	0.6	171	4.6	3534	94.1	0	0.0	3757	100.0
Mid North Coast	21	0.9	5	0.2	104	4.6	2111	94.2	0	0.0	2241	100.0
Southern NSW	4	0.3	4	0.3	43	3.0	1360	96.4	0	0.0	1411	100.0
Murrumbidgee	17	0.9	7	0.4	78	3.9	1892	94.9	0	0.0	1994	100.0
Western NSW	15	0.4	15	0.4	172	5.0	3260	94.2	0	0.0	3462	100.0
Far West	0	0.0	0	0.0	21	8.7	221	91.3	0	0.0	242	100.0
Private Hospitals	66	0.3	102	0.4	1085	4.6	22375	94.7	2	0.0	23630	100.0
TOTAL*	1365	1.4	826	0.9	4871	5.1	89369	92.7	8	0.0	96439	100.0
Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.												
* Total includes births at home assisted by independent midwives.												

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

\* Total includes births at home assisted by independent midwives.

**Table 44. Births by gestational age, hospital and maternity service level, NSW 2009#**

Maternity service level–hospital	Gestational age (weeks)											
	< 32		32–33		34–36		37+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Level 6												
Royal Prince Alfred	140	2.7	89	1.7	261	5.1	4621	90.4	0	0.0	5111	100.0
Royal North Shore	97	4.6	39	1.9	105	5.0	1864	88.5	1	0.0	2106	100.0
Royal Hospital for Women	151	3.6	71	1.7	279	6.6	3701	88.1	1	0.0	4203	100.0
Liverpool	143	4.6	76	2.4	216	6.9	2706	86.2	0	0.0	3141	100.0
Nepean	119	3.3	67	1.8	222	6.1	3245	88.8	0	0.0	3653	100.0
Westmead	170	3.6	86	1.8	283	6.0	4185	88.6	0	0.0	4724	100.0
John Hunter	167	4.4	89	2.3	295	7.8	3241	85.5	0	0.0	3792	100.0
TOTAL	987	3.7	517	1.9	1661	6.2	23563	88.2	2	0.0	26730	100.0
Level 5												
Gosford	24	0.9	16	0.6	150	5.8	2404	92.7	0	0.0	2594	100.0
St. George	32	1.3	25	1.0	124	4.9	2374	92.9	1	0.0	2556	100.0
Blacktown	21	0.6	15	0.5	159	4.9	3041	94.0	0	0.0	3236	100.0
Lismore Base	13	1.0	6	0.4	80	6.0	1242	92.6	0	0.0	1341	100.0
Tweed Heads	14	0.9	9	0.6	67	4.4	1425	94.1	0	0.0	1515	100.0
Port Macquarie Base	10	1.3	2	0.3	41	5.1	744	93.4	0	0.0	797	100.0
Wollongong	19	0.8	31	1.3	171	7.2	2145	90.7	0	0.0	2366	100.0
Maitland	6	0.4	5	0.3	106	6.9	1429	92.4	0	0.0	1546	100.0
Wagga Wagga Base	12	1.6	6	0.8	47	6.1	700	91.5	0	0.0	765	100.0
TOTAL	151	0.9	115	0.7	945	5.7	15504	92.7	1	0.0	16716	100.0
Level 4												
Canterbury	10	0.6	1	0.1	59	3.5	1632	95.9	0	0.0	1702	100.0
Hornsby	3	0.3	3	0.3	47	4.0	1114	95.5	0	0.0	1167	100.0
Manly	2	0.2	0	0.0	34	3.0	1108	96.9	0	0.0	1144	100.0

Table 44. (Continued)

Maternity service level–hospital	Gestational age (weeks)											
	< 32		32–33		34–36		37+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mona Vale	1	0.3	1	0.3	14	4.4	300	94.9	0	0.0	316	100.0
Sutherland	7	0.5	4	0.3	47	3.7	1224	95.5	0	0.0	1282	100.0
Auburn	6	0.4	1	0.1	43	3.2	1294	96.3	0	0.0	1344	100.0
Fairfield	10	0.5	3	0.2	75	4.0	1806	95.4	0	0.0	1894	100.0
Campbelltown	18	0.7	10	0.4	126	4.6	2556	94.3	0	0.0	2710	100.0
Bankstown-Lidcombe	19	0.9	5	0.2	88	4.0	2081	94.8	1	0.0	2194	100.0
Hawkesbury	3	0.3	1	0.1	39	4.5	825	95.0	0	0.0	868	100.0
Coffs Harbour	9	0.8	1	0.1	49	4.5	1027	94.6	0	0.0	1086	100.0
Grafton Base	2	0.4	8	1.6	17	3.4	467	94.5	0	0.0	494	100.0
Tamworth Base	12	1.4	6	0.7	55	6.5	771	91.4	0	0.0	844	100.0
Manning Base	8	1.1	8	1.1	45	5.9	699	92.0	0	0.0	760	100.0
Dubbo Base	6	0.5	5	0.4	72	5.9	1138	93.2	0	0.0	1221	100.0
Orange Base	5	0.6	6	0.7	67	7.4	825	91.4	0	0.0	903	100.0
Goulburn Base	1	0.3	1	0.3	11	3.6	289	95.7	0	0.0	302	100.0
Shoalhaven	13	1.5	7	0.8	42	4.7	825	93.0	0	0.0	887	100.0
Griffith Base	1	0.2	1	0.2	13	3.1	400	96.4	0	0.0	415	100.0
TOTAL	136	0.6	72	0.3	943	4.4	20381	94.7	1	0.0	21533	100.0
Level 3												
Blue Mountains	0	0.0	1	0.4	11	4.5	233	94.7	1	0.4	246	100.0
Kempsey	2	0.7	1	0.3	13	4.2	291	94.8	0	0.0	307	100.0
Murwillumbah	0	0.0	0	0.0	7	3.3	202	96.7	0	0.0	209	100.0
Armidale	4	0.9	2	0.4	30	6.7	411	91.9	0	0.0	447	100.0
Inverell	3	1.2	2	0.8	13	5.1	239	93.0	0	0.0	257	100.0
Mudgee	0	0.0	0	0.0	4	1.7	225	98.3	0	0.0	229	100.0
Bathurst Base	4	0.7	2	0.4	19	3.4	541	95.6	0	0.0	566	100.0
Bega	1	0.4	1	0.4	9	3.2	270	96.1	0	0.0	281	100.0
Moruya	2	0.6	1	0.3	9	2.8	313	96.3	0	0.0	325	100.0
Queanbeyan	0	0.0	0	0.0	10	3.2	299	96.8	0	0.0	309	100.0
Bowral	0	0.0	0	0.0	11	1.9	558	98.1	0	0.0	569	100.0
Broken Hill Base	0	0.0	0	0.0	21	8.7	221	91.3	0	0.0	242	100.0
Other hospitals	6	0.2	6	0.2	62	2.4	2471	97.1	0	0.0	2545	100.0
TOTAL	22	0.3	16	0.2	219	3.4	6274	96.1	1	0.0	6532	100.0
Level 2												
Wyang	0	0.0	0	0.0	0	0.0	234	100.0	0	0.0	234	100.0
Other hospitals	3	0.4	3	0.4	13	1.5	835	97.8	0	0.0	854	100.0
TOTAL	3	0.3	3	0.3	13	1.2	1069	98.3	0	0.0	1088	100.0
Private												
Mater, North Sydney	3	0.1	23	0.9	106	4.2	2403	94.8	1	0.0	2536	100.0
North Shore Private	9	0.3	29	1.1	140	5.2	2493	93.3	0	0.0	2671	100.0
Sydney Adventist	12	0.5	13	0.6	80	3.5	2181	95.4	0	0.0	2286	100.0
North Gosford Private	2	0.2	1	0.1	41	4.8	804	94.8	0	0.0	848	100.0
Hurstville Private	1	0.1	4	0.4	59	6.1	911	93.4	0	0.0	975	100.0
Kareena Private	2	0.3	2	0.3	49	7.1	636	92.3	0	0.0	689	100.0
St. George Private	2	0.1	8	0.4	84	4.6	1751	94.9	0	0.0	1845	100.0
Prince of Wales Private	1	0.0	4	0.2	94	4.1	2191	95.6	1	0.0	2291	100.0
Norwest Private	8	0.6	8	0.6	50	4.0	1175	94.7	0	0.0	1241	100.0
Sydney Southwest Private	1	0.1	0	0.0	52	4.9	1016	95.0	0	0.0	1069	100.0
Nepean Private	1	0.1	0	0.0	40	4.3	899	95.6	0	0.0	940	100.0
Westmead Private	9	0.4	4	0.2	120	5.0	2260	94.4	0	0.0	2393	100.0
Figtree Private	6	0.6	0	0.0	42	4.1	985	95.4	0	0.0	1033	100.0
Newcastle Private	6	0.3	1	0.1	82	4.3	1814	95.3	0	0.0	1903	100.0
Calvary, Wagga Wagga	3	0.5	5	0.8	39	6.1	592	92.6	0	0.0	639	100.0
Other hospitals	0	0.0	0	0.0	7	2.6	264	97.4	0	0.0	271	100.0
TOTAL	66	0.3	102	0.4	1085	4.6	22375	94.7	2	0.0	23630	100.0
TOTAL NSW*	1365	1.4	826	0.9	4871	5.1	89369	92.7	8	0.0	96439	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

\* Total NSW includes births at home assisted by independent midwives and births at level 1 hospitals.



## Neonatal resuscitation

Table 45 shows the type of neonatal resuscitation for Local Health Districts, and Table 46 for individual hospitals by maternity service level where at least 200 mothers gave birth in 2009.

**Table 45. Births by type of resuscitation and Local Health District of hospital, NSW 2009**

Local Health District	Resuscitation															
	None		Suction		Oxygen therapy		IPPR by bag and mask		Intubation and IPPR		External cardiac massage and ventilation		Not stated		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	5348	78.5	310	4.6	453	6.6	581	8.5	78	1.1	43	0.6	0	0.0	6813	100.0
South Western Sydney	8868	84.4	498	4.7	585	5.6	465	4.4	44	0.4	48	0.5	1	0.0	10509	100.0
South Eastern Sydney	6146	76.4	574	7.1	718	8.9	492	6.1	90	1.1	21	0.3	0	0.0	8041	100.0
Illawarra Shoalhaven	2445	73.1	432	12.9	298	8.9	145	4.3	8	0.2	16	0.5	0	0.0	3344	100.0
Western Sydney	6808	73.2	948	10.2	877	9.4	472	5.1	161	1.7	38	0.4	0	0.0	9304	100.0
Nepean Blue Mountains	3415	68.9	690	13.9	527	10.6	242	4.9	60	1.2	23	0.5	0	0.0	4957	100.0
Northern Sydney	3534	72.8	434	8.9	501	10.3	345	7.1	23	0.5	17	0.4	0	0.0	4854	100.0
Central Coast	2080	73.6	167	5.9	313	11.1	239	8.5	12	0.4	17	0.6	0	0.0	2828	100.0
Hunter New England	6457	72.7	289	3.3	1030	11.6	1010	11.4	57	0.6	43	0.5	0	0.0	8886	100.0
Northern NSW	2755	73.3	211	5.6	502	13.4	270	7.2	12	0.3	7	0.2	0	0.0	3757	100.0
Mid North Coast	1761	78.6	91	4.1	231	10.3	145	6.5	5	0.2	8	0.4	0	0.0	2241	100.0
Southern NSW	1206	85.5	43	3.0	87	6.2	69	4.9	2	0.1	4	0.3	0	0.0	1411	100.0
Murrumbidgee	1479	74.2	139	7.0	229	11.5	132	6.6	6	0.3	9	0.5	0	0.0	1994	100.0
Western NSW	2693	77.8	120	3.5	415	12.0	211	6.1	12	0.3	11	0.3	0	0.0	3462	100.0
Far West	177	73.1	25	10.3	27	11.2	12	5.0	0	0.0	1	0.4	0	0.0	242	100.0
Private Hospitals	15931	67.4	3774	16.0	2898	12.3	978	4.1	27	0.1	16	0.1	6	0.0	23630	100.0
<b>TOTAL*</b>	<b>71257</b>	<b>73.9</b>	<b>8746</b>	<b>9.1</b>	<b>9698</b>	<b>10.1</b>	<b>5812</b>	<b>6.0</b>	<b>597</b>	<b>0.6</b>	<b>322</b>	<b>0.3</b>	<b>7</b>	<b>0.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

\*Total includes births at home assisted by independent midwives.

IPPR: intermittent positive pressure respiration.

**Table 46. Births by type of resuscitation, hospital and maternity service level, NSW 2009#**

Maternity service level – hospital	Resuscitation															
	None		Suction		Oxygen therapy		IPPR by bag and mask		Intubation and IPPR		External cardiac massage and ventilation		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Level 6</b>																
Royal Prince Alfred	3882	76.0	262	5.1	311	6.1	546	10.7	76	1.5	34	0.7	0	0.0	5111	100.0
Royal North Shore	1460	69.3	268	12.7	167	7.9	179	8.5	19	0.9	13	0.6	0	0.0	2106	100.0
Royal Hospital for Women	3077	73.2	383	9.1	368	8.8	277	6.6	85	2.0	13	0.3	0	0.0	4203	100.0
Liverpool	2532	80.6	221	7.0	162	5.2	187	6.0	30	1.0	8	0.3	1	0.0	3141	100.0
Nepean	2467	67.5	564	15.4	343	9.4	201	5.5	57	1.6	21	0.6	0	0.0	3653	100.0
Westmead	3343	70.8	404	8.6	539	11.4	275	5.8	150	3.2	13	0.3	0	0.0	4724	100.0
John Hunter	2691	71.0	124	3.3	312	8.2	592	15.6	41	1.1	32	0.8	0	0.0	3792	100.0
<b>TOTAL</b>	<b>19452</b>	<b>72.8</b>	<b>2226</b>	<b>8.3</b>	<b>2202</b>	<b>8.2</b>	<b>2257</b>	<b>8.4</b>	<b>458</b>	<b>1.7</b>	<b>134</b>	<b>0.5</b>	<b>1</b>	<b>0.0</b>	<b>26730</b>	<b>100.0</b>
<b>Level 5</b>																
Gosford	1879	72.4	163	6.3	297	11.4	227	8.8	12	0.5	16	0.6	0	0.0	2594	100.0
St. George	1992	77.9	101	4.0	282	11.0	173	6.8	3	0.1	5	0.2	0	0.0	2556	100.0
Blacktown	2317	71.6	500	15.5	247	7.6	139	4.3	11	0.3	22	0.7	0	0.0	3236	100.0
Lismore Base	1029	76.7	50	3.7	170	12.7	88	6.6	1	0.1	3	0.2	0	0.0	1341	100.0
Tweed Heads	1090	71.9	30	2.0	249	16.4	135	8.9	7	0.5	4	0.3	0	0.0	1515	100.0
Port Macquarie Base	617	77.4	17	2.1	105	13.2	51	6.4	3	0.4	4	0.5	0	0.0	797	100.0
Wollongong	1659	70.1	359	15.2	219	9.3	107	4.5	8	0.3	14	0.6	0	0.0	2366	100.0
Maitland	1245	80.5	13	0.8	145	9.4	132	8.5	3	0.2	8	0.5	0	0.0	1546	100.0
Wagga Wagga Base	600	78.4	40	5.2	58	7.6	62	8.1	3	0.4	2	0.3	0	0.0	765	100.0
<b>TOTAL</b>	<b>12428</b>	<b>74.3</b>	<b>1273</b>	<b>7.6</b>	<b>1772</b>	<b>10.6</b>	<b>1114</b>	<b>6.7</b>	<b>51</b>	<b>0.3</b>	<b>78</b>	<b>0.5</b>	<b>0</b>	<b>0.0</b>	<b>16716</b>	<b>100.0</b>
<b>Level 4</b>																
Canterbury	1466	86.1	48	2.8	142	8.3	35	2.1	2	0.1	9	0.5	0	0.0	1702	100.0
Hornsby	909	77.9	41	3.5	134	11.5	78	6.7	2	0.2	3	0.3	0	0.0	1167	100.0
Manly	872	76.2	37	3.2	161	14.1	71	6.2	2	0.2	1	0.1	0	0.0	1144	100.0

Table 46. (Continued)

Maternity service level – hospital	Resuscitation															
	None		Suction		Oxygen therapy		IPPR by bag and mask		Intubation and IPPR		External cardiac massage and ventilation		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mona Vale	180	57.0	87	27.5	36	11.4	13	4.1	0	0.0	0	0	0	0.0	316	100.0
Sutherland	1077	84.0	90	7.0	68	5.3	42	3.3	2	0.2	3	0.2	0	0.0	1282	100.0
Auburn	1148	85.4	44	3.3	91	6.8	58	4.3	0	0.0	3	0.2	0	0.0	1344	100.0
Fairfield	1682	88.8	55	2.9	74	3.9	74	3.9	3	0.2	6	0.3	0	0.0	1894	100.0
Campbelltown	2289	84.5	80	3.0	194	7.2	125	4.6	7	0.3	15	0.6	0	0.0	2710	100.0
Bankstown-Lidcombe	1887	86.0	114	5.2	109	5.0	66	3.0	2	0.1	16	0.7	0	0.0	2194	100.0
Hawkesbury	677	78.0	54	6.2	113	13.0	20	2.3	3	0.3	1	0.1	0	0.0	868	100.0
Coffs Harbour	859	79.1	69	6.4	100	9.2	54	5.0	2	0.2	2	0.2	0	0.0	1086	100.0
Grafton Base	326	66.0	101	20.4	32	6.5	31	6.3	4	0.8	0	0.0	0	0.0	494	100.0
Tamworth Base	586	69.4	46	5.5	115	13.6	85	10.1	9	1.1	3	0.4	0	0.0	844	100.0
Manning Base	617	81.2	14	1.8	79	10.4	49	6.4	1	0.1	0	0.0	0	0.0	760	100.0
Dubbo Base	949	77.7	42	3.4	143	11.7	80	6.6	3	0.2	4	0.3	0	0.0	1221	100.0
Orange Base	681	75.4	20	2.2	132	14.6	62	6.9	4	0.4	4	0.4	0	0.0	903	100.0
Goulburn Base	225	74.5	18	6.0	32	10.6	22	7.3	1	0.3	4	1.3	0	0.0	302	100.0
Shoalhaven	711	80.2	70	7.9	69	7.8	35	3.9	0	0.0	2	0.2	0	0.0	887	100.0
Griffith Base	305	73.5	21	5.1	59	14.2	26	6.3	2	0.5	2	0.5	0	0.0	415	100.0
<b>TOTAL</b>	<b>17446</b>	<b>81.0</b>	<b>1051</b>	<b>4.9</b>	<b>1883</b>	<b>8.7</b>	<b>1026</b>	<b>4.8</b>	<b>49</b>	<b>0.2</b>	<b>78</b>	<b>0.4</b>	<b>0</b>	<b>0.0</b>	<b>21533</b>	<b>100.0</b>
<b>Level 3</b>																
Blue Mountains	181	73.6	18	7.3	33	13.4	13	5.3	0	0.0	1	0.4	0	0.0	246	100.0
Kempsey	243	79.2	3	1.0	23	7.5	36	11.7	0	0.0	2	0.7	0	0.0	307	100.0
Murwillumbah	148	70.8	24	11.5	30	14.4	7	3.3	0	0.0	0	0.0	0	0.0	209	100.0
Armidale	326	72.9	11	2.5	94	21.0	16	3.6	0	0.0	0	0.0	0	0.0	447	100.0
Inverell	66	25.7	12	4.7	119	46.3	58	22.6	2	0.8	0	0.0	0	0.0	257	100.0
Mudgee	188	82.1	9	3.9	14	6.1	17	7.4	1	0.4	0	0.0	0	0.0	229	100.0
Bathurst Base	444	78.4	36	6.4	50	8.8	31	5.5	4	0.7	1	0.2	0	0.0	566	100.0
Bega	243	86.5	4	1.4	16	5.7	18	6.4	0	0.0	0	0.0	0	0.0	281	100.0
Moruya	282	86.8	10	3.1	18	5.5	15	4.6	0	0.0	0	0.0	0	0.0	325	100.0
Queanbeyan	281	90.9	4	1.3	13	4.2	10	3.2	1	0.3	0	0.0	0	0.0	309	100.0
Bowral	477	83.8	28	4.9	46	8.1	13	2.3	2	0.4	3	0.5	0	0.0	569	100.0
Broken Hill Base	177	73.1	25	10.3	27	11.2	12	5.0	0	0.0	1	0.4	0	0.0	242	100.0
Other hospitals	1833	72.0	210	8.3	380	14.9	113	4.4	2	0.1	7	0.3	0	0.0	2545	100.0
<b>TOTAL</b>	<b>4889</b>	<b>74.8</b>	<b>394</b>	<b>6.0</b>	<b>863</b>	<b>13.2</b>	<b>359</b>	<b>5.5</b>	<b>12</b>	<b>0.2</b>	<b>15</b>	<b>0.2</b>	<b>0</b>	<b>0.0</b>	<b>6532</b>	<b>100.0</b>
<b>Level 2</b>																
Wyong	201	85.9	4	1.7	16	6.8	12	5.1	0	0.0	1	0.4	0	0.0	234	100.0
Other hospitals	722	84.5	17	2.0	53	6.2	62	7.3	0	0.0	0	0.0	0	0.0	854	100.0
<b>TOTAL</b>	<b>923</b>	<b>84.8</b>	<b>21</b>	<b>1.9</b>	<b>69</b>	<b>6.3</b>	<b>74</b>	<b>6.8</b>	<b>0</b>	<b>0.0</b>	<b>1</b>	<b>0.1</b>	<b>0</b>	<b>0.0</b>	<b>1088</b>	<b>100.0</b>
<b>Private</b>																
Mater, North Sydney	1795	70.8	166	6.5	421	16.6	152	6.0	1	0.0	1	0.0	0	0.0	2536	100.0
North Shore Private	2066	77.3	262	9.8	256	9.6	83	3.1	4	0.1	0	0.0	0	0.0	2671	100.0
Sydney Adventist	1910	83.6	120	5.2	166	7.3	84	3.7	0	0.0	1	0.0	5	0.2	2286	100.0
North Gosford Private	614	72.4	73	8.6	135	15.9	25	2.9	0	0.0	1	0.1	0	0.0	848	100.0
Hurstville Private	275	28.2	440	45.1	196	20.1	62	6.4	2	0.2	0	0.0	0	0.0	975	100.0
Kareena Private	383	55.6	204	29.6	74	10.7	26	3.8	2	0.3	0	0.0	0	0.0	689	100.0
St. George Private	717	38.9	775	42.0	285	15.4	64	3.5	2	0.1	2	0.1	0	0.0	1845	100.0
Prince of Wales Private	1261	55.0	469	20.5	468	20.4	90	3.9	0	0.0	3	0.1	0	0.0	2291	100.0
Norwest Private	1077	86.8	44	3.5	83	6.7	35	2.8	1	0.1	1	0.1	0	0.0	1241	100.0
Sydney Southwest Private	781	73.1	148	13.8	98	9.2	41	3.8	0	0.0	1	0.1	0	0.0	1069	100.0
Nepean Private	618	65.7	87	9.3	184	19.6	41	4.4	8	0.9	2	0.2	0	0.0	940	100.0
Westmead Private	1946	81.3	199	8.3	152	6.4	93	3.9	0	0.0	3	0.1	0	0.0	2393	100.0
Figtree Private	318	30.8	591	57.2	105	10.2	17	1.6	1	0.1	0	0.0	1	0.1	1033	100.0
Newcastle Private	1547	81.3	74	3.9	166	8.7	111	5.8	4	0.2	1	0.1	0	0.0	1903	100.0
Calvary, Wagga Wagga	434	67.9	95	14.9	66	10.3	44	6.9	0	0.0	0	0.0	0	0.0	639	100.0
Other hospitals	189	69.7	27	10.0	43	15.9	10	3.7	2	0.7	0	0.0	0	0.0	271	100.0
<b>TOTAL</b>	<b>15931</b>	<b>67.4</b>	<b>3774</b>	<b>16.0</b>	<b>2898</b>	<b>12.3</b>	<b>978</b>	<b>4.1</b>	<b>27</b>	<b>0.1</b>	<b>16</b>	<b>0.1</b>	<b>6</b>	<b>0.0</b>	<b>23630</b>	<b>100.0</b>
<b>TOTAL NSW*</b>	<b>71257</b>	<b>73.9</b>	<b>8746</b>	<b>9.1</b>	<b>9698</b>	<b>10.1</b>	<b>5812</b>	<b>6.0</b>	<b>597</b>	<b>0.6</b>	<b>322</b>	<b>0.3</b>	<b>7</b>	<b>0.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

\*Total NSW includes births at home assisted by independent midwives and births at level 1 hospitals.

IPPR: intermittent positive pressure respiration.

## Admission to special care or neonatal intensive care

Table 47 shows admissions of live born babies to special care or neonatal intensive care for Local Health Districts, and Table

48 for individual hospitals by maternity service level where at least 200 mothers gave birth in 2009.

**Table 47. Live births by admission to special care or neonatal intensive care by Local Health District of hospital, NSW 2009**

Local Health District	Admission to special care or NICU							
	No		Yes		Not stated		Total	
	No.	%	No.	%	No.	%	No.	%
Sydney	5924	87.7	831	12.3	0	0.0	6755	100.0
South Western Sydney	9257	88.7	1175	11.3	0	0.0	10432	100.0
South Eastern Sydney	6574	82.4	1402	17.6	0	0.0	7976	100.0
Illawarra Shoalhaven	2737	82.3	588	17.7	0	0.0	3325	100.0
Western Sydney	7363	79.8	1860	20.2	0	0.0	9223	100.0
Nepean Blue Mountains	3741	75.9	1185	24.1	0	0.0	4926	100.0
Northern Sydney	4013	83.2	813	16.8	0	0.0	4826	100.0
Central Coast	2345	83.4	468	16.6	0	0.0	2813	100.0
Hunter New England	7271	82.5	1545	17.5	0	0.0	8816	100.0
Northern NSW	3146	84.2	587	15.7	2	0.1	3735	100.0
Mid North Coast	1930	86.8	294	13.2	0	0.0	2224	100.0
Southern NSW	1329	94.7	74	5.3	0	0.0	1403	100.0
Murrumbidgee	1685	85.0	297	15.0	0	0.0	1982	100.0
Western NSW	3030	87.9	419	12.1	0	0.0	3449	100.0
Far West	223	92.5	18	7.5	0	0.0	241	100.0
Private Hospitals	21456	91.1	2091	8.9	2	0.0	23549	100.0
TOTAL*	82184	85.8	13649	14.2	4	0.0	95837	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

\* Total includes live births at home assisted by independent midwives.

NICU: neonatal intensive care unit.

**Table 48. Live births by admission to special care or neonatal intensive care, hospital and maternity service level, NSW 2009#**

Maternity service level-hospital	Admission to Special Care or NICU							
	No		Yes		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%
<b>Level 6</b>								
Royal Prince Alfred	4378	86.4	687	13.6	0	0.0	5065	100.0
Royal North Shore	1814	87.0	271	13.0	0	0.0	2085	100.0
Royal Hospital for Women	3393	81.7	761	18.3	0	0.0	4154	100.0
Liverpool	2573	82.6	541	17.4	0	0.0	3114	100.0
Nepean	2621	72.3	1002	27.7	0	0.0	3623	100.0
Westmead	3664	78.5	1001	21.5	0	0.0	4665	100.0
John Hunter	2994	79.7	762	20.3	0	0.0	3756	100.0
TOTAL	21437	81.0	5025	19.0	0	0.0	26462	100.0
<b>Level 5</b>								
Gosford	2115	82.0	464	18.0	0	0.0	2579	100.0
St. George	2100	82.5	444	17.5	0	0.0	2544	100.0
Blacktown	2628	81.6	594	18.4	0	0.0	3222	100.0
Lismore Base	1057	79.2	277	20.8	0	0.0	1334	100.0
Tweed Heads	1261	84.0	241	16.0	0	0.0	1502	100.0
Port Macquarie Base	697	88.2	93	11.8	0	0.0	790	100.0
Wollongong	1855	78.8	499	21.2	0	0.0	2354	100.0
Maitland	1281	83.7	249	16.3	0	0.0	1530	100.0
Wagga Wagga Base	615	81.3	141	18.7	0	0.0	756	100.0
TOTAL	13609	81.9	3002	18.1	0	0.0	16611	100.0
<b>Level 4</b>								
Canterbury	1546	91.5	144	8.5	0	0.0	1690	100.0
Hornsby	894	76.8	270	23.2	0	0.0	1164	100.0
Manly	906	79.4	235	20.6	0	0.0	1141	100.0

Table 48. (Continued)

Maternity service level–hospital	Admission to Special Care or NICU							
	No		Yes		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Mona Vale	280	88.9	35	11.1	0	0.0	315	100.0
Sutherland	1081	84.6	197	15.4	0	0.0	1278	100.0
Auburn	1071	80.2	265	19.8	0	0.0	1336	100.0
Fairfield	1670	88.8	211	11.2	0	0.0	1881	100.0
Campbelltown	2552	94.8	139	5.2	0	0.0	2691	100.0
Bankstown-Lidcombe	1922	88.3	255	11.7	0	0.0	2177	100.0
Hawkesbury	717	82.7	150	17.3	0	0.0	867	100.0
Coffs Harbour	903	83.6	177	16.4	0	0.0	1080	100.0
Grafton Base	439	89.2	53	10.8	0	0.0	492	100.0
Tamworth Base	554	66.0	285	34.0	0	0.0	839	100.0
Manning Base	616	81.8	137	18.2	0	0.0	753	100.0
Dubbo Base	1028	84.5	189	15.5	0	0.0	1217	100.0
Orange Base	740	82.5	157	17.5	0	0.0	897	100.0
Goulburn Base	272	90.7	28	9.3	0	0.0	300	100.0
Shoalhaven	794	90.2	86	9.8	0	0.0	880	100.0
Griffith Base	289	70.0	124	30.0	0	0.0	413	100.0
TOTAL	18274	85.3	3137	14.7	0	0.0	21411	100.0
<b>Level 3</b>								
Blue Mountains	222	90.2	24	9.8	0	0.0	246	100.0
Kempsey	281	92.4	23	7.6	0	0.0	304	100.0
Murwillumbah	198	94.7	11	5.3	0	0.0	209	100.0
Armidale	404	90.6	42	9.4	0	0.0	446	100.0
Inverell	229	89.8	26	10.2	0	0.0	255	100.0
Mudgee	222	97.8	5	2.2	0	0.0	227	100.0
Bathurst Base	522	92.4	43	7.6	0	0.0	565	100.0
Bega	258	92.1	22	7.9	0	0.0	280	100.0
Moruya	305	95.0	16	5.0	0	0.0	321	100.0
Queanbeyan	307	99.4	2	0.6	0	0.0	309	100.0
Bowral	539	94.9	29	5.1	0	0.0	568	100.0
Broken Hill Base	223	92.5	18	7.5	0	0.0	241	100.0
Other hospitals	2439	96.0	101	4.0	1	0.0	2541	100.0
TOTAL	6149	94.4	362	5.6	1	0.0	6512	100.0
<b>Level 2</b>								
Wyang	230	98.3	4	1.7	0	0.0	234	100.0
Other hospitals	828	97.2	23	2.7	1	0.1	852	100.0
TOTAL	1058	97.4	27	2.5	1	0.1	1086	100.0
<b>Private</b>								
Mater, North Sydney	2272	89.7	260	10.3	0	0.0	2532	100.0
North Shore Private	2650	99.6	11	0.4	0	0.0	2661	100.0
Sydney Adventist	1936	85.2	337	14.8	0	0.0	2273	100.0
North Gosford Private	732	86.5	114	13.5	0	0.0	846	100.0
Hurstville Private	825	84.7	149	15.3	0	0.0	974	100.0
Kareena Private	684	99.6	3	0.4	0	0.0	687	100.0
St. George Private	1836	99.7	5	0.3	0	0.0	1841	100.0
Prince of Wales Private	2042	89.4	243	10.6	0	0.0	2285	100.0
Norwest Private	1065	86.3	169	13.7	0	0.0	1234	100.0
Sydney Southwest Private	825	77.2	243	22.8	0	0.0	1068	100.0
Nepean Private	694	74.0	244	26.0	0	0.0	938	100.0
Westmead Private	2368	99.5	12	0.5	0	0.0	2380	100.0
Figtree Private	1025	99.9	1	0.1	0	0.0	1026	100.0
Newcastle Private	1655	87.3	241	12.7	0	0.0	1896	100.0
Calvary, Wagga Wagga	581	91.2	56	8.8	0	0.0	637	100.0
Other hospitals	266	98.2	3	1.1	2	0.7	271	100.0
TOTAL	21456	91.1	2091	8.9	2	0.0	23549	100.0
<b>TOTAL*</b>	<b>82184</b>	<b>85.8</b>	<b>13649</b>	<b>14.2</b>	<b>4</b>	<b>0.0</b>	<b>95837</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

\* Total includes live births at home assisted by independent midwives and live births at level 1 hospitals.

NICU: neonatal intensive care unit.

## Infant feeding

Table 49 shows infant feeding at discharge from the hospital of birth for Local Health Districts, and Table 50 for individual

hospitals by maternity service level where at least 200 mothers gave birth in 2009.

**Table 49. Live births by type of infant feeding and Local Health District of hospital, NSW 2009**

Local Health District	Full breast-feeding		Any breast-feeding		Infant feeding Infant formula only		Not stated		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	5524	81.8	765	11.3	410	6.1	56	0.8	6755	100.0
South Western Sydney	7331	70.3	1121	10.7	1925	18.5	55	0.5	10432	100.0
South Eastern Sydney	6674	83.7	665	8.3	566	7.1	71	0.9	7976	100.0
Illawarra Shoalhaven	2561	77.0	77	2.3	645	19.4	42	1.3	3325	100.0
Western Sydney	7346	79.6	680	7.4	1022	11.1	175	1.9	9223	100.0
Nepean Blue Mountains	3612	73.3	271	5.5	1004	20.4	39	0.8	4926	100.0
Northern Sydney	4286	88.8	290	6.0	217	4.5	33	0.7	4826	100.0
Central Coast	2269	80.7	85	3.0	419	14.9	40	1.4	2813	100.0
Hunter New England	6992	79.3	307	3.5	1445	16.4	72	0.8	8816	100.0
Northern NSW	3322	88.9	115	3.1	286	7.7	12	0.3	3735	100.0
Mid North Coast	1942	87.3	63	2.8	212	9.5	7	0.3	2224	100.0
Southern NSW	1214	86.5	31	2.2	154	11.0	4	0.3	1403	100.0
Murrumbidgee	1506	76.0	45	2.3	425	21.4	6	0.3	1982	100.0
Western NSW	2770	80.3	64	1.9	606	17.6	9	0.3	3449	100.0
Far West	183	75.9	12	5.0	46	19.1	0	0.0	241	100.0
Private Hospitals	19499	82.8	1831	7.8	2177	9.2	42	0.2	23549	100.0
<b>TOTAL*</b>	<b>77155</b>	<b>80.5</b>	<b>6423</b>	<b>6.7</b>	<b>11559</b>	<b>12.1</b>	<b>700</b>	<b>0.7</b>	<b>95837</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

\*Total includes live births at home assisted by independent midwives.

NICU: neonatal intensive care unit.

**Table 50. Live births by type of infant feeding, hospital and maternity service level, NSW 2009#**

Maternity service level—hospital	Full breast-feeding		Any breast-feeding		Infant feeding Infant formula only		Not stated		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Level 6</b>										
Royal Prince Alfred	4162	82.2	604	11.9	255	5.0	44	0.9	5065	100.0
Royal North Shore	1795	86.1	163	7.8	116	5.6	11	0.5	2085	100.0
Royal Hospital for Women	3578	86.1	309	7.4	226	5.4	41	1.0	4154	100.0
Liverpool	2009	64.5	470	15.1	605	19.4	30	1.0	3114	100.0
Nepean	2595	71.6	229	6.3	777	21.4	22	0.6	3623	100.0
Westmead	3694	79.2	412	8.8	442	9.5	117	2.5	4665	100.0
John Hunter	2934	78.1	140	3.7	640	17.0	42	1.1	3756	100.0
Total	20767	78.5	2327	8.8	3061	11.6	307	1.2	26462	100.0
<b>Level 5</b>										
Gosford	2061	79.9	84	3.3	395	15.3	39	1.5	2579	100.0
St. George	1952	76.7	315	12.4	254	10.0	23	0.9	2544	100.0
Blacktown	2492	77.3	202	6.3	487	15.1	41	1.3	3222	100.0
Lismore Base	1193	89.4	60	4.5	74	5.5	7	0.5	1334	100.0
Tweed Heads	1372	91.3	22	1.5	104	6.9	4	0.3	1502	100.0
Port Macquarie Base	689	87.2	13	1.6	83	10.5	5	0.6	790	100.0
Wollongong	1763	74.9	53	2.3	507	21.5	31	1.3	2354	100.0
Maitland	1143	74.7	72	4.7	309	20.2	6	0.4	1530	100.0
Wagga Wagga Base	566	74.9	13	1.7	173	22.9	4	0.5	756	100.0
TOTAL	13231	79.7	834	5.0	2386	14.4	160	1.0	16611	100.0
<b>Level 4</b>										
Canterbury	1362	80.6	161	9.5	155	9.2	12	0.7	1690	100.0
Hornsby	1044	89.7	67	5.8	39	3.4	14	1.2	1164	100.0
Manly	1044	91.5	43	3.8	46	4.0	8	0.7	1141	100.0

Table 50. (Continued)

Maternity service level–hospital	Full breast-feeding		Any breast-feeding		Infant feeding Infant formula only		Not stated		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Mona Vale	283	89.8	17	5.4	15	4.8	0	0.0	315	100.0
Sutherland	1144	89.5	41	3.2	86	6.7	7	0.5	1278	100.0
Auburn	1160	86.8	66	4.9	93	7.0	17	1.3	1336	100.0
Fairfield	1174	62.4	347	18.4	357	19.0	3	0.2	1881	100.0
Campbelltown	1932	71.8	139	5.2	610	22.7	10	0.4	2691	100.0
Bankstown-Lidcombe	1742	80.0	142	6.5	284	13.0	9	0.4	2177	100.0
Hawkesbury	668	77.0	24	2.8	168	19.4	7	0.8	867	100.0
Coffs Harbour	942	87.2	44	4.1	92	8.5	2	0.2	1080	100.0
Grafton Base	376	76.4	27	5.5	89	18.1	0	0.0	492	100.0
Tamworth Base	668	79.6	27	3.2	135	16.1	9	1.1	839	100.0
Manning Base	636	84.5	18	2.4	98	13.0	1	0.1	753	100.0
Dubbo Base	912	74.9	22	1.8	282	23.2	1	0.1	1217	100.0
Orange Base	747	83.3	18	2.0	132	14.7	0	0.0	897	100.0
Goulburn Base	236	78.7	4	1.3	58	19.3	2	0.7	300	100.0
Shoalhaven	715	81.3	24	2.7	131	14.9	10	1.1	880	100.0
Griffith Base	318	77.0	13	3.1	81	19.6	1	0.2	413	100.0
TOTAL	17103	79.9	1244	5.8	2951	13.8	113	0.5	21411	100.0
<b>Level 3</b>										
Blue Mountains	209	85.0	11	4.5	22	8.9	4	1.6	246	100.0
Kempsey	265	87.2	5	1.6	34	11.2	0	0	304	100.0
Murwillumbah	192	91.9	4	1.9	12	5.7	1	0.5	209	100.0
Armidale	387	86.8	10	2.2	45	10.1	4	0.9	446	100.0
Inverell	194	76.1	13	5.1	45	17.6	3	1.2	255	100.0
Mudgee	178	78.4	1	0.4	48	21.1	0	0.0	227	100.0
Bathurst Base	490	86.7	8	1.4	62	11.0	5	0.9	565	100.0
Bega	245	87.5	10	3.6	25	8.9	0	0.0	280	100.0
Moruya	285	88.8	6	1.9	29	9.0	1	0.3	321	100.0
Queanbeyan	273	88.3	7	2.3	28	9.1	1	0.3	309	100.0
Bowral	473	83.3	23	4.0	69	12.1	3	0.5	568	100.0
Broken Hill Base	183	75.9	12	5.0	46	19.1	0	0.0	241	100.0
Other hospitals	2030	79.9	65	2.6	432	17.0	14	0.6	2541	100.0
TOTAL	5404	83.0	175	2.7	897	13.8	36	0.6	6512	100.0
<b>Level 2</b>										
Wyong	208	88.9	1	0.4	24	10.3	1	0.4	234	100.0
Other hospitals	788	92.5	9	1.1	52	6.1	3	0.4	852	100.0
TOTAL	996	91.7	10	0.9	76	7.0	4	0.4	1086	100.0
<b>Private</b>										
Mater, North Sydney	2186	86.3	246	9.7	99	3.9	1	0.0	2532	100.0
North Shore Private	2259	84.9	238	8.9	155	5.8	9	0.3	2661	100.0
Sydney Adventist	2005	88.2	0	0.0	262	11.5	6	0.3	2273	100.0
North Gosford Private	753	89.0	30	3.5	63	7.4	0	0.0	846	100.0
Hurstville Private	724	74.3	162	16.6	88	9.0	0	0.0	974	100.0
Kareena Private	592	86.2	26	3.8	69	10.0	0	0.0	687	100.0
St. George Private	1413	76.8	243	13.2	181	9.8	4	0.2	1841	100.0
Prince of Wales Private	2028	88.8	146	6.4	110	4.8	1	0.0	2285	100.0
Norwest Private	1013	82.1	65	5.3	154	12.5	2	0.2	1234	100.0
Sydney Southwest Private	848	79.4	61	5.7	158	14.8	1	0.1	1068	100.0
Nepean Private	698	74.4	105	11.2	133	14.2	2	0.2	938	100.0
Westmead Private	1669	70.1	442	18.6	255	10.7	14	0.6	2380	100.0
Figtree Private	816	79.5	29	2.8	181	17.6	0	0.0	1026	100.0
Newcastle Private	1732	91.4	0	0.0	162	8.5	2	0.1	1896	100.0
Calvary, Wagga Wagga	528	82.9	28	4.4	81	12.7	0	0.0	637	100.0
Other hospitals	235	86.7	10	3.7	26	9.6	0	0.0	271	100.0
TOTAL	19499	82.8	1831	7.8	2177	9.2	42	0.2	23549	100.0
<b>TOTAL NSW*</b>	<b>77155</b>	<b>80.5</b>	<b>6423</b>	<b>6.7</b>	<b>11559</b>	<b>12.1</b>	<b>700</b>	<b>0.7</b>	<b>95837</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

#Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

\* Total NSW includes live births at home assisted by independent midwives and live births at level 1 hospitals.

## Baby discharge status

Table 51 shows the discharge status of babies for Local Health Districts, and Table 52 for individual hospitals by maternity service level where at least 200 mothers gave birth in 2009.

**Table 51. Baby discharge status by Local Health District of hospital, NSW 2009**

Local Health District	Baby discharge status													
	Discharged		Transferred		Stillborn		Died		Transferred and died		Not stated		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	6604	96.9	120	1.8	58	0.9	31	0.5	0	0.0	0	0.0	6813	100.0
South Western Sydney	10116	96.3	279	2.7	77	0.7	37	0.4	0	0.0	0	0.0	10509	100.0
South Eastern Sydney	7764	96.6	176	2.2	65	0.8	36	0.4	0	0.0	0	0.0	8041	100.0
Illawarra Shoalhaven	3238	96.8	75	2.2	19	0.6	12	0.4	0	0.0	0	0.0	3344	100.0
Western Sydney	8845	95.1	349	3.8	81	0.9	29	0.3	0	0.0	0	0.0	9304	100.0
Nepean Blue Mountains	4710	95.0	200	4.0	31	0.6	16	0.3	0	0.0	0	0.0	4957	100.0
Northern Sydney	4672	96.3	142	2.9	28	0.6	12	0.2	0	0.0	0	0.0	4854	100.0
Central Coast	2740	96.9	66	2.3	15	0.5	7	0.2	0	0.0	0	0.0	2828	100.0
Hunter New England	8176	92.0	600	6.8	70	0.8	40	0.5	0	0.0	0	0.0	8886	100.0
Northern NSW	3553	94.6	174	4.6	22	0.6	8	0.2	0	0.0	0	0.0	3757	100.0
Mid North Coast	2099	93.7	120	5.4	17	0.8	5	0.2	0	0.0	0	0.0	2241	100.0
Southern NSW	1371	97.2	32	2.3	8	0.6	0	0.0	0	0.0	0	0.0	1411	100.0
Murrumbidgee	1865	93.5	116	5.8	12	0.6	1	0.1	0	0.0	0	0.0	1994	100.0
Western NSW	3023	87.3	423	12.2	13	0.4	3	0.1	0	0.0	0	0.0	3462	100.0
Far West	237	97.9	4	1.7	1	0.4	0	0.0	0	0.0	0	0.0	242	100.0
Private Hospitals	23348	98.8	189	0.8	81	0.3	10	0.0	2	0.0	0	0.0	23630	100.0
<b>TOTAL*</b>	<b>92521</b>	<b>95.9</b>	<b>3067</b>	<b>3.2</b>	<b>598</b>	<b>0.6</b>	<b>247</b>	<b>0.3</b>	<b>2</b>	<b>0.0</b>	<b>4</b>	<b>0.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

\*Total includes births at home assisted by independent midwives.

**Table 52. Baby discharge status by hospital and maternity service level, NSW 2009#**

Maternity service level-hospital	Baby discharge status													
	Discharged		Transferred		Stillborn		Died		Transferred and died		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Level 6</b>														
Royal Prince Alfred	4931	96.5	104	2.0	46	0.9	30	0.6	0	0	0	0	5111	100.0
Royal North Shore	1972	93.6	104	4.9	21	1.0	9	0.4	0	0	0	0	2106	100.0
Royal Hospital for Women	4020	95.6	112	2.7	49	1.2	22	0.5	0	0	0	0	4203	100.0
Liverpool	2888	91.9	203	6.5	27	0.9	23	0.7	0	0	0	0	3141	100.0
Nepean	3445	94.3	163	4.5	30	0.8	15	0.4	0	0	0	0	3653	100.0
Westmead	4370	92.5	274	5.8	59	1.2	21	0.4	0	0	0	0	4724	100.0
John Hunter	3535	93.2	184	4.9	36	0.9	37	1.0	0	0	0	0	3792	100.0
<b>TOTAL</b>	<b>25161</b>	<b>94.1</b>	<b>1144</b>	<b>4.3</b>	<b>268</b>	<b>1.0</b>	<b>157</b>	<b>0.6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26730</b>	<b>100.0</b>
<b>Level 5</b>														
Gosford	2526	97.4	46	1.8	15	0.6	7	0.3	0	0	0	0	2594	100.0
St. George	2485	97.2	48	1.9	12	0.5	11	0.4	0	0	0	0	2556	100.0
Blacktown	3161	97.7	55	1.7	14	0.4	6	0.2	0	0	0	0	3236	100.0
Lismore Base	1307	97.5	23	1.7	7	0.5	4	0.3	0	0	0	0	1341	100.0
Tweed Heads	1365	90.1	133	8.8	13	0.9	4	0.3	0	0	0	0	1515	100.0
Port Macquarie Base	741	93.0	45	5.6	7	0.9	4	0.5	0	0	0	0	797	100.0
Wollongong	2292	96.9	57	2.4	12	0.5	5	0.2	0	0	0	0	2366	100.0
Maitland	1341	86.7	188	12.2	16	1.0	1	0.1	0	0	0	0	1546	100.0
Wagga Wagga Base	677	88.5	78	10.2	9	1.2	1	0.1	0	0	0	0	765	100.0
<b>TOTAL</b>	<b>15895</b>	<b>95.1</b>	<b>673</b>	<b>4.0</b>	<b>105</b>	<b>0.6</b>	<b>43</b>	<b>0.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16716</b>	<b>100.0</b>
<b>Level 4</b>														
Canterbury	1673	98.3	16	0.9	12	0.7	1	0.1	0	0	0	0	1702	100.0
Hornsby	1146	98.2	15	1.3	3	0.3	3	0.3	0	0	0	0	1167	100.0
Manly	1127	98.5	14	1.2	3	0.3	0	0	0	0	0	0	1144	100.0

Table 52. (Continued)

Maternity service level–hospital	Baby discharge status													
	Discharged		Transferred		Stillborn		Died		Transferred and died		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mona Vale	311	98.4	4	1.3	1	0.3	0	0	0	0	0	0	316	100.0
Sutherland	1259	98.2	16	1.2	4	0.3	3	0.2	0	0	0	0	1282	100.0
Auburn	1314	97.8	20	1.5	8	0.6	2	0.1	0	0	0	0	1344	100.0
Fairfield	1861	98.3	18	1.0	13	0.7	2	0.1	0	0	0	0	1894	100.0
Campbelltown	2655	98.0	30	1.1	19	0.7	6	0.2	0	0	0	0	2710	100.0
Bankstown-Lidcombe	2149	97.9	22	1.0	17	0.8	6	0.3	0	0	0	0	2194	100.0
Hawkesbury	857	98.7	9	1.0	1	0.1	1	0.1	0	0	0	0	868	100.0
Coffs Harbour	1021	94.0	58	5.3	6	0.6	1	0.1	0	0	0	0	1086	100.0
Grafton Base	486	98.4	6	1.2	2	0.4	0	0	0	0	0	0	494	100.0
Tamworth Base	701	83.1	138	16.4	5	0.6	0	0	0	0	0	0	844	100.0
Manning Base	739	97.2	14	1.8	7	0.9	0	0	0	0	0	0	760	100.0
Dubbo Base	980	80.3	236	19.3	4	0.3	1	0.1	0	0	0	0	1221	100.0
Orange Base	825	91.4	72	8.0	6	0.7	0	0	0	0	0	0	903	100.0
Goulburn Base	290	96.0	10	3.3	2	0.7	0	0	0	0	0	0	302	100.0
Shoalhaven	860	97.0	14	1.6	7	0.8	6	0.7	0	0	0	0	887	100.0
Griffith Base	403	97.1	10	2.4	2	0.5	0	0	0	0	0	0	415	100.0
TOTAL	20657	95.9	722	3.4	122	0.6	32	0.1	0	0	0	0	21533	100.0
<b>Level 3</b>														
Blue Mountains	236	95.9	10	4.1	0	0	0	0	0	0	0	0	246	100.0
Kempsey	291	94.8	13	4.2	3	1.0	0	0	0	0	0	0	307	100.0
Murwillumbah	205	98.1	4	1.9	0	0	0	0	0	0	0	0	209	100.0
Armidale	428	95.7	17	3.8	1	0.2	1	0.2	0	0	0	0	447	100.0
Inverell	247	96.1	7	2.7	2	0.8	1	0.4	0	0	0	0	257	100.0
Mudgee	223	97.4	4	1.7	2	0.9	0	0	0	0	0	0	229	100.0
Bathurst Base	495	87.5	68	12.0	1	0.2	2	0.4	0	0	0	0	566	100.0
Bega	276	98.2	4	1.4	1	0.4	0	0	0	0	0	0	281	100.0
Moruya	309	95.1	12	3.7	4	1.2	0	0	0	0	0	0	325	100.0
Queanbeyan	305	98.7	4	1.3	0	0	0	0	0	0	0	0	309	100.0
Bowral	562	98.8	6	1.1	1	0.2	0	0	0	0	0	0	569	100.0
Broken Hill Base	237	97.9	4	1.7	1	0.4	0	0	0	0	0	0	242	100.0
Other hospitals	2431	95.5	110	4.3	4	0.2	0	0	0	0	0	0	2545	100.0
TOTAL	6245	95.6	263	4.0	20	0.3	4	0.1	0	0	0	0	6532	100.0
<b>Level 2</b>														
Wyong	214	91.5	20	8.5	0	0	0	0	0	0	0	0	234	100.0
Other hospitals	819	95.9	32	3.7	2	0.2	1	0.1	0	0	0	0	854	100.0
TOTAL	1033	94.9	52	4.8	2	0.2	1	0.1	0	0	0	0	1088	100.0
<b>Private</b>														
Mater, North Sydney	2518	99.3	14	0.6	4	0.2	0	0	0	0	0	0	2536	100.0
North Shore Private	2638	98.8	18	0.7	10	0.4	5	0.2	0	0	0	0	2671	100.0
Sydney Adventist	2268	99.2	4	0.2	13	0.6	1	0.0	0	0	0	0	2286	100.0
North Gosford Private	840	99.1	6	0.7	2	0.2	0	0	0	0	0	0	848	100.0
Hurstville Private	957	98.2	17	1.7	1	0.1	0	0	0	0	0	0	975	100.0
Kareena Private	683	99.1	4	0.6	2	0.3	0	0	0	0	0	0	689	100.0
St. George Private	1827	99.0	13	0.7	4	0.2	1	0.1	0	0	0	0	1845	100.0
Prince of Wales Private	2277	99.4	8	0.3	6	0.3	0	0	0	0	0	0	2291	100.0
Norwest Private	1218	98.1	14	1.1	7	0.6	2	0.2	0	0	0	0	1241	100.0
Sydney Southwest Private	1062	99.3	6	0.6	1	0.1	0	0	0	0	0	0	1069	100.0
Nepean Private	921	98.0	16	1.7	2	0.2	0	0	1	0.1	0	0	940	100.0
Westmead Private	2355	98.4	25	1.0	13	0.5	0	0	0	0	0	0	2393	100.0
Figtree Private	1017	98.5	9	0.9	7	0.7	0	0	0	0	0	0	1033	100.0
Newcastle Private	1871	98.3	23	1.2	7	0.4	1	0.1	1	0.1	0	0	1903	100.0
Calvary, Wagga Wagga	632	98.9	5	0.8	2	0.3	0	0	0	0	0	0	639	100.0
Other hospitals	264	97.4	7	2.6	0	0	0	0	0	0	0	0	271	100.0
TOTAL	23348	98.8	189	0.8	81	0.3	10	0.0	2	0.0	0	0	23630	100.0
<b>TOTAL NSW*</b>	<b>92521</b>	<b>95.9</b>	<b>3067</b>	<b>3.2</b>	<b>598</b>	<b>0.6</b>	<b>247</b>	<b>0.3</b>	<b>2</b>	<b>0.0</b>	<b>4</b>	<b>0.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

#Hospitals with more than 200 births are identified individually. Maternity service levels are described on page 13 of the Methods chapter.

\*Total NSW includes births at home assisted by independent midwives and births at level 1 hospitals.



## Postnatal length of stay

Table 53 shows the mother's postnatal length of stay in the hospital of birth for hospitals where at least 200 mothers gave birth in 2009.

**Table 53. Average maternal postnatal length of stay in hospital of birth, NSW 2007-2009#**

Local Health District–hospital	Average postnatal length of stay (days)			Local Health District–hospital	Average postnatal length of stay (days)		
	2007	2008	2009		2007	2008	2009
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	3.1	2.9	2.8	Grafton Base	3.7	3.5	3.6
Royal Prince Alfred	3.6	3.5	3.4	Lismore Base	3.3	3.1	3.2
TOTAL	3.4	3.4	3.2	Murwillumbah	3.5	3.2	3.2
<b>South Western Sydney</b>				Tweed Heads	2.7	2.7	2.7
Fairfield	2.6	2.5	2.5	Other hospitals	3.0	1.0	0.0
Liverpool	3.0	3.0	2.9	TOTAL	3.1	3.0	3.0
Campbelltown	2.7	2.7	2.5	<b>Mid North Coast</b>			
Bankstown-Lidcombe	2.9	2.6	2.5	Coffs Harbour	3.7	3.8	3.7
Bowral	2.6	2.8	2.8	Kempsey	3.1	2.9	2.8
Other hospitals	0.0	7.0	0.0	Port Macquarie Base	3.4	3.2	3.3
TOTAL	2.8	2.7	2.7	Other hospitals	4.4	2.3	2.4
<b>South Eastern Sydney</b>				TOTAL	3.5	3.4	3.4
St. George	3.5	3.1	2.7	<b>Southern NSW</b>			
Sutherland	2.9	2.8	2.7	Bega	2.4	2.3	2.1
Royal Hospital for Women	3.5	3.9	3.7	Goulburn Base	3.3	3.3	3.3
TOTAL	3.4	3.5	3.2	Moruya	2.6	2.6	2.7
<b>Illawarra Shoalhaven</b>				Queanbeyan	3.3	3.3	3.7
Shoalhaven	2.8	2.6	2.5	Other hospitals	0.0	0.0	0.0
Wollongong	2.8	2.8	2.7	TOTAL	3.1	3.0	3.0
Other hospitals	2.0	0.0	0.0	<b>Murrumbidgee</b>			
TOTAL	2.8	2.8	2.6	Griffith Base	3.3	3.1	2.9
<b>Western Sydney</b>				Wagga Wagga Base	2.8	2.8	2.4
Auburn	2.6	2.0	2.0	Other hospitals	1.7	0.0	0.0
Blacktown	2.9	2.8	2.7	TOTAL	3.3	3.1	2.9
Westmead	2.7	2.6	2.4	<b>Western NSW</b>			
TOTAL	2.8	2.6	2.4	Dubbo Base	2.9	2.8	2.6
<b>Nepean Blue Mountains</b>				Mudgee	2.9	3.1	2.5
Blue Mountains	3.3	3.4	3.4	Bathurst Base	3.2	2.9	2.7
Nepean	2.9	2.6	2.4	Orange Base	3.3	3.4	2.9
Hawkesbury	3.2	3.2	3.2	Other hospitals	3.7	2.0	0.9
Lithgow	3.0	2.9	3.2	TOTAL	3.2	3.0	2.7
TOTAL	2.9	2.8	2.6	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	3.5	3.3	3.5
Hornsby	2.5	2.5	2.4	TOTAL	3.5	3.3	3.5
Manly	2.9	3.1	2.7	<b>Private Hospitals</b>			
Mona Vale	2.6	2.7	2.5	Mater, North Sydney	4.6	4.5	4.5
Royal North Shore	3.1	3.0	2.8	North Shore Private	4.4	4.5	4.4
Ryde	0.5	0.9	0.4	Sydney Adventist	4.7	4.7	4.6
TOTAL	2.8	2.8	2.6	North Gosford Private	4.6	4.8	4.6
<b>Central Coast</b>				Hurstville Private	4.7	4.5	4.5
Gosford	2.2	2.2	2.2	Kareena Private	4.5	4.6	4.5
Wyang	1.8	1.3	1.1	St. George Private	4.4	4.3	4.3
TOTAL	2.2	2.2	2.1	Prince of Wales Private	4.8	4.4	4.5
<b>Hunter New England</b>				Norwest Private	4.7	4.3	4.3
Armidale	3.4	3.3	3.1	Sydney Southwest Private	4.5	4.4	4.3
Inverell	3.5	3.0	3.1	Nepean Private	5.2	4.8	4.8
Tamworth Base	3.2	3.1	3.0	Westmead Private	4.0	3.9	3.9
Manning Base	3.3	3.1	3.1	Figtree Private	5.3	5.3	5.3
Maitland	2.5	2.4	2.5	Newcastle Private	4.1	4.1	3.9
John Hunter	3.1	3.0	2.8	Calvary, Wagga Wagga	5.0	5.0	4.5
Other hospitals	2.1	3.2	2.2	Other hospitals	4.9	4.5	4.5
TOTAL	3.0	2.8	2.8	TOTAL	4.5	4.5	4.4
				<b>TOTAL NSW</b>	3.4	3.3	3.2

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Clinical Indicators

Selected clinical indicators for obstetrics are reported in this section. The definitions of the clinical indicators follow those described in Version 6 of the Australian Council on Healthcare Standards Clinical Indicator User's Manual 2008.<sup>1</sup>

### Reference

1. Australian Council on Healthcare Standards. *Obstetrics Indicators—Clinical Indicator Users' Manual*, version 6. Sydney: ACHS, 2008.

## Outcome of selected primipara.

### Indicator 1.1

**Definition:** The number of selected primipara who have a spontaneous vaginal birth as a percentage of the total number of selected primipara who give birth.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>0</sup> to 41<sup>0</sup> weeks gestation.

Table 54 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 54. 1.1 Selected primipara who have a spontaneous vaginal birth by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	58.0	57.2	55.2	Grafton Base	57.5	55.9	57.6
Royal Prince Alfred	53.8	54.0	51.8	Lismore Base	60.3	60.0	59.2
TOTAL	54.7	54.6	52.6	Murwillumbah	61.7	63.7	87.5
<b>South Western Sydney</b>				Tweed Heads	65.2	66.8	67.8
Fairfield	73.5	75.8	71.2	Other hospitals	84.7	98.0	93.3
Liverpool	62.6	65.0	67.6	TOTAL	63.5	64.6	65.8
Campbelltown	67.6	66.9	64.8	<b>Mid North Coast</b>			
Bankstown-Lidcombe	62.1	63.6	62.2	Coffs Harbour	60.2	56.1	51.1
Bowral	48.9	55.6	52.9	Kempsey	73.5	73.8	71.2
Other hospitals	0.0	0.0	100.0	Port Macquarie Base	62.4	57.7	58.4
TOTAL	65.0	66.7	65.7	Other hospitals	100.0	100.0	75.0
<b>South Eastern Sydney</b>				TOTAL	63.3	59.2	56.0
St. George	57.6	50.9	55.2	<b>Southern NSW</b>			
Sutherland	66.2	70.3	57.4	Bega	61.5	56.3	68.4
Royal Hospital for Women	49.5	49.4	51.4	Goulburn Base	52.0	55.6	38.0
TOTAL	54.6	53.1	53.7	Moruya	58.2	53.5	54.5
<b>Illawarra Shoalhaven</b>				Queanbeyan	68.0	63.6	60.0
Shoalhaven	57.2	55.8	57.1	Other hospitals	67.1	69.3	75.6
Wollongong	55.9	59.8	59.0	TOTAL	61.4	60.1	57.6
Other hospitals	58.1	60.0	41.7	<b>Murrumbidgee</b>			
TOTAL	56.2	58.9	58.0	Griffith Base	64.2	58.6	59.4
<b>Western Sydney</b>				Wagga Wagga Base	54.3	49.1	51.1
Auburn	69.2	70.8	63.7	Other hospitals	49.5	52.7	51.5
Blacktown	54.8	54.4	50.7	TOTAL	54.8	52.7	53.2
Westmead	57.2	50.9	50.6	<b>Western NSW</b>			
TOTAL	58.4	54.8	52.4	Dubbo Base	54.8	57.1	62.2
<b>Nepean Blue Mountains</b>				Mudgee	56.7	57.9	64.3
Blue Mountains	55.7	47.2	51.1	Bathurst Base	64.9	66.7	59.4
Nepean	49.0	47.5	49.0	Orange Base	50.6	56.4	46.0
Hawkesbury	50.0	45.9	44.8	Other hospitals	56.5	64.8	60.0
Other hospitals	63.0	59.6	64.5	TOTAL	55.7	59.8	57.6
TOTAL	50.2	47.8	48.6	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	53.8	47.9	52.9
Hornsby	52.3	49.0	53.6	TOTAL	53.8	47.9	52.9
Manly	63.4	55.0	49.6	<b>Private Hospitals</b>			
Mona Vale	44.2	45.8	48.3	Mater, North Sydney	29.8	28.2	30.1
Royal North Shore	54.5	54.8	46.7	North Shore Private	33.9	31.3	36.1
Other hospitals	100.0	100.0	100.0	Sydney Adventist	44.0	42.8	47.2
TOTAL	55.0	53.6	50.2	North Gosford Private	34.1	30.7	29.8
<b>Central Coast</b>				Hurstville Private	35.5	36.7	39.9
Gosford	43.7	46.4	43.6	Kareena Private	21.9	20.9	35.3
Wyong	83.8	95.8	100.0	St. George Private	35.1	31.3	25.6
TOTAL	47.6	48.2	46.9	Prince of Wales Private	39.7	40.8	35.5
<b>Hunter New England</b>				Norwest Private	41.9	47.5	40.1
Armidale	71.6	59.5	73.5	Sydney Southwest Private	55.2	51.8	48.9
Inverell	43.1	39.2	42.3	Nepean Private	44.1	42.1	48.0
Tamworth Base	46.4	45.3	53.7	Westmead Private	43.5	40.6	39.4
Manning Base	59.7	63.0	57.3	Figtree Private	41.7	45.8	38.3
Maitland	58.0	56.0	50.2	Newcastle Private	41.8	41.7	45.8
John Hunter	60.4	59.9	59.5	Calvary, Wagga Wagga	36.8	37.1	39.2
Other hospitals	69.5	68.2	71.3	Other hospitals	31.9	43.5	34.7
TOTAL	59.8	58.9	58.6	TOTAL	38.9	38.0	38.1
				<b>TOTAL NSW*</b>	52.7	52.1	51.4

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Outcome of selected primipara. Indicator 1.2

Definition: The number of selected primipara who undergo induction of labour as a percentage of the total number of selected primipara who give birth.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>o</sup> to 41<sup>o</sup> weeks gestation.

Table 55 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 55. 1.2 Selected primipara who undergo induction of labour by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	28.5	27.8	28.2	Grafton Base	32.5	40.5	31.4
Royal Prince Alfred	25.7	25.1	27.6	Lismore Base	33.9	24.0	25.6
TOTAL	26.3	25.6	27.8	Murwillumbah	20.2	21.6	10.0
<b>South Western Sydney</b>				Tweed Heads	27.8	26.6	30.6
Fairfield	23.7	19.0	23.1	Other hospitals	0.0	0.0	0.0
Liverpool	27.3	31.2	28.9	TOTAL	28.0	25.4	26.8
Campbelltown	30.6	27.3	32.2	<b>Mid North Coast</b>			
Bankstown-Lidcombe	33.5	28.3	33.8	Coffs Harbour	20.8	23.5	23.8
Bowral	35.1	36.8	21.4	Kempsey	8.2	31.1	23.7
Other hospitals	0.0	0.0	0.0	Port Macquarie Base	32.5	24.5	28.1
TOTAL	29.1	27.5	29.4	Other hospitals	0.0	0.0	0.0
<b>South Eastern Sydney</b>				TOTAL	23.9	24.4	25.1
St. George	35.1	39.7	35.9	<b>Southern NSW</b>			
Sutherland	30.5	29.9	37.7	Bega	33.3	27.1	29.8
Royal Hospital for Women	35.2	33.8	32.8	Goulburn Base	8.0	9.7	15.5
TOTAL	34.5	35.1	34.7	Moruya	27.8	29.6	24.7
<b>Illawarra Shoalhaven</b>				Queanbeyan	26.7	29.9	15.6
Shoalhaven	28.9	32.0	30.7	Other hospitals	22.0	18.7	13.3
Wollongong	39.7	43.2	43.7	TOTAL	22.6	22.7	19.7
Other hospitals	54.8	30.0	37.5	<b>Murrumbidgee</b>			
TOTAL	38.1	40.5	40.5	Griffith Base	19.5	15.2	24.8
<b>Western Sydney</b>				Wagga Wagga Base	31.4	26.0	35.1
Auburn	32.3	29.5	30.3	Other hospitals	32.4	27.3	30.7
Blacktown	43.2	40.4	43.9	TOTAL	28.9	24.0	31.1
Westmead	43.0	44.5	42.7	<b>Western NSW</b>			
TOTAL	41.3	41.1	41.4	Dubbo Base	31.2	34.5	29.7
<b>Nepean Blue Mountains</b>				Mudgee	28.3	31.6	37.5
Blue Mountains	35.4	26.4	51.1	Bathurst Base	23.9	16.7	16.9
Nepean	37.9	41.3	40.7	Orange Base	35.9	33.6	38.6
Hawkesbury	43.0	39.7	42.3	Other hospitals	35.5	27.0	26.0
Other hospitals	41.3	22.8	35.5	TOTAL	31.8	29.7	29.3
TOTAL	38.9	39.5	41.3	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	24.6	15.5	19.1
Hornsby	28.8	37.6	34.5	TOTAL	24.6	15.5	19.1
Manly	32.8	30.7	31.9	<b>Private Hospitals</b>			
Mona Vale	46.5	43.2	42.7	Mater, North Sydney	29.7	30.7	28.2
Royal North Shore	33.0	35.7	37.1	North Shore Private	27.2	30.3	30.6
Other hospitals	0.0	0.0	0.0	Sydney Adventist	35.8	32.0	33.9
TOTAL	33.2	35.1	34.8	North Gosford Private	31.8	29.9	30.3
<b>Central Coast</b>				Hurstville Private	36.2	36.3	30.5
Gosford	36.4	38.2	39.8	Kareena Private	36.3	45.0	40.6
Wyong	0.0	0.0	0.0	St. George Private	35.5	32.0	36.6
TOTAL	32.9	36.8	37.5	Prince of Wales Private	28.1	25.2	28.9
<b>Hunter New England</b>				Norwest Private	46.1	47.2	45.5
Armidale	33.3	35.5	33.7	Sydney Southwest Private	33.4	36.3	35.9
Inverell	31.4	33.3	51.9	Nepean Private	34.0	40.7	40.6
Tamworth Base	37.5	44.8	48.3	Westmead Private	37.2	34.3	34.4
Manning Base	23.7	33.6	37.6	Figtree Private	51.0	49.8	52.3
Maitland	39.1	40.3	38.5	Newcastle Private	30.1	33.3	30.3
John Hunter	28.5	34.0	34.2	Calvary, Wagga Wagga	27.1	26.9	26.7
Other hospitals	23.8	26.8	27.5	Other hospitals	33.3	37.1	36.1
TOTAL	30.8	35.0	36.2	TOTAL	33.9	33.9	34.0
				<b>TOTAL NSW*</b>	32.8	33.0	33.8

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Outcome of selected primipara.

### Indicator 1.3

Definition: The number of selected primipara who undergo an instrumental vaginal birth as a percentage of the total number of selected primipara who give birth.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>o</sup> to 41<sup>o</sup> weeks gestation.

Table 56 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 56. 1.3 Selected primipara who undergo an instrumental vaginal birth by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	22.1	26.1	24.0	Grafton Base	17.5	17.1	17.8
Royal Prince Alfred	22.7	20.5	22.7	Lismore Base	12.4	13.2	15.8
TOTAL	22.6	21.7	23.0	Murwillumbah	11.7	17.6	7.5
<b>South Western Sydney</b>				Tweed Heads	15.8	15.6	13.4
Fairfield	11.9	11.2	16.6	Other hospitals	15.3	2.0	6.7
Liverpool	19.8	15.6	16.7	TOTAL	14.4	14.5	14.2
Campbelltown	9.7	12.8	14.2	<b>Mid North Coast</b>			
Bankstown-Lidcombe	21.4	20.9	21.3	Coffs Harbour	16.3	18.6	23.4
Bowral	30.5	29.2	27.9	Kempsey	6.1	3.3	10.2
Other hospitals	0.0	0.0	0.0	Port Macquarie Base	17.3	22.1	20.0
TOTAL	17.0	16.0	17.5	Other hospitals	0.0	0.0	25.0
<b>South Eastern Sydney</b>				TOTAL	15.3	18.0	20.8
St. George	23.6	25.6	24.4	<b>Southern NSW</b>			
Sutherland	16.4	16.4	25.8	Bega	10.3	25.0	8.8
Royal Hospital for Women	26.0	26.1	27.1	Goulburn Base	18.7	26.4	32.4
TOTAL	23.8	24.5	26.0	Moruya	21.5	25.4	20.8
<b>Illawarra Shoalhaven</b>				Queanbeyan	18.7	23.4	26.7
Shoalhaven	15.7	17.1	20.0	Other hospitals	13.4	12.0	11.1
Wollongong	20.3	20.2	18.1	TOTAL	17.1	22.2	21.5
Other hospitals	22.6	35.0	37.5	<b>Murrumbidgee</b>			
TOTAL	19.5	19.9	19.1	Griffith Base	23.6	19.2	17.8
<b>Western Sydney</b>				Wagga Wagga Base	20.0	22.5	20.7
Auburn	13.7	14.9	17.9	Other hospitals	23.5	20.6	19.0
Blacktown	20.0	22.5	25.7	TOTAL	22.3	21.0	19.4
Westmead	22.0	27.1	24.8	<b>Western NSW</b>			
TOTAL	20.0	23.9	24.1	Dubbo Base	17.6	17.5	17.8
<b>Nepean Blue Mountains</b>				Mudgee	26.7	23.7	16.1
Blue Mountains	22.8	18.9	17.8	Bathurst Base	7.5	14.6	13.8
Nepean	22.1	22.8	21.9	Orange Base	21.2	20.0	23.8
Hawkesbury	15.2	16.3	22.6	Other hospitals	16.9	11.5	6.0
Other hospitals	10.9	10.5	9.7	TOTAL	17.5	17.3	16.8
TOTAL	20.4	20.9	21.5	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	12.3	14.1	10.3
Hornsby	24.0	20.4	23.3	TOTAL	12.3	14.1	10.3
Manly	18.8	23.0	26.2	<b>Private Hospitals</b>			
Mona Vale	35.0	28.1	28.1	Mater, North Sydney	35.9	35.9	30.9
Royal North Shore	19.5	18.3	23.3	North Shore Private	28.1	29.2	25.9
Other hospitals	0.0	0.0	0.0	Sydney Adventist	22.1	27.8	25.2
TOTAL	22.1	20.4	23.7	North Gosford Private	22.4	21.2	24.1
<b>Central Coast</b>				Hurstville Private	29.1	34.2	24.0
Gosford	21.0	22.1	22.6	Kareena Private	33.6	40.3	27.1
Wyong	10.3	4.2	0.0	St. George Private	29.6	34.8	32.4
TOTAL	20.0	21.4	21.3	Prince of Wales Private	24.6	23.0	26.2
<b>Hunter New England</b>				Norwest Private	35.6	30.2	29.4
Armidale	11.8	15.7	8.4	Sydney Southwest Private	22.1	23.7	27.1
Inverell	19.6	19.6	25.0	Nepean Private	26.5	27.5	22.1
Tamworth Base	31.3	27.9	32.0	Westmead Private	28.7	27.0	28.6
Manning Base	21.6	16.4	20.4	Figtree Private	31.1	31.6	27.7
Maitland	19.4	16.8	18.1	Newcastle Private	24.5	28.8	25.9
John Hunter	22.2	23.1	20.0	Calvary, Wagga Wagga	33.3	29.3	33.5
Other hospitals	17.8	14.6	12.0	Other hospitals	34.8	29.0	40.3
TOTAL	21.4	20.0	19.5	TOTAL	28.2	29.3	27.6
				<b>TOTAL NSW*</b>	22.3	22.7	22.8

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Outcome of selected primipara.

### Indicator 1.4

Definition: The number of selected primipara undergoing caesarean section birth as a percentage of the total number of selected primipara who give birth.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>o</sup> to 41<sup>o</sup> weeks gestation.

Table 57 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 57. 1.4 Selected primipara undergoing caesarean section by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	19.9	16.7	20.8	Grafton Base	25.0	27.0	24.6
Royal Prince Alfred	23.3	25.5	25.4	Lismore Base	27.0	26.8	25.0
TOTAL	22.6	23.6	24.4	Murwillumbah	26.6	18.6	5.0
<b>South Western Sydney</b>				Tweed Heads	19.0	17.3	18.7
Fairfield	14.7	13.0	12.2	Other hospitals	0.0	0.0	0.0
Liverpool	17.6	19.4	15.7	TOTAL	22.0	20.9	20.0
Campbelltown	22.8	20.3	21.0	<b>Mid North Coast</b>			
Bankstown-Lidcombe	16.5	15.3	16.5	Coffs Harbour	23.5	25.3	25.5
Bowral	20.1	15.2	19.3	Kempsey	20.4	21.3	18.6
Other hospitals	0.0	0.0	0.0	Port Macquarie Base	20.3	20.2	21.6
TOTAL	18.0	17.2	16.8	Other hospitals	0.0	0.0	0.0
<b>South Eastern Sydney</b>				TOTAL	21.4	22.6	23.2
St. George	18.8	23.5	20.3	<b>Southern NSW</b>			
Sutherland	17.4	13.3	16.7	Bega	28.2	18.8	22.8
Royal Hospital for Women	24.5	24.5	21.5	Goulburn Base	29.3	18.1	29.6
TOTAL	21.6	22.5	20.2	Moruya	20.3	21.1	24.7
<b>Illawarra Shoalhaven</b>				Queanbeyan	13.3	13.0	13.3
Shoalhaven	27.1	27.1	22.9	Other hospitals	19.5	17.3	13.3
Wollongong	23.8	20.0	23.0	TOTAL	21.4	17.5	20.9
Other hospitals	19.4	5.0	20.8	<b>Murrumbidgee</b>			
TOTAL	24.3	21.2	22.9	Griffith Base	12.2	22.2	22.8
<b>Western Sydney</b>				Wagga Wagga Base	25.7	28.4	28.2
Auburn	17.1	14.3	18.4	Other hospitals	27.0	26.7	29.4
Blacktown	25.2	23.1	23.7	TOTAL	22.9	26.3	27.4
Westmead	20.8	22.1	24.6	<b>Western NSW</b>			
TOTAL	21.6	21.3	23.4	Dubbo Base	25.1	25.0	19.9
<b>Nepean Blue Mountains</b>				Mudgee	16.7	18.4	19.6
Blue Mountains	21.5	34.0	31.1	Bathurst Base	27.6	18.8	26.9
Nepean	28.9	29.7	29.2	Orange Base	27.7	23.6	29.6
Hawkesbury	34.8	37.8	32.6	Other hospitals	26.6	23.8	34.0
Other hospitals	26.1	29.8	25.8	TOTAL	25.8	22.7	25.4
TOTAL	29.4	31.3	29.9	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	33.8	36.6	36.8
Hornsby	23.8	30.7	23.1	TOTAL	33.8	36.6	36.8
Manly	17.8	22.0	24.3	<b>Private Hospitals</b>			
Mona Vale	20.7	26.0	23.6	Mater, North Sydney	34.2	35.9	39.0
Royal North Shore	26.0	27.0	30.1	North Shore Private	37.8	39.5	37.9
Other hospitals	0.0	0.0	0.0	Sydney Adventist	33.9	29.4	27.7
TOTAL	23.0	26.0	26.0	North Gosford Private	43.1	48.1	46.1
<b>Central Coast</b>				Hurstville Private	35.1	29.1	36.1
Gosford	35.3	31.5	33.8	Kareena Private	44.5	38.7	37.2
Wyong	5.9	0.0	0.0	St. George Private	34.8	33.9	42.0
TOTAL	32.4	30.4	31.8	Prince of Wales Private	35.5	36.0	38.3
<b>Hunter New England</b>				Norwest Private	22.5	22.0	30.5
Armidale	16.7	24.8	18.1	Sydney Southwest Private	22.4	23.7	24.0
Inverell	37.3	41.2	32.7	Nepean Private	29.4	30.4	29.9
Tamworth Base	22.3	26.7	14.3	Westmead Private	27.6	32.3	32.1
Manning Base	18.0	20.5	22.3	Figtree Private	26.8	22.5	34.0
Maitland	22.5	27.3	31.6	Newcastle Private	33.8	29.5	28.3
John Hunter	17.4	17.0	20.5	Calvary, Wagga Wagga	29.9	33.5	27.3
Other hospitals	12.8	17.2	16.7	Other hospitals	31.9	27.4	25.0
TOTAL	18.7	21.1	21.9	TOTAL	32.7	32.6	34.2
				<b>TOTAL NSW*</b>	24.9	25.1	25.7

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Vaginal birth following caesarean section. Indicator 2.1

Definition: Total number of women delivering vaginally following a previous primary caesarean section as a percentage of the total number of women delivering who have had a previous primary caesarean section and no intervening pregnancies greater than 20 weeks gestation.

Table 58 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 58. 2.1 Vaginal delivery after previous primary caesarean section by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	16.9	12.0	15.6	Grafton Base	12.2	7.7	17.6
Royal Prince Alfred	13.5	11.0	14.3	Lismore Base	20.1	18.4	23.0
TOTAL	14.3	11.3	14.7	Murwillumbah	23.3	12.8	6.9
<b>South Western Sydney</b>				Tweed Heads	19.1	17.2	16.6
Fairfield	5.4	0.0	2.8	Other hospitals	100.0	0.0	100.0
Liverpool	20.5	27.7	17.1	TOTAL	19.7	16.2	18.9
Campbelltown	15.6	22.6	12.5	<b>Mid North Coast</b>			
Bankstown-Lidcombe	11.0	22.0	12.2	Coffs Harbour	10.0	14.6	14.7
Bowral	20.7	11.9	14.3	Kempsey	30.4	16.7	8.7
Other hospitals	15.3	20.2	12.9	Port Macquarie Base	21.3	14.8	9.7
TOTAL	18.0	17.2	16.8	Other hospitals	17.0	15.0	12.6
<b>South Eastern Sydney</b>				TOTAL	21.4	22.6	23.2
St. George	23.0	16.6	19.3	<b>Southern NSW</b>			
Sutherland	6.7	6.1	1.3	Bega	9.1	18.2	38.1
Royal Hospital for Women	8.3	9.8	10.7	Goulburn Base	26.5	30.3	22.6
TOTAL	13.1	11.5	12.6	Moruya	12.5	22.5	7.4
<b>Illawarra Shoalhaven</b>				Queanbeyan	5.3	16.7	14.3
Shoalhaven	6.3	3.4	11.0	Other hospitals	16.7	25.0	31.8
Wollongong	25.3	23.4	20.9	TOTAL	16.1	23.7	22.1
Other hospitals	9.1	8.3	50.0	<b>Murrumbidgee</b>			
TOTAL	18.3	16.7	18.0	Griffith Base	12.8	17.6	20.0
<b>Western Sydney</b>				Wagga Wagga Base	8.7	13.3	11.0
Auburn	4.0	1.6	3.1	Other hospitals	5.3	10.7	9.0
Blacktown	18.4	22.5	18.0	TOTAL	8.3	12.9	12.4
Westmead	20.8	16.9	17.4	<b>Western NSW</b>			
TOTAL	18.7	17.6	16.6	Dubbo Base	25.3	21.9	12.9
<b>Nepean Blue Mountains</b>				Mudgee	0.0	0.0	15.8
Blue Mountains	0.0	0.0	0.0	Bathurst Base	24.4	13.4	14.3
Nepean	14.8	16.5	17.8	Orange Base	8.9	12.4	12.3
Hawkesbury	14.1	14.7	14.6	Other hospitals	16.7	6.4	17.2
Other hospitals	15.6	16.7	13.3	TOTAL	17.4	13.8	13.8
TOTAL	14.3	15.7	16.0	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	6.5	13.8	13.0
Hornsby	9.4	11.1	9.6	TOTAL	6.5	13.8	13.0
Manly	17.3	9.0	11.3	<b>Private Hospitals</b>			
Mona Vale	4.2	13.0	16.0	Mater, North Sydney	3.6	3.9	4.3
Royal North Shore	11.2	9.8	9.4	North Shore Private	3.8	4.2	6.2
Other hospitals	10.4	10.6	10.3	Sydney Adventist	6.4	9.2	8.5
TOTAL	23.0	26.0	26.0	North Gosford Private	6.8	6.5	3.9
<b>Central Coast</b>				Hurstville Private	2.9	2.8	6.1
Gosford	5.7	8.6	7.0	Kareena Private	1.9	0.0	3.0
Wyong	100.0	0.0	0.0	St. George Private	6.4	6.5	4.0
TOTAL	6.3	8.6	7.0	Prince of Wales Private	4.8	4.3	3.4
<b>Hunter New England</b>				Norwest Private	11.7	10.8	11.4
Armidale	16.3	27.8	15.4	Sydney Southwest Private	5.1	5.9	3.3
Inverell	13.5	14.3	9.1	Nepean Private	10.4	11.5	5.8
Tamworth Base	13.1	8.2	23.8	Westmead Private	8.3	5.1	8.3
Manning Base	29.5	27.7	10.8	Figtree Private	6.4	7.1	5.9
Maitland	16.4	17.1	19.4	Newcastle Private	9.3	11.4	12.4
John Hunter	21.7	27.3	23.7	Calvary, Wagga Wagga	14.3	7.2	12.5
Other hospitals	20.0	14.4	14.7	Other hospitals	2.0	7.8	8.5
TOTAL	19.6	21.5	19.8	TOTAL	6.2	6.3	6.5
				<b>TOTAL NSW*</b>	12.3	12.5	12.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Major perineal tears and surgical repair of the perineum.

### Indicator 3.1

Definition: Total number of selected primipara with an intact perineum as a percentage of the total number of selected primipara delivering vaginally.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>o</sup> to 41<sup>o</sup> weeks gestation.

Table 59 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 59. 3.1 Selected primipara delivering vaginally with an intact perineum by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	5.0	3.2	5.0	Grafton Base	16.7	23.5	19.1
Royal Prince Alfred	4.7	6.5	5.0	Lismore Base	11.7	11.8	8.9
TOTAL	4.8	5.7	5.0	Murwillumbah	21.7	27.7	26.3
<b>South Western Sydney</b>				Tweed Heads	20.8	13.6	10.8
Fairfield	10.0	14.5	11.6	Other hospitals	16.9	13.7	17.8
Liverpool	7.5	9.4	8.4	TOTAL	17.2	15.6	12.3
Campbelltown	8.1	12.9	16.5	<b>Mid North Coast</b>			
Bankstown-Lidcombe	5.5	5.3	8.2	Coffs Harbour	18.9	17.8	11.0
Bowral	15.9	14.5	15.0	Kempsey	25.6	17.0	16.7
Other hospitals	0.0	0.0	100.0	Port Macquarie Base	20.4	19.9	20.0
TOTAL	8.3	10.7	11.5	Other hospitals	30.0	28.6	0.0
<b>South Eastern Sydney</b>				TOTAL	20.5	18.7	14.7
St. George	11.6	9.6	8.6	<b>Southern NSW</b>			
Sutherland	16.1	10.9	10.9	Bega	17.9	23.1	27.3
Royal Hospital for Women	9.1	7.1	6.2	Goulburn Base	13.2	3.4	8.0
TOTAL	11.0	8.5	7.9	Moruya	22.2	19.6	22.4
<b>Illawarra Shoalhaven</b>				Queanbeyan	15.4	17.9	21.8
Shoalhaven	9.9	15.2	8.9	Other hospitals	25.8	32.8	38.5
Wollongong	6.7	12.5	13.9	TOTAL	19.3	19.1	22.7
Other hospitals	28.0	10.5	15.8	<b>Murrumbidgee</b>			
TOTAL	8.1	13.0	12.7	Griffith Base	13.9	18.2	11.5
<b>Western Sydney</b>				Wagga Wagga Base	18.5	19.0	14.4
Auburn	13.6	7.7	11.1	Other hospitals	25.5	19.0	21.7
Blacktown	6.6	5.5	5.7	TOTAL	19.9	18.8	16.4
Westmead	5.2	6.5	5.2	<b>Western NSW</b>			
TOTAL	7.1	6.4	6.2	Dubbo Base	13.4	13.3	21.4
<b>Nepean Blue Mountains</b>				Mudgee	6.0	16.1	28.9
Blue Mountains	4.8	11.4	12.9	Bathurst Base	19.6	12.8	17.1
Nepean	8.0	7.9	7.9	Orange Base	18.7	16.1	12.8
Hawkesbury	13.3	10.0	5.6	Other hospitals	18.7	11.8	13.6
Other hospitals	23.5	20.0	8.7	TOTAL	16.0	14.0	18.3
TOTAL	9.3	8.9	7.7	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	23.3	22.2	25.6
Hornsby	8.2	7.1	6.4	TOTAL	23.3	22.2	25.6
Manly	8.1	6.6	8.3	<b>Private Hospitals</b>			
Mona Vale	14.0	12.0	14.7	Mater, North Sydney	7.3	7.6	7.0
Royal North Shore	9.2	7.5	5.3	North Shore Private	10.3	6.3	12.6
Other hospitals	8.0	17.8	9.1	Sydney Adventist	7.1	6.6	5.4
TOTAL	9.4	8.2	6.9	North Gosford Private	16.6	20.8	20.3
<b>Central Coast</b>				Hurstville Private	4.1	6.1	9.7
Gosford	8.4	6.8	5.3	Kareena Private	4.9	14.5	10.0
Wyong	7.8	0.0	9.3	St. George Private	12.9	6.2	7.5
TOTAL	8.4	6.4	5.7	Prince of Wales Private	12.5	12.1	13.3
<b>Hunter New England</b>				Norwest Private	9.8	12.6	12.5
Armidale	20.0	16.5	14.7	Sydney Southwest Private	12.0	12.0	6.8
Inverell	15.6	20.0	14.3	Nepean Private	5.4	11.6	10.7
Tamworth Base	13.8	4.8	7.5	Westmead Private	7.1	7.8	9.7
Manning Base	19.3	11.2	13.1	Figtree Private	5.9	10.7	10.1
Maitland	9.0	9.3	6.5	Newcastle Private	11.8	17.6	18.4
John Hunter	6.9	5.0	6.0	Calvary, Wagga Wagga	10.9	11.7	4.7
Other hospitals	16.2	13.8	8.8	Other hospitals	8.7	6.7	11.1
TOTAL	11.1	8.5	7.7	TOTAL	9.4	10.0	10.4
				<b>TOTAL NSW*</b>	10.0	9.8	9.6

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.



## Major perineal tears and surgical repair of the perineum.

### Indicator 3.2

Definition: Total number of selected primipara undergoing episiotomy and no perineal tear while giving birth vaginally as a percentage of the total number of selected primipara delivering vaginally.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>0</sup> to 41<sup>0</sup> weeks gestation.

Table 60 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 60. 3.2 Selected primipara undergoing episiotomy and no perineal tear by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	17.3	19.8	29.8	Grafton Base	18.9	21.0	22.5
Royal Prince Alfred	16.6	17.4	16.6	Lismore Base	17.5	12.2	18.1
TOTAL	16.8	17.9	19.7	Murwillumbah	8.7	16.9	10.5
<b>South Western Sydney</b>				Tweed Heads	18.5	14.0	14.9
Fairfield	32.6	21.2	30.5	Other hospitals	11.9	7.8	15.6
Liverpool	33.5	31.3	28.7	TOTAL	16.8	14.1	16.6
Campbelltown	16.9	19.2	20.3	<b>Mid North Coast</b>			
Bankstown-Lidcombe	29.2	30.2	32.3	Coffs Harbour	11.2	15.0	24.3
Bowral	13.0	15.9	18.6	Kempsey	7.7	8.5	4.2
Other hospitals	0.0	0.0	0.0	Port Macquarie Base	17.2	19.9	16.6
TOTAL	27.7	25.1	27.2	Other hospitals	0.0	14.3	0.0
<b>South Eastern Sydney</b>				TOTAL	13.1	16.2	18.9
St. George	14.1	14.5	19.4	<b>Southern NSW</b>			
Sutherland	9.3	8.0	16.8	Bega	10.7	7.7	13.6
Royal Hospital for Women	26.3	27.5	27.0	Goulburn Base	50.9	66.1	74.0
TOTAL	19.6	20.0	22.6	Moruya	15.9	19.6	20.7
<b>Illawarra Shoalhaven</b>				Queanbeyan	10.8	7.5	10.3
Shoalhaven	18.2	18.2	18.4	Other hospitals	7.6	11.5	2.6
Wollongong	18.5	12.7	14.1	TOTAL	18.9	23.0	23.8
Other hospitals	8.0	10.5	10.5	<b>Murrumbidgee</b>			
TOTAL	18.1	13.8	15.0	Griffith Base	23.1	20.8	20.5
<b>Western Sydney</b>				Wagga Wagga Base	18.5	19.0	20.0
Auburn	19.2	19.3	24.8	Other hospitals	22.1	21.5	27.0
Blacktown	32.8	26.1	26.6	TOTAL	21.2	20.4	22.6
Westmead	34.3	36.6	34.7	<b>Western NSW</b>			
TOTAL	31.2	30.6	30.7	Dubbo Base	32.2	34.0	23.1
<b>Nepean Blue Mountains</b>				Mudgee	30.0	24.2	8.9
Blue Mountains	8.1	11.4	9.7	Bathurst Base	8.2	17.1	20.5
Nepean	25.0	24.9	21.3	Orange Base	14.5	14.3	15.0
Hawkesbury	14.7	16.2	22.4	Other hospitals	17.6	12.9	7.6
Other hospitals	32.4	25.0	30.4	TOTAL	21.1	21.5	18.0
TOTAL	22.3	22.9	21.3	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	16.3	17.8	16.3
Hornsby	22.3	18.6	21.5	TOTAL	16.3	17.8	16.3
Manly	11.2	17.8	14.4	<b>Private Hospitals</b>			
Mona Vale	10.5	9.9	8.8	Mater, North Sydney	40.5	45.2	43.6
Royal North Shore	13.4	20.9	24.0	North Shore Private	42.9	46.8	38.7
Other hospitals	0.0	2.2	0.0	Sydney Adventist	37.3	36.9	34.6
TOTAL	14.4	17.7	19.6	North Gosford Private	31.7	25.8	25.2
<b>Central Coast</b>				Hurstville Private	43.9	44.2	36.1
Gosford	11.4	9.8	13.2	Kareena Private	45.7	38.5	32.3
Wyong	7.8	4.2	4.7	St. George Private	24.7	36.0	32.0
TOTAL	10.9	9.5	12.5	Prince of Wales Private	34.7	32.9	34.4
<b>Hunter New England</b>				Norwest Private	39.2	33.3	27.5
Armidale	20.0	17.6	19.1	Sydney Southwest Private	43.1	45.6	46.8
Inverell	53.1	46.7	48.6	Nepean Private	52.4	48.9	47.7
Tamworth Base	31.0	31.7	17.8	Westmead Private	51.2	50.9	49.8
Manning Base	10.5	12.9	12.3	Figtree Private	48.9	51.5	53.5
Maitland	14.4	10.3	12.2	Newcastle Private	32.2	26.0	22.4
John Hunter	11.1	13.4	14.9	Calvary, Wagga Wagga	27.7	20.7	29.7
Other hospitals	16.5	11.9	11.6	Other hospitals	30.4	48.9	44.4
TOTAL	15.8	14.8	15.0	TOTAL	39.7	40.0	37.8
				<b>TOTAL NSW*</b>	24.9	25.0	25.4

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.



## Major perineal tears and surgical repair of the perineum.

### Indicator 3.3

Definition: Total number of selected primipara sustaining a perineal tear and no episiotomy as a percentage of the total number of selected primipara delivering vaginally.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>o</sup> to 41<sup>o</sup> weeks gestation.

Table 61 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 61. 3.3 Selected primipara sustaining a perineal tear and no episiotomy by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	65.7	63.7	54.9	Grafton Base	53.3	49.4	51.7
Royal Prince Alfred	70.6	69.0	72.4	Lismore Base	64.6	66.8	68.4
TOTAL	69.5	67.8	68.3	Murwillumbah	59.4	48.2	55.3
<b>South Western Sydney</b>				Tweed Heads	54.5	62.8	66.1
Fairfield	52.3	60.2	52.7	Other hospitals	64.4	76.5	64.4
Liverpool	51.1	49.0	51.5	TOTAL	58.7	61.9	64.5
Campbelltown	68.2	60.0	56.4	<b>Mid North Coast</b>			
Bankstown-Lidcombe	57.2	57.8	49.1	Coffs Harbour	53.8	57.7	51.9
Bowral	67.4	62.1	63.7	Kempsey	66.7	70.2	70.8
Other hospitals	0.0	0.0	0.0	Port Macquarie Base	54.8	54.8	57.2
TOTAL	57.2	56.7	53.0	Other hospitals	70.0	57.1	100.0
<b>South Eastern Sydney</b>				TOTAL	56.0	58.0	56.5
St. George	64.4	64.6	59.8	<b>Southern NSW</b>			
Sutherland	70.5	73.7	66.2	Bega	67.9	64.1	47.7
Royal Hospital for Women	57.4	58.2	58.4	Goulburn Base	28.3	22.0	14.0
TOTAL	61.8	62.9	60.3	Moruya	58.7	51.8	50.0
<b>Illawarra Shoalhaven</b>				Queanbeyan	69.2	68.7	59.0
Shoalhaven	66.1	59.1	62.0	Other hospitals	59.1	55.7	59.0
Wollongong	70.6	68.4	64.9	TOTAL	56.4	52.1	46.8
Other hospitals	44.0	57.9	63.2	<b>Murrumbidgee</b>			
TOTAL	68.7	66.2	64.2	Griffith Base	58.3	50.6	62.8
<b>Western Sydney</b>				Wagga Wagga Base	52.3	52.9	57.6
Auburn	55.5	63.3	53.7	Other hospitals	47.0	50.4	43.5
Blacktown	49.2	57.7	56.5	TOTAL	51.9	51.4	53.8
Westmead	47.8	45.4	46.4	<b>Western NSW</b>			
TOTAL	49.5	52.0	50.7	Dubbo Base	45.0	43.1	45.0
<b>Nepean Blue Mountains</b>				Mudgee	56.0	53.2	51.1
Blue Mountains	82.3	65.7	71.0	Bathurst Base	62.9	64.1	56.4
Nepean	54.9	58.7	59.6	Orange Base	50.6	58.9	51.9
Hawkesbury	63.3	64.6	57.8	Other hospitals	53.8	63.4	68.2
Other hospitals	41.2	45.0	56.5	TOTAL	51.7	55.3	51.9
TOTAL	57.8	59.3	59.6	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	58.1	57.8	53.5
Hornsby	59.3	62.1	64.6	TOTAL	58.1	57.8	53.5
Manly	72.9	67.2	63.7	<b>Private Hospitals</b>			
Mona Vale	68.6	71.1	73.5	Mater, North Sydney	37.4	34.4	36.6
Royal North Shore	65.0	58.8	53.3	North Shore Private	41.8	44.9	46.4
Other hospitals	92.0	80.0	90.9	Sydney Adventist	47.7	52.4	56.8
TOTAL	66.2	63.6	60.8	North Gosford Private	41.4	44.2	44.7
<b>Central Coast</b>				Hurstville Private	39.8	36.0	43.5
Gosford	65.8	73.4	68.0	Kareena Private	45.7	43.6	54.6
Wyong	79.7	87.5	79.1	St. George Private	56.7	53.9	56.2
TOTAL	67.7	74.1	68.9	Prince of Wales Private	47.9	47.1	40.1
<b>Hunter New England</b>				Norwest Private	41.2	45.2	50.2
Armidale	45.9	52.7	60.3	Sydney Southwest Private	38.2	35.1	36.8
Inverell	25.0	30.0	28.6	Nepean Private	36.3	32.6	29.9
Tamworth Base	47.1	54.0	67.2	Westmead Private	39.9	39.5	39.3
Manning Base	59.6	69.8	67.2	Figtree Private	41.6	34.7	35.4
Maitland	72.6	73.5	73.1	Newcastle Private	55.4	54.2	57.5
John Hunter	69.4	69.9	69.1	Calvary, Wagga Wagga	47.5	48.6	50.8
Other hospitals	59.2	64.6	73.5	Other hospitals	52.2	44.4	27.8
TOTAL	63.4	66.8	68.8	TOTAL	44.3	44.0	45.2
				<b>TOTAL NSW*</b>	56.6	57.0	56.2

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Major perineal tears and surgical repair of the perineum.

### Indicator 3.4

Definition: Total number of selected primipara undergoing episiotomy and sustaining a perineal tear while giving birth vaginally as a percentage of the total number of selected primipara delivering vaginally.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>0</sup> to 41<sup>0</sup> weeks gestation.

Table 62 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 62. 3.4 Selected primipara undergoing episiotomy and sustaining a perineal tear by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	7.77	7.41	5.51	Grafton Base	4.44	1.23	0.00
Royal Prince Alfred	5.42	4.87	3.47	Lismore Base	5.00	5.88	3.38
TOTAL	5.95	5.45	3.94	Murwillumbah	1.45	3.61	2.63
<b>South Western Sydney</b>				Tweed Heads	1.98	3.65	2.44
Fairfield	3.73	1.87	3.05	Other hospitals	3.39	0.00	2.22
Liverpool	4.07	5.58	5.49	TOTAL	3.29	3.85	2.44
Campbelltown	2.32	2.62	2.08	<b>Mid North Coast</b>			
Bankstown-Lidcombe	4.82	5.13	6.57	Coffs Harbour	5.92	2.82	7.14
Bowral	0.00	2.07	1.77	Kempsey	0.00	4.26	6.25
Other hospitals	0.00	0.00	0.00	Port Macquarie Base	2.55	3.61	6.21
TOTAL	3.53	3.78	4.16	Other hospitals	0.00	0.00	0.00
<b>South Eastern Sydney</b>				TOTAL	3.73	3.23	6.63
St. George	8.24	9.95	11.42	<b>Southern NSW</b>			
Sutherland	2.80	3.24	4.83	Bega	0.00	2.56	6.82
Royal Hospital for Women	6.12	6.18	6.94	Goulburn Base	1.89	0.00	4.00
TOTAL	6.33	6.88	7.94	Moruya	3.17	5.36	0.00
<b>Illawarra Shoalhaven</b>				Queanbeyan	3.08	4.48	6.41
Shoalhaven	3.31	5.30	6.96	Other hospitals	3.03	0.00	0.00
Wollongong	2.92	5.37	5.71	TOTAL	2.55	2.48	3.72
Other hospitals	12.00	15.79	10.53	<b>Murrumbidgee</b>			
TOTAL	3.35	5.66	6.15	Griffith Base	0.93	2.60	3.85
<b>Western Sydney</b>				Wagga Wagga Base	4.62	4.96	8.00
Auburn	10.62	9.32	8.25	Other hospitals	4.03	4.96	4.35
Blacktown	10.82	10.17	10.73	TOTAL	3.36	4.39	5.66
Westmead	11.10	10.44	11.63	<b>Western NSW</b>			
TOTAL	10.94	10.18	10.85	Dubbo Base	6.93	4.26	6.11
<b>Nepean Blue Mountains</b>				Mudgee	2.00	4.84	11.11
Blue Mountains	3.23	5.71	6.45	Bathurst Base	4.12	2.56	1.71
Nepean	10.19	6.90	9.69	Orange Base	7.23	8.33	17.29
Hawkesbury	8.00	6.92	13.04	Other hospitals	6.59	6.45	6.06
Other hospitals	2.94	5.00	4.35	TOTAL	6.11	5.41	8.14
TOTAL	9.04	6.76	10.07	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	2.33	0.00	0.00
Hornsby	7.54	11.90	6.06	TOTAL	2.33	0.00	0.00
Manly	5.81	6.64	12.59	<b>Private Hospitals</b>			
Mona Vale	5.81	6.34	2.94	Mater, North Sydney	11.01	7.62	7.95
Royal North Shore	11.32	11.32	16.44	North Shore Private	1.88	0.63	0.90
Other hospitals	0.00	0.00	0.00	Sydney Adventist	7.84	2.73	2.59
TOTAL	8.47	9.44	11.69	North Gosford Private	9.66	5.83	4.88
<b>Central Coast</b>				Hurstville Private	9.94	8.63	7.41
Gosford	11.66	8.41	11.94	Kareena Private	1.23	1.71	0.77
Wyong	4.69	0.00	4.65	St. George Private	3.87	1.04	0.86
TOTAL	10.71	7.96	11.33	Prince of Wales Private	2.20	3.62	6.41
<b>Hunter New England</b>				Norwest Private	4.05	3.74	4.31
Armidale	5.88	10.99	5.88	Sydney Southwest Private	2.62	3.86	5.20
Inverell	6.25	3.33	8.57	Nepean Private	1.79	2.11	1.52
Tamworth Base	6.32	9.52	7.47	Westmead Private	0.73	0.38	0.52
Manning Base	3.51	4.31	4.92	Figtree Private	0.90	1.53	0.51
Maitland	3.34	5.15	7.89	Newcastle Private	0.00	0.50	0.25
John Hunter	11.08	10.54	9.14	Calvary, Wagga Wagga	7.92	9.91	13.28
Other hospitals	5.77	5.77	3.72	Other hospitals	8.70	0.00	9.26
TOTAL	7.51	8.22	7.57	TOTAL	4.13	2.92	3.40
				<b>TOTAL NSW*</b>	6.02	5.70	6.36

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Major perineal tears and surgical repair of the perineum.

### Indicator 3.5

Definition: Total number of selected primipara undergoing surgical repair of the perineum for third degree tear as a percentage of the total number of selected primipara delivering vaginally.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>0</sup> to 41<sup>0</sup> weeks gestation.

Table 63 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 63. 3.5 Selected primipara undergoing surgical repair of the perineum for third degree tear by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	9.02	6.91	2.51	Grafton Base	3.33	1.23	4.49
Royal Prince Alfred	7.84	5.24	6.04	Lismore Base	2.92	3.36	3.38
TOTAL	8.11	5.62	5.22	Murwillumbah	1.45	3.61	2.63
<b>South Western Sydney</b>				Tweed Heads	4.29	5.65	7.05
Fairfield	5.60	4.15	4.77	Other hospitals	0.00	1.96	0.00
Liverpool	3.74	5.74	6.19	TOTAL	3.15	3.98	5.01
Campbelltown	3.94	3.84	2.97	<b>Mid North Coast</b>			
Bankstown-Lidcombe	2.19	2.85	4.20	Coffs Harbour	4.73	3.76	7.14
Bowral	2.90	2.76	4.42	Kempsey	2.56	0.00	0.00
Other hospitals	0.00	0.00	0.00	Port Macquarie Base	5.10	4.82	4.83
TOTAL	3.82	4.12	4.55	Other hospitals	10.00	0.00	0.00
<b>South Eastern Sydney</b>				TOTAL	4.80	3.70	5.41
St. George	6.56	8.21	7.98	<b>Southern NSW</b>			
Sutherland	3.11	3.54	4.58	Bega	0.00	0.00	2.27
Royal Hospital for Women	3.71	6.76	7.33	Goulburn Base	7.55	6.78	8.00
TOTAL	4.58	6.68	7.01	Moruya	4.76	3.57	1.72
<b>Illawarra Shoalhaven</b>				Queanbeyan	1.54	2.99	3.85
Shoalhaven	3.31	2.27	1.27	Other hospitals	3.03	1.64	5.13
Wollongong	3.13	1.99	3.27	TOTAL	3.64	3.19	4.09
Other hospitals	16.00	0.00	15.79	<b>Murrumbidgee</b>			
TOTAL	3.67	1.99	3.15	Griffith Base	3.70	1.30	6.41
<b>Western Sydney</b>				Wagga Wagga Base	6.15	3.31	4.00
Auburn	4.13	5.79	1.90	Other hospitals	6.04	4.13	0.87
Blacktown	5.76	7.28	8.87	TOTAL	5.43	3.13	3.46
Westmead	4.59	5.86	3.73	<b>Western NSW</b>			
TOTAL	4.85	6.30	5.12	Dubbo Base	8.42	4.79	4.80
<b>Nepean Blue Mountains</b>				Mudgee	2.00	4.84	4.44
Blue Mountains	6.45	5.71	3.23	Bathurst Base	0.00	6.84	5.98
Nepean	4.78	3.69	5.33	Orange Base	7.23	7.74	8.27
Hawkesbury	4.00	1.54	2.48	Other hospitals	6.59	9.68	6.06
Other hospitals	2.94	2.50	0.00	TOTAL	5.94	6.69	5.93
TOTAL	4.69	3.38	4.56	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	2.33	2.22	2.33
Hornsby	6.56	8.92	5.39	TOTAL	2.33	2.22	2.33
Manly	1.94	2.90	2.88	<b>Private Hospitals</b>			
Mona Vale	4.65	4.93	5.88	Mater, North Sydney	3.30	3.93	4.09
Royal North Shore	8.19	10.04	10.50	North Shore Private	1.46	0.84	2.25
Other hospitals	0.00	0.00	3.03	Sydney Adventist	1.90	1.59	2.16
TOTAL	6.00	7.30	6.94	North Gosford Private	2.76	0.00	2.44
<b>Central Coast</b>				Hurstville Private	1.17	3.05	4.17
Gosford	7.94	6.31	7.04	Kareena Private	1.23	0.85	3.08
Wyong	1.56	0.00	0.00	St. George Private	2.84	3.11	4.61
TOTAL	7.07	5.97	6.45	Prince of Wales Private	1.47	1.93	1.19
<b>Hunter New England</b>				Norwest Private	4.05	3.74	3.53
Armidale	0.00	3.30	0.00	Sydney Southwest Private	3.75	1.93	1.60
Inverell	0.00	0.00	0.00	Nepean Private	1.79	2.63	1.52
Tamworth Base	5.17	6.35	4.60	Westmead Private	0.91	0.57	0.17
Manning Base	5.26	1.72	2.46	Figtree Private	0.45	1.02	0.51
Maitland	4.35	10.31	10.04	Newcastle Private	2.20	2.72	1.97
John Hunter	7.85	10.14	7.80	Calvary, Wagga Wagga	5.94	4.50	7.81
Other hospitals	3.08	4.62	2.33	Other hospitals	0.00	0.00	3.70
TOTAL	5.49	7.86	6.23	TOTAL	2.17	2.09	2.43
				<b>TOTAL NSW*</b>	4.48	4.73	4.75

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Major perineal tears and surgical repair of the perineum.

### Indicator 3.6

Definition: Total number of selected primipara undergoing surgical repair of the perineum for fourth degree tear as a percentage of the total number of selected primipara delivering vaginally.

A selected primipara is defined as a woman who is 20-34 years of age at the time of giving birth; giving birth for the first

time at greater than 20 weeks gestation; singleton pregnancy; cephalic presentation; and at 37<sup>0</sup> to 41<sup>0</sup> weeks gestation.

Table 64 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 64. 3.6 Selected primipara undergoing surgical repair of the perineum for fourth degree tear by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	0.75	1.23	0.00	Grafton Base	2.22	0.00	0.00
Royal Prince Alfred	0.22	0.07	0.23	Lismore Base	0.00	0.42	0.42
TOTAL	0.34	0.34	0.17	Murwillumbah	0.00	0.00	0.00
<b>South Western Sydney</b>				Tweed Heads	0.33	0.00	0.00
Fairfield	0.21	0.00	0.19	Other hospitals	0.00	0.00	0.00
Liverpool	0.33	0.48	0.84	TOTAL	0.39	0.13	0.13
Campbelltown	0.70	0.35	0.00	<b>Mid North Coast</b>			
Bankstown-Lidcombe	0.22	0.19	0.36	Coffs Harbour	0.00	0.00	0.48
Bowral	0.00	0.69	0.00	Kempsey	0.00	0.00	0.00
Other hospitals	0.00	0.00	0.00	Port Macquarie Base	0.00	0.00	0.69
TOTAL	0.33	0.30	0.35	Other hospitals	0.00	0.00	0.00
<b>South Eastern Sydney</b>				TOTAL	0.00	0.00	0.49
St. George	0.84	0.47	0.78	<b>Southern NSW</b>			
Sutherland	0.31	0.29	0.00	Bega	0.00	0.00	0.00
Royal Hospital for Women	0.28	0.39	0.20	Goulburn Base	0.00	0.00	0.00
TOTAL	0.47	0.40	0.34	Moruya	0.00	0.00	0.00
<b>Illawarra Shoalhaven</b>				Queanbeyan	0.00	1.49	0.00
Shoalhaven	0.83	0.00	0.63	Other hospitals	0.00	0.00	0.00
Wollongong	0.42	0.20	0.41	TOTAL	0.00	0.35	0.00
Other hospitals	4.00	5.26	0.00	<b>Murrumbidgee</b>			
TOTAL	0.64	0.31	0.45	Griffith Base	0.93	0.00	0.00
<b>Western Sydney</b>				Wagga Wagga Base	0.00	0.83	0.00
Auburn	0.29	0.00	1.27	Other hospitals	0.67	0.00	0.87
Blacktown	0.35	0.15	0.14	TOTAL	0.52	0.31	0.31
Westmead	0.29	0.18	0.69	<b>Western NSW</b>			
TOTAL	0.31	0.15	0.60	Dubbo Base	0.00	0.00	0.00
<b>Nepean Blue Mountains</b>				Mudgee	0.00	1.61	0.00
Blue Mountains	0.00	0.00	0.00	Bathurst Base	1.03	0.00	0.00
Nepean	0.64	0.48	0.48	Orange Base	0.60	0.00	0.00
Hawkesbury	0.00	0.00	0.00	Other hospitals	0.00	0.00	0.00
Other hospitals	0.00	0.00	0.00	TOTAL	0.33	0.16	0.00
TOTAL	0.46	0.36	0.36	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	0.00	0.00	0.00
Hornsby	0.33	0.00	0.00	TOTAL	0.00	0.00	0.00
Manly	0.00	0.41	0.72	<b>Private Hospitals</b>			
Mona Vale	0.58	0.00	0.00	Mater, North Sydney	0.66	0.00	0.23
Royal North Shore	0.87	0.64	0.20	North Shore Private	0.21	0.00	0.45
Other hospitals	0.00	0.00	0.00	Sydney Adventist	0.24	0.23	0.22
TOTAL	0.52	0.34	0.25	North Gosford Private	0.00	0.00	0.00
<b>Central Coast</b>				Hurstville Private	0.58	0.00	0.00
Gosford	0.50	0.47	0.00	Kareena Private	0.00	0.00	0.00
Wyong	1.56	0.00	0.00	St. George Private	1.29	0.78	0.58
TOTAL	0.64	0.44	0.00	Prince of Wales Private	0.24	0.00	0.00
<b>Hunter New England</b>				Norwest Private	0.00	0.00	0.39
Armidale	0.00	0.00	0.00	Sydney Southwest Private	0.00	0.77	0.00
Inverell	0.00	0.00	0.00	Nepean Private	0.00	0.00	0.00
Tamworth Base	0.00	0.00	1.15	Westmead Private	0.37	0.00	0.17
Manning Base	0.00	0.00	0.00	Figtree Private	0.00	0.00	0.00
Maitland	0.67	0.00	0.36	Newcastle Private	0.00	0.25	1.23
John Hunter	0.70	0.14	0.67	Calvary, Wagga Wagga	0.00	0.90	3.13
Other hospitals	0.00	0.00	0.00	Other hospitals	2.17	0.00	1.85
TOTAL	0.42	0.06	0.49	TOTAL	0.33	0.17	0.39
				<b>TOTAL NSW*</b>	0.38	0.24	0.35

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## General anaesthesia for caesarean section. Indicator 4.1

Definition: Total number of women having a general anaesthetic for a caesarean section as a percentage of women having a caesarean section

Table 65 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 65. 4.1 General anaesthesia for caesarean section by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	13.28	14.09	14.06	Grafton Base	26.67	29.25	15.83
Royal Prince Alfred	12.25	12.19	11.89	Lismore Base	4.86	6.49	6.43
TOTAL	12.45	12.53	12.36	Murwillumbah	6.03	8.33	3.70
<b>South Western Sydney</b>				Tweed Heads	11.15	10.76	10.31
Fairfield	50.26	43.49	36.19	Other hospitals	0.00	0.00	0.00
Liverpool	21.65	20.22	18.22	TOTAL	10.12	11.51	9.19
Campbelltown	11.73	12.82	16.10	<b>Mid North Coast</b>			
Bankstown-Lidcombe	22.67	20.09	15.30	Coffs Harbour	11.67	14.92	9.12
Bowral	15.67	14.71	9.35	Kempsey	8.77	10.45	16.33
Other hospitals	23.51	21.72	19.27	Port Macquarie Base	10.82	8.00	10.20
TOTAL	0.33	0.30	0.35	Other hospitals	0.00	0.0	0.0
<b>South Eastern Sydney</b>				TOTAL	10.98	11.75	10.14
St. George	11.32	8.29	8.59	<b>Southern NSW</b>			
Sutherland	6.37	8.33	10.11	Bega	22.86	8.33	15.09
Royal Hospital for Women	4.05	4.61	4.73	Goulburn Base	29.27	37.04	24.36
TOTAL	6.39	6.05	6.49	Moruya	23.17	18.68	17.20
<b>Illawarra Shoalhaven</b>				Queanbeyan	10.71	18.18	16.36
Shoalhaven	11.22	6.93	8.21	Other hospitals	5.80	9.23	4.88
Wollongong	12.57	9.75	10.59	TOTAL	18.83	19.76	16.88
Other hospitals	12.50	8.70	8.33	<b>Murrumbidgee</b>			
TOTAL	12.08	8.78	9.78	Griffith Base	18.63	18.42	12.15
<b>Western Sydney</b>				Wagga Wagga Base	12.74	13.40	5.68
Auburn	27.34	19.48	15.21	Other hospitals	13.36	7.01	10.95
Blacktown	17.57	18.88	13.03	TOTAL	14.12	11.92	8.94
Westmead	19.04	18.31	14.69	<b>Western NSW</b>			
TOTAL	19.47	18.62	14.19	Dubbo Base	25.89	24.08	20.77
<b>Nepean Blue Mountains</b>				Mudgee	25.42	15.00	10.42
Blue Mountains	8.06	5.08	10.67	Bathurst Base	10.92	12.27	14.97
Nepean	23.18	20.32	19.98	Orange Base	12.87	12.75	16.96
Hawkesbury	10.64	11.59	14.39	Other hospitals	28.13	23.44	24.63
Other hospitals	10.14	7.59	3.33	TOTAL	19.45	18.09	18.55
TOTAL	20.05	17.69	17.81	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	18.67	11.49	13.10
Hornsby	9.06	8.11	7.35	TOTAL	18.67	11.49	13.10
Manly	8.65	7.78	6.13	<b>Private Hospitals</b>			
Mona Vale	6.39	6.64	6.90	Mater, North Sydney	4.33	3.36	2.85
Royal North Shore	7.82	8.43	8.90	North Shore Private	2.48	3.62	2.73
Other hospitals	8.00	8.00	7.84	Sydney Adventist	5.98	6.77	3.77
TOTAL	0.52	0.34	0.25	North Gosford Private	5.57	5.29	18.88
<b>Central Coast</b>				Hurstville Private	4.49	3.51	3.90
Gosford	14.07	13.88	11.06	Kareena Private	4.85	1.77	2.60
Wyong	55.56	100.00	100.00	St. George Private	4.33	5.11	4.87
TOTAL	14.50	13.98	11.16	Prince of Wales Private	0.47	3.28	25.46
<b>Hunter New England</b>				Norwest Private	8.53	10.25	12.57
Armidale	4.80	8.47	10.19	Sydney Southwest Private	10.72	5.62	4.53
Inverell	4.40	1.96	1.25	Nepean Private	7.57	6.07	6.11
Tamworth Base	13.91	17.67	16.04	Westmead Private	9.03	6.60	6.30
Manning Base	23.57	19.32	22.11	Figtree Private	7.94	2.56	5.29
Maitland	11.68	14.53	12.27	Newcastle Private	6.57	4.46	3.03
John Hunter	20.59	17.83	19.27	Calvary, Wagga Wagga	2.55	3.53	5.02
Other hospitals	20.21	21.88	26.96	Other hospitals	11.90	9.62	10.34
TOTAL	16.61	16.43	17.41	TOTAL	5.25	4.76	7.49
				<b>TOTAL NSW*</b>	11.91	11.19	11.40

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Postpartum haemorrhage and blood transfusion after vaginal birth.

### Indicator 7.1

Definition: Total number of women who give birth vaginally who require a blood transfusion during the same admission as a percentage of women who give birth vaginally.

Table 66 shows aggregate information for hospitals where at least 200 mothers gave birth in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 66. 7.1 Postpartum haemorrhage and blood transfusion by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	0.08	0.08	0.24	Grafton Base	2.40	2.45	3.68
Royal Prince Alfred	0.11	0.11	0.17	Lismore Base	3.94	2.42	3.28
TOTAL	0.10	0.10	0.19	Murwillumbah	1.90	0.73	0.65
<b>South Western Sydney</b>				Tweed Heads	4.70	2.65	3.43
Fairfield	0.12	0.49	0.39	Other hospitals	4.80	3.41	3.03
Liverpool	0.30	0.43	0.26	TOTAL	3.86	2.41	3.23
Campbelltown	0.20	0.19	0.25	<b>Mid North Coast</b>			
Bankstown-Lidcombe	0.17	0.91	0.58	Coffs Harbour	2.49	3.00	2.07
Bowral	0.36	0.19	0.94	Kempsey	3.45	1.66	3.11
Other hospitals	0.00	0.00	0.00	Port Macquarie Base	2.03	2.11	2.21
TOTAL	0.22	0.47	0.39	Other hospitals	4.49	2.38	3.92
<b>South Eastern Sydney</b>				TOTAL	2.57	2.46	2.34
St. George	0.15	0.33	0.32	<b>Southern NSW</b>			
Sutherland	0.22	0.32	0.40	Bega	6.19	7.10	3.95
Royal Hospital for Women	1.03	0.74	0.79	Goulburn Base	2.38	3.24	2.68
TOTAL	0.59	0.54	0.56	Moruya	4.15	4.01	3.88
<b>Illawarra Shoalhaven</b>				Queanbeyan	6.38	3.51	5.91
Shoalhaven	0.19	0.36	0.33	Other hospitals	2.30	3.57	4.58
Wollongong	0.87	0.37	0.67	TOTAL	4.03	4.10	4.22
Other hospitals	0.97	0.00	0.00	<b>Murrumbidgee</b>			
TOTAL	0.73	0.35	0.57	Griffith Base	5.98	4.90	7.26
<b>Western Sydney</b>				Wagga Wagga Base	8.61	3.17	1.52
Auburn	0.17	0.35	0.74	Other hospitals	6.38	2.32	3.93
Blacktown	0.48	0.45	0.38	TOTAL	7.11	3.18	3.75
Westmead	0.13	0.48	0.34	<b>Western NSW</b>			
TOTAL	0.26	0.45	0.42	Dubbo Base	3.42	2.93	2.19
<b>Nepean Blue Mountains</b>				Mudgee	1.04	1.10	3.35
Blue Mountains	1.79	0.00	1.76	Bathurst Base	5.68	4.45	4.58
Nepean	0.43	0.44	0.44	Orange Base	2.19	3.92	1.84
Hawkesbury	0.66	0.17	0.51	Other hospitals	4.43	3.34	3.42
Other hospitals	2.47	1.96	3.88	TOTAL	3.45	3.38	2.77
TOTAL	0.65	0.45	0.65	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	4.10	7.53	4.55
Hornsby	0.56	0.11	1.30	TOTAL	4.10	7.53	4.55
Manly	0.00	0.29	0.74	<b>Private Hospitals</b>			
Mona Vale	0.56	0.43	0.00	Mater, North Sydney	2.72	2.74	1.92
Royal North Shore	0.26	0.39	0.61	North Shore Private	0.74	0.14	0.21
Other hospitals	0.00	0.83	0.00	Sydney Adventist	1.60	3.22	3.65
TOTAL	0.32	0.32	0.75	North Gosford Private	3.73	1.85	2.70
<b>Central Coast</b>				Hurstville Private	1.43	1.49	1.63
Gosford	0.48	0.45	0.49	Kareena Private	0.00	1.74	0.53
Wyong	0.39	0.68	0.43	St. George Private	0.36	0.27	0.70
TOTAL	0.47	0.47	0.48	Prince of Wales Private	2.68	2.52	2.12
<b>Hunter New England</b>				Norwest Private	1.41	1.10	1.36
Armidale	2.13	1.77	0.30	Sydney Southwest Private	1.62	1.84	0.69
Inverell	0.56	1.89	0.57	Nepean Private	3.64	3.28	1.40
Tamworth Base	3.49	1.50	0.80	Westmead Private	0.36	0.43	0.46
Manning Base	2.66	0.92	0.72	Figtree Private	1.81	1.28	0.16
Maitland	0.34	0.34	0.09	Newcastle Private	0.53	0.25	0.33
John Hunter	0.55	0.38	0.54	Calvary, Wagga Wagga	1.91	2.17	1.55
Other hospitals	1.78	0.78	0.58	Other hospitals	2.40	2.00	0.00
TOTAL	1.24	0.68	0.50	TOTAL	1.51	1.50	1.29
				<b>TOTAL NSW*</b>	1.23	1.05	1.04

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.

## Intrauterine growth restriction. Indicator 8.1

Definition: Total number of deliveries with birth weight less than 2750 grams at 40<sup>th</sup> weeks gestation or beyond as a percentage of the total number of deliveries at 40<sup>th</sup> weeks gestation or beyond.

Table 67 shows aggregate information for hospitals where at least 200 babies were born in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 67. 8.1 Intrauterine growth restriction at 40 weeks gestation or more by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	2.59	2.21	2.04	Grafton Base	1.08	1.97	1.19
Royal Prince Alfred	1.13	1.75	1.38	Lismore Base	1.73	1.41	1.39
TOTAL	1.49	1.86	1.55	Murwillumbah	1.79	1.81	4.95
<b>South Western Sydney</b>				Tweed Heads	0.77	1.38	1.51
Fairfield	2.01	2.77	2.12	Other hospitals	3.01	2.56	1.32
Liverpool	2.87	2.33	2.20	TOTAL	1.44	1.61	1.58
Campbelltown	2.16	1.14	1.41	<b>Mid North Coast</b>			
Bankstown-Lidcombe	1.69	1.11	2.71	Coffs Harbour	1.89	1.56	0.89
Bowral	2.26	1.36	1.67	Kempsey	3.76	2.27	2.63
Other hospitals	0.00	0.00	0.00	Port Macquarie Base	2.10	2.84	2.12
TOTAL	2.23	1.77	2.04	Other hospitals	4.26	0.00	3.13
<b>South Eastern Sydney</b>				TOTAL	2.39	2.04	1.63
St. George	2.10	2.07	2.01	<b>Southern NSW</b>			
Sutherland	1.80	1.12	0.83	Bega	0.00	2.56	0.64
Royal Hospital for Women	1.49	0.78	1.39	Goulburn Base	4.19	5.88	1.79
TOTAL	1.74	1.24	1.48	Moruya	1.63	3.24	2.96
<b>Illawarra Shoalhaven</b>				Queanbeyan	2.58	2.61	2.66
Shoalhaven	2.28	1.83	1.01	Other hospitals	2.44	2.82	2.73
Wollongong	1.63	1.81	1.12	TOTAL	2.44	3.58	2.15
Other hospitals	3.57	0.00	0.00	<b>Murrumbidgee</b>			
TOTAL	1.87	1.76	1.04	Griffith Base	3.33	1.35	2.29
<b>Western Sydney</b>				Wagga Wagga Base	3.10	1.41	1.65
Auburn	1.98	1.90	2.04	Other hospitals	2.06	2.39	1.71
Blacktown	1.97	2.06	1.80	TOTAL	2.70	1.83	1.81
Westmead	2.16	3.52	2.75	<b>Western NSW</b>			
TOTAL	2.06	2.72	2.30	Dubbo Base	3.03	2.28	2.31
<b>Nepean Blue Mountains</b>				Mudgee	1.95	3.36	1.47
Blue Mountains	0.62	1.85	0.00	Bathurst Base	3.34	4.82	2.73
Nepean	1.53	1.55	1.34	Orange Base	2.40	1.09	2.10
Hawkesbury	1.39	0.85	1.10	Other hospitals	1.69	1.55	3.90
Other hospitals	3.30	2.35	5.80	TOTAL	2.59	2.47	2.56
TOTAL	1.52	1.48	1.37	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	2.21	4.69	6.40
Hornsby	1.81	0.67	0.80	TOTAL	2.21	4.69	6.40
Manly	1.00	0.42	0.51	<b>Private Hospitals</b>			
Mona Vale	2.02	0.65	0.68	Mater, North Sydney	1.59	1.29	0.85
Royal North Shore	1.70	2.38	1.62	North Shore Private	1.32	1.64	2.30
Other hospitals	2.22	1.45	0.00	Sydney Adventist	0.68	1.14	2.25
TOTAL	1.64	1.25	1.01	North Gosford Private	2.45	0.36	0.76
<b>Central Coast</b>				Hurstville Private	1.52	0.95	1.38
Gosford	1.51	0.85	1.00	Kareena Private	0.70	1.28	1.72
Wyong	0.66	0.00	1.34	St. George Private	2.03	1.69	1.63
TOTAL	1.41	0.79	1.04	Prince of Wales Private	2.28	1.22	1.30
<b>Hunter New England</b>				Norwest Private	1.21	1.96	2.37
Armidale	5.22	0.97	2.35	Sydney Southwest Private	0.95	1.00	1.24
Inverell	5.68	1.45	5.08	Nepean Private	0.64	1.27	1.67
Tamworth Base	2.26	2.23	2.71	Westmead Private	2.46	2.26	1.60
Manning Base	1.31	3.08	2.48	Figtree Private	1.18	1.17	0.41
Maitland	0.68	2.37	1.62	Newcastle Private	0.81	1.47	1.63
John Hunter	2.65	2.19	1.77	Calvary, Wagga Wagga	0.76	1.61	1.63
Other hospitals	2.95	1.27	1.42	Other hospitals	1.55	0.00	0.99
TOTAL	2.42	2.06	1.90	TOTAL	1.45	1.41	1.60
				<b>TOTAL NSW*</b>	1.87	1.78	1.72

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.



## Apgar score. Indicator 9.1

Definition: Total number of term babies born with an Apgar score of less than 7 at 5 minutes post delivery as a percentage of the total number of term babies born.

Table 68 shows aggregate information for hospitals where at least 200 babies were born in 2009, totals for hospitals within each Local Health District, and the NSW total.

**Table 68. 9.1 Apgar score of 7 or less in term babies by Local Health District and hospital, NSW 2007–2009#**

Local Health District–hospital	2007 %	2008 %	2009 %	Local Health District–hospital	2007 %	2008 %	2009 %
<b>Sydney</b>				<b>Northern NSW</b>			
Canterbury	0.78	0.85	0.86	Grafton Base	1.25	2.24	0.43
Royal Prince Alfred	1.09	1.57	1.64	Lismore Base	1.85	0.86	1.14
TOTAL	1.02	1.40	1.43	Murwillumbah	0.82	0.83	0.00
<b>South Western Sydney</b>				Tweed Heads	0.43	0.42	1.28
Fairfield	1.24	1.32	2.01	Other hospitals	0.88	0.99	0.00
Liverpool	1.10	0.84	0.79	TOTAL	1.12	0.89	0.97
Campbelltown	1.07	0.92	0.87	<b>Mid North Coast</b>			
Bankstown-Lidcombe	0.84	0.82	0.68	Coffs Harbour	0.94	0.80	0.59
Bowral	0.75	1.91	0.91	Kempsey	2.80	2.75	0.69
Other hospitals	0.00	0.00	0.00	Port Macquarie Base	2.46	2.13	2.31
TOTAL	1.04	1.02	1.02	Other hospitals	1.19	0.00	2.04
<b>South Eastern Sydney</b>				TOTAL	1.79	1.52	1.24
St. George	1.31	1.32	0.60	<b>Southern NSW</b>			
Sutherland	0.54	0.82	0.82	Bega	0.00	0.52	0.37
Royal Hospital for Women	1.27	1.21	1.50	Goulburn Base	1.07	0.70	0.69
TOTAL	1.17	1.18	1.09	Moruya	1.78	1.45	1.29
<b>Illawarra Shoalhaven</b>				Queanbeyan	1.06	0.75	0.33
Shoalhaven	0.78	0.65	0.86	Other hospitals	0.00	0.35	0.00
Wollongong	0.61	1.02	1.17	TOTAL	0.89	0.80	0.59
Other hospitals	4.69	2.22	3.41	<b>Murrumbidgee</b>			
TOTAL	0.83	0.96	1.15	Griffith Base	1.39	1.78	1.01
<b>Western Sydney</b>				Wagga Wagga Base	1.65	1.22	1.44
Auburn	0.51	0.53	1.32	Other hospitals	0.96	0.88	1.14
Blacktown	1.10	1.02	0.76	TOTAL	1.30	1.19	1.22
Westmead	0.97	1.01	0.90	<b>Western NSW</b>			
TOTAL	0.94	0.94	0.91	Dubbo Base	1.81	1.02	1.51
<b>Nepean Blue Mountains</b>				Mudgee	2.03	0.42	0.90
Blue Mountains	0.35	1.06	3.02	Bathurst Base	1.16	0.71	1.30
Nepean	0.53	0.75	0.53	Orange Base	0.95	1.08	1.35
Hawkesbury	0.99	0.39	1.46	Other hospitals	1.37	0.72	0.94
Other hospitals	1.38	0.47	0.00	TOTAL	1.43	0.89	1.30
TOTAL	0.64	0.68	0.81	<b>Far West</b>			
<b>Northern Sydney</b>				Broken Hill Base	1.20	3.19	0.46
Hornsby	0.51	0.57	1.90	TOTAL	1.20	3.19	0.46
Manly	1.25	1.00	1.00	<b>Private Hospitals</b>			
Mona Vale	2.76	0.92	1.33	Mater, North Sydney	0.51	0.36	0.38
Royal North Shore	0.78	1.00	1.13	North Shore Private	0.51	0.39	0.61
Other hospitals	0.00	1.67	0.00	Sydney Adventist	0.82	0.67	0.23
TOTAL	1.08	0.89	1.27	North Gosford Private	0.60	0.50	0.13
<b>Central Coast</b>				Hurstville Private	0.73	0.58	0.77
Gosford	1.28	1.06	2.60	Kareena Private	0.19	1.53	0.63
Wyong	0.00	1.38	0.85	St. George Private	0.69	0.57	0.58
TOTAL	1.16	1.08	2.44	Prince of Wales Private	0.95	0.86	0.46
<b>Hunter New England</b>				Norwest Private	0.32	0.33	0.17
Armidale	1.41	0.24	1.23	Sydney Southwest Private	0.86	0.84	0.30
Inverell	0.41	1.24	0.42	Nepean Private	0.51	0.47	0.34
Tamworth Base	0.85	1.42	1.18	Westmead Private	0.81	0.86	0.62
Manning Base	1.34	1.35	1.01	Figtree Private	0.11	0.55	0.31
Maitland	1.83	2.34	1.91	Newcastle Private	0.46	0.74	0.33
John Hunter	1.77	1.90	2.39	Calvary, Wagga Wagga	1.48	0.69	0.51
Other hospitals	1.28	0.67	0.58	Other hospitals	0.70	0.40	0.76
TOTAL	1.51	1.58	1.68	TOTAL	0.64	0.63	0.44
				<b>TOTAL NSW*</b>	1.00	0.99	1.01

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Hospitals with more than 200 births are identified individually.

\* Total NSW includes births at home assisted by independent midwives.



## 7. Aboriginal and Torres Strait Islander Mothers and Babies

### Reporting of Aboriginality

Maternal Aboriginality is under-reported on the PDC. One method of assessing the extent of under-reporting and monitoring changes over time is to compare the reporting of maternal Aboriginality to the PDC with reporting of maternal Aboriginality on birth registrations held by the NSW Registry of Births, Deaths and Marriages. Using capture-recapture methods, an estimate of the total number of babies born to Aboriginal or Torres Strait Islander mothers was obtained and compared with the number of babies born to Aboriginal or Torres Strait Islander mothers as reported to the PDC (Table 69). An estimate of the total number of babies born to Aboriginal or Torres Strait Islander mothers or fathers was also obtained and compared with the number of babies born to Aboriginal or Torres Strait Islander mothers as reported to the PDC (Table 70). The method used here is described in Chapter 3 (page 11).

For NSW overall, the estimated percentage of births to Aboriginal or Torres Strait Islander mothers reported to the PDC ranged from 63% to 68% between 2006 and 2008. In 2008, reporting varied markedly between Local Health Districts, ranging from 14% in the Northern Sydney Local Health District to 93% in the Mid North Coast Local Health District, with reporting generally better in rural compared to

urban areas (Table 69, Figure 2). Under-reporting means that numbers of births presented in this chapter should be interpreted with caution. The total number of babies born to Aboriginal or Torres Strait Islander mothers in 2008 is estimated to be 4,716, about one and a half times higher than the number reported to the PDC.

Table 70 shows the number of babies born to Aboriginal or Torres Strait Islander mothers as reported to the PDC and the number of babies born to Aboriginal or Torres Strait Islander mothers or fathers as reported to the NSW Registry of Births, Deaths and Marriages between 2006 and 2008. Using capture-recapture methods, an estimate of the total number of babies born to Aboriginal or Torres Strait Islander mothers or fathers was obtained from both data sources. For NSW overall, the estimated percentage of births to Aboriginal or Torres Strait Islander mothers or fathers ranged from 44% to 46% between 2006 and 2008. In 2008, reporting ranged from 11% in the Northern Sydney Local Health District to 63% in the Western NSW and Far West Local Health Districts. There are therefore a substantial number of babies with non-Aboriginal or Torres Strait Islander mothers and Aboriginal or Torres Strait Islander fathers who are not represented in the numbers reported in this chapter.

**Table 69. Births to Aboriginal mothers by source of birth report, year of birth and Local Health District of residence, NSW 2006–2008#**

Year of birth– Local Health District of residence	MDC births No.	RBDM births No.	Births reported to both MDC/RBDM No.	Total estimated Aboriginal births No.	Estimated Aboriginal births reported to MDC %	95% confidence interval of estimated births reported
<b>2006</b>						
Sydney	99	115	64	177	55.8	48.5–63.1
South Western Sydney	118	215	72	351	33.6	28.7–38.5
South Eastern Sydney	74	99	52	141	52.7	44.4–60.9
Illawarra Shoalhaven	155	142	108	204	76.1	70.3–82.0
Western Sydney	194	209	123	329	58.9	53.6–64.2
Nepean Blue Mountains	91	93	56	151	60.4	52.6–68.2
Northern Sydney	16	38	6	94	17.1	9.5–24.7
Central Coast	88	106	64	146	60.5	52.5–68.4
Hunter New England	598	499	361	826	72.4	69.3–75.4
Northern NSW	203	143	115	252	80.5	75.6–85.4
Mid North Coast	158	87	75	183	86.3	81.3–91.3
Southern NSW	70	39	32	85	82.3	74.2–90.4
Murrumbidgee	121	88	66	161	75.1	68.5–81.8
Western NSW	527	380	330	607	86.9	84.2–89.5
Far West	44	34	31	48	91.3	83.3–99.2
Other-not stated	91	68	56	110	82.5	75.4–89.5
NSW	2647	2355	1611	3869	68.4	66.9–69.9
<b>2007</b>						
Sydney	97	126	58	210	46.2	39.5–52.9
South Western Sydney	160	237	87	434	36.8	32.3–41.4
South Eastern Sydney	86	106	33	273	31.5	26.0–37.0
Illawarra Shoalhaven	163	121	96	205	79.4	73.9–84.9
Western Sydney	221	222	118	415	53.3	48.5–58.1
Nepean Blue Mountains	144	124	81	220	65.4	59.2–71.7

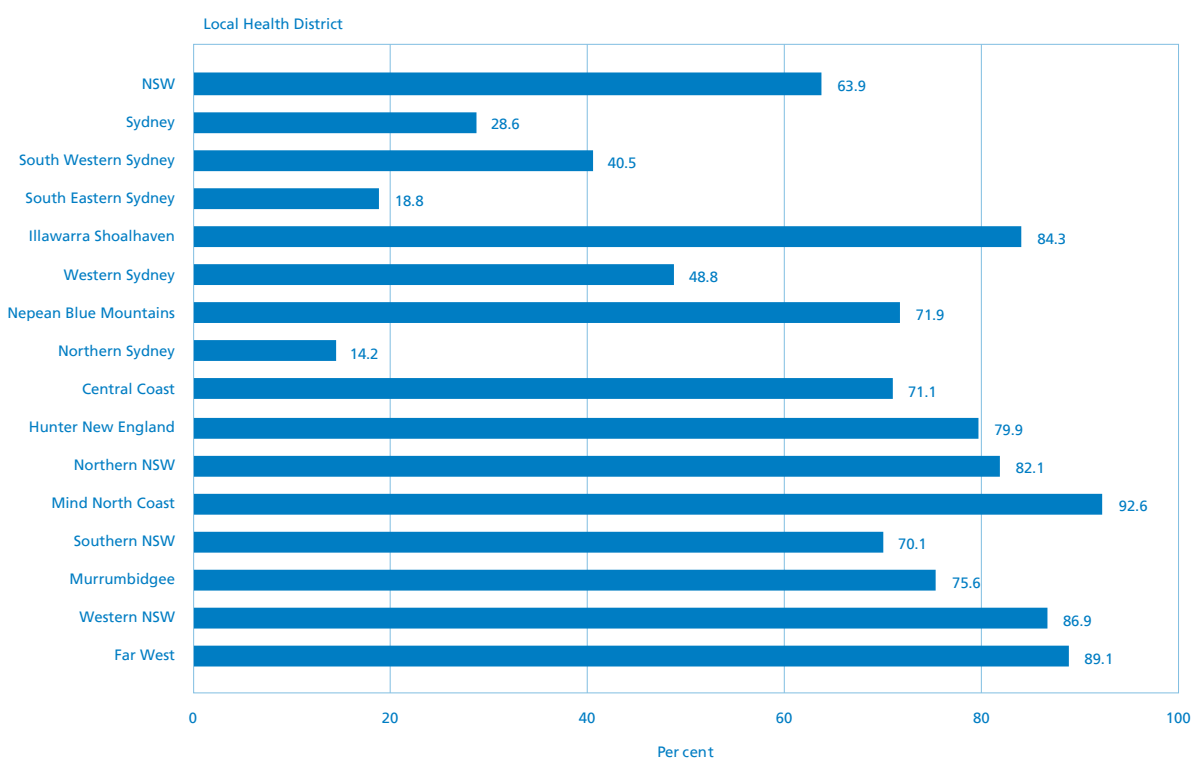
Table 69. (Continued)

Year of birth– Local Health District of residence	MDC births No.	RBDM births No.	Births reported to both MDC/RBDM No.	Total estimated Aboriginal births No.	Estimated Aboriginal births reported to MDC %	95% confidence interval of estimated births reported
Northern Sydney	28	57	13	119	23.5	15.9–31.1
Central Coast	111	99	70	157	70.8	63.7–77.9
Hunter New England	661	506	383	873	75.7	72.9–78.6
Northern NSW	230	139	121	264	87.1	83.1–91.1
Mid North Coast	149	83	75	165	90.4	85.9–94.9
Southern NSW	67	37	31	80	84.0	76.0–92.1
Murrumbidgee	169	129	103	212	79.9	74.5–85.3
Western NSW	511	360	318	578	88.3	85.7–91.0
Far West	44	25	20	55	80.4	69.9–90.9
Other-not stated	82	68	51	109	75.1	67.0–83.2
NSW	2923	2439	1658	4300	68.0	66.6–69.4
<b>2008</b>						
Sydney	103	218	62	361	28.6	23.9–33.2
South Western Sydney	174	233	94	430	40.5	35.8–45.1
South Eastern Sydney	59	188	35	314	18.8	14.5–23.1
Illawarra Shoalhaven	196	146	123	233	84.3	79.6–89.0
Western Sydney	202	238	116	414	48.8	44.0–53.6
Nepean Blue Mountains	148	117	84	206	71.9	65.8–78.0
Northern Sydney	21	80	11	148	14.2	8.6–19.9
Central Coast	123	114	81	173	71.1	64.4–77.9
Hunter New England	750	576	460	939	79.9	77.3–82.4
Northern NSW	203	139	114	247	82.1	77.3–86.9
Mid North Coast	172	94	87	186	92.6	88.8–96.4
Southern NSW	59	43	30	84	70.1	60.3–79.9
Murrumbidgee	150	106	80	198	75.6	69.6–81.6
Western NSW	535	328	285	616	86.9	84.2–89.6
Far West	53	27	24	59	89.1	81.2–97.0
Other-not stated	66	57	42	89	73.8	64.7–83.0
NSW	3014	2704	1728	4716	63.9	62.5–65.3

Source: Linked records of the NSW Perinatal Data Collection and Registry of Births, Deaths and Marriages birth registration data.

#Information for 2006 and 2007 differs slightly from that reported previously as the linked datasets have been updated.

Figure 2. Level of reporting of maternal Aboriginality to the NSW Perinatal Data Collection by year of birth and Local Health District of residence, NSW 2008



Source: Linked records of the NSW Perinatal Data Collection and Registry of Births, Deaths and Marriages birth registration data.

**Table 70. Births to Aboriginal mothers and fathers by source of birth report, year of birth and Local Health District of residence, NSW 2006–2008#**

Year of birth– Local Health District of residence	MDC births  No.	RBDM births  No.	Births reported to both MDC/RBDM  No.	Total estimated Aboriginal births  No.	Estimated Aboriginal births reported to MDC %	95% confidence interval of estimated births reported
<b>2006</b>						
Sydney	99	153	68	222	44.6	38.0–51.1
South Western Sydney	118	314	72	512	23.0	19.4–26.7
South Eastern Sydney	74	155	52	220	33.7	27.4–39.9
Illawarra Shoalhaven	155	239	110	336	46.1	40.8–51.4
Western Sydney	194	326	127	497	39.0	34.7–43.3
Nepean Blue Mountains	91	185	57	294	30.9	25.7–36.2
Northern Sydney	16	61	7	131	12.2	6.6–17.9
Central Coast	88	179	66	238	37.0	30.8–43.1
Hunter New England	598	835	372	1342	44.6	41.9–47.2
Northern NSW	203	212	116	370	54.8	49.7–59.9
Mid North Coast	158	136	76	282	56.0	50.3–61.8
Southern NSW	70	85	33	179	39.2	32.0–46.4
Murrumbidgee	121	145	69	253	47.7	41.6–53.9
Western NSW	527	516	332	819	64.4	61.1–67.6
Far West	44	50	31	71	62.2	50.9–73.5
Other-not stated	91	112	57	178	51.1	43.7–58.4
NSW	2647	3703	1645	5958	44.4	43.2–45.7
<b>2007</b>						
Sydney	97	165	64	249	38.9	32.9–45.0
South Western Sydney	160	352	91	617	25.9	22.5–29.4
South Eastern Sydney	86	148	34	369	23.3	19.0–27.6
Illawarra Shoalhaven	163	227	101	366	44.6	39.5–49.7
Western Sydney	221	341	123	611	36.2	32.3–40.0
Nepean Blue Mountains	144	203	83	351	41.0	35.9–46.2
Northern Sydney	28	86	13	179	15.6	10.3–20.9
Central Coast	111	177	73	268	41.4	35.5–47.2
Hunter New England	661	811	394	1360	48.6	46.0–51.3
Northern NSW	230	238	132	414	55.5	50.8–60.3
Mid North Coast	149	141	76	276	54.1	48.2–59.9
Southern NSW	67	67	33	135	49.6	41.2–58.1
Murrumbidgee	169	188	112	283	59.6	53.9–65.4
Western NSW	511	525	331	810	63.1	59.7–66.4
Far West	44	34	22	67	65.2	53.8–76.6
Other-not stated	82	109	54	165	49.7	42.1–57.3
NSW	2923	3812	1736	6418	45.5	44.3–46.8
<b>2008</b>						
Sydney	103	258	64	413	24.9	20.7–29.1
South Western Sydney	174	352	96	636	27.4	23.9–30.8
South Eastern Sydney	59	237	35	396	14.9	11.4–18.4
Illawarra Shoalhaven	196	236	128	361	54.3	49.2–59.4
Western Sydney	202	335	116	582	34.7	30.8–38.6
Nepean Blue Mountains	148	195	86	335	44.2	38.9–49.5
Northern Sydney	21	108	12	183	11.4	6.8–16.1
Central Coast	123	186	84	272	45.3	39.3–51.2
Hunter New England	750	865	464	1398	53.7	51.0–56.3
Northern NSW	203	233	122	387	52.4	47.5–57.4
Mid North Coast	172	159	91	300	57.4	51.8–63.0
Southern NSW	59	74	33	131	44.9	36.4–53.4
Murrumbidgee	150	178	87	306	49.0	43.4–54.6
Western NSW	535	475	299	849	63.0	59.7–66.2
Far West	53	40	25	84	63.0	52.7–73.3
Other-not stated	66	89	43	136	48.5	40.1–56.9
NSW	3014	4020	1785	6787	44.4	43.2–45.6

Source: Linked records of the NSW Perinatal Data Collection and Registry of Births, Deaths and Marriages birth registration data.  
#Information for 2006 and 2007 differs slightly from that reported previously as the linked datasets have been updated.

## Trends in births

Between 2005 and 2009, the number of reported births to Aboriginal or Torres Strait Islander mothers rose from 2,507 to 2,931, representing 2.8% and 3.0% respectively of all babies born in NSW. In 2009, 2,784 babies were born to Aboriginal

mothers, 45 babies were born to Torres Strait Islander mothers and 102 babies were born to mothers of both Aboriginal and Torres Strait Islander background (Table 71).

**Table 71. Aboriginal and Torres Strait Islander mothers and babies, NSW 2005–2009#**

Aboriginal and Torres Strait Islander mothers and babies	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Mothers</b>										
Aboriginal but not Torres Strait Islander	2347	94.9	2429	93.0	2700	93.5	2801	94.1	2757	94.9
Torres Strait Islander but not Aboriginal	30	1.2	50	1.9	53	1.8	61	2.0	45	1.5
Both Aboriginal and Torres Strait Islander	97	3.9	132	5.1	135	4.7	114	3.8	102	3.5
<b>TOTAL</b>	<b>2474</b>	<b>100.0</b>	<b>2611</b>	<b>100.0</b>	<b>2888</b>	<b>100.0</b>	<b>2976</b>	<b>100.0</b>	<b>2904</b>	<b>100.0</b>
<b>Babies</b>										
Aboriginal but not Torres Strait Islander	2376	94.8	2463	93.0	2736	93.5	2836	94.1	2784	95.0
Torres Strait Islander but not Aboriginal	31	1.2	51	1.9	54	1.8	61	2.0	45	1.5
Both Aboriginal and Torres Strait Islander	100	4.0	135	5.1	136	4.6	118	3.9	102	3.5
<b>TOTAL</b>	<b>2507</b>	<b>100.0</b>	<b>2649</b>	<b>100.0</b>	<b>2926</b>	<b>100.0</b>	<b>3015</b>	<b>100.0</b>	<b>2931</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
 # Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers of mothers are about one-and-a-half times higher than shown, and the true numbers of babies are about two times higher than shown.

## Plurality

Between 2005 and 2009 multiple pregnancies (twins, triplets etc.) were reported for about 1% of all pregnancies. In 2009,

1.8% of babies born to Aboriginal or Torres Strait Islander mothers were twins (Table 72).

**Table 72. Aboriginal and Torres Strait Islander mothers and babies by plurality, NSW 2005–2009#**

Plurality	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Mothers</b>										
Singleton	2443	98.7	2574	98.6	2851	98.7	2937	98.7	2877	99.1
Twins	29	1.2	36	1.4	36	1.2	39	1.3	27	0.9
Triplets	2	0.1	1	0.0	1	0.0	0	0.0	0	0.0
<b>TOTAL</b>	<b>2474</b>	<b>100.0</b>	<b>2611</b>	<b>100.0</b>	<b>2888</b>	<b>100.0</b>	<b>2976</b>	<b>100.0</b>	<b>2904</b>	<b>100.0</b>
<b>Babies</b>										
Singleton	2443	97.4	2574	97.2	2851	97.4	2937	97.4	2877	98.2
Twins	58	2.3	72	2.7	72	2.5	78	2.6	54	1.8
Triplets	6	0.2	3	0.1	3	0.1	0	0.0	0	0.0
<b>TOTAL</b>	<b>2507</b>	<b>100.0</b>	<b>2649</b>	<b>100.0</b>	<b>2926</b>	<b>100.0</b>	<b>3015</b>	<b>100.0</b>	<b>2931</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
 # Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers of mothers are about one-and-a-half times higher than shown, and the true numbers of babies are about two times higher than shown.

## Previous pregnancies

In 2009, one-third of Aboriginal or Torres Strait Islander mothers gave birth for the first time (Table 73), 57.7% of mothers reported between one and four previous births and

7.8% of mothers had previously given birth to 5 or more babies. This pattern has not changed substantially since 2005.

**Table 73. Previous pregnancies among Aboriginal and Torres Strait Islander mothers, NSW 2005–2009#**

No. previous pregnancies (>20 weeks)	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
0	787	31.8	844	32.3	952	33.0	986	33.1	1000	34.4
1–4	1472	59.5	1551	59.4	1683	58.3	1735	58.3	1677	57.7
5+	214	8.6	199	7.6	237	8.2	253	8.5	227	7.8
Not stated	1	0.0	17	0.7	16	0.6	2	0.1	0	0.0
<b>TOTAL</b>	<b>2474</b>	<b>100.0</b>	<b>2611</b>	<b>100.0</b>	<b>2888</b>	<b>100.0</b>	<b>2976</b>	<b>100.0</b>	<b>2904</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown.

## Maternal age

The reported number of Aboriginal or Torres Strait Islander mothers giving birth has increased at all ages over recent years. The percentage of Aboriginal or Torres Strait Islander mothers

who were teenagers fell from 20.4% in 2005 to 18.9% in 2009. The percentage of mothers giving birth at 35 years of age or more has been stable at about 9% (Table 74).

**Table 74. Age of Aboriginal and Torres Strait Islander mothers, NSW 2005–2009#**

Maternal age (years)	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
12–19	504	20.4	534	20.5	543	18.8	589	19.8	549	18.9
20–34	1739	70.3	1851	70.9	2080	72.0	2109	70.9	2074	71.4
35+	231	9.3	222	8.5	264	9.1	278	9.3	281	9.7
Not stated	0	0.0	4	0.2	1	0.0	0	0.0	0	0.0
<b>TOTAL</b>	<b>2474</b>	<b>100.0</b>	<b>2611</b>	<b>100.0</b>	<b>2888</b>	<b>100.0</b>	<b>2976</b>	<b>100.0</b>	<b>2904</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown.

## Local Health District of residence

Between 2005 and 2009, the reported number of Aboriginal or Torres Strait Islander mothers rose in most Local Health Districts. The reported number of Aboriginal or Torres Strait Islander mothers who gave birth in 2009 ranged from 28 in the Northern Sydney Local Health District to 654 in the Hunter

New England Local Health District (Table 75). The proportion of mothers who were teenagers varied from 15.3% in the Northern NSW Local Health District to 28.3% in the Nepean Blue Mountains Local Health District (Table 76).

**Table 75. Local Health District of residence of Aboriginal and Torres Strait Islander mothers, NSW 2005–2009#**

Local Health District	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	74	3.0	97	3.7	96	3.3	102	3.4	105	3.6
South Western Sydney	106	4.3	117	4.5	157	5.4	173	5.8	170	5.9
South Eastern Sydney	70	2.8	69	2.6	85	2.9	57	1.9	64	2.2
Illawarra Shoalhaven	124	5.0	151	5.8	162	5.6	190	6.4	170	5.9
Western Sydney	180	7.3	191	7.3	221	7.7	201	6.8	203	7.0
Nepean Blue Mountains	87	3.5	87	3.3	141	4.9	140	4.7	113	3.9
Northern Sydney	17	0.7	17	0.7	27	0.9	21	0.7	28	1.0
Central Coast	71	2.9	88	3.4	109	3.8	122	4.1	110	3.8
Hunter New England	603	24.4	589	22.6	647	22.4	730	24.5	654	22.5
Northern NSW	172	7.0	205	7.9	228	7.9	210	7.1	203	7.0
Mid North Coast	168	6.8	190	7.3	195	6.8	203	6.8	234	8.1
Southern NSW	73	3.0	71	2.7	66	2.3	58	1.9	68	2.3
Murrumbidgee	143	5.8	128	4.9	178	6.2	152	5.1	156	5.4
Western NSW	511	20.7	521	20.0	499	17.3	526	17.7	553	19.0
Far West	42	1.7	43	1.6	43	1.5	51	1.7	35	1.2
Other-not stated	33	1.3	47	1.8	34	1.2	40	1.3	38	1.3
<b>TOTAL</b>	<b>2474</b>	<b>100.0</b>	<b>2611</b>	<b>100.0</b>	<b>2888</b>	<b>100.0</b>	<b>2976</b>	<b>100.0</b>	<b>2904</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown. The level of under-reporting varies between Local Health Districts (Table 69).

**Table 76. Local Health District of residence of Aboriginal and Torres Strait Islander mothers by age, NSW 2009#**

Local Health District	Maternal age (years)					
	Under 20		20-plus		TOTAL	
	No.	%	No.	%	No.	%
Sydney	19	18.1	86	81.9	105	100.0
South Western Sydney	38	22.4	132	77.6	170	100.0
South Eastern Sydney	10	15.6	54	84.4	64	100.0
Illawarra Shoalhaven	32	18.8	138	81.2	170	100.0
Western Sydney	41	20.2	162	79.8	203	100.0
Nepean Blue Mountains	32	28.3	81	71.7	113	100.0
Northern Sydney	-	-	-	-	28	100.0
Central Coast	17	15.5	93	84.5	110	100.0
Hunter New England	128	19.6	526	80.4	654	100.0
Northern NSW	31	15.3	172	84.7	203	100.0
Mid North Coast	45	19.2	189	80.8	234	100.0
Southern NSW	13	19.1	55	80.9	68	100.0
Murrumbidgee	30	19.2	126	80.8	156	100.0
Western NSW	103	18.6	450	81.4	553	100.0
Far West	7	20.0	28	80.0	35	100.0
Other-not stated	-	-	-	-	38	100.0
<b>TOTAL</b>	<b>549</b>	<b>18.9</b>	<b>2355</b>	<b>81.1</b>	<b>2904</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# # Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown. The level of under-reporting varies between Local Health Districts (Table 69). Data not shown for cell counts less than five.

## Duration of pregnancy at first antenatal visit

Between 2005 and 2009, the proportion of Aboriginal or Torres Strait Islander mothers who commenced antenatal care at less than 14 weeks gestation rose from 56.4% to 69.2%, and the proportion who commenced antenatal care at less than 20 weeks gestation rose from 74.9% to 83.4% (Table 77). This compares with 79.2% of non-Aboriginal or Torres Strait Islander mothers who commenced antenatal care at less

than 14 weeks gestation, and 89.2% who commenced antenatal care at less than 20 weeks gestation in 2009.

In 2009, the proportion of Aboriginal or Torres Strait Islander mothers who commenced antenatal care at less than 14 weeks gestation varied from 34.3% in the Sydney Local Health District to 86.4% in the Central Coast Local Health District (Table 78).

**Table 77. Duration of pregnancy at first antenatal visit among Aboriginal and Torres Strait Islander mothers, NSW 2005–2009#**

Duration of pregnancy (weeks)	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
0-13	1396	56.4	1531	58.6	1840	63.7	2045	68.7	2011	69.2
14-19	458	18.5	421	16.1	456	15.8	437	14.7	410	14.1
20-plus	561	22.7	550	21.1	461	16.0	404	13.6	428	14.7
Not stated	59	2.4	109	4.2	131	4.5	90	3.0	55	1.9
<b>TOTAL</b>	<b>2474</b>	<b>100.0</b>	<b>2611</b>	<b>100.0</b>	<b>2888</b>	<b>100.0</b>	<b>2976</b>	<b>100.0</b>	<b>2904</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown.

**Table 78. Duration of pregnancy at first antenatal visit among Aboriginal and Torres Strait Islander mothers by Local Health District of residence, NSW 2009#**

Local Health District	Duration of pregnancy (weeks)									
	0-13		14-19		20-plus		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	36	34.3	27	25.7	35	33.3	7	6.7	105	100.0
South Western Sydney	87	51.2	36	21.2	44	25.9	3	1.8	170	100.0
South Eastern Sydney	37	57.8	20	31.3	6	9.4	1	1.6	64	100.0
Illawarra Shoalhaven	127	74.7	22	12.9	21	12.4	0	0.0	170	100.0
Western Sydney	171	84.2	8	3.9	20	9.9	4	2.0	203	100.0
Nepean Blue Mountains	91	80.5	10	8.8	10	8.8	2	1.8	113	100.0
Northern Sydney	24	85.7	-	-	-	-	0	0.0	28	100.0
Central Coast	95	86.4	8	7.3	6	5.5	1	0.9	110	100.0
Hunter New England	463	70.8	88	13.5	93	14.2	10	1.5	654	100.0
Northern NSW	150	73.9	25	12.3	22	10.8	6	3.0	203	100.0
Mid North Coast	155	66.2	40	17.1	34	14.5	5	2.1	234	100.0
Southern NSW	43	63.2	12	17.6	13	19.1	0	0.0	68	100.0
Murrumbidgee	103	66.0	25	16.0	27	17.3	1	0.6	156	100.0
Western NSW	380	68.7	76	13.7	83	15.0	14	2.5	553	100.0
Far West	19	54.3	8	22.9	8	22.9	0	0.0	35	100.0
Other-not stated	30	78.9	-	-	-	-	1	2.6	38	100.0
<b>TOTAL</b>	<b>2011</b>	<b>69.2</b>	<b>410</b>	<b>14.1</b>	<b>428</b>	<b>14.7</b>	<b>55</b>	<b>1.9</b>	<b>2904</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

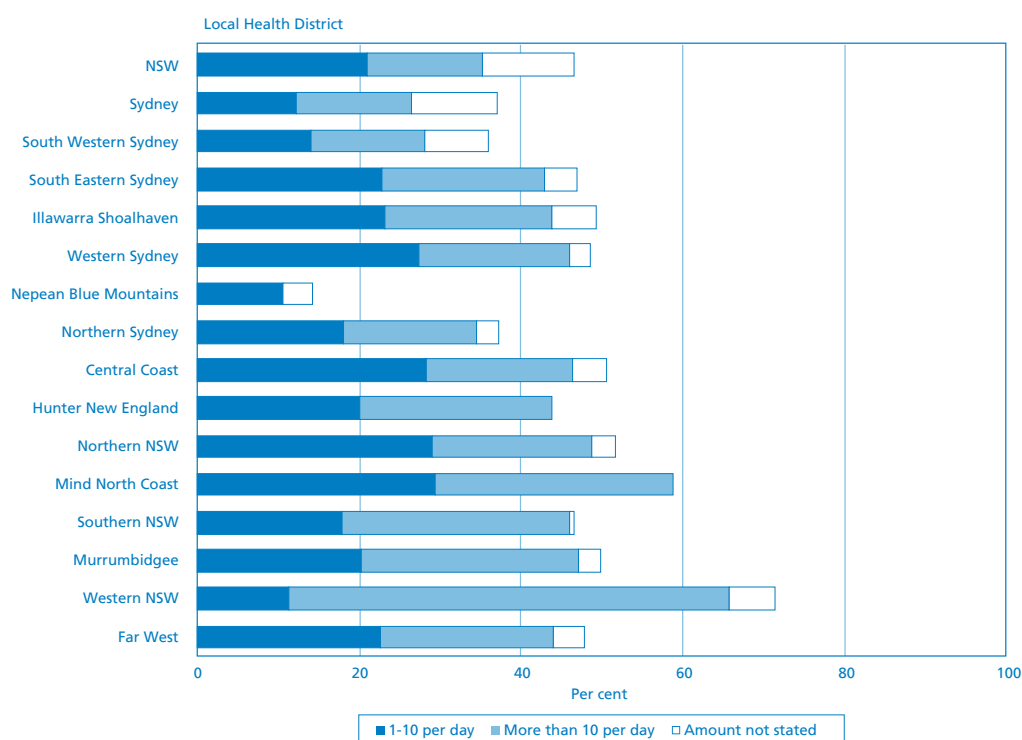
# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown. The level of under-reporting varies between Local Health Districts (Table 69). Data not shown for cell counts less than five.

## Smoking in pregnancy

In 2009, 50.5% of Aboriginal or Torres Strait Islander mothers reported smoking at some time during pregnancy, compared to 55.3% in 2005. This compares with 10.5% of non-Aboriginal or Torres Strait Islander mothers who reported smoking at some time during pregnancy in 2009.

Smoking in the second half of pregnancy poses the greatest risk to the health of both mother and baby. In 2009, 47.9% of Aboriginal or Torres Strait Islander mothers reported smoking in the second half of pregnancy. This percentage varied from 14.3% in the Northern Sydney Local Health District to 58.8% in the Southern NSW Local Health District (Figure 3).

**Figure 3. Smoking in the second half of pregnancy among Aboriginal and Torres Strait Islander mothers by amount smoked and Local Health District of residence, NSW 2009#**



Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research. NSW Ministry of Health.

# Due to under-reporting of Aboriginal mothers on the PDC, it is likely that the true numbers are about one and a half times higher than shown. The level of reporting varies between Local Health Districts (Table 69).

## Medical conditions and obstetric complications

In 2009, there was a lower rate of gestational diabetes and pregnancy-induced hypertension and a higher rate of diabetes mellitus reported among Aboriginal or Torres Strait Islander mothers compared with non-Aboriginal or Torres Strait Islander mothers (Table 79). The number of Aboriginal or

Torres Strait Islander mothers with medical conditions and obstetric complications reported to the PDC is low, even after taking into account under-reporting of Aboriginal mothers. The low numbers may be due to under-detection and/or under-reporting.

**Table 79. Maternal medical conditions and obstetric complications among Aboriginal and non-Aboriginal mothers, NSW 2009#**

Condition	Aboriginality							
	Aboriginal/ Torres Strait islander		Non-Aboriginal/ Torres Strait islander		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Diabetes mellitus	22	0.8	503	0.5	0	0.0	525	0.6
Gestational diabetes	96	3.3	5050	5.5	11	6.3	5157	5.4
Essential hypertension	26	0.9	730	0.8	0	0.0	756	0.8
Pregnancy-induced hypertension	160	5.5	5987	6.5	6	3.4	6153	6.5
<b>TOTAL</b>	<b>2904</b>	<b>100.0</b>	<b>91963</b>	<b>100.0</b>	<b>176</b>	<b>100.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown.



## Labour and birth

The rate of spontaneous onset of labour among Aboriginal or Torres Strait Islander mothers fell from 65.2% in 2005 to 63.8% in 2009 (Table 80), while the rate of induction of labour was stable at about 23% to 24%. The rate of induction of labour among Aboriginal or Torres Strait Islander mothers was slightly lower than the rate of 25.8% reported among non-Aboriginal or Torres Strait Islander mothers in 2009.

Between 2005 and 2009, the rate of normal vaginal birth fell from 70.4% to 63.8%. The caesarean section rate rose from 23.3% to 24.3% (Table 81). The rate of instrumental delivery rose slightly from 5.4% to 6.5%, and about 1% of all births were vaginal breech births.

**Table 80. Labour onset for Aboriginal and Torres Strait Islander mothers, NSW 2005–2009#**

Labour onset	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Spontaneous	1613	65.2	1728	66.2	1884	65.2	1966	66.1	1852	63.8
No labour##	277	11.2	329	12.6	315	10.9	339	11.4	357	12.3
Induced	584	23.6	552	21.1	688	23.8	669	22.5	695	23.9
Not stated	0	0.0	2	0.1	1	0.0	2	0.1	0	0.0
<b>TOTAL</b>	<b>2474</b>	<b>100.0</b>	<b>2611</b>	<b>100.0</b>	<b>2888</b>	<b>100.0</b>	<b>2976</b>	<b>100.0</b>	<b>2904</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown.

## No labour indicates elective caesarean section.

**Table 81. Type of birth among Aboriginal and Torres Strait Islander mothers, NSW 2005–2009#**

Labour onset	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Normal vaginal	1741	70.4	1868	71.5	2015	69.8	2074	69.7	1984	68.3
Forceps	42	1.7	46	1.8	42	1.5	75	2.5	64	2.2
Vacuum extraction	91	3.7	84	3.2	121	4.2	124	4.2	126	4.3
Vaginal breech	24	1.0	17	0.7	27	0.9	25	0.8	23	0.8
Elective caesarean section	277	11.2	329	12.6	315	10.9	339	11.4	357	12.3
Emergency caesarean section##	299	12.1	259	9.9	365	12.6	336	11.3	350	12.1
Not stated	0	0.0	8	0.3	3	0.1	3	0.1	0	0.0
<b>TOTAL</b>	<b>2474</b>	<b>100.0</b>	<b>2611</b>	<b>100.0</b>	<b>2888</b>	<b>100.0</b>	<b>2976</b>	<b>100.0</b>	<b>2904</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about one-and-a-half times higher than shown.

## Emergency caesarean section includes caesarean section where the onset of labour was not stated.

## Birth weight

Since 2005, the rate of low birth weight (less than 2,500 grams) in Aboriginal or Torres Strait Islander babies has been over 10% and was 10.8% in 2009 (Table 82). This is about twice the rate for babies born to non-Aboriginal or Torres

Strait Islander mothers, which was 5.8% in 2009. In 2009, the largest number of low birth weight babies was in the Hunter New England Local Health District (Table 83).

**Table 82. Weight of Aboriginal and Torres Strait Islander babies, NSW 2005–2009#**

Birth weight (grams)	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 1,000	36	1.4	26	1.0	57	1.9	39	1.3	36	1.2
1,000–1,499	20	0.8	29	1.1	23	0.8	36	1.2	22	0.8
1,500–2,499	257	10.3	273	10.3	276	9.4	272	9.0	259	8.8
2,500+	2193	87.5	2318	87.5	2563	87.6	2665	88.4	2610	89.0
Not stated	1	0.0	3	0.1	7	0.2	3	0.1	4	0.1
<b>TOTAL</b>	2507	100.0	2649	100.0	2926	100.0	3015	100.0	2931	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about two times higher than shown.

**Table 83. Weight of Aboriginal and Torres Strait Islander babies by Local Health District of residence, NSW 2009#**

Local Health District	Birth weight (grams)							
	< 2,500		2,500+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Sydney	15	14.0	92	86.0	0	0.0	107	100.0
South Western Sydney	16	9.2	156	90.2	1	0.6	173	100.0
South Eastern Sydney	6	9.2	59	90.8	0	0.0	65	100.0
Illawarra Shoalhaven	14	8.2	157	91.8	0	0.0	171	100.0
Western Sydney	28	13.7	176	86.3	0	0.0	204	100.0
Nepean Blue Mountains	13	11.3	102	88.7	0	0.0	115	100.0
Northern Sydney	-	-	-	-	-	-	28	100.0
Central Coast	10	9.1	100	90.9	0	0.0	110	100.0
Hunter New England	82	12.4	579	87.5	1	0.2	662	100.0
Northern NSW	21	10.3	183	89.7	0	0.0	204	100.0
Mid North Coast	29	12.2	207	87.3	1	0.4	237	100.0
Southern NSW	5	7.4	63	92.6	0	0.0	68	100.0
Murrumbidgee	12	7.6	144	91.7	1	0.6	157	100.0
Western NSW	56	10.1	501	89.9	0	0.0	557	100.0
Far West	-	-	-	-	-	-	35	100.0
Other-not stated	5	13.2	33	86.8	0	0.0	38	100.0
<b>TOTAL</b>	317	10.8	2610	89.0	4	0.1	2931	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about two times higher than shown.  
The level of under-reporting varies between Local Health Districts (Table 70). Data not shown for cell counts less than five.

## Gestational age

Since 2005, over 10% of Aboriginal or Torres Strait Islander babies have been premature (less than 37 weeks gestation) (Table 84). The rate of prematurity was 10.5% in 2009—compared with a rate of 7.2% for babies born to

non-Aboriginal or Torres Strait Islander mothers. In 2009, the largest number of premature babies was born in the Hunter New England Local Health District (Table 85).

**Table 84. Gestational age of Aboriginal and Torres Strait Islander babies, NSW 2005–2009#**

Gestational age (weeks)	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
< 28	30	1.2	25	0.9	56	1.9	44	1.5	39	1.3
28-31	27	1.1	26	1.0	28	1.0	40	1.3	26	0.9
32-36	244	9.7	235	8.9	289	9.9	284	9.4	244	8.3
37-41	2180	87.0	2330	88.0	2518	86.1	2622	87.0	2589	88.3
42 +	26	1.0	31	1.2	32	1.1	24	0.8	33	1.1
Not stated	0	0.0	2	0.1	3	0.1	1	0.0	0	0.0
<b>TOTAL</b>	<b>2507</b>	<b>100.0</b>	<b>2649</b>	<b>100.0</b>	<b>2926</b>	<b>100.0</b>	<b>3015</b>	<b>100.0</b>	<b>2931</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about two times higher than shown.

**Table 85. Gestational age of Aboriginal and Torres Strait Islander babies by Local Health District of residence, NSW 2009#**

Local Health District	Gestational age (weeks)					
	Less than 37		37+		TOTAL	
	No.	%	No.	%	No.	%
Sydney	9	8.4	98	91.6	107	100.0
South Western Sydney	15	8.7	158	91.3	173	100.0
South Eastern Sydney	8	12.3	57	87.7	65	100.0
Illawarra Shoalhaven	16	9.4	155	90.6	171	100.0
Western Sydney	24	11.8	180	88.2	204	100.0
Nepean Blue Mountains	15	13.0	100	87.0	115	100.0
Northern Sydney	-	-	-	-	28	100.0
Central Coast	7	6.4	103	93.6	110	100.0
Hunter New England	90	13.6	572	86.4	662	100.0
Northern NSW	15	7.4	189	92.6	204	100.0
Mid North Coast	25	10.5	212	89.5	237	100.0
Southern NSW	-	-	-	-	68	100.0
Murrumbidgee	12	7.6	145	92.4	157	100.0
Western NSW	60	10.8	497	89.2	557	100.0
Far West	-	-	-	-	35	100.0
Other-not stated	4	10.5	34	89.5	38	100.0
<b>TOTAL</b>	<b>309</b>	<b>10.5</b>	<b>2622</b>	<b>89.5</b>	<b>2931</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about two times higher than shown. The level of under-reporting varies between Local Health Districts (Table 70). Data not shown for cell counts less than five.

## Apgar score

In 2009, 3.1% of Aboriginal or Torres Strait Islander babies had an Apgar score less than seven (Table 86), slightly higher

than the rate of 2.0% for babies born to non-Aboriginal or Torres Strait Islander mothers.

**Table 86. Apgar score of Aboriginal and Torres Strait Islander babies, NSW 2005–2009#**

Apgar score at 5 minutes	Year									
	2005		2006		2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
0-4	42	1.7	36	1.4	73	2.5	62	2.1	53	1.8
5-6	33	1.3	24	0.9	42	1.4	45	1.5	39	1.3
7+	2416	96.4	2571	97.1	2794	95.5	2886	95.7	2819	96.2
Not stated	16	0.6	18	0.7	17	0.6	22	0.7	20	0.7
<b>TOTAL</b>	<b>2507</b>	<b>100.0</b>	<b>2649</b>	<b>100.0</b>	<b>2926</b>	<b>100.0</b>	<b>3015</b>	<b>100.0</b>	<b>2931</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about two times higher than shown.

## Infant feeding

In 2009, 62.4% of babies born to Aboriginal or Torres Strait Islander mothers were fully breastfed at discharge from hospital, 4.5% were partially breastfed and 31.3% received infant formula only (Table 87). This compares with 80.6% of

babies born to non-Aboriginal or Torres Strait Islander mothers who were fully breastfed in 2009. Rates of full breastfeeding ranged from 51.0% in the Western Sydney Local Health District to 92.9% in the Northern Sydney Local Health District.

**Table 87. Infant feeding among Aboriginal and Torres Strait Islander liveborn babies by Local Health District of residence, NSW 2009#**

Local Health District	Full breast-feeding		Any breast-feeding		Infant feeding Infant formula only		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sydney	64	59.8	13	12.1	29	27.1	1	0.9	107	100.0
South Western Sydney	90	52.0	17	9.8	64	37.0	2	1.2	173	100.0
South Eastern Sydney	48	73.8	-	3.1	14	21.5	-	-	65	100.0
Illawarra Shoalhaven	109	63.7	-	2.3	53	31.0	-	-	171	100.0
Western Sydney	104	51.0	9	4.4	87	42.6	4	2.0	204	100.0
Nepean Blue Mountains	65	56.5	5	4.3	43	37.4	2	1.7	115	100.0
Northern Sydney	26	92.9	-	-	-	-	-	-	28	100.0
Central Coast	76	69.1	-	-	29	26.4	-	-	110	100.0
Hunter New England	410	61.9	30	4.5	205	31.0	17	2.6	662	100.0
Northern NSW	140	68.6	13	6.4	47	23.0	4	2.0	204	100.0
Mid North Coast	182	76.8	7	3.0	44	18.6	4	1.7	237	100.0
Southern NSW	51	75.0	0	0.0	16	23.5	1	1.5	68	100.0
Murrumbidgee	95	60.5	-	-	57	36.3	-	-	157	100.0
Western NSW	319	57.3	21	3.8	210	37.7	7	1.3	557	100.0
Far West	21	60.0	5	14.3	9	25.7	0	0.0	35	100.0
Other-not stated	28	73.7	0	0.0	7	18.4	3	7.9	38	100.0
<b>TOTAL</b>	<b>1828</b>	<b>62.4</b>	<b>131</b>	<b>4.5</b>	<b>916</b>	<b>31.3</b>	<b>56</b>	<b>1.9</b>	<b>2931</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about two times higher than shown. The level of under-reporting varies between Local Health Districts (Table 69). Data not shown for cell counts less than five.

## Perinatal mortality

Since 2005, the perinatal mortality rate among Aboriginal or Torres Strait Islander babies has varied from 12.1 to 22.6 per 1,000 births (Table 88). The rate of 12.6 per 1,000 in 2009 is

substantially higher than the rate of 8.5 per 1,000 experienced by babies born to non-Aboriginal or Torres Strait Islander mothers.

**Table 88. Perinatal deaths among Aboriginal and Torres Strait Islander babies, NSW 2005–2009#**

Perinatal deaths	2005		2006		Year 2007		2008		2009	
	No.	Rate/ 1,000	No.	Rate/ 1,000	No.	Rate/ 1,000	No.	Rate/ 1,000	No.	Rate/ 1,000
Stillbirth	22	8.8	16	6.0	41	14.0	34	11.3	27	9.2
Neonatal death	16	6.4	16	6.0	25	8.5	12	4.0	10	3.4
<b>TOTAL</b>	<b>38</b>	<b>15.2</b>	<b>32</b>	<b>12.1</b>	<b>66</b>	<b>22.6</b>	<b>46</b>	<b>15.3</b>	<b>37</b>	<b>12.6</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Perinatal deaths include deaths reported to the PDC only. As the PDC form is completed at discharge or transfer of the baby, deaths occurring after this time may not be reported to the MDC. Due to under-reporting of Aboriginality to the PDC, it is likely that the true numbers are about two times higher than shown.

## 8. Maternal Country of Birth

In this section maternal countries of birth are combined into English-speaking and other regional groups. The country groups and individual countries are listed in Appendix 3. Recent trends in confinements for individual maternal countries of birth are shown in Table 4 (page 17).

### Trends in confinements

Between 2005 and 2009, the percentage of mothers who were born in non-English speaking countries rose from 20.8% to 24.3% (Table 89). The increase was mainly among mothers born in Asian countries and the Middle East and Africa. There was a decline in the percentage of mothers born in Southern European countries and Melanesia, Micronesia and Polynesia.

**Table 89. Births and confinements by country of birth group, NSW 2005–2009**

Country of birth group	2005		2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Confinements</b>										
English speaking	70354	78.9	71515	78.3	73109	77.3	72361	76.3	71643	75.4
Central & South America	726	0.8	765	0.8	793	0.8	830	0.9	867	0.9
Melanesia, Micronesia & Polynesia	1485	1.7	1538	1.7	1518	1.6	1424	1.5	1351	1.4
Southern Europe	927	1.0	901	1.0	843	0.9	847	0.9	865	0.9
Western & Northern Europe	688	0.8	725	0.8	782	0.8	844	0.9	834	0.9
Eastern Europe, Russia, Central Asian & Baltic States	578	0.6	564	0.6	688	0.7	676	0.7	749	0.8
Middle East & Africa	4080	4.6	4216	4.6	4343	4.6	4635	4.9	4503	4.7
South East Asia	4571	5.1	4698	5.1	5166	5.5	5255	5.5	5286	5.6
North East Asia	3117	3.5	3143	3.4	3966	4.2	4023	4.2	4333	4.6
Southern Asia	2396	2.7	2759	3.0	3191	3.4	3759	4.0	4310	4.5
Other-not stated	218	0.2	491	0.5	203	0.2	210	0.2	302	0.3
TOTAL	89140	100.0	91315	100.0	94602	100.0	94864	100.0	95043	100.0
<b>Births</b>										
English speaking	71558	79.0	72699	78.4	74266	77.3	73562	76.4	72741	75.4
Central & South America	743	0.8	779	0.8	809	0.8	842	0.9	881	0.9
Melanesia, Micronesia & Polynesia	1508	1.7	1564	1.7	1546	1.6	1441	1.5	1364	1.4
Southern Europe	945	1.0	920	1.0	858	0.9	866	0.9	879	0.9
Western & Northern Europe	700	0.8	737	0.8	795	0.8	861	0.9	845	0.9
Eastern Europe, Russia, Central Asian & Baltic States	593	0.7	573	0.6	701	0.7	689	0.7	758	0.8
Middle East & Africa	4142	4.6	4287	4.6	4410	4.6	4707	4.9	4595	4.8
South East Asia	4626	5.1	4746	5.1	5206	5.4	5304	5.5	5334	5.5
North East Asia	3144	3.5	3172	3.4	4006	4.2	4058	4.2	4382	4.5
Southern Asia	2428	2.7	2801	3.0	3225	3.4	3798	3.9	4354	4.5
Other-not stated	223	0.2	503	0.5	208	0.2	215	0.2	306	0.3
TOTAL	90610	100.0	92781	100.0	96030	100.0	96343	100.0	96439	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Maternal age

In 2009 births to teenage mothers were more common among mothers born in English-speaking countries than non-English speaking countries (Table 90, Figure 4), while the

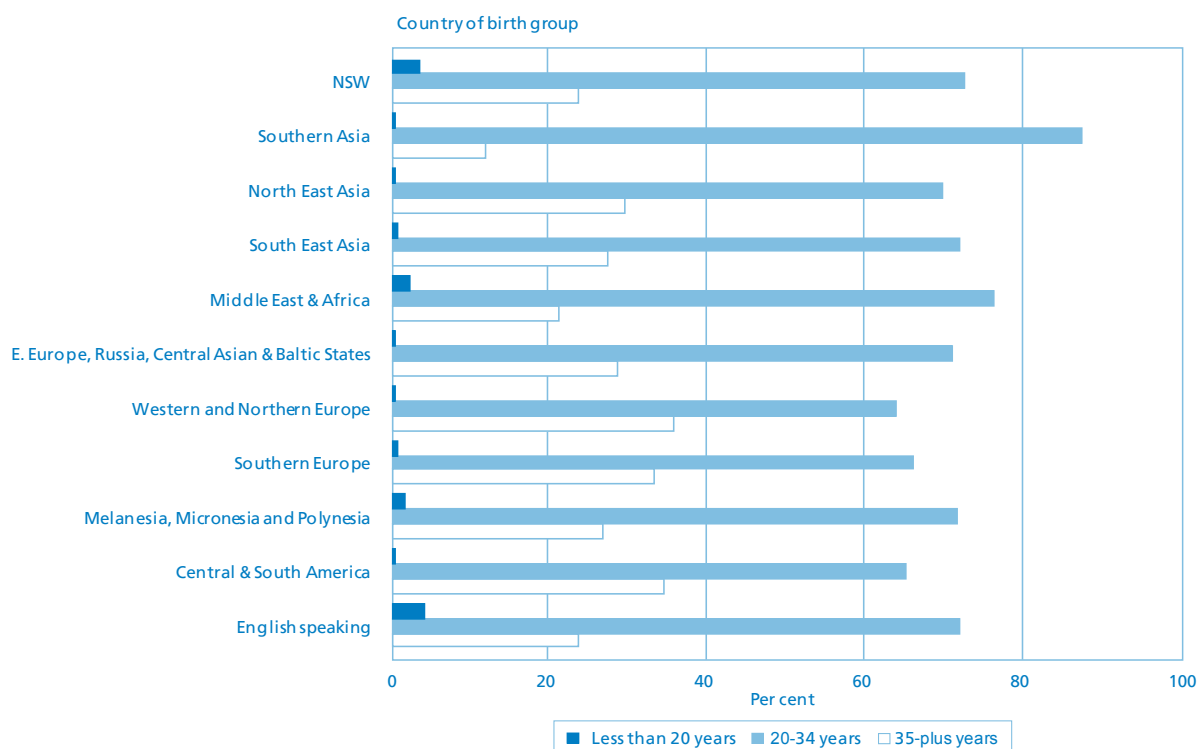
largest proportions of mothers aged 35 years and over were among mothers born in Western and Northern Europe (35.7%) and Central and South America (34.4%).

**Table 90. Maternal age by country of birth group, NSW 2009**

Country of birth group	Maternal age (years)									
	12–19		20–34		35+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
English speaking	3064	4.3	51651	72.1	16914	23.6	14	0.0	71643	100.0
Central & South America	3	0.3	566	65.3	298	34.4	0	0.0	867	100.0
Melanesia, Micronesia & Polynesia	21	1.6	969	71.7	361	26.7	0	0.0	1351	100.0
Southern Europe	7	0.8	571	66.0	287	33.2	0	0.0	865	100.0
Western & Northern Europe	4	0.5	532	63.8	298	35.7	0	0.0	834	100.0
Eastern Europe, Russia, Central Asian & Baltic States	2	0.3	533	71.2	214	28.6	0	0.0	749	100.0
Middle East & Africa	107	2.4	3436	76.3	960	21.3	0	0.0	4503	100.0
South East Asia	35	0.7	3801	71.9	1450	27.4	0	0.0	5286	100.0
North East Asia	22	0.5	3028	69.9	1283	29.6	0	0.0	4333	100.0
Southern Asia	24	0.6	3774	87.6	512	11.9	0	0.0	4310	100.0
Other-not stated	5	1.7	214	70.9	82	27.2	1	0.3	302	100.0
TOTAL	3294	3.5	69075	72.7	22659	23.8	15	0.0	95043	100.0
Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.										

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

**Figure 4. Maternal age by country of birth group, NSW 2009**



Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research. NSW Ministry of Health.

## Local health district of residence

In 2009, the proportion of mothers born in non-English speaking countries was highest in the Western Sydney Local Health District (45.3%), followed by the South Western Sydney Local Health District (40.0%). Six percent of mothers were born in South East Asian countries, 52.5% of whom were resident in the Western Sydney and South Western Sydney Local Health Districts. Almost 5% of mothers were born in

Middle Eastern and African countries and 64.7% of these mothers were resident in the Western Sydney and South Western Sydney Local Health Districts. A further 9.1% of mothers were born in North East Asian or Southern Asian countries, with the majority living in Sydney metropolitan areas (Table 91).

**Table 91. Local Health District of residence by country of birth group, NSW 2009#**

Local Health District	Country of birth group																						TOTAL	
	English speaking		Central & South America		Melanesia, Micronesia, Polynesia		Southern Europe		Western & Northern Europe		Eastern Europe, Russia, Central Asian & Baltic States		Middle East & Africa		South East Asia		North East Asia		Southern Asia		Other-not stated			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Sydney	5160	60.9	98	1.2	108	1.3	115	1.4	94	1.1	87	1.0	556	6.6	669	7.9	887	10.5	664	7.8	35	0.4	8473	100.0
South Western Sydney	7596	59.6	172	1.3	479	3.8	256	2.0	46	0.4	58	0.5	1593	12.5	1731	13.6	292	2.3	466	3.7	54	0.4	12743	100.0
South Eastern Sydney	7966	70.6	186	1.6	101	0.9	172	1.5	213	1.9	207	1.8	419	3.7	709	6.3	839	7.4	373	3.3	93	0.8	11278	100.0
Illawarra Shoalhaven	4032	91.2	25	0.6	14	0.3	55	1.2	24	0.5	19	0.4	82	1.9	81	1.8	47	1.1	34	0.8	7	0.2	4420	100.0
Western Sydney	7393	54.5	121	0.9	408	3.0	102	0.8	34	0.3	102	0.8	1322	9.7	1046	7.7	1014	7.5	2004	14.8	27	0.2	13573	100.0
Nepean Blue Mountains	4351	90.3	19	0.4	45	0.9	35	0.7	15	0.3	15	0.3	91	1.9	116	2.4	41	0.9	74	1.5	17	0.4	4819	100.0
Northern Sydney	7546	72.8	161	1.6	82	0.8	72	0.7	242	2.3	173	1.7	210	2.0	516	5.0	958	9.2	373	3.6	39	0.4	10372	100.0
Central Coast	3727	94.4	20	0.5	15	0.4	8	0.2	25	0.6	22	0.6	19	0.5	47	1.2	32	0.8	24	0.6	10	0.3	3949	100.0
Hunter New England	10087	95.5	17	0.2	31	0.3	27	0.3	51	0.5	24	0.2	75	0.7	101	1.0	70	0.7	72	0.7	4	0.0	10559	100.0
Northern NSW	2785	94.7	11	0.4	10	0.3	5	0.2	28	1.0	4	0.1	20	0.7	43	1.5	17	0.6	17	0.6	0	0.0	2940	100.0
Mid North Coast	2126	94.4	5	0.2	6	0.3	2	0.1	9	0.4	10	0.4	13	0.6	37	1.6	11	0.5	30	1.3	3	0.1	2252	100.0
Southern NSW	1356	95.4	0	0.0	7	0.5	2	0.1	7	0.5	3	0.2	9	0.6	21	1.5	8	0.6	6	0.4	2	0.1	1421	100.0
Murrumbidgee	2473	94.5	0	0.0	17	0.6	1	0.0	9	0.3	2	0.1	27	1.0	21	0.8	17	0.6	48	1.8	1	0.0	2616	100.0
Western NSW	3587	96.7	7	0.2	8	0.2	2	0.1	7	0.2	7	0.2	20	0.5	36	1.0	16	0.4	15	0.4	3	0.1	3708	100.0
Far West	235	96.7	2	0.8	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	3	1.2	0	0.0	2	0.8	0	0.0	243	100.0
Other-not stated	1223	72.9	23	1.4	19	1.1	11	0.7	30	1.8	16	1.0	47	2.8	109	6.5	84	5.0	108	6.4	7	0.4	1677	100.0
TOTAL	71643	75.4	867	0.9	1351	1.4	865	0.9	834	0.9	749	0.8	4503	4.7	5286	5.6	4333	4.6	4310	4.5	302	0.3	95043	100.0

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Data not shown for country of birth groups with less than five in a group.

## Duration of pregnancy at first antenatal visit

In 2009, 91.9% of all mothers commenced antenatal care before 20 weeks gestation and 78.9% commenced antenatal care before 14 weeks gestation. There was some variation between country of birth groups, with 93.2% of mothers

born in English speaking countries commencing antenatal care before 20 weeks gestation, compared with 79.6% of mothers born in Melanesia, Micronesia, and Polynesia, and 87.9% of mothers born in North East Asia (Table 92).

**Table 92. Duration of pregnancy at first antenatal visit by country of birth group, NSW 2009**

Country of birth group	Duration of pregnancy at first antenatal visit (weeks)									
	0–13		14–19		20–plus		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
English speaking	58083	81.1	8657	12.1	4317	6.0	586	0.8	71643	100.0
Central & South America	654	75.4	139	16.0	66	7.6	8	0.9	867	100.0
Melanesia, Micronesia & Polynesia	847	62.7	228	16.9	246	18.2	30	2.2	1351	100.0
Southern Europe	639	73.9	153	17.7	63	7.3	10	1.2	865	100.0
Western & Northern Europe	682	81.8	110	13.2	37	4.4	5	0.6	834	100.0
Eastern Europe, Russia, Central Asian & Baltic States	591	78.9	103	13.8	48	6.4	7	0.9	749	100.0
Middle East & Africa	3051	67.8	799	17.7	560	12.4	93	2.1	4503	100.0
South East Asia	3590	67.9	1020	19.3	598	11.3	78	1.5	5286	100.0
North East Asia	3166	73.1	644	14.9	475	11.0	48	1.1	4333	100.0
Southern Asia	3425	79.5	530	12.3	314	7.3	41	1.0	4310	100.0
Other-not stated	219	72.5	54	17.9	20	6.6	9	3.0	302	100.0
<b>TOTAL</b>	<b>74947</b>	<b>78.9</b>	<b>12437</b>	<b>13.1</b>	<b>6744</b>	<b>7.1</b>	<b>915</b>	<b>1.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Smoking in pregnancy

In 2009, smoking at any time during pregnancy was more common among mothers born in English speaking countries than mothers born in non-English speaking countries (Table 93). About one in seven mothers born in English speaking countries smoked at some time during pregnancy, compared to fewer than one in nine mothers born in other country of birth groups.

Smoking in the second half of pregnancy poses the greatest risk to the health of both mother and baby. Sixteen percent of mothers who smoked during pregnancy quit before the

second half of pregnancy. Mothers born in non-English speaking countries were more likely to quit before the second half of pregnancy compared to mothers born in English speaking countries. Of mothers who did smoke in the second half of pregnancy, mothers born in English speaking countries were more likely to smoke more than 10 cigarettes per day compared to mothers born in other country of birth groups (Table 94).

**Table 93. Smoking in pregnancy by country of birth group, NSW 2009**

Country of birth group	Smoking in pregnancy							
	No		Yes		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%
English speaking	61121	85.3	10519	14.7	3	0.0	71643	100.0
Central & South America	844	97.3	23	2.7	0	0.0	867	100.0
Melanesia, Micronesia & Polynesia	1204	89.1	147	10.9	0	0.0	1351	100.0
Southern Europe	797	92.1	68	7.9	0	0.0	865	100.0
Western & Northern Europe	806	96.6	28	3.4	0	0.0	834	100.0
Eastern Europe, Russia, Central Asian & Baltic States	726	96.9	23	3.1	0	0.0	749	100.0
Middle East & Africa	4208	93.4	295	6.6	0	0.0	4503	100.0
South East Asia	5082	96.1	204	3.9	0	0.0	5286	100.0
North East Asia	4294	99.1	39	0.9	0	0.0	4333	100.0
Southern Asia	4242	98.4	68	1.6	0	0.0	4310	100.0
Other-not stated	281	93.0	20	6.6	1	0.3	302	100.0
<b>TOTAL</b>	<b>83605</b>	<b>88.0</b>	<b>11434</b>	<b>12.0</b>	<b>4</b>	<b>0.0</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.



**Table 94. Mothers who smoked at all during pregnancy by number of cigarettes smoked in the second half of pregnancy and country of birth group, NSW 2009**

Country of birth group	Cigarettes per day in the second half of pregnancy											
	None		1–10 per day		> 10 per day		Smoked, amount not stated		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
English speaking	1362	12.9	4766	45.3	3481	33.1	908	8.6	2	0.0	10519	100.0
Central & South America	14	60.9	5	21.7	2	8.7	2	8.7	0	0.0	23	100.0
Melanesia, Micronesia & Polynesia	51	34.7	53	36.1	25	17.0	18	12.2	0	0.0	147	100.0
Southern Europe	19	27.9	27	39.7	8	11.8	14	20.6	0	0.0	68	100.0
Western & Northern Europe	15	53.6	8	28.6	3	10.7	2	7.1	0	0.0	28	100.0
Eastern Europe, Russia, Central Asian & Baltic States	9	39.1	8	34.8	3	13.0	3	13.0	0	0.0	23	100.0
Middle East & Africa	147	49.8	76	25.8	34	11.5	38	12.9	0	0.0	295	100.0
South East Asia	136	66.7	35	17.2	12	5.9	21	10.3	0	0.0	204	100.0
North East Asia	27	69.2	8	20.5	2	5.1	2	5.1	0	0.0	39	100.0
Southern Asia	52	76.5	4	5.9	6	8.8	6	8.8	0	0.0	68	100.0
Other-not stated	10	50.0	5	25.0	4	20.0	1	5.0	0	0.0	20	100.0
TOTAL	1842	16.1	4995	43.7	3580	31.3	1015	8.9	2	0.0	11434	100.0
Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.												

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Medical conditions and obstetric complications

In 2009, 1.5% of mothers born in Melanesia, Micronesia, and Polynesia were reported to have diabetes mellitus—two and a half times the rate for all mothers in NSW, though the number of mothers is small (Table 95). The rates of gestational diabetes in mothers born in Asian countries and Melanesia, Micronesia, and Polynesia were over twice the rate for all mothers in NSW.

Mothers born in English speaking countries were more likely to have pregnancy-induced hypertension compared to mothers born in non-English speaking countries. Rates of essential hypertension were higher among mothers born in Southern European countries, than other country of birth groups.

**Table 95. Medical conditions and obstetric complications by country of birth group, NSW 2009**

Country of birth group	Condition									
	Diabetes mellitus		Gestational diabetes		Essential hypertension		Pregnancy-induced hypertension		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
English speaking	372	0.5	2783	3.9	584	0.8	5370	7.5	71643	100.0
Central & South America	6	0.7	52	6.0	7	0.8	36	4.2	867	100.0
Melanesia, Micronesia & Polynesia	20	1.5	158	11.7	12	0.9	66	4.9	1351	100.0
Southern Europe	3	0.3	64	7.4	10	1.2	32	3.7	865	100.0
Western & Northern Europe	4	0.5	34	4.1	6	0.7	36	4.3	834	100.0
Eastern Europe, Russia, Central Asian & Baltic States	3	0.4	45	6.0	7	0.9	38	5.1	749	100.0
Middle East & Africa	30	0.7	328	7.3	27	0.6	124	2.8	4503	100.0
South East Asia	33	0.6	612	11.6	46	0.9	163	3.1	5286	100.0
North East Asia	20	0.5	484	11.2	17	0.4	90	2.1	4333	100.0
Southern Asia	31	0.7	578	13.4	36	0.8	181	4.2	4310	100.0
Other-not stated	3	1.0	19	6.3	4	1.3	17	5.6	302	100.0
TOTAL	525	0.6	5157	5.4	756	0.8	6153	6.5	95043	100.0
Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health. # Total refers to total mothers giving birth in NSW.										

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Total refers to total mothers giving birth in NSW.

## Labour and birth

Mothers born in non-English speaking countries, except mothers born in Southern Asia, were more likely to have a spontaneous onset of labour than mothers born in English speaking countries (Table 96). Rates of induction of labour varied from 18.7% among mothers born in South East Asia to 28.9% among mothers born in Southern Asia.

Mothers born in the Middle East and Africa and Melanesia, Micronesia and Polynesia were more likely to have a normal vaginal birth than mothers in other country of birth groups (Table 97). The highest caesarean section rate was among mothers born in Central and South America (37.7%).

**Table 96. Labour onset by country of birth group, NSW 2009**

Country of birth group	Onset of labour							
	Spontaneous		No labour#		Induced		TOTAL	
	No.	%	No.	%	No.	%	No.	%
English speaking	39706	55.4	12810	17.9	19127	26.7	71643	100.0
Central & South America	497	57.3	186	21.5	184	21.2	867	100.0
Melanesia, Micronesia & Polynesia	839	62.1	212	15.7	300	22.2	1351	100.0
Southern Europe	487	56.3	155	17.9	223	25.8	865	100.0
Western & Northern Europe	526	63.1	134	16.1	174	20.9	834	100.0
Eastern Europe, Russia, Central Asian & Baltic States	440	58.7	135	18.0	174	23.2	749	100.0
Middle East & Africa	2799	62.2	679	15.1	1025	22.8	4503	100.0
South East Asia	3427	64.8	868	16.4	991	18.7	5286	100.0
North East Asia	2685	62.0	704	16.2	944	21.8	4333	100.0
Southern Asia	2355	54.6	708	16.4	1247	28.9	4310	100.0
Other-not stated	158	52.3	58	19.2	86	28.5	302	100.0
<b>TOTAL</b>	<b>53919</b>	<b>56.7</b>	<b>16649</b>	<b>17.5</b>	<b>24475</b>	<b>25.8</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# No labour indicates elective caesarean section.

**Table 97. Type of birth by country of birth group, NSW 2009**

Local Health District	Type of birth												TOTAL	
	Normal vaginal		Forceps		Vacuum extraction		Vaginal breech		Elective caesarean section		Emergency caesarean section#		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
English speaking	42207	58.9	2402	3.4	5092	7.1	258	0.4	12810	17.9	8874	12.4	71643	100.0
Central & South America	419	48.3	41	4.7	78	9.0	2	0.2	186	21.5	141	16.3	867	100.0
Melanesia, Micronesia & Polynesia	881	65.2	26	1.9	77	5.7	6	0.4	212	15.7	149	11.0	1351	100.0
Southern Europe	508	58.7	36	4.2	62	7.2	5	0.6	155	17.9	99	11.4	865	100.0
Western & Northern Europe	480	57.6	27	3.2	85	10.2	3	0.4	134	16.1	105	12.6	834	100.0
Eastern Europe, Russia, Central Asian & Baltic States	437	58.3	39	5.2	52	6.9	5	0.7	135	18.0	81	10.8	749	100.0
Middle East & Africa	2942	65.3	117	2.6	264	5.9	25	0.6	679	15.1	476	10.6	4503	100.0
South East Asia	2939	55.6	196	3.7	557	10.5	15	0.3	868	16.4	711	13.5	5286	100.0
North East Asia	2326	53.7	219	5.1	487	11.2	13	0.3	704	16.2	584	13.5	4333	100.0
Southern Asia	2073	48.1	263	6.1	444	10.3	21	0.5	708	16.4	801	18.6	4310	100.0
Other-not stated	147	48.7	17	5.6	34	11.3	2	0.7	58	19.2	44	14.6	302	100.0
<b>TOTAL</b>	<b>55359</b>	<b>58.2</b>	<b>3383</b>	<b>3.6</b>	<b>7232</b>	<b>7.6</b>	<b>355</b>	<b>0.4</b>	<b>16649</b>	<b>17.5</b>	<b>12065</b>	<b>12.7</b>	<b>95043</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Emergency caesarean section includes caesarean sections where the onset of labour was not stated.

## Birth weight

The rate of low birth weight (less than 2,500 grams) in 2009 was 6.0% in NSW. The highest rates of low birth weight were in babies of mothers born in Southern Asia (9.6%) and South

East Asia (6.2%) (Table 98). Babies of mothers born in Western and Northern Europe were least likely to be low birth weight.

**Table 98. Birth weight by maternal country of birth group, NSW 2009**

Country of birth group	Birth weight (grams)							
	Less than 2500		2500+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%
English speaking	4277	5.9	68412	94.0	52	0.1	72741	100.0
Central & South America	46	5.2	835	94.8	0	0.0	881	100.0
Melanesia, Micronesia & Polynesia	82	6.0	1282	94.0	0	0.0	1364	100.0
Southern Europe	46	5.2	831	94.5	2	0.2	879	100.0
Western & Northern Europe	25	3.0	820	97.0	0	0.0	845	100.0
Eastern Europe, Russia, Central Asian & Baltic States	46	6.1	710	93.7	2	0.3	758	100.0
Middle East & Africa	282	6.1	4311	93.8	2	0.0	4595	100.0
South East Asia	329	6.2	4996	93.7	9	0.2	5334	100.0
North East Asia	214	4.9	4166	95.1	2	0.0	4382	100.0
Southern Asia	418	9.6	3932	90.3	4	0.1	4354	100.0
Other-not stated	19	6.2	286	93.5	1	0.3	306	100.0
<b>TOTAL</b>	<b>5784</b>	<b>6.0</b>	<b>90581</b>	<b>93.9</b>	<b>74</b>	<b>0.1</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Gestational age

The rate of prematurity (less than 37 weeks gestation) in 2009 was 7.3% in NSW. The highest rate of prematurity was among babies of mothers born in English-speaking countries (7.5%).

Babies of mothers born in Western and Northern Europe were least likely to be premature (Table 99).

**Table 99. Gestational age by maternal country of birth group, NSW 2009**

Country of birth group	Gestational age (weeks)							
	Less than 37		37+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%
English speaking	5462	7.5	67273	92.5	6	0.0	72741	100.0
Central & South America	65	7.4	816	92.6	0	0.0	881	100.0
Melanesia, Micronesia & Polynesia	89	6.5	1275	93.5	0	0.0	1364	100.0
Southern Europe	64	7.3	815	92.7	0	0.0	879	100.0
Western & Northern Europe	40	4.7	805	95.3	0	0.0	845	100.0
Eastern Europe, Russia, Central Asian & Baltic States	53	7.0	705	93.0	0	0.0	758	100.0
Middle East & Africa	291	6.3	4304	93.7	0	0.0	4595	100.0
South East Asia	396	7.4	4938	92.6	0	0.0	5334	100.0
North East Asia	255	5.8	4126	94.2	1	0.0	4382	100.0
Southern Asia	319	7.3	4035	92.7	0	0.0	4354	100.0
Other-not stated	28	9.2	277	90.5	1	0.3	306	100.0
<b>TOTAL</b>	<b>7062</b>	<b>7.3</b>	<b>89369</b>	<b>92.7</b>	<b>8</b>	<b>0.0</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Apgar score

In 2009, 2.1% of all babies (including stillborn babies) had an Apgar score of less than 7 at 5 minutes and 1.1% had a score of less than 4 (Table 100). The rates of Apgar scores of less

than 7 were highest among babies of mothers born in Southern Asia (2.8%).

**Table 100. Apgar score at five minutes by country of birth group, NSW 2009#**

Country of birth group	Apgar Score									
	0–4		5–6		7+		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
English speaking	792	1.1	687	0.9	71043	97.7	219	0.3	72741	100.0
Central & South America	5	0.6	11	1.2	864	98.1	1	0.1	881	100.0
Melanesia, Micronesia & Polynesia	21	1.5	12	0.9	1323	97.0	8	0.6	1364	100.0
Southern Europe	8	0.9	8	0.9	861	98.0	2	0.2	879	100.0
Western & Northern Europe	3	0.4	9	1.1	832	98.5	1	0.1	845	100.0
Eastern Europe, Russia, Central Asian & Baltic States	10	1.3	4	0.5	743	98.0	1	0.1	758	100.0
Middle East & Africa	57	1.2	54	1.2	4469	97.3	15	0.3	4595	100.0
South East Asia	68	1.3	47	0.9	5206	97.6	13	0.2	5334	100.0
North East Asia	43	1.0	19	0.4	4310	98.4	10	0.2	4382	100.0
Southern Asia	76	1.7	46	1.1	4228	97.1	4	0.1	4354	100.0
Other-not stated	5	1.6	4	1.3	296	96.7	1	0.3	306	100.0
<b>TOTAL</b>	<b>1088</b>	<b>1.1</b>	<b>901</b>	<b>0.9</b>	<b>94175</b>	<b>97.7</b>	<b>275</b>	<b>0.3</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.  
# Births include stillbirths.

## Infant feeding

The highest rates of full breastfeeding in 2009 were among babies of mothers born in Western and Northern Europe (91.5%), followed by babies of mothers born in Eastern Europe, Russia, Central Asian and Baltic States (88.9%).

The lowest rates of full breastfeeding were among babies of mothers born in South East Asia (72.0%) and North East Asia (72.3%) (Table 101).

**Table 101. Infant feeding among liveborn babies by country of birth group, NSW 2009#**

Country of birth group	Infant feeding									
	Full breast-feeding		Any breast-feeding		Infant formula only		Not stated		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
English speaking	58597	80.6	3318	4.6	9869	13.6	957	1.3	72741	100.0
Central & South America	761	86.4	63	7.2	51	5.8	6	0.7	881	100.0
Melanesia, Micronesia & Polynesia	1015	74.4	154	11.3	171	12.5	24	1.8	1364	100.0
Southern Europe	704	80.1	84	9.6	81	9.2	10	1.1	879	100.0
Western & Northern Europe	773	91.5	28	3.3	37	4.4	7	0.8	845	100.0
Eastern Europe, Russia, Central Asian & Baltic States	674	88.9	38	5.0	36	4.7	10	1.3	758	100.0
Middle East & Africa	3724	81.0	440	9.6	355	7.7	76	1.7	4595	100.0
South East Asia	3839	72.0	899	16.9	532	10.0	64	1.2	5334	100.0
North East Asia	3168	72.3	881	20.1	284	6.5	49	1.1	4382	100.0
Southern Asia	3659	84.0	488	11.2	119	2.7	88	2.0	4354	100.0
Other-not stated	243	79.4	30	9.8	24	7.8	9	2.9	306	100.0
<b>TOTAL</b>	<b>77157</b>	<b>80.0</b>	<b>6423</b>	<b>6.7</b>	<b>11559</b>	<b>12.0</b>	<b>1300</b>	<b>1.3</b>	<b>96439</b>	<b>100.0</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Perinatal outcomes

In 2009, 99% of babies born in NSW and reported to the PDC were born alive and survived until discharge from the hospital of birth (Table 102). The perinatal mortality rate was highest among babies of mothers born in Southern Asia (14.5 per 1,000) and lowest among babies of mothers born in Central and South America (5.7 per 1,000). However, as the majority of births are to mothers born in English speaking countries,

the majority of perinatal deaths occurred among these babies ( $n=602$ , 71.8%). There were further 63 deaths among babies of mothers born in Southern Asian countries, and 53 deaths among babies of mothers born in Middle Eastern and African Countries—comprising 7.5% and 6.0% respectively of all perinatal deaths reported to the PDC.

**Table 102. Perinatal mortality by country of birth group, NSW 2009#**

Country of birth group	Liveborn surviving		Stillborn		Neonatal death		Death—age not stated		Not stated		Total births		Perinatal mortality rate/1000 births##
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
English speaking	72134	99.2	420	0.6	182	0.3	2	0.0	3	0.0	72741	100.0	8.3
Central & South America	876	99.4	5	0.6	0	0.0	0	0.0	0	0.0	881	100.0	5.7
Melanesia, Micronesia & Polynesia	1348	98.8	14	1.0	2	0.1	0	0.0	0	0.0	1364	100.0	11.7
Southern Europe	870	99.0	7	0.8	2	0.2	0	0.0	0	0.0	879	100.0	10.2
Western & Northern Europe	842	99.6	2	0.2	0	0.0	0	0.0	1	0.1	845	100.0	-
Eastern Europe, Russia, Central Asian & Baltic States	750	98.9	6	0.8	2	0.3	0	0.0	0	0.0	758	100.0	10.6
Middle East & Africa	4542	98.8	33	0.7	20	0.4	0	0.0	0	0.0	4595	100.0	11.5
South East Asia	5289	99.2	32	0.6	13	0.2	0	0.0	0	0.0	5334	100.0	8.4
North East Asia	4352	99.3	21	0.5	9	0.2	0	0.0	0	0.0	4382	100.0	6.8
Southern Asia	4291	98.6	53	1.2	10	0.2	0	0.0	0	0.0	4354	100.0	14.5
Other-not stated	301	98.4	5	1.6	0	0.0	0	0.0	0	0.0	306	100.0	-
<b>TOTAL</b>	<b>95595</b>	<b>99.1</b>	<b>598</b>	<b>0.6</b>	<b>240</b>	<b>0.2</b>	<b>2</b>	<b>0.0</b>	<b>4</b>	<b>0.0</b>	<b>96439</b>	<b>100.0</b>	<b>8.7</b>

Source: NSW Perinatal Data Collection (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# Perinatal deaths include deaths reported to the PDC only. As the PDC form is completed at discharge or transfer of the baby, deaths occurring after this time may not be reported to the PDC.

## Perinatal mortality rate not calculated for country of birth groups with less than 5 perinatal deaths.

## 9. Congenital Conditions

### Congenital conditions among stillborn and liveborn infants

From 1 January 1998, doctors, hospitals and laboratories are required under the *NSW Public Health Act 1991* to notify certain congenital conditions detected during pregnancy or in a baby up to one year of age. Information reported is included in the NSW Register of Congenital Conditions, formerly known as the NSW Birth Defects Register.

There are three types of conditions that are reported to the Register:

- Conditions that affect the growth, development and health of the baby that are present before birth, such as cleft lip, dislocated hip and problems with the development of the heart, lungs or other organs
- Conditions due to changes in the number of the baby's chromosomes, such as Down syndrome
- Four conditions due to changes in the baby's inherited genetic information: cystic fibrosis, phenylketonuria, congenital hypothyroidism and thalassaemia major.

Descriptions of some common congenital conditions are shown in Appendix 1. A list of common exclusions is shown in Appendix 2.

This chapter reports congenital conditions detected during pregnancy or in the first year of life for 2003-2008 and congenital conditions detected during pregnancy or at birth for 2009.

### Trends in reported congenital conditions

Between 2003 and 2008, 1.8% to 2.1% of infants were reported to have congenital conditions, (Table 103). In 2009, 831 cases of congenital conditions detected during pregnancy or at birth have been reported to date.

**Table 103. Cases of congenital conditions, NSW 2003–2009#**

Year	Cases of congenital conditions	Births	Rate/1000 births
	No.	No.	
2003	1756	85405	20.6
2004	1751	84607	20.7
2005	1617	89337	18.1
2006	1768	91554	19.3
2007	1829	94640	19.3
2008	1881	94874	19.8
2009	831	94733	8.8

Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are included.

### Congenital conditions by diagnostic category

The most common categories of congenital conditions for stillborn and live born babies are presented in Table 104. Congenital conditions are classified using the British Paediatric Association (BPA) Classification of Diseases, which is primarily organised by body system. For infants with more than one condition, each condition is counted separately. The number of congenital conditions reported therefore exceeds the number of affected infants.

In 2002–2008, conditions of the cardiovascular system were most commonly reported, followed by conditions of the musculoskeletal system and conditions of the genitourinary system (Table 104). This is a similar pattern to previous years. In 2008, the overall rate of conditions was lower than the previous 5 years (36.0 versus 44.0 per 1,000 respectively).

**Table 104. Congenital conditions among stillbirths and liveborn infants by diagnostic category, NSW 2003–2009#**

Diagnostic category	No. conditions				Rate/1,000 births			
	2003-2007	2008	2009	2003-2009	2003-2007	2008	2009	2003-2009
<b>Nervous system</b>								
Anencephaly	51	7	5	63	0.1	0.1	0.1	0.1
Spina Bifida	138	38	27	203	0.4	0.4	0.3	0.3
Encephalocele	30	8	5	43	0.1	0.1	0.1	0.1
Microcephaly	101	19	10	130	0.3	0.2	0.1	0.2
Congenital hydrocephalus	175	33	23	231	0.5	0.3	0.2	0.4
Other nervous system anomalies	291	76	42	409	0.8	0.8	0.4	0.6
TOTAL	786	181	112	1079	2.2	1.9	1.2	1.7
<b>Eye</b>								
Anophthalmos-microphthalmos	58	8	11	77	0.2	0.1	0.1	0.1
Buphthalmos-congenital glaucoma	27	7	2	36	0.1	0.1	0.0	0.1
Congenital cataract	86	12	4	102	0.2	0.1	0.0	0.2
Other eye anomalies	180	45	11	236	0.5	0.5	0.1	0.4
TOTAL	351	72	28	451	1.0	0.8	0.3	0.7
<b>Ear, face and neck</b>								
Absence-stricture auditory canal	50	8	6	64	0.1	0.1	0.1	0.1
Absent auricle	4	1	0	5	0.0	0.0	0	0.0
Anomalies of face and neck	38	5	2	45	0.1	0.1	0.0	0.1
Other ear anomalies	65	12	7	84	0.2	0.1	0.1	0.1
TOTAL	157	26	15	198	0.4	0.3	0.2	0.3
<b>Cardiovascular system</b>								
Transposition of great vessels	242	51	46	339	0.7	0.5	0.5	0.5
Tetralogy of Fallot	160	33	20	213	0.5	0.3	0.2	0.3
Ventricular septal defect	804	203	86	1093	2.3	2.1	0.9	1.7
Atrial septal defect	821	194	102	1117	2.3	2.0	1.1	1.8
Heart valve anomalies	502	119	60	681	1.4	1.3	0.6	1.1
Patent ductus arteriosus > 37 weeks	444	94	79	617	1.3	1.0	0.8	1.0
Coarctation of aorta	211	48	28	287	0.6	0.5	0.3	0.5
Other anomalies of aorta	127	27	8	162	0.4	0.3	0.1	0.3
Anomalies of pulmonary artery	155	27	15	197	0.4	0.3	0.2	0.3
Other cardiovascular anomalies	744	153	131	1028	2.1	1.6	1.4	1.6
TOTAL	4210	949	575	5734	12.0	10.0	6.1	9.0
<b>Respiratory system</b>								
Nose	60	8	6	74	0.2	0.1	0.1	0.1
Larynx, trachea and bronchus	37	7	3	47	0.1	0.1	0.0	0.1
Lung	95	31	20	146	0.3	0.3	0.2	0.2
TOTAL	192	46	29	267	0.5	0.5	0.3	0.4
<b>Gastrointestinal system</b>								
Cleft palate only	430	87	47	564	1.2	0.9	0.5	0.9
Cleft lip only	144	38	24	206	0.4	0.4	0.3	0.3
Cleft palate and cleft lip	216	49	47	312	0.6	0.5	0.5	0.5
Oesophageal atresia only	17	2	2	21	0.0	0.0	0.0	0.0
Tracheo-oesophageal fistula (TOF) only	20	4	4	28	0.1	0.0	0.0	0.0
Oesophageal atresia with TOF	84	26	11	121	0.2	0.3	0.1	0.2
Atresia-stenosis of small intestine	123	26	11	160	0.4	0.3	0.1	0.3
Atresia-stenosis of anus	134	39	30	203	0.4	0.4	0.3	0.3
Other gastrointestinal anomalies	483	106	24	613	1.4	1.1	0.3	1.0
TOTAL	1651	377	200	2228	4.7	4.0	2.1	3.5
<b>Genitourinary system</b>								
Anomalies of female genitals	63	15	5	83	0.2	0.2	0.1	0.1
Undescended testis	312	89	20	421	0.9	0.9	0.2	0.7
Hypospadias	776	127	76	979	2.2	1.3	0.8	1.5
Epispadias	5	3	1	9	0.0	0.0	0.0	0.0
Chordee	149	43	8	200	0.4	0.5	0.1	0.3
Indeterminate sex-ambiguous genitalia	55	10	8	73	0.2	0.1	0.1	0.1
Renal agenesis-dysgenesis	174	30	20	224	0.5	0.3	0.2	0.4
Obstructive anomalies of renal pelvis and ureter	700	158	37	895	2.0	1.7	0.4	1.4
Other genitourinary system anomalies	677	142	61	880	1.9	1.5	0.6	1.4
TOTAL	2911	617	236	3764	8.3	6.5	2.5	5.9

Table 104. (Continued)

Diagnostic category	No. conditions				Rate/1,000 births			
	2003-2007	2008	2009	2003-2009	2003-2007	2008	2009	2003-2009
<b>Musculoskeletal system</b>								
Congenital dislocation of the hips	640	123	31	794	1.8	1.3	0.3	1.3
Talipes equinovarus	370	82	31	483	1.1	0.9	0.3	0.8
Polydactyly	485	95	60	640	1.4	1.0	0.6	1.0
Syndactyly	123	24	13	160	0.4	0.3	0.1	0.3
Reduction deformities of limbs	251	64	63	378	0.7	0.7	0.7	0.6
Craniosynostosis	197	47	2	246	0.6	0.5	0.0	0.4
Diaphragmatic hernia	129	30	25	184	0.4	0.3	0.3	0.3
Exomphalos	66	15	26	107	0.2	0.2	0.3	0.2
Gastroschisis	97	19	31	147	0.3	0.2	0.3	0.2
Other musculoskeletal anomalies	733	165	118	1016	2.1	1.7	1.2	1.6
<b>TOTAL</b>	<b>3091</b>	<b>664</b>	<b>400</b>	<b>4155</b>	<b>8.8</b>	<b>7.0</b>	<b>4.2</b>	<b>6.5</b>
<b>Integumentary system</b>	<b>242</b>	<b>58</b>	<b>12</b>	<b>312</b>	<b>0.7</b>	<b>0.6</b>	<b>0.1</b>	<b>0.5</b>
<b>Cystic hygroma</b>	<b>48</b>	<b>14</b>	<b>8</b>	<b>70</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
<b>Chromosomal anomalies</b>								
Trisomy 21	450	88	61	599	1.3	0.9	0.6	0.9
Trisomy 13	36	4	8	48	0.1	0.0	0.1	0.1
Trisomy 18	92	16	8	116	0.3	0.2	0.1	0.2
Turner syndrome	72	15	5	92	0.2	0.2	0.1	0.1
Other chromosomal anomalies	331	62	37	430	0.9	0.7	0.4	0.7
<b>TOTAL</b>	<b>981</b>	<b>185</b>	<b>119</b>	<b>1285</b>	<b>2.8</b>	<b>2.0</b>	<b>1.3</b>	<b>2.0</b>
<b>Situs inversus</b>	<b>28</b>	<b>6</b>	<b>2</b>	<b>36</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>
<b>Congenital malformation syndromes</b>	<b>191</b>	<b>34</b>	<b>27</b>	<b>252</b>	<b>0.5</b>	<b>0.4</b>	<b>0.3</b>	<b>0.4</b>
<b>Congenital cytomegalovirus infection</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Non-immune hydrops foetalis</b>	<b>99</b>	<b>24</b>	<b>14</b>	<b>137</b>	<b>0.3</b>	<b>0.3</b>	<b>0.1</b>	<b>0.2</b>
<b>Other and unspecified anomalies</b>	<b>486</b>	<b>149</b>	<b>20</b>	<b>655</b>	<b>1.4</b>	<b>1.6</b>	<b>0.2</b>	<b>1.0</b>
<b>TOTAL</b>	<b>15425</b>	<b>3404</b>	<b>1798</b>	<b>20627</b>	<b>44.0</b>	<b>36.0</b>	<b>19.0</b>	<b>32.5</b>

Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are included.

## Infant characteristics

In the period 2003–2009, a single condition was reported in 63.4% of infants, two conditions in 18.2%, three conditions in 8.3%, and four or more conditions in 10.1% of cases. The sex was male in 57.7% of infants, female in 41.8%, indeterminate in 0.3% of infants, and was not stated for 0.2%.

Congenital conditions were more common in preterm and post-term infants than infants born at term (Table 105). Congenital conditions were also more common in infants born of a multiple pregnancy than a singleton pregnancy: in

2003–2009, 1.8% of singleton babies, 2.7% of twins, and 3.3% of triplets were born with a congenital condition.

About 11% of infants born with congenital conditions died in the perinatal period, over half of which were stillbirths (Table 106). These figures comprise all cases of congenital conditions, including those where the cause of death may not be directly related to the congenital condition(s). By comparison, the perinatal mortality rate among all births reported to the NSW Perinatal Data Collection was less than 1% in 2009 (see Chapter 4).

Table 105. Cases of congenital conditions by gestational age, NSW 2003–2009#

Gestational age (weeks)	2003-2007		2008		Year 2009		2003-2009		No. of cases/1,000 births
	No.	%	No.	%	No.	%	No.	%	
20–27	599	6.9	136	7.2	87	10.5	822	7.2	182.2
28–31	258	3.0	61	3.2	22	2.6	341	3.0	74.6
32–36	1155	13.2	228	12.1	120	14.4	1503	13.1	40.4
37–41	6313	72.4	1376	73.2	593	71.4	8282	72.4	14.3
42 +	135	1.5	16	0.9	8	1.0	159	1.4	16.9
Not stated	261	3.0	64	3.4	1	0.1	326	2.9	0
<b>TOTAL</b>	<b>8721</b>	<b>100.0</b>	<b>1881</b>	<b>100.0</b>	<b>831</b>	<b>100.0</b>	<b>11433</b>	<b>100.0</b>	<b>18.0</b>

Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are included.



**Table 106. Cases of congenital conditions by pregnancy outcome, NSW 2003–2009#**

Pregnancy outcome	Year							
	2003-2007		2008		2009		2003-2009	
	No.	%	No.	%	No.	%	No.	%
Stillbirth	593	6.8	124	6.6	89	10.7	806	7.0
Liveborn/ neonatal death	333	3.8	68	3.6	45	5.4	446	3.9
Liveborn/ postneonatal death	42	0.5	15	0.8	17	2.0	74	0.6
Liveborn surviving	7753	88.9	1674	89.0	680	81.8	10107	88.4
<b>TOTAL</b>	<b>8721</b>	<b>100.0</b>	<b>1881</b>	<b>100.0</b>	<b>831</b>	<b>100.0</b>	<b>11433</b>	<b>100.0</b>

Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are included.

## Maternal characteristics

After 35 years of age, the incidence of congenital conditions increased with increasing maternal age (Table 107). While the rate of congenital conditions is higher in older women, the majority of births occur in younger women. In 2003–2009, 71.9% of babies with congenital conditions were born to women aged less than 35 years.

In 2003–2009, 414 babies of Aboriginal or Torres Strait Islander mothers were reported to have congenital conditions. The rate of congenital conditions among these babies was 22.6 per 1,000 compared with 17.2 per 1,000 for babies born to non-Aboriginal mothers.

**Table 107. Cases of congenital conditions by maternal age, NSW 2003–2009#**

Maternal age (years)	2003-2007		2008		Year 2009		2003-2009		No. of cases/ 1,000 births
	No.	%	No.	%	No.	%	No.	%	
Under 20	351	4.0	75	4.0	46	5.5	472	4.1	20.1
20–24	1198	13.7	252	13.4	112	13.5	1562	13.7	17.7
25–29	2132	24.4	409	21.7	205	24.7	2746	24.0	16.0
30–34	2649	30.4	553	29.4	239	28.8	3441	30.1	16.2
35–39	1477	16.9	379	20.1	180	21.7	2036	17.8	17.6
40–44	377	4.3	105	5.6	44	5.3	526	4.6	23.3
45+	32	0.4	6	0.3	5	0.6	43	0.4	38.5
Not stated	505	5.8	102	5.4	0	0.0	607	5.3	0.0
<b>TOTAL</b>	<b>8721</b>	<b>100.0</b>	<b>1881</b>	<b>100.0</b>	<b>831</b>	<b>100.0</b>	<b>11433</b>	<b>100.0</b>	<b>18.0</b>

Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are included.

## Congenital conditions among terminations of pregnancy, spontaneous abortions and unknown outcomes of pregnancy

The number of terminations of pregnancy reported to the Register increased from 313 in 2003 to 354 in 2009 (Table 108). The number of terminations of pregnancy for 2009 is expected to increase as pregnancy outcomes for babies with conditions detected during pregnancy in 2009 continue to be followed-up.

Of the 2,304 terminations of pregnancy reported in 2003–2009, 1,830 (79.4%) were associated with a chromosomal anomaly, the most common of which was Trisomy 21 (Down

syndrome), and 171 (7.4%) were associated with a neural tube defect (Table 109).

For spontaneous abortions, cytogenetic analysis is only carried out in cases of habitual abortion; the numbers presented, therefore, underestimate the number of spontaneous abortions that occur due to congenital conditions. Descriptions of some diagnostic terms used here are included in Appendix 1.

**Table 108. Pregnancies with fetuses affected by congenital conditions resulting in spontaneous termination, spontaneous abortion or unknown outcome, NSW 2003–2009**

Pregnancy outcome	Year							
	2003	2004	2005	2006	2007	2008	2009	2003–2009
	No.	No.	No.	No.	No.	No.	No.	No.
Spontaneous abortion	233	298	322	363	334	330	237	2117
Termination of pregnancy less than 20 weeks gestation	313	306	303	361	328	339	354	2304
Unknown outcome	17	38	29	23	23	35	0	165
<b>TOTAL</b>	<b>563</b>	<b>642</b>	<b>654</b>	<b>747</b>	<b>685</b>	<b>704</b>	<b>591</b>	<b>4586</b>

Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

Table 109. Congenital conditions among terminations, spontaneous abortions and unknown outcomes of pregnancy by diagnostic category, NSW 2003–2009

Diagnostic category	2003–2007						Year						2003–2009					
	Spont. abortion	No.	Termination of pregnancy less than 20 weeks gestation	No.	Unknown	No.	Spont. abortion	No.	Termination of pregnancy less than 20 weeks gestation	No.	Unknown	No.	Spont. abortion	No.	Termination of pregnancy less than 20 weeks gestation	No.	Unknown	No.
<b>Nervous system</b>																		
Neural tube defects	5	122		1		0	0	19		30	0	0	5	171		1		
Other nervous system defects	7	104		0		0	0	13		25	1	0	7	142		1		
TOTAL	12	226		1		0	0	32		55	1	0	12	313		2		
<b>Eye</b>	0	3		0		0	0	0		2	0	0	0	5		0		
Ear, face and neck	1	9		0		0	0	4		3	0	0	1	16		0		
Cardiovascular system	19	239		4		5	5	54		48	0	7	31	341		4		
Respiratory system	7	27		1		1	1	5		8	0	1	9	40		1		
Gastrointestinal system	13	141		0		6	6	22		20	1	4	23	183		1		
Musculoskeletal system	24	324		4		15	15	50		95	1	4	43	469		5		
Genitourinary system	9	166		1		5	5	30		15	0	0	14	211		1		
Integumentary system	1	0		0		0	0	0		0	0	0	1	0		0		
Cystic hygroma	24	133		9		8	8	25		21	7	5	37	179		16		
<b>Chromosomal anomalies</b>																		
Trisomy 21	121	692		64		35	35	168		172	21	29	185	1032		85		
Trisomy 13	64	84		8		16	16	24		21	0	10	90	129		8		
Trisomy 18	69	210		15		16	16	42		40	3	10	95	292		18		
Turner syndrome	174	108		7		30	30	18		13	6	19	223	139		13		
Other chromosomal anomalies	1100	175		28		225	225	31		32	2	162	1487	238		30		
TOTAL	1528	1269		122		322	322	283		278	32	230	2080	1830		154		
<b>Situs inversus</b>	0	2		0		0	0	0		0	0	0	0	2		0		
<b>Congenital malformation syndromes</b>	0	16		0		2	2	2		3	0	1	3	21		0		
<b>Non-immune hydrops foetalis</b>	17	48		2		3	3	7		11	0	3	23	66		2		
<b>Other and unspecified conditions</b>	4	31		1		0	0	9		9	0	0	4	49		1		
<b>TOTAL</b>	1659	2634		145		367	367	523		568	42	255	2281	3725		187		

Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

## Trends in selected congenital conditions

Trends in a selection of common congenital conditions are shown in Table 110 and Figures 5 to 8. For 2003–2008, conditions reported up to one year of age are included. For 2009, conditions reported during pregnancy or at birth are included.

Over the period 2003–2009, the rate of neural tube defects has remained fairly stable at about 0.7 per 1,000 births. The reported number of live born and stillborn infants with neural tube defects was 39 in 2003 and 35 in 2009. The number of reported terminations of pregnancy was 28 in both 2003 and 2009 (Figure 5).

Over the period 2003–2008, the number of cases of isolated cleft palate ranged from 64 to 90 per year, and for total cleft lip (including cases of cleft lip and cleft palate) from 66 to 91 per year. Termination of pregnancy was usually associated with other conditions such as neural tube conditions, chromosomal anomalies, or multiple anomalies in addition to the cleft lip and/or cleft palate.

The reported number of live born and stillborn infants reported with chromosomal anomalies was 209 in 2003 and 185 in 2008. The number of reported terminations of pregnancy associated with chromosomal conditions rose from 245 in 2003 to 283 in 2008. The number of infants born with Down syndrome was 102 in 2003 and 85 in 2008, while the number of reported terminations of pregnancy associated with Down syndrome rose from 126 in 2003 to 168 in 2008.

In 2003, 17 live born infants were reported to have a diaphragmatic hernia, 4 babies were stillborn and there were no terminations of pregnancy associated with this condition. In 2008, there were 28 live born infants reported with a diaphragmatic hernia, 2 stillborn babies and 2 terminations of pregnancy (Figure 8).

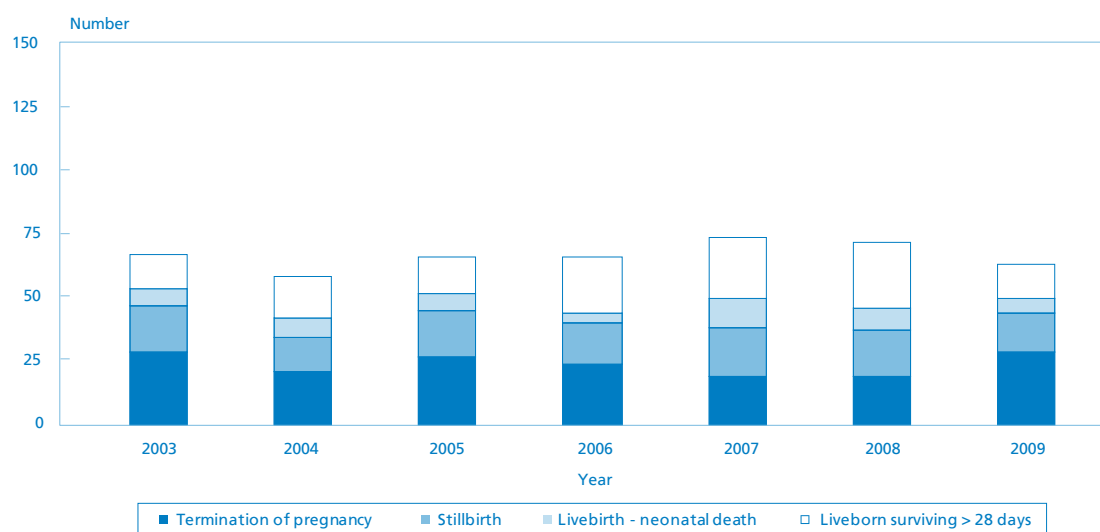
**Table 110. Selected congenital conditions by year, NSW 2003–2009#**

Condition	2003		2004		2005		2006		2007		2008		2009	
	No.	Rate/ 1000	No.	Rate/ 1000	No.	Rate/ 1000	No.	Rate/ 1000	No.	Rate/ 1000	No.	Rate/ 1000	No.	Rate/ 1000
Neural tube defects	67	0.8	58	0.7	66	0.7	66	0.7	74	0.8	72	0.8	63	0.7
Anencephalus	18	0.2	16	0.2	19	0.2	15	0.2	26	0.3	18	0.2	13	0.1
Spina bifida	46	0.5	35	0.4	40	0.4	45	0.5	42	0.4	45	0.5	45	0.5
Encephalocele	7	0.1	8	0.1	8	0.1	8	0.1	8	0.1	9	0.1	9	0.1
Cleft palate	88	1.0	74	0.9	90	1.0	64	0.7	74	0.8	82	0.9	43	0.5
Total cleft lip	83	1.0	79	0.9	66	0.7	85	0.9	73	0.8	91	1.0	73	0.8
Hypospadias	171	2.0	150	1.8	146	1.6	149	1.6	162	1.7	127	1.3	77	0.8
Limb reduction defects	31	0.4	36	0.4	38	0.4	43	0.5	49	0.5	53	0.6	45	0.5
Chromosomal abnormalities	454	5.3	447	5.3	409	4.6	480	5.2	454	4.8	468	4.9	397	4.2
Down syndrome	228	2.7	233	2.8	209	2.3	252	2.8	218	2.3	256	2.7	233	2.5
Renal agenesis and dysgenesis	67	0.8	82	1.0	73	0.8	86	0.9	63	0.7	70	0.7	44	0.5
Exomphalos	19	0.2	28	0.3	15	0.2	22	0.2	25	0.3	22	0.2	30	0.3
Gastroschisis	18	0.2	16	0.2	19	0.2	21	0.2	30	0.3	19	0.2	32	0.3
Diaphragmatic hernia	21	0.2	30	0.4	28	0.3	25	0.3	28	0.3	32	0.3	30	0.3

Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003–2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are included.

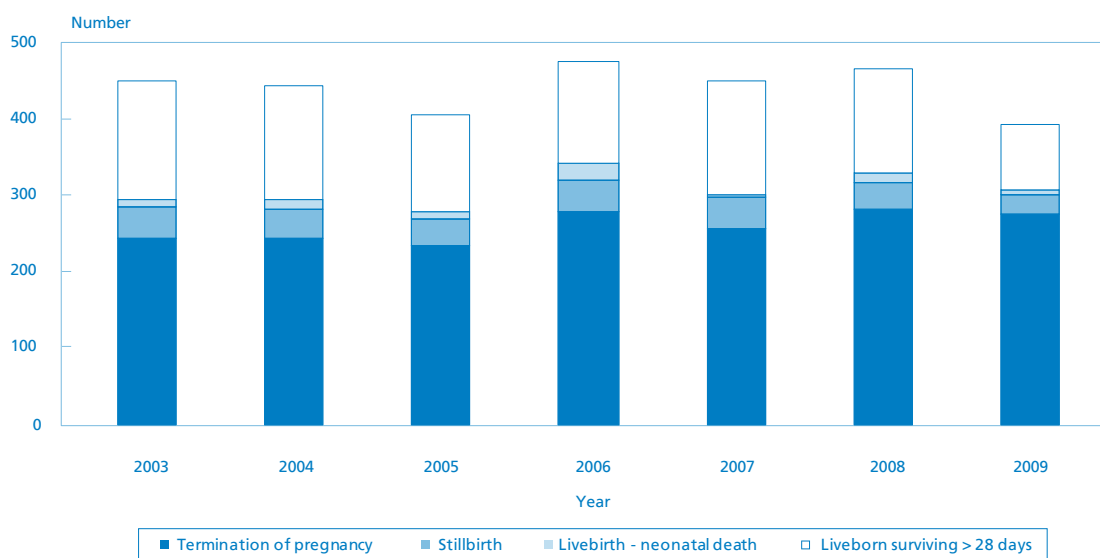
**Figure 5. Neural tube anomalies: cases by year and pregnancy outcome, NSW 2003–2009#**



Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2008, cases reported during pregnancy or at birth are reported.

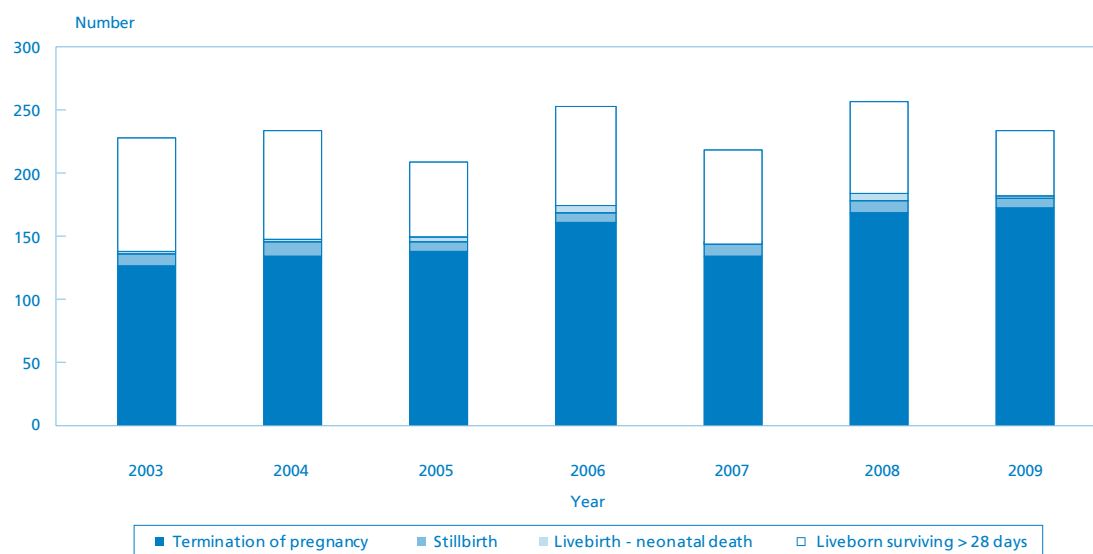
**Figure 6. Chromosomal anomalies: cases by year and pregnancy outcome, NSW 2003-2009#**



Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are reported.

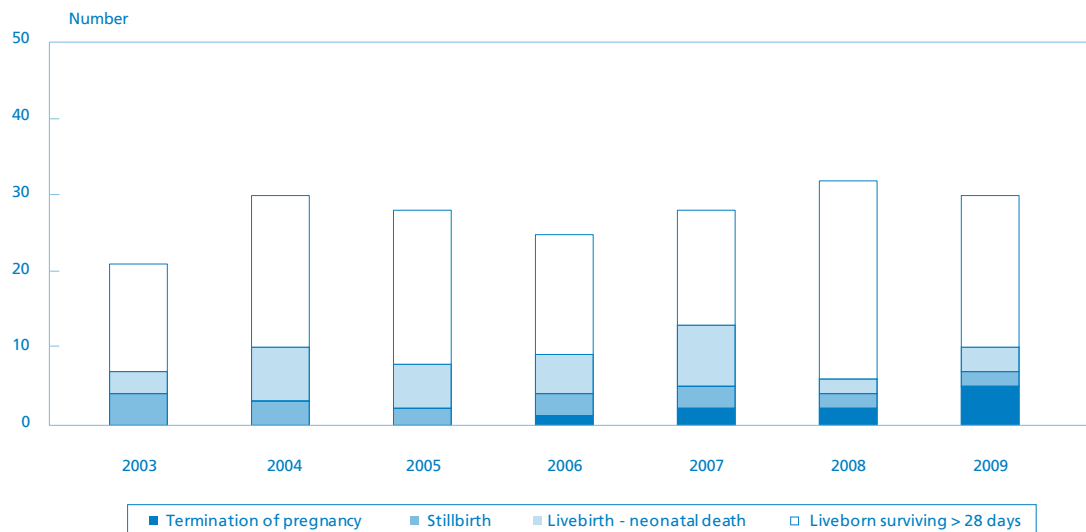
**Figure 7. Down syndrome: cases by year and pregnancy outcome, NSW 2003-2009#**



Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are reported.

**Figure 8. Diaphragmatic hernia: cases by year and pregnancy outcome, NSW 2003-2009#**



Source: NSW Register of Congenital Conditions (HOIST). Centre for Epidemiology and Research, NSW Ministry of Health.

# For 2003-2008, cases reported during pregnancy and up to one year of age are included. For 2009, cases reported during pregnancy or at birth are reported.

# 10. Perinatal deaths

## Review of perinatal deaths 2009

This chapter presents the results of perinatal death reviews carried out by the NSW Maternal and Perinatal Committee, which is a quality assurance committee established under the NSW Health Administration Act 1982. The Committee is privileged under the Act to carry out confidential reviews of maternal and perinatal deaths.

NSW Ministry of Health Policy Directive No. 2006\_006 describes hospital procedures for review and reporting of perinatal deaths.<sup>1</sup> Since 2006, the Maternal and Perinatal Committee has carried out reviews of perinatal deaths occurring among fetuses or infants of at least 20 weeks gestation or at least 400 grams birth weight, bringing the Committee's review process in line with the criteria used by the NSW Perinatal Data Collection (PDC) since 2006 for reporting of births.

Perinatal deaths were reviewed by the Committee's Perinatal Outcomes Working Party. Both stillbirths and neonatal deaths were classified according to an obstetric cause-specific classification, the Perinatal Society of Australia and New Zealand Perinatal Death Classification (PSANZ-PDC). Neonatal deaths were also classified by neonatal cause according to the Perinatal Society of Australia and New Zealand Neonatal Death Classification (PSANZ-NDC).<sup>2</sup>

There were 838 perinatal deaths of at least 20 weeks gestation or at least 400 grams birth weight reported to the PDC in 2009. Confidential reports on 827 deaths were reviewed. Of the 598 stillbirths reported to the PDC, reviews were carried out on 580 (97.0%). The PDC was notified of 240 neonatal deaths. Reviews were carried out on 247 neonatal deaths, which include neonatal deaths that occurred after discharge or transfer from the hospital of birth.

## Trends in causes of perinatal death

Recent trends in causes of perinatal death are shown in Table 111. Over the period 2006 to 2009 the most common cause of perinatal death was congenital anomaly followed by unexplained antepartum death and spontaneous preterm birth. The percentage of deaths attributed to perinatal infection increased from 5.9% to 10.8% over the four-year period, while the percentage of deaths attributed to spontaneous preterm birth and specific perinatal conditions fell from 19.8% to 16.2% and 8.6 to 6.7% respectively.

**Table 111. Perinatal deaths by psanz-pdc classification, NSW 2006–2009#**

PSANZ perinatal death classification	2006		2007		Year 2008		2009	
	No.	%	No.	%	No.	%	No.	%
1. Congenital anomaly	194	22.5	189	21.2	192	23.2	198	23.9
2. Perinatal infection	51	5.9	62	7.0	93	11.2	89	10.8
3. Hypertension	26	3.0	34	3.8	42	5.1	29	3.5
4. Antepartum haemorrhage	71	8.2	73	8.2	74	8.9	67	8.1
5. Maternal disease	23	2.7	28	3.1	15	1.8	19	2.3
6. Specific perinatal conditions	74	8.6	53	5.9	48	5.8	55	6.7
7. Hypoxic peripartum death	27	3.1	40	4.5	30	3.6	26	3.1
8. Fetal growth restriction	53	6.1	35	3.9	22	2.7	19	2.3
9. Spontaneous preterm	171	19.8	156	17.5	121	14.6	134	16.2
10. Unexplained antepartum death	167	19.4	214	24.0	187	22.6	185	22.4
11. No obstetric antecedent	5	0.6	8	0.9	3	0.4	6	0.7
<b>TOTAL</b>	<b>862</b>	<b>100.0</b>	<b>892</b>	<b>100.0</b>	<b>827</b>	<b>100.0</b>	<b>827</b>	<b>100.0</b>

Source: NSW Maternal and Perinatal Committee, NSW Ministry of Health.

#Numbers may differ from previous reports due to additional information being received after publication.

**Table 112. Perinatal deaths by PSANZ-PDC classification and perinatal outcome, NSW 2009**

PSANZ perinatal death classification	Stillbirth		Perinatal outcome Neonatal death		TOTAL	
	No.	%	No.	%	No.	%
<b>1. Congenital abnormality</b>						
Central nervous system	41	7.1	13	5.3	54	6.5
Cardiovascular system	19	3.3	4	1.6	23	2.8
Urinary system	11	1.9	4	1.6	15	1.8
Gastrointestinal system	0	0.0	2	0.8	2	0.2
Chromosomal	37	6.4	11	4.5	48	5.8
Multiple	24	4.1	8	3.2	32	3.9
Musculoskeletal	5	0.9	3	1.2	8	1.0
Respiratory	2	0.3	2	0.8	4	0.5
Diaphragmatic hernia	0	0.0	2	0.8	2	0.2
Haematological	1	0.2	0	0.0	1	0.1
Tumours	4	0.7	0	0.0	4	0.5
Other specified	4	0.7	1	0.4	5	0.6
<b>TOTAL</b>	<b>148</b>	<b>25.5</b>	<b>50</b>	<b>20.2</b>	<b>198</b>	<b>23.9</b>
<b>2. Perinatal infection</b>						
Group B Streptococcus	12	2.1	6	2.4	18	2.2
E Coli	7	1.2	2	0.8	9	1.1
Listeria Monocytogenes	0	0.0	1	0.4	1	0.1
Spirochaetal	1	0.2	0	0.0	1	0.1
Other bacterial	6	1.0	3	1.2	9	1.1
Unspecified bacterial	25	4.3	11	4.5	36	4.4
Cytomegalovirus	2	0.3	0	0.0	2	0.2
Parvovirus	4	0.7	0	0.0	4	0.5
Protozoal eg Toxoplasma	0	0.0	3	1.2	3	0.4
Other unspecified organism	4	0.7	2	0.8	6	0.7
<b>TOTAL</b>	<b>61</b>	<b>10.5</b>	<b>28</b>	<b>11.3</b>	<b>89</b>	<b>10.8</b>
<b>3. Hypertension</b>						
Chronic: Essential	2	0.3	1	0.4	3	0.4
Gestational	3	0.5	2	0.8	5	0.6
Pre-eclampsia	13	2.2	4	1.6	17	2.1
Pre-eclampsia superimposed on chronic hypertension	1	0.2	0	0.0	1	0.1
Unspecified hypertension	3	0.5	0	0.0	3	0.4
<b>TOTAL</b>	<b>22</b>	<b>3.8</b>	<b>7</b>	<b>2.8</b>	<b>29</b>	<b>3.5</b>
<b>4. Antepartum haemorrhage</b>						
Placental abruption	33	5.7	13	5.3	46	5.6
Placenta praevia	1	0.2	4	1.6	5	0.6
Vasa praevia	1	0.2	0	0.0	1	0.1
Other	4	0.7	1	0.4	5	0.6
Undetermined origin	6	1.0	4	1.6	10	1.2
<b>TOTAL</b>	<b>45</b>	<b>7.8</b>	<b>22</b>	<b>8.9</b>	<b>67</b>	<b>8.1</b>
<b>5. Maternal disease</b>						
Diabetes/gestational diabetes	6	1.0	2	0.8	8	1.0
Maternal injury: Accidental	1	0.2	0	0.0	1	0.1
Lupus obstetric syndrome	4	0.7	1	0.4	5	0.6
Other specified	4	0.7	1	0.4	5	0.6
<b>TOTAL</b>	<b>15</b>	<b>2.6</b>	<b>4</b>	<b>1.6</b>	<b>19</b>	<b>2.3</b>
<b>6. Specific perinatal conditions</b>						
Twin-to-twin transfusion	9	1.6	7	2.8	16	1.9
Fetomaternal haemorrhage	6	1.0	0	0.0	6	0.7
Antepartum cord complications	7	1.2	1	0.4	8	1.0
Uterine abnormality	2	0.3	10	4.0	12	1.5
Alloimmune disease – Other	0	0.0	1	0.4	1	0.1
Idiopathic hydrops	5	0.9	1	0.4	6	0.7
Other	6	1.0	0	0.0	6	0.7
<b>TOTAL</b>	<b>35</b>	<b>6.0</b>	<b>20</b>	<b>8.1</b>	<b>55</b>	<b>6.7</b>



Table 112. (Continued)

PSANZ perinatal death classification	Stillbirth		Perinatal outcome Neonatal death		TOTAL	
	No.	%	No.	%	No.	%
<b>7. Hypoxic peripartum death</b>						
Intrapartum complication – Uterine rupture	0	0.0	2	0.8	2	0.2
Intrapartum complication – Cord prolapse	3	0.5	0	0.0	3	0.4
Intrapartum complication – Shoulder dystocia	1	0.2	1	0.4	2	0.2
Intrapartum complication – Other	0	0.0	3	1.2	3	0.4
Evidence of non-re-assuring fetal status in a normally grown infant	3	0.5	0	0.0	3	0.4
No intrapartum complications and no evidence of non-reassuring fetal status	0	0.0	1	0.4	1	0.1
Unspecified	7	1.2	5	2.0	12	1.5
TOTAL	14	2.4	12	4.9	26	3.1
<b>8. Fetal growth restriction</b>						
With evidence of reduced vascular perfusion on Doppler studies and/or placental histopathology	11	1.9	1	0.4	12	1.5
No placental pathology	1	0.2	0	0.0	1	0.1
No examination of placenta	1	0.2	2	0.8	3	0.4
Other specified placental pathology	1	0.2	0	0.0	1	0.1
Unspecified or not known whether placental examined	1	0.2	1	0.4	2	0.2
TOTAL	15	2.6	4	1.6	19	2.3
<b>9. Spontaneous preterm</b>						
Intact membranes or membrane rupture less than 24 hours: with chorioamnionitis on placental histopathology	5	0.9	32	13.0	37	4.5
Intact membranes or membrane rupture less than 24 hours: without chorioamnionitis on placental histopathology	5	0.9	13	5.3	18	2.2
Intact membranes or membrane rupture less than 24 hours: with clinical evidence of chorioamnionitis, no examination of placenta	0	0.0	4	1.6	4	0.5
Intact membranes or membrane rupture less than 24 hours: no clinical signs of chorioamnionitis, no examination of placenta	5	0.9	9	3.6	14	1.7
Intact membranes or membrane rupture less than 24 hours: unspecified/unknown placental examination	1	0.2	0	0.0	1	0.1
Membrane rupture 24 hours or more: with chorioamnionitis on placental histopathology	14	2.4	19	7.7	33	4.0
Membrane rupture 24 hours or more: without chorioamnionitis on placental histopathology	0	0.0	6	2.4	6	0.7
Membrane rupture 24 hours or more: no clinical signs of chorioamnionitis, no examination of placenta	4	0.7	0	0.0	4	0.5
Membrane rupture 24 hours or more: unspecified/unknown placental examination	0	0.0	1	0.4	1	0.1
Membrane rupture unknown duration: with chorioamnionitis on placental histopathology	5	0.9	3	1.2	8	1.0
Membrane rupture unknown duration: without chorioamnionitis on placental histopathology	0	0.0	1	0.4	1	0.1
Membrane rupture unknown duration: no clinical signs of chorioamnionitis, no examination of placenta	1	0.2	6	2.4	7	0.8
TOTAL	40	6.9	94	38.1	134	16.2
<b>10. Unexplained antepartum death</b>						
With evidence of reduced vascular perfusion on Doppler studies and / or placental histopathology	37	6.4	0	0.0	37	4.5
With chronic villitis	2	0.3	0	0.0	2	0.2
No placental pathology	87	15.0	0	0.0	87	10.5
No examination of placenta	17	2.9	0	0.0	17	2.1
Other specified placental pathology	40	6.9	0	0.0	40	4.8
Unspecified or not known whether placenta examined	2	0.3	0	0.0	2	0.2
TOTAL	185	31.9	0	0.0	185	22.4
<b>11. No obstetric antecedent</b>						
Other specified	0	0.0	3	1.2	3	0.4
Accidental asphyxiation	0	0.0	1	0.4	1	0.1
Unknown/unexplained	0	0.0	2	0.8	2	0.2
TOTAL	0	0.0	6	2.4	6	0.7
<b>TOTAL</b>	<b>580</b>	<b>100.0</b>	<b>247</b>	<b>100.0</b>	<b>827</b>	<b>100.0</b>

Source: NSW Maternal and Perinatal Committee, NSW Ministry of Health.

## Causes of perinatal death 2009

Perinatal deaths were classified according to the PSANZ-PDC, which identifies the single most important factor which led to the chain of events that resulted in the death (Table 112).

### 1. Congenital anomaly

In 2009, congenital anomalies as a group were the most common cause of perinatal death, responsible for 198 deaths. The most common anomalies were chromosomal ( $n=48$ , 24.2%). Of these, 15 were trisomy 21, 12 were trisomy 18, 7 were trisomy 13, and 3 were Turner syndrome. Fifty-four deaths were associated with anomalies of the central nervous system (27.3%) and included 21 deaths due to neural tube defects, 8 deaths associated with congenital hydrocephalus and 7 cases of holoprosencephaly. Twenty-three deaths were associated with anomalies of the cardiovascular system, which included 6 cases of hypoplastic left heart syndrome, 2 cases of common ventricle, and 2 cases of Ebstein's anomaly. Thirty-two deaths were due to multiple anomalies not associated with a chromosomal anomaly.

### 2. Perinatal infection

Eighty-nine deaths (10.8%) were due to infection, of which 61 were stillbirths and 28 were neonatal deaths. For 46 deaths there was an associated chorioamnionitis. The most common specified infective organism was group B streptococcus infection ( $n=18$ ) followed by *Escherichia coli* ( $n=9$ ). Four perinatal deaths followed congenital parvovirus infection, two followed a cytomegalovirus infection, and one followed an infection with *Listeria Monocytogenes*.

### 3. Hypertension

Twenty-nine deaths (3.5%) were considered to be due to maternal hypertension. There were 22 stillbirths and 7 neonatal deaths. The majority ( $n=18$ ) occurred in mothers with pre-eclampsia. There were 3 deaths attributed to chronic hypertension, and 4 to gestational hypertension.

### 4. Antepartum haemorrhage

Sixty-seven deaths were due to antepartum haemorrhage, of which 46 were due to placental abruption, 5 were due to placenta praevia, and 1 due to vasa praevia. Of the 46 deaths due to placental abruption, 5 were associated with maternal hypertension.

### 5. Maternal disease

Nineteen deaths were attributed to other maternal conditions including: diabetes ( $n=8$ ), lupus obstetric syndrome ( $n=5$ ), and maternal injury ( $n=1$ ).

### 6. Specific perinatal conditions

Twin-to-twin transfusion accounted for the majority of deaths in this group ( $n=16$ ), followed by uterine anomaly ( $n=12$ ), antepartum cord complications ( $n=8$ ), idiopathic hydrops ( $n=6$ ), and fetomaternal haemorrhage ( $n=6$ ).

### 7. Hypoxic peripartum death

There were 26 deaths associated with peripartum hypoxia. Three deaths followed cord prolapse, 2 deaths were associated with shoulder dystocia and 2 deaths followed uterine rupture. Seven deaths occurred before the onset of labour, 4 during labour, 3 at an unspecified time before birth and the remaining 12 deaths occurred in the neonatal period.

### 8. Fetal growth restriction

In 19 cases the main cause of death was considered to be fetal growth restriction (FGR). Of these, 15 were stillbirths and 4 were neonatal deaths. FGR is defined as less than the tenth percentile of birth weight for gestational age with no major congenital anomalies. If a maternal or fetal cause of FGR was known then the cause of death was classified to the underlying cause of the FGR. Stillbirths with evidence of maceration were not classified as FGR unless there was evidence of growth restriction on serial ultrasound during pregnancy or ultrasound prior to fetal demise.

### 9. Spontaneous preterm

There were 134 (16.2%) perinatal deaths associated with spontaneous preterm birth, which comprises normally formed and appropriately grown babies born before 37 weeks gestation. Of these, 40 (29.9%) were stillbirths and 94 (70.1%) were neonatal deaths.

Of all deaths in this category, 73 (54.5%) were at less than 23 weeks gestation, 59 (44.0%) were at 23–25 weeks gestation, and 2 (1.5%) occurred between 26 and 36 weeks gestation. Forty-four deaths (32.8%) were associated with membrane rupture of 24 hours or more.

### 10. Unexplained antepartum death

Of the 185 unexplained stillbirths, 123 (66.5%) were low birth weight babies and 130 (70.3%) were premature. A variety of associated maternal conditions were reported in this group including: multiple pregnancy ( $n=15$  deaths), maternal hypertension ( $n=8$ ), diabetes ( $n=8$ ) and hypothyroidism ( $n=2$ ). Post-mortem examination was carried out in 64 cases (34.6%). Placental histopathology results were provided for 163 (88.1%) unexplained antepartum deaths.

### 11. No obstetric antecedent

No obstetric cause of death was identified for 6 neonatal deaths. Causes included meconium aspiration, massive pulmonary haemorrhage, Sudden Infant Death Syndrome, accidental asphyxiation and kernicterus.

**Table 113. Perinatal deaths by psanz-pdc classification and maternity service level, NSW 2009#**

PSANZ perinatal death classification	Maternity service level													
	Level 2		Level 3		Level 4		Level 5		Level 6		Private		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. Congenital anomaly	0	0.0	3	15.8	24	16.1	31	21.5	121	28.2	19	22.6	198	23.9
2. Perinatal infection	0	0.0	4	21.1	12	8.1	10	6.9	45	10.5	18	21.4	89	10.8
3. Hypertension	0	0.0	0	0.0	4	2.7	5	3.5	18	4.2	2	2.4	29	3.5
4. Antepartum haemorrhage	0	0.0	2	10.5	13	8.7	12	8.3	33	7.7	7	8.3	67	8.1
5. Maternal disease	0	0.0	0	0.0	7	4.7	1	0.7	11	2.6	0	0.0	19	2.3
6. Specific perinatal conditions	0	0.0	1	5.3	8	5.4	9	6.3	32	7.5	5	6.0	55	6.7
7. Hypoxic peripartum death	0	0.0	1	5.3	7	4.7	7	4.9	8	1.9	2	2.4	26	3.1
8. Fetal growth restriction	1	100.0	0	0.0	1	0.7	2	1.4	14	3.3	1	1.2	19	2.3
9. Spontaneous preterm	0	0.0	1	5.3	22	14.8	27	18.8	75	17.5	9	10.7	134	16.2
10. Unexplained antepartum death	0	0.0	7	36.8	51	34.2	38	26.4	69	16.1	20	23.8	185	22.4
11. No obstetric antecedent	0	0.0	0	0.0	0	0.0	2	1.4	3	0.7	1	1.2	6	0.7
TOTAL	1	100.0	19	100.0	149	100.0	144	100.0	429	100.0	84	100.0	827	100.0

Source: NSW Maternal and Perinatal Committee, NSW Ministry of Health.  
 # The maternity service level is the level of the hospital of death.  
 ## Total includes 1 baby who died in NSW non-maternity hospitals.

## Obstetric cause of perinatal death by hospital service level

Maternity service levels are described in the Explanatory Notes of the Methods section (page 13). The majority of perinatal deaths occurred in level 6 hospitals (48.7%, Table 113). The proportion of unexplained intrauterine deaths was substantially lower in level 6 hospitals than other hospitals, possibly due to better access to perinatal postmortem services. The proportion of deaths associated with congenital abnormalities was highest in level 6 hospitals, reflecting patterns of referral for diagnosis and treatment.

## Time of death

Of the 827 perinatal deaths reviewed for 2009, 378 (45.7%) occurred before the onset of labour, 83 (10.0%) occurred during labour, 119 (14.4%) occurred at an unspecified time before birth, and 247 (29.9%) were neonatal deaths.

Of the 83 deaths reported to have occurred during labour, 55 (66.3%) occurred at less than 23 weeks gestation, 13 (15.7%) occurred at 23 to 25 weeks gestation, and 15 (18.1%) occurred at 26 weeks gestation or more.

## Perinatal deaths associated with maternal drug dependency–abuse

Three perinatal deaths were directly attributed to maternal drug dependency or drug abuse in 2009. A further nine deaths occurred among mothers who had a history of drug dependency or abuse, but drug use was not considered to be the main cause of death.

## Postmortem examination

Postmortem examination is valuable in ascertaining or confirming the cause of death, identifying additional factors that may have contributed to the death, and counselling parents about the cause of death. Postmortem examinations were carried out for 249 (30.1%) perinatal deaths: 204 stillborn infants (35.2% of all reported stillbirths) and 45 neonatal deaths (18.2% of all reported neonatal deaths). Placental histopathology was carried out for 690 (83.4%) perinatal deaths.

## Causes of neonatal death 2009

In 2009 extreme prematurity (26 weeks gestation or less) accounted for 51.4% of all neonatal deaths (Table 114). Congenital anomalies were the next most common cause of neonatal death, accounting for about one in five deaths.

Of the 247 neonatal deaths, 218 (88.3%) were preterm (Table 115). Twenty-nine neonatal deaths were among babies born at term, of which 11 deaths were due to neurological conditions, and a further 10 deaths were due to congenital anomalies.

## References

1. NSW Ministry of Health. Hospital procedures for Review and Reporting of Perinatal Deaths. Available at [www.health.nsw.gov.au/policies/pd/2006/PD2006\\_006.html](http://www.health.nsw.gov.au/policies/pd/2006/PD2006_006.html).
2. Perinatal Society of Australia and New Zealand. *Clinical Practice Guideline for Perinatal Mortality Audit*. PSANZ, 2005.

**Table 114. Neonatal deaths by PSANZ-NDC classification, NSW 2006–2009#**

PSANZ neonatal death classification	2006		Year 2007		2008		2009	
	No.	%	No.	%	No.	%	No.	%
<b>Congenital abnormality</b>								
Central nervous system	5	1.9	20	7.7	18	6.7	11	4.5
Cardiovascular system	8	3.0	10	3.9	4	1.5	5	2.0
Urinary system	7	2.6	6	2.3	3	1.1	4	1.6
Gastrointestinal system	5	1.9	0	0.0	2	0.7	1	0.4
Chromosomal	16	5.9	4	1.5	9	3.3	9	3.6
Metabolic	2	0.7	2	0.8	1	0.4	0	0.0
Multiple	12	4.5	6	2.3	12	4.5	8	3.2
Musculoskeletal	4	1.5	4	1.5	5	1.9	3	1.2
Respiratory	1	0.4	1	0.4	1	0.4	2	0.8
Diaphragmatic hernia	3	1.1	5	1.9	1	0.4	2	0.8
Haematological	0	0.0	1	0.4	0	0.0	0	0.0
Tumours	1	0.4	2	0.8	0	0.0	0	0.0
Other specified congenital abnormality	1	0.4	1	0.4	3	1.1	1	0.4
Unspecified	1	0.4	1	0.4	0	0.0	0	0.0
<b>TOTAL</b>	<b>66</b>	<b>24.5</b>	<b>63</b>	<b>24.3</b>	<b>59</b>	<b>21.9</b>	<b>46</b>	<b>18.6</b>
<b>Extreme prematurity</b>								
Not resuscitated	72	26.8	92	35.5	96	35.7	112	45.3
Unsuccessful resuscitation	10	3.7	11	4.2	12	4.5	5	2.0
Resuscitation unspecified or unknown	26	9.7	17	6.6	20	7.4	10	4.0
<b>TOTAL</b>	<b>108</b>	<b>40.1</b>	<b>120</b>	<b>46.3</b>	<b>128</b>	<b>47.6</b>	<b>127</b>	<b>51.4</b>
<b>Cardio-respiratory disorders</b>								
Hyaline membrane disease / Respiratory distress syndrome	18	6.7	5	1.9	11	4.1	6	2.4
Meconium aspiration syndrome	4	1.5	2	0.8	2	0.7	1	0.4
Primary persistent pulmonary hypertension	1	0.4	1	0.4	1	0.4	2	0.8
Pulmonary hypoplasia	4	1.5	3	1.2	4	1.5	5	2.0
Chronic neonatal lung disease	0	0.0	0	0.0	1	0.4	0	0.0
Other	3	1.1	5	1.9	2	0.7	2	0.8
<b>TOTAL</b>	<b>30</b>	<b>11.2</b>	<b>16</b>	<b>6.2</b>	<b>21</b>	<b>7.8</b>	<b>16</b>	<b>6.5</b>
<b>Infection</b>								
Congenital bacterial	5	1.9	6	2.3	14	5.2	5	2.0
Acquired bacterial	6	2.2	2	0.8	3	1.1	2	0.8
Congenital viral	2	0.7	1	0.4	0	0.0	0	0.0
Acquired viral	0	0.0	1	0.4	0	0.0	0	0.0
Protozoal eg Toxoplasma	0	0.0	0	0.0	0	0.0	3	1.2
Other	0	0.0	1	0.4	1	0.4	0	0.0
Unspecified organism	5	1.9	1	0.4	2	0.7	1	0.4
<b>TOTAL</b>	<b>18</b>	<b>6.7</b>	<b>12</b>	<b>4.6</b>	<b>20</b>	<b>7.4</b>	<b>11</b>	<b>4.5</b>
<b>Neurological</b>								
Hypoxic ischaemic encephalopathy / perinatal asphyxia	27	10.0	27	10.4	14	5.2	26	10.5
Intracranial haemorrhage	8	3.0	10	3.9	15	5.6	13	5.3
Other	0	0.0	1	0.4	0	0.0	1	0.4
<b>TOTAL</b>	<b>35</b>	<b>13.0</b>	<b>38</b>	<b>14.7</b>	<b>29</b>	<b>10.8</b>	<b>40</b>	<b>16.2</b>
<b>Gastrointestinal</b>								
Necrotising enterocolitis	3	1.1	2	0.8	5	1.9	1	0.4
<b>TOTAL</b>	<b>3</b>	<b>1.1</b>	<b>2</b>	<b>0.8</b>	<b>5</b>	<b>1.9</b>	<b>1</b>	<b>0.4</b>
<b>Other</b>								
SIDS	1	0.4		0	0.0	0	0.0	0
Unclassified Sudden Infant Death	0	0.0	1	0.4	1	0.4	0	0.0
Possible SIDS	0	0.0	0	0.0	1	0.4	0	0.0
Multisystem failure	0	0.0	0	0.0	0	0.0	1	0.4
Trauma	1	0.4	0	0.0	0	0.0	0	0.0
Other specified	3	1.1	0	0.0	3	1.1	2	0.8
Unknown/Undetermined	4	1.5	7	2.7	2	0.7	3	1.2
<b>TOTAL</b>	<b>9</b>	<b>3.3</b>	<b>8</b>	<b>3.1</b>	<b>7</b>	<b>2.6</b>	<b>6</b>	<b>2.4</b>
<b>TOTAL</b>	<b>269</b>	<b>100.0</b>	<b>259</b>	<b>100.0</b>	<b>269</b>	<b>100.0</b>	<b>247</b>	<b>100.0</b>

Source: NSW Maternal and Perinatal Committee, NSW Ministry of Health.

#Figures may differ from previous reports due to additional information being received after publication.

**Table 115. Neonatal deaths by PSANZ-NDC classification and gestational age, NSW 2009**

PSANZ neonatal death classification	< 37 weeks		Gestational age > 37 weeks		TOTAL	
	No.	%	No.	%	No.	%
<b>Congenital abnormality</b>						
Central nervous system	8	3.7	3	10.3	11	4.5
Cardiovascular system	4	1.8	1	3.4	5	2.0
Urinary tract	3	1.4	1	3.4	4	1.6
Gastrointestinal tract	1	0.5	0	0.0	1	0.4
Chromosomal	7	3.2	2	6.9	9	3.6
Multiple	6	2.8	2	6.9	8	3.2
Musculoskeletal	3	1.4	0	0.0	3	1.2
Respiratory	2	0.9	0	0.0	2	0.8
Diaphragmatic hernia	1	0.5	1	3.4	2	0.8
Other specified congenital abnormality	1	0.5	0	0.0	1	0.4
TOTAL	36	16.5	10	34.5	46	18.6
<b>Extreme prematurity</b>						
Not resuscitated	112	51.4	0	0.0	112	45.3
Unsuccessful resuscitation	5	2.3	0	0.0	5	2.0
Resuscitation unspecified or unknown	10	4.6	0	0.0	10	4.0
TOTAL	127	58.3	0	0.0	127	51.4
<b>Cardio-respiratory disorders</b>						
Hyaline membrane disease / Respiratory distress syndrome	6	2.8	0	0.0	6	2.4
Meconium aspiration syndrome	0	0.0	1	3.4	1	0.4
Primary persistent pulmonary hypertension	2	0.9	0	0.0	2	0.8
Pulmonary hypoplasia	5	2.3	0	0.0	5	2.0
Other	1	0.5	1	3.4	2	0.8
TOTAL	14	6.4	2	6.9	16	6.5
<b>Infection</b>						
Congenital bacterial	3	1.4	2	6.9	5	2.0
Acquired bacterial	1	0.5	1	3.4	2	0.8
Protozoal eg Toxoplasma	3	1.4	0	0.0	3	1.2
Unspecified organism	1	0.5	0	0.0	1	0.4
TOTAL	8	3.7	3	10.3	11	4.5
<b>Neurological</b>						
Hypoxic ischaemic encephalopathy / perinatal asphyxia	16	7.3	10	34.5	26	10.5
Intracranial haemorrhage	13	6.0	0	0.0	13	5.3
Other	0	0.0	1	3.4	1	0.4
TOTAL	29	13.3	11	37.9	40	16.2
<b>Gastrointestinal</b>						
Necrotising enterocolitis	1	0.5	0	0.0	1	0.4
TOTAL	1	0.5	0	0.0	1	0.4
<b>Other</b>						
Multisystem failure	1	0.5	0	0.0	1	0.4
Other specified	1	0.5	1	3.4	2	0.8
Unknown/Undetermined	1	0.5	2	6.9	3	1.2
TOTAL	3	1.4	3	10.3	6	2.4
<b>TOTAL</b>	218	100.0	29	100.0	247	100.0

Source: NSW Maternal and Perinatal Committee, NSW Ministry of Health.

# 11. Appendices

## Appendix 1. Description of selected congenital conditions

The following include descriptions of some of the congenital conditions included in this report:

<i>Anencephaly</i>	Absence of the cranial vault, with the brain tissue completely missing or markedly reduced.
<i>Spina bifida</i>	Incomplete closure of the bony encasement of the spinal cord, through which the spinal cord may protrude.
<i>Encephalocele</i>	Protrusion of brain through a congenital opening in the skull.
<i>Hydrocephalus</i>	Dilatation of the cerebral ventricles accompanied by an accumulation of cerebral fluid within the skull.
<i>Buphthalmos</i>	Enlargement and distension of the fibrous coats of the eye.
<i>Hypospadias</i>	The opening of the urethra lies on the underside of the penis or on the perineum.
<i>Epispadias</i>	Absence of the upper wall of the urethra. The opening of the urethra lies on the dorsum of the penis in males, and anterior to or onto the clitoris in females.
<i>Chordee</i>	Downward bowing of the penis.
<i>Talipes equinovarus</i>	A deformity of the foot in which the heel is elevated and turned outward.
<i>Polydactyly</i>	Presence of additional fingers or toes on hands or feet.
<i>Syndactyly</i>	Attachment of adjacent fingers or toes on hands or feet.
<i>Craniosynostosis</i>	Premature closure of the sutures of the skull.
<i>Exomphalos</i>	Herniation of the abdominal contents into the umbilical cord.
<i>Gastroschisis</i>	A defect in the abdominal wall not involving the umbilicus and through which the abdominal contents herniate.
<i>Cystic hygroma</i>	A sac, cyst or bursa distended with fluid.

## Appendix 2. Congenital conditions exclusion list

The following is a general list of minor conditions and non-structural disorders that are excluded from the NSW Register of Congenital Conditions:

Abnormal palmar creases	Haemophilia	Muscular dystrophies & myopathies
Accessory nipples	Heart murmurs (functional)	Oesophageal reflux
Balanced chromosomal translocation (unless occurring with structural anomalies)	Hernia (epigastric, hiatus, inguinal, umbilical)	Patent ductus arteriosus (less than 37 weeks gestation)
Birthmarks (single, < 4 cms diameter)	Hydrocele (testis)	Pilonidal sinus
Bronchopulmonary dysplasia	Hypoplastic lung (less than 37 weeks gestation)	Sacral dimples
Cerebral palsy	Imperforate hymen	Single umbilical artery (unless occurring with structural anomalies)
Clicky hips	Inborn errors of metabolism other than phenylketonuria, galactosemia and congenital hypothyroidism.	Skin tag
Congenital infections (unless occurring with structural anomalies)	Intrauterine growth retardation	Strabismus
Congenital neoplasms/tumours (exception: cystic hygroma)	Low birth weight	Talipes (exception: those requiring surgery)
Developmental disability	Meconium ileus	Tongue tie
Deviated nasal septum	Minor ear anomalies	Undescended testes (exception: those requiring surgery)
Fetal alcohol syndrome	Minor finger/hand anomalies	Webbing of 2nd and 3rd toes
Glucose-6-phosphate dehydrogenase (G6PD) deficiency	Minor toe/foot anomalies	Wide sutures

### Appendix 3. Maternal countries of birth and country of birth groups

<b>English speaking</b> Australia Christmas Island Cocos (Keeling) Islands Norfolk Island New Zealand United Kingdom Channel Islands Isle of Man Ireland Bermuda Canada United States of America South Africa	<b>Eastern Europe, Russia, Central Asian and Baltic States</b> Bulgaria Czechoslovakia Hungary Poland Romania Armenia Azerbaijan Belarus (formerly Byelorussia) Estonia Georgia Kazakhstan Latvia Lithuania Moldova (formerly Moldavia) Russian Federation Ukraine Uzbekistan Kazakhstan Kyrgyzstan	Egypt Libya Mauritania Morocco Sudan Tunisia Cameroon Central African Republic Congo Cote d'Ivoire Gambia Ghana Guinea-Bissau Liberia Mali Nigeria Senegal Sierra Leone Zaire Angola Botswana Djibouti Ethiopia Kenya Malawi Mauritius Mozambique Namibia Reunion Rwanda Seychelles Somalia Swaziland Tanzania Uganda Zambia Zimbabwe Eritrea Ethiopia	<b>Southern Asia</b> Afghanistan Bangladesh Bhutan India Maldives Nepal Pakistan Sri Lanka
<b>Central and South America</b> Bahrain Argentina Bolivia Brazil Chile Colombia Ecuador Falkland Islands French Guiana Guyana Paraguay Peru Surinam Uruguay Venezuela Belize Costa Rica El Salvador Guatamala Honduras Mexico Nicaragua Panama Antigua and Barbuda Bahamas Barbados Cayman Islands Cuba Grenada Guadeloupe Jamaica Netherlands Antilles Puerto Rico St Kitts-Nevis St Lucia St Vincent and the Grenadines Trinidad and Tobago Turks and Caicos Islands	<b>Melanesia, Micronesia and Polynesia</b> New Caledonia Papua New Guinea Solomon Islands Vanuatu Guam Kiribati Nauru Cook Islands Fiji French Polynesia (including Tahiti) Niue American Samoa Western Samoa Tokelau Tonga Tuvalu Wallis and Fortuna	<b>North East Asia</b> China (excluding Taiwan) Hong Kong Japan North Korea South Korea Macau Mongolia Taiwan	<b>Southern Europe</b> Albania Andorra Cyprus Gibraltar Greece Italy Malta Portugal Spain Bosnia-Herzegovina Croatia Macedonia Slovenia Serbia and Montenegro Former Yugoslavia (not otherwise defined)
	<b>Middle East and Africa</b> Bahrain Gaza Strip Iran Iraq Israel Jordan Kuwait Lebanon Qatar Saudi Arabia Syria Turkey United Arab Emirates West Bank Yemen Algeria	<b>South East Asia</b> Brunei Cambodia Indonesia Laos Malaysia Burma (Myanmar) Philippines Singapore Thailand Vietnam	<b>Western and Northern Europe</b> Austria Belgium France Germany (United) Luxembourg Netherlands Switzerland Denmark Faeroe Islands Finland Iceland Norway Sweden

## Appendix 4. NSW Midwives Data Collection Form

PLEASE PRESS FIRMLY WHEN COMPLETING THIS FORM

## NSW MIDWIVES DATA COLLECTION

Mother Unit  
Record No. Hospital  Code First Name  Family Name Address  Postcode Mother's  
birth date Country of birth  Australia ☐ 1101  
Other ☐If other, specify Indigenous status ☐ 1  
Aboriginal ☐ 2  
Torres Strait Islander ☐ 3  
Aboriginal and Torres Strait Islander ☐ 4  
None of the above ☐

## PREVIOUS PREGNANCIES

Previous pregnancy  
greater than 20 weeks? Yes ☐ 1 No ☐ 0If yes  
No. previous pregnancies > 20 weeks Was the last birth by  
caesarean section? Yes ☐ 1 No ☐ 0Total number of previous caesarean  
sections? 

## THIS PREGNANCY

Date of EDC Was antenatal care  
received? Yes ☐ 1 No ☐ 0If yes, duration of pregnancy at  
first contact for care (weeks) Medical conditions ☐ Diabetes mellitus ☐  
Gestational diabetes ☐  
Chronic hypertension ☐  
Pregnancy-induced hypertension:  
- proteinuric ☐  
- non-proteinuric ☐Did the mother smoke at  
all during pregnancy? Yes ☐ 1 No ☐ 0If yes, how many cigarettes each day on  
average in the second half of pregnancy?  
None ☐ 1 >10 per day ☐ 2  
≤ 10 per day ☐ 3 Unknown ☐ 4

## LABOUR AND DELIVERY

Onset of labour ☐ 1  
Spontaneous ☐ 2  
No labour ☐ 3If labour augmented/induced (tick 1 or more):  
Oxytocins ☐ ARM ☐  
Prostaglandins ☐ Other ☐If labour induced, main indication:  
Diabetes ☐ 1  
Hypertensive disease ☐ 2  
Fetal distress ☐ 3  
Fetal death ☐ 4  
Chorioamnionitis ☐ 5  
Blood group isoimmunisation ☐ 6  
Prelabour rupture of membranes ☐ 7  
Prolonged pregnancy (41+ weeks) ☐ 8  
Suspected intrauterine growth restriction ☐ 9  
Other ☐ 10Presentation at birth ☐ 1  
Vertex ☐ 2  
Brow ☐ 3  
Shoulder/transverse ☐ 4  
Face ☐ 5  
Other ☐ 6

## LABOUR AND DELIVERY (cont.)

Analgesia for labour (tick one or more)  
None ☐ Epidural/caudal ☐  
Nitrous oxide ☐ Combined ☐  
Systemic opioids ☐ spinal-epidural ☐  
Spinal ☐ Other ☐Type of birth ☐ 1  
Normal vaginal ☐ 2  
Forceps ☐ 3  
Vacuum extr. ☐ 4  
Vaginal breech ☐ 5  
Caesarean section ☐If caesarean section, main indication:  
Failure to progress ☐ 2  
- Cx 3cm dilated or less ☐ 3  
- Cx dilated more than 3cm ☐ 4  
Fetal distress ☐ 5  
Elective repeat caesarean section ☐ 6  
Other clinical indication ☐ 7  
Non-clinical indication ☐Analgesia for delivery (tick one or more)  
None ☐ Epidural/caudal ☐  
Local to perineum ☐ Combined ☐  
Pudendal ☐ spinal+epidural ☐  
Spinal ☐ General ☐  
anaesthetic ☐ Other ☐Perineal status ☐ 1  
Intact ☐ 2  
1st deg. tear/graze ☐ 3  
2nd deg. tear ☐ 4  
3rd deg. tear ☐ 5  
4th deg. tear ☐ 6  
Other ☐Episiotomy ☐ 1  
Yes ☐ 2  
No ☐Surgical repair of the vagina or perineum?  
Yes ☐ 1 No ☐ 0Management of the 3rd stage  
Active ☐ 1 Physiological ☐ 2

## BABY

Unit Record No. Birth date Sex ☐ 1  
M ☐ 2  
F ☐ 3  
Indet. ☐Plurality ☐ 1  
Single ☐ 2  
Multiple ☐If multiple, total number If multiple birth, specify baby number Birthweight (grams) Estimated gestational age Apgar  1 min  5 minResuscitation of baby (tick 1 or more)  
None/minimal ☐ 1 IPPR: bag + mask ☐ 4  
Suction ☐ 2 Intubation + IPPR ☐ 5  
O<sub>2</sub> therapy ☐ 3 External cardiac ☐ 6  
massage + ventilation

## MATERNITY CARE

Model of care Antenatal care Birth  
(for shared care tick more than one box)  
Private obstetrician ☐  
Hospital-based medical ☐  
General practitioner ☐  
Hospital-based midwife/midwives ☐  
Independent midwife ☐  
Not applicable ☐Mother referred from another hospital?  
Yes ☐ 1 No ☐ 0  
If yes, specify hospital Referral prior to onset of labour ☐ 1  
Referral after onset of labour ☐ 2Baby place of birth ☐ 1  
Hospital theatre/delivery suite ☐ 2  
Birth centre ☐ 3  
Planned birth centre/delivery suite birth ☐ 4  
Planned homebirth ☐ 5  
Planned homebirth/hospital admission ☐ 6  
Born before arrival ☐

## POSTNATAL

Mother ☐ 1  
Postpartum haemorrhage ☐ 2  
requiring blood transfusion ☐Baby ☐ 1  
Birth defect? ☐ 2  
If yes, specify Admitted to SCN/NICU ☐ 1  
Yes ☐ 2  
No ☐If admitted to NICU:  
Was a birth defect the main  
reason for admission? Yes ☐ 1 No ☐ 0Vitamin K ☐ 1  
Oral ☐ 2  
IM ☐ 3  
None ☐Hepatitis B birth dose ☐ 1  
Yes ☐ 2  
No ☐

## DISCHARGE

Mother ☐ 1  
Discharged ☐ 2  
Transferred ☐ 3  
Died ☐Baby ☐ 1  
Discharged ☐ 2  
Transferred ☐ 3  
Stillbirth ☐ 4  
Died ☐ 5  
Transferred and died ☐Mother's date of discharge Hospital mother  
transferred to Infant feeding on ☐ 1  
hospital discharge ☐ 2  
Expressed breast milk ☐ 3  
(tick one or more) ☐ 4  
Infant formula ☐Baby's date of discharge Hospital baby  
transferred to Baby transferred by NETS ☐ 1  
Yes ☐ 2  
No ☐Signature of midwife  
at discharge 

Health Department Copy

Please complete and forward to: NSW Midwives Data Collection  
Performance Analysis and Reporting Branch, Level 5, NSW Department of Health  
Locked Bag 961, North Sydney, NSW 2059

Public Health Act, 1991

606201 - Sept/05

MR44/PR16





