

## 12. PERINATAL DEATHS

### Review of perinatal deaths 2005

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 Department of Health Policy Directive No. 2006\_006 describes hospital procedures for review and reporting of perinatal deaths.<sup>1</sup> In 2005, the Maternal and Perinatal Committee carried out reviews of perinatal deaths occurring among fetuses or infants of at least 22 weeks gestation or at least 500 grams birthweight. For 2006 the Committee will carry out reviews of perinatal deaths occurring among fetuses or infants of at least 20 weeks gestation or at least 400 grams birthweight, bringing the Committee's review process in line with the criteria used by the NSW Midwives Data Collection (MDC) for reporting of births.

Perinatal deaths in 2005 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 643 perinatal deaths of at least 22 weeks gestation or at least 500 grams birth weight reported to the MDC in 2005. Confidential reports on 630 deaths were reviewed. Of the 416 stillbirths reported to the MDC, reviews were carried out on 405 (97.4 per cent). The MDC was notified of 227 neonatal deaths. Reviews were carried out on 225 neonatal deaths. Comparative information is also presented for previous years.

### Trends in obstetric antecedents of perinatal death

The pattern of antecedent causes of death between 2002 and 2005 is shown in Table 139. The proportion of deaths attributed to hypertension fell over the 4-year period, while the proportion of deaths attributed to fetal growth restriction increased due to improved reporting of serial antenatal ultrasound findings.

In 2005, unexplained antepartum deaths comprised the largest category in 2005 (Figure 18), as for previous years. The next most common categories were fetal abnormalities followed by spontaneous preterm birth.

### Obstetric antecedents of perinatal death 2005

#### 1. Congenital abnormality

In 2005, congenital abnormalities were the underlying cause for 114 deaths (Table 140). The most common abnormalities were chromosomal ( $n=29$ , 25.4 per cent). Of these, 12 were trisomy 18, 5 were trisomy 21, 5 were trisomy 13, 3 were Turner syndrome, and there were 6 other abnormalities.

Twenty deaths were associated with abnormalities of the central nervous system (17.5 per cent): 11 were neural tube defects and 4 were congenital hydrocephalus. Nineteen deaths were associated with abnormalities of the cardiovascular system, of which 3 were cases of transposition of the great vessels, 4 were cases of hypoplastic left heart syndrome, and there were 2 cases of coarctation of the aorta. Two deaths were associated with congenital diaphragmatic hernia, 1 with pulmonary hypoplasia at term, while 23 deaths were due to multiple abnormalities not associated with a chromosomal abnormality.

#### 2. Perinatal infection

Twenty-two deaths were found to be due to infection, of which 9 were stillbirths and 13 were neonatal deaths. In 10 deaths there was an associated chorioamnionitis. The most common infective organism was group B streptococcus, which was considered responsible for 3 deaths. Three deaths were caused by *Escherichia coli* infection. Other bacterial infections included *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Haemophilus influenzae* and *Proteus Mirabilis* infection. Two perinatal deaths followed congenital cytomegalovirus infection.

#### 3. Hypertension

Sixteen deaths (2.5 per cent) were considered to be due to maternal hypertension. There were 11 stillbirths and 5 neonatal deaths. The majority ( $n=12$ ) occurred in mothers with pre-eclampsia. There were 2 deaths attributed to gestational hypertension, 1 to chronic hypertension and in 1 case the type of hypertension was not specified.

#### 4. Antepartum haemorrhage

Fifty-one deaths were due to antepartum haemorrhage, of which 35 were due to placental abruption, 3 were due to placenta praevia, and 2 due to vasa praevia.

#### 5. Maternal disease

Thirty-five deaths were attributed to other maternal conditions including: diabetes (12), maternal injury (5), termination of pregnancy (6), sepsis (4), antiphospholipid syndrome (2), systemic lupus erythematosus (1), peritonitis (1), Graves' disease (1), Crohn's disease (1), glomerulonephritis (1), and maternal death (1).

**TABLE 139**

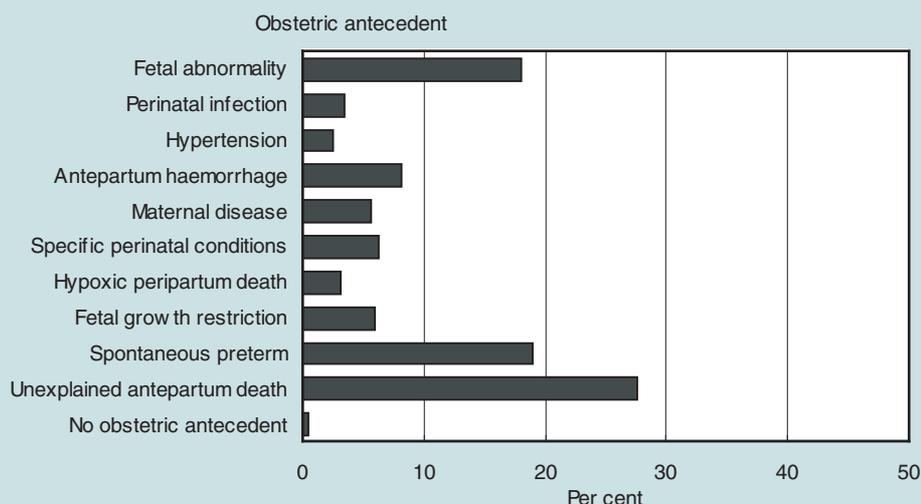
**PERINATAL DEATHS BY OBSTETRIC ANTECEDENT AND YEAR, NSW 2002–2005\***

Obstetric antecedent	2002		2003		2004		2005	
	No.	%	No.	%	No.	%	No.	%
1. Fetal abnormality	102	16.2	97	16.1	127	19.5	114	18.1
2. Perinatal infection	28	4.4	30	5.0	15	2.3	22	3.5
3. Hypertension	34	5.4	33	5.5	30	4.6	16	2.5
4. Antepartum haemorrhage	49	7.8	44	7.3	59	9.1	51	8.1
5. Maternal disease	27	4.3	28	4.6	21	3.2	35	5.6
6. Specific perinatal conditions	45	7.1	52	8.6	43	6.6	39	6.2
7. Hypoxic peripartum death	25	4.0	22	3.6	20	3.1	20	3.2
8. Fetal growth restriction	30	4.8	11	1.8	17	2.6	37	5.9
9. Spontaneous preterm	133	21.1	95	15.8	123	18.9	119	18.9
10. Unexplained antepartum death	152	24.1	185	30.7	192	29.5	174	27.6
11. No obstetric antecedent	6	1.0	6	1.0	3	0.5	3	0.5
<b>TOTAL</b>	<b>631</b>	<b>100.0</b>	<b>603</b>	<b>100.0</b>	<b>650</b>	<b>100.0</b>	<b>630</b>	<b>100.0</b>

Source: NSW Maternal and Perinatal Committee, NSW Department of Health.  
 # Figures may differ from previous reports due to additional information being received after publication.

**FIGURE 18**

**PERINATAL DEATHS BY OBSTETRIC ANTECEDENT, NSW 2005**



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

TABLE 140

## PERINATAL DEATHS BY OBSTETRIC ANTECEDENT AND PERINATAL OUTCOME, NSW 2005

Obstetric antecedent	Stillbirth		Perinatal outcome Neonatal death		TOTAL	
	No.	%	No.	%	No.	%
<b>1. Fetal abnormality</b>						
Central nervous system	11	2.7	9	4.0	20	3.2
Cardiovascular system	9	2.2	10	4.4	19	3.0
Urinary tract	4	1.0	4	1.8	8	1.3
Gastrointestinal system	1	0.2	4	1.8	5	0.8
Chromosomal	20	4.9	9	4.0	29	4.6
Multiple	10	2.5	13	5.8	23	3.7
Other	3	0.7	7	3.1	10	1.6
Total	58	14.3	56	24.9	114	18.1
<b>2. Perinatal infection</b>						
Group B Streptococcus	2	0.5	1	0.4	3	0.5
E Coli	1	0.2	2	0.9	3	0.5
Other bacterial	1	0.2	3	1.3	4	0.6
Unspecified bacterial	2	0.5	5	2.2	7	1.1
Cytomegalovirus	1	0.2	1	0.4	2	0.3
Parvovirus	1	0.2	0	0.0	1	0.2
Fungal	0	0.0	1	0.4	1	0.2
Unspecified organism	1	0.2	0	0.0	1	0.2
Total	9	2.2	13	5.8	22	3.5
<b>3. Hypertension</b>						
Chronic: Essential	1	0.2	0	0.0	1	0.2
Chronic: Unspecified	1	0.2	0	0.0	1	0.2
Gestational	2	0.5	0	0.0	2	0.3
Pre-eclampsia	7	1.7	5	2.2	12	1.9
Total	11	2.7	5	2.2	16	2.5
<b>4. Antepartum haemorrhage</b>						
Placental abruption	8	4.4	17	7.6	35	5.6
Placenta praevia	1	0.2	2	0.9	3	0.5
Vasa praevia	1	0.2	1	0.4	2	0.3
Undetermined origin	5	1.2	2	0.9	7	1.1
Other	1	0.2	3	1.3	4	0.6
Total	26	6.4	25	11.1	51	8.1
<b>5. Maternal disease</b>						
Termination of pregnancy other than for fetal abnormality	5	1.2	1	0.4	6	1.0
Diabetes/gestational diabetes	12	3.0	0	0.0	12	1.9
Maternal injury: Accidental	3	0.7	2	0.9	5	0.8
Sepsis	4	1.0	0	0.0	4	0.6
Other	6	1.5	2	0.9	8	1.3
Total	30	7.4	5	2.2	35	5.6
<b>6. Specific perinatal conditions</b>						
Twin-to-twin transfusion	13	3.2	4	1.8	17	2.7
Fetomaternal haemorrhage	3	0.7	0	0.0	3	0.5
Antepartum cord complications	7	1.7	0	0.0	7	1.1
Uterine abnormality	0	0.0	2	0.9	2	0.3
Idiopathic hydrops	4	1.0	4	1.8	8	1.3
Other	1	0.2	1	0.4	2	0.3
Total	28	6.9	11	4.9	39	6.2
<b>7. Hypoxic peripartum death</b>						
Uterine rupture	1	0.2	1	0.4	2	0.3
Cord prolapse	2	0.5	0	0.0	2	0.3
Other intrapartum complication	1	0.2	1	0.4	2	0.3
No intrapartum complication	3	0.7	2	0.9	5	0.8
Unspecified	5	1.2	4	1.8	9	1.4
Total	12	3.0	8	3.6	20	3.2
<b>8. Fetal growth restriction</b>						
With evidence of uteroplacental insufficiency	13	3.2	5	2.2	18	2.9
With chronic villitis	3	0.7	2	0.9	5	0.8
Without the above placental pathology	9	2.2	1	0.4	10	1.6
No placental examination	1	0.2	2	0.9	3	0.5
Unspecified placental examination	1	0.2	0	0.0	1	0.2
Total	27	6.7	10	4.4	37	5.9

**TABLE 140 (continued)**
**PERINATAL DEATHS BY OBSTETRIC ANTECEDENT AND PERINATAL OUTCOME, NSW 2005**

Obstetric antecedent	Stillbirth		Perinatal outcome Neonatal death		TOTAL	
	No.	%	No.	%	No.	%
<b>9. Spontaneous preterm</b>						
Intact membranes or membrane rupture less than 24 hours:						
with chorioamnionitis	8	2.0	27	12.0	35	5.6
Intact membranes or membrane rupture less than 24 hours:						
without chorioamnionitis	3	0.7	30	13.3	33	5.2
no placental examination	1	0.2	8	3.6	9	1.4
Membrane rupture 24 hours or more:						
with chorioamnionitis	13	3.2	16	7.1	29	4.6
without chorioamnionitis	1	0.2	4	1.8	5	0.8
no placental examination	1	0.2	1	0.4	2	0.3
Membrane rupture unknown duration:						
with chorioamnionitis	1	0.2	2	0.9	3	0.5
without chorioamnionitis	1	0.2	0	0.0	1	0.2
no placental examination	2	0.5	0	0.0	2	0.3
Total	31	7.7	88	39.1	119	18.9
<b>10. Unexplained antepartum death</b>						
With evidence of uteroplacental insufficiency	44	10.9	1	0.4	45	7.1
With chronic villitis	3	0.7	0	0.0	3	0.5
Without the above placental pathology	112	27.7	0	0.0	112	17.8
No placental examination	7	1.7	0	0.0	7	1.1
Unspecified placental examination	7	1.7	0	0.0	7	1.1
Total	173	42.7	1	0.4	174	27.6
<b>11. No obstetric antecedent</b>						
Possible SIDS	0	0.0	1	0.4	1	0.2
Unknown-unexplained	0	0.0	2	0.9	2	0.3
Total	0	0.0	3	1.3	3	0.5
<b>TOTAL</b>	<b>405</b>	<b>100.0</b>	<b>225</b>	<b>100.0</b>	<b>630</b>	<b>100.0</b>

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

## 6. Specific perinatal conditions

Twin-to-twin transfusion accounted for 17 of the 39 deaths in this group, followed by idiopathic hydrops (8), antepartum cord complications (7) and fetomaternal haemorrhage (3). Other causes were: uterine abnormality (2), severe erythroblastosis in the fetus (1), and chorangioma of the placenta (1).

## 7. Hypoxic peripartum death

There were 20 deaths associated with peripartum hypoxia. Two deaths followed uterine rupture and two deaths followed cord prolapse.

Four deaths occurred before the onset of labour, 6 during labour and 2 at an unspecified time prior to birth. The remaining 8 deaths occurred in the neonatal period.

## 8. Fetal growth restriction

In 37 cases, the main obstetric cause of death was considered to be fetal growth restriction (FGR). Of these, 8 were stillbirths and 8 were neonatal deaths.

FGR is defined as less than the tenth percentile of birthweight for gestational age with no major congenital abnormalities. 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.

## 9. Spontaneous preterm

There were 119 perinatal deaths associated with spontaneous preterm birth, which comprises normally formed and appropriately grown babies born before 37 weeks gestation. Of these, 31 (26.1 per cent) were stillbirths and 88 (73.9 per cent) were neonatal deaths.

Thirty-five deaths (29.4 per cent) were at less than 23 weeks gestation, 63 (52.9 per cent) were at 23–25 weeks gestation, and 21 (17.6 per cent) occurred between 26 and 36 weeks gestation. Thirty-six deaths (30.3 per cent) were associated with membrane rupture of 24 hours or more.

## 10. Unexplained antepartum death

Of the 174 unexplained stillbirths, 112 (64.4 per cent) were low birth weight babies and 106 (60.9 per cent) were premature. A variety of associated maternal conditions were reported in this group including: multiple pregnancy (7 deaths), maternal hypertension (19), diabetes (3), asthma (3), epilepsy (1), and thyroid disease (2). Placental histopathology results were provided for 160 unexplained antepartum deaths (92.0 per cent) and evidence of uteroplacental insufficiency was found in 45.

## 11. No obstetric antecedent

No obstetric cause of death was identified for 3 neonatal deaths. One newborn died following meconium aspiration. In the remaining two cases, no post-mortem was carried out. One death was considered to be a possible SIDS, and in the remaining case no cause of death was identified.

### Obstetric cause of perinatal death by hospital service level 2005

Obstetric service levels are described in the Explanatory Notes of the Methods section (page 16). The majority of perinatal deaths occurred in level 6 hospitals (52.7 per cent, Table 141). The proportion of unexplained intrauterine deaths was substantially lower in level 6 hospitals than other hospitals, possibly due to better access to perinatal post-mortem 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 2005

Of the 630 perinatal deaths reviewed for 2005, 282 (44.7 per cent) occurred before the onset of labour, 48 (7.6 per cent) occurred during labour, 75 (11.9 per cent) occurred at an unknown time before birth, and 225 (35.7 per cent) were neonatal deaths.

Of the 48 deaths that occurred during labour, 23 (47.9 per cent) occurred in level 6 hospitals, 8 (16.7 per cent) occurred in level 5 hospitals, 6 (12.5 per cent) occurred in level 4 hospitals, 6 occurred in level 3 hospitals, 3 (6.3 per cent) occurred in level 2 hospitals, and 2 (4.2 per cent) occurred in private hospitals.

### Neonatal causes of death

Between 2002 and 2005 extreme prematurity was the most common cause of neonatal death, accounting for over

40 per cent of all neonatal deaths in 2005 (Table 142). Congenital abnormalities were the next most common cause of neonatal death over the four years, accounting for about one in five deaths.

Of the 225 neonatal deaths reviewed for 2005, 184 (81.8 per cent) were less than 37 weeks gestation (Table 143). The most common neonatal cause of death was extreme prematurity ( $n=97$ , 43.1 per cent). Forty-seven infants died from a congenital abnormality. There were 16 deaths due to hypoxic ischaemic encephalopathy and 6 deaths due to intracranial haemorrhage.

### Perinatal deaths associated with maternal drug dependency–abuse 2005

No perinatal deaths were directly attributed to maternal drug dependency or drug abuse. Five 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.

### Post-mortem examination 2005

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 238 (37.7 per cent) deaths: 182 stillborn infants (44.9 per cent of all reported stillbirths) and 56 neonatal deaths (24.7 per cent of all reported neonatal deaths). Placental histopathology was carried out in 535 perinatal deaths (84.9 per cent)

### References

1. NSW Department 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. Available at: [www.psanz.org.au](http://www.psanz.org.au).

TABLE 141

#### PERINATAL DEATHS BY OBSTETRIC ANTECEDENT AND HOSPITAL SERVICE LEVEL, NSW 2005

Obstetric antecedent	Hospital service level													
	Level 2		Level 3		Level 4		Level 5		Level 6		Private		TOTAL#	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. Fetal abnormality	2	22.2	3	5.9	8	11.6	11	10.9	84	24.7	4	7.3	113	18.0
2. Perinatal infection	0	0.0	2	3.9	2	2.9	4	4.0	13	3.8	1	1.8	22	3.5
3. Hypertension	0	0.0	0	0.0	2	2.9	2	2.0	10	2.9	2	3.6	16	2.6
4. Antepartum haemorrhage	0	0.0	5	9.8	6	8.7	6	5.9	30	8.8	3	5.5	50	8.0
5. Maternal disease	0	0.0	2	3.9	8	11.6	6	5.9	17	5.0	2	3.6	35	5.6
6. Specific perinatal conditions	0	0.0	2	3.9	0	0.0	10	9.9	23	6.8	4	7.3	39	6.2
7. Hypoxic peripartum death	3	33.3	2	3.9	2	2.9	3	3.0	7	2.1	3	5.5	20	3.2
8. Fetal growth restriction	0	0.0	4	7.8	1	1.4	3	3.0	24	7.1	5	9.1	37	5.9
9. Spontaneous preterm	1	11.1	5	9.8	13	18.8	19	18.8	77	22.6	2	3.6	118	18.8
10. Unexplained antepartum death	3	33.3	26	51.0	27	39.1	36	35.6	53	15.6	29	52.7	174	27.8
11. No obstetric antecedent	0	0.0	0	0.0	0	0.0	1	1.0	2	0.6	0	0.0	3	0.5
TOTAL	9	100.0	51	100.0	69	100.0	101	100.0	340	100.0	55	100.0	627	100.0

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

# The fetal abnormality and spontaneous preterm groups each include one perinatal death that occurred in a level 1 hospital.

TABLE 142

NEONATAL DEATHS BY CAUSE AND YEAR, NSW 2002–2005<sup>#</sup>

Neonatal cause	Year							
	2002		2003		2004		2005	
	No.	%	No.	%	No.	%	No.	%
<b>1. Congenital abnormality</b>								
Central nervous system	6	2.9	10	5.2	12	6.1	6	2.7
Cardiovascular system	2	1.0	11	5.7	6	3.1	9	4.0
Urinary tract	2	1.0	3	1.5	3	1.5	5	2.2
Gastrointestinal tract	2	1.0	2	1.0	4	2.0	1	0.4
Chromosomal	9	4.3	3	1.5	11	5.6	5	2.2
Metabolic	1	0.5	0	0.0	2	1.0	0	0.0
Multiple	5	2.4	2	1.0	9	4.6	11	4.9
Other	12	5.7	7	3.6	7	3.6	10	4.4
Unspecified	1	0.5	0	0.0	2	1.0	0	0.0
Total	40	19.1	38	19.6	56	28.6	47	20.9
<b>2. Extreme prematurity</b>								
Not resuscitated	44	21.1	45	23.2	37	18.9	54	24.0
Unsuccessful resuscitation	36	17.2	22	11.3	23	11.7	27	12.0
Resuscitation unspecified or unknown	9	4.3	20	10.3	8	4.1	16	7.1
Total	89	42.6	87	44.8	68	34.7	97	43.1
<b>3. Cardio-respiratory disorders</b>								
Hyaline membrane disease– respiratory distress syndrome	4	1.9	6	3.1	3	1.5	5	2.2
Meconium aspiration syndrome	1	0.5	1	0.5	1	0.5	1	0.4
Primary persistent pulmonary hypertension	2	1.0	1	0.5	3	1.5	1	0.4
Pulmonary hypoplasia	7	3.3	5	2.6	5	2.6	4	1.8
Chronic neonatal lung disease	0	0.0	2	1.0	0	0.0	1	0.4
Other	7	3.3	6	3.1	4	2.0	10	4.4
Total	21	10.0	21	10.8	16	8.2	22	9.8
<b>4. Infection</b>								
Congenital bacterial	9	4.3	3	1.5	6	3.1	6	2.7
Acquired bacterial	7	3.3	6	3.1	3	1.5	9	4.0
Fungal	1	0.5	1	0.5	0	0.0	1	0.4
Congenital viral	0	0.0	0	0.0	1	0.5	1	0.4
Unspecified organism	0	0.0	0	0.0	1	0.5	0	0.0
Other	1	0.5	1	0.5	2	1.0	4	1.8
Total	18	8.6	11	5.7	13	6.6	21	9.3
<b>5. Neurological</b>								
Hypoxic ischaemic encephalopathy– perinatal asphyxia	15	7.2	13	6.7	20	10.2	16	7.1
Intracranial haemorrhage	10	4.8	10	5.2	12	6.1	6	2.7
Other	2	1.0	1	0.5	0	0.0	2	0.9
Total	27	12.9	24	12.4	32	16.3	24	10.7
<b>6. Gastrointestinal</b>								
Necrotising enterocolitis	5	2.4	5	2.6	2	1.0	4	1.8
Other	0	0.0	1	0.5	1	0.5	1	0.4
Total	5	2.4	6	3.1	3	1.5	5	2.2
<b>7. Other</b>								
Trauma	1	0.5	0	0.0	0	0.0	0	0.0
Consistent with SIDS	0	0.0	1	0.5	0	0.0	0	0.0
Possible SIDS	0	0.0	0	0.0	0	0.0	2	0.9
Multisystem failure	0	0.0	0	0.0	0	0.0	1	0.4
Other	5	2.4	5	2.6	7	3.6	4	1.8
Undetermined–unknown	3	1.4	1	0.5	1	0.5	2	0.9
Total	9	4.3	7	3.6	8	4.1	9	4.0
<b>TOTAL</b>	<b>209</b>	<b>100.0</b>	<b>194</b>	<b>100.0</b>	<b>196</b>	<b>100.0</b>	<b>225</b>	<b>100.0</b>

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

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

TABLE 143

## NEONATAL DEATHS BY CAUSE AND GESTATIONAL AGE, NSW 2005

Neonatal cause	Less than 37		Gestational age (weeks) 37+		TOTAL	
	No.	%	No.	%	No.	%
<b>1. Congenital abnormality</b>						
Central nervous system	4	2.2	2	4.9	6	2.7
Cardiovascular system	1	0.5	8	19.5	9	4.0
Urinary tract	4	2.2	1	2.4	5	2.2
Gastrointestinal tract	1	0.5	0	0.0	1	0.4
Chromosomal	4	2.2	1	2.4	5	2.2
Multiple	10	5.4	1	2.4	11	4.9
Other	4	2.2	6	14.6	10	4.4
Total	28	15.2	19	46.3	47	20.9
<b>2. Extreme prematurity</b>						
Not resuscitated	54	29.3	0	0.0	54	24.0
Unsuccessful resuscitation	27	14.7	0	0.0	27	12.0
Resuscitation unspecified or unknown	16	8.7	0	0.0	16	7.1
Total	97	52.7	0	0.0	97	43.1
<b>3. Cardio-respiratory disorders</b>						
Hyaline membrane disease – respiratory distress syndrome	5	2.7	0	0.0	5	2.2
Meconium aspiration syndrome	0	0.0	1	2.4	1	0.4
Primary persistent pulmonary hypertension	0	0.0	1	2.4	1	0.4
Pulmonary hypoplasia	3	1.6	1	2.4	4	1.8
Chronic neonatal lung disease	1	0.5	0	0.0	1	0.4
Other	7	3.8	3	7.3	10	4.4
Total	16	8.7	6	14.6	22	9.8
<b>4. Infection</b>						
Congenital bacterial	5	2.7	1	2.4	6	2.7
Acquired bacterial	9	4.9	0	0.0	9	4.0
Congenital viral	1	0.5	0	0.0	1	0.4
Fungal	1	0.5	0	0.0	1	0.4
Other	4	2.2	0	0.0	4	1.8
Total	20	10.9	1	2.4	21	9.3
<b>5. Neurological</b>						
Hypoxic ischaemic encephalopathy– perinatal asphyxia	5	2.7	11	26.8	16	7.1
Intracranial haemorrhage	5	2.7	1	2.4	6	2.7
Other	2	1.1	0	0.0	2	0.9
Total	12	6.5	12	29.3	24	10.7
<b>6. Gastrointestinal</b>						
Necrotising enterocolitis	3	1.6	1	2.4	4	1.8
Other	1	0.5	0	0.0	1	0.4
Total	4	2.2	1	2.4	5	2.2
<b>7. Other</b>						
Possible SIDS	0	0.0	2	4.9	2	0.9
Multisystem failure	1	0.5	0	0.0	1	0.4
Other	4	2.2	0	0.0	4	1.8
Undetermined–unknown	2	1.1	0	0.0	2	0.9
Total	7	3.8	2	4.9	9	4.0
<b>TOTAL</b>	<b>184</b>	<b>100.0</b>	<b>41</b>	<b>100.0</b>	<b>225</b>	<b>100.0</b>

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