10. Perinatal deaths

Review of perinatal deaths 2008

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[1]. 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 Midwives Data Collection (MDC) 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).[2]

There were 841 perinatal deaths of at least 20 weeks gestation or at least 400 grams birth weight reported to the MDC in 2008. Confidential reports on 713 deaths were reviewed. Of the 585 stillbirths reported to the MDC, reviews were carried out on 487 (83.2%). The MDC was notified of 256 neonatal deaths. Reviews were carried out on 226 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 112. The overall pattern of deaths was similar over the period 2006 to 2008—the most common cause of perinatal death was unexplained antepartum death, followed by congenital abnormalities and spontaneous preterm birth. Together, these 3 groups account for over 60% of perinatal deaths.

Causes of perinatal death 2008

Perinatal deaths were classified according to the PSANZ–PDC, which identifies the single most important factor which led to the chain of events which resulted in the death (Table 113).

Table 112. Perinatal deaths by PSANZ-PDC classification NSW 2006–2008#

PSANZ perinatal death classification	Year					
	2006		2007		2008	
	No.	%	No.	%	No.	%
1. Congenital abnormality	194	22.5	174	20.9	161	22.6
2. Perinatal infection	51	5.9	54	6.5	70	9.8
3. Hypertension	26	3.0	27	3.2	36	5.0
4. Antepartum haemorrhage	71	8.2	70	8.4	66	9.3
5. Maternal disease	23	2.7	27	3.2	14	2.0
6. Specific perinatal conditions	74	8.6	48	5.8	37	5.2
7. Hypoxic peripartum death	27	3.1	35	4.2	28	3.9
8. Fetal growth restriction	53	6.1	32	3.9	20	2.8
9. Spontaneous preterm	171	19.8	152	18.3	107	15.0
10. Unexplained antepartum death	167	19.4	204	24.5	172	24.1
11. No obstetric antecedent	5	0.6	8	1.0	2	0.3
TOTAL	862	100.0	831	100.0	713	100.0

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

Table 113. Perinatal deaths by PSANZ-PDC classification and perinatal outcome, NSW 2008

PSANZ perinatal death classification	Perinatal outcome					
	Stillbirth		Neonatal death		TOTAL	
	No.	%	No.	%	No.	%
1. Congenital abnormality						
Central nervous system	27	5.5	17	7.5	44	6.2
Cardiovascular system	16	3.3	4	1.8	20	2.8
Urinary system	6	1.2	3	1.3	9	1.3
Gastrointestinal system	0	0.0	2	0.9	2	0.3
Chromosomal	24	4.9	9	4.0	33	4.6
Multiple	14	2.9	8	3.5	22	3.1
Musculoskeletal	9	1.8	4	1.8	13	1.8
Respiratory	0	0.0	1	0.4	1	0.1
Diaphragmatic hernia	0	0.0	1	0.4	1	0.1
Haematological	0	0.0	1	0.4	1	0.1
Tumours	0	0.0	1	0.4	1	0.1
Other specified	10	2.1	2	0.9	12	1.7
Unspecified	1	0.2	1	0.4	2	0.3
TOTAL	107	22.0	54	23.9	161	22.6
2. Perinatal						
Group B Streptococcus	5	1.0	4	1.8	9	1.3
E Coli	2	0.4	4	1.8	6	0.8
Listeria Monocytogenes	1	0.2	0	0.0	1	0.1
Other bacterial	5	1.0	4	1.8	9	1.3
Unspecified bacterial	28	5.7	3	1.3	31	4.3
Cytomegalovirus	1	0.2	0	0.0	1	0.1
Parvovirus	5	1.0	0	0.0	5	0.7
Other unspecified organism	4	0.8	4	1.8	8	1.1
TOTAL	51	10.5	19	8.4	70	9.8
3. Hypertension						
Chronic: Essential	4	0.8	3	1.3	7	1.0
Chronic: Secondary eg renal	1	0.2	0	0.0	1	0.1
Chronic: Unspecified	1	0.2	0	0.0	1	0.1
Gestational	6	1.2	2	0.9	8	1.1
Pre-eclampsia	12	2.5	3	1.3	15	2.1
Pre-eclampsia superimposed on chronic hypertension	1	0.2	1	0.4	2	0.3
Unspecified hypertension	2	0.4	0	0.0	2	0.3
TOTAL	27	5.5	9	4.0	36	5.0
4. Antepartum haemorrhage						
Placental abruption	25	5.1	17	7.5	42	5.9
Placenta praevia	4	0.8	0	0.0	4	0.6
Vasa praevia	2	0.4	3	1.3	5	0.7
Other	2	0.4	4	1.8	6	0.8
Undetermined origin	7	1.4	2	0.9	9	1.3
TOTAL	40	8.2	26	11.5	66	9.3
5. Maternal disease						
Termination of pregnancy for maternal psychosocial indications	0	0.0	2	0.9	2	0.3
Diabetes/gestational diabetes	8	1.6	1	0.4	9	1.3
Maternal injury: Accidental	1	0.2	1	0.4	2	0.3
Lupus obstetric syndrome	1	0.2	0	0.0	1	0.1
TOTAL	10	2.1	4	1.8	14	2.0
6. Specific perinatal conditions						
Twin-to-twin transfusion	14	2.9	7	3.1	21	2.9
Fetomaternal haemorrhage	1	0.2	0	0.0	1	0.1
Antepartum cord complications	5	1.0	0	0.0	5	0.7
Uterine abnormality	2	0.4	0	0.0	2	0.3
Birth trauma	0	0.0	1	0.4	1	0.1
Alloimmune disease – Kell	1	0.2	0	0.0	1	0.1
Idiopathic hydrops	4	0.8	0	0.0	4	0.6
Other	1	0.2	1	0.4	2	0.3
TOTAL	28	5.7	9	4.0	37	5.2

Table 113. (Continued)

PSANZ perinatal death classification	Perinatal outcome					
	Stillbirth		Neonatal death		TOTAL	
	No.	%	No.	%	No.	%
7. Hypoxic peripartum death						
Intrapartum complication – Uterine rupture	2	0.4	0	0.0	2	0.3
Intrapartum complication – Cord prolapse	4	0.8	1	0.4	5	0.7
Intrapartum complication – Shoulder dystocia	1	0.2	1	0.4	2	0.3
Intrapartum complication – Other	1	0.2	1	0.4	2	0.3
Evidence of non-reassuring fetal status in a normally grown infant	2	0.4	2	0.9	4	0.6
No intrapartum complications and no evidence of non-reassuring fetal status	2	0.4	1	0.4	3	0.4
Unspecified	8	1.6	2	0.9	10	1.4
TOTAL	20	4.1	8	3.5	28	3.9
8. Fetal growth restriction						
With evidence of reduced vascular perfusion on Doppler studies and/or placental histopathology	10	2.1	4	1.8	14	2.0
With chronic villitis	2	0.4	0	0.0	2	0.3
No placental pathology	0	0.0	4	1.8	4	0.6
TOTAL	12	2.5	8	3.5	20	2.8
9. Spontaneous preterm						
Intact membranes or membrane rupture less than 24 hours: with chorioamnionitis on placental histopathology	10	2.1	25	11.1	35	4.9
Intact membranes or membrane rupture less than 24 hours: without chorioamnionitis on placental histopathology	4	0.8	18	8.0	22	3.1
Intact membranes or membrane rupture less than 24 hours: with clinical evidence of chorioamnionitis, no examination of placenta	0	0.0	2	0.9	2	0.3
Intact membranes or membrane rupture less than 24 hours: no clinical signs of choriamnionitis, no examination of placenta	1	0.2	5	2.2	6	0.8
Intact membranes or membrane rupture less than 24 hours: unspecified/ unknown placental examination	0	0.0	2	0.9	2	0.3
Membrane rupture 24 hours or more: with chorioamnionitis on placental histopathology	2	0.4	21	9.3	23	3.2
Membrane rupture 24 hours or more: without chorioamnionitis on placental histopathology	2	0.4	3	1.3	5	0.7
Membrane rupture 24 hours or more: no clinical signs of chorioamnionitis, no examination of placenta	0	0.0	1	0.4	1	0.1
Membrane rupture 24 hours or more: unspecified/unknown placental examination	0	0.0	2	0.9	2	0.3
Membrane rupture unknown duration: with chorioamnionitis on placental histopathology	1	0.2	3	1.3	4	0.6
Membrane rupture unknown duration: without chorioamnionitis on placental histopathology	0	0.0	3	1.3	3	0.4
Membrane rupture unknown duration: with clinical evidence of chorioamnionitis, no examination of placenta	0	0.0	1	0.4	1	0.1
Membrane rupture unknown duration: no clinical signs of chorioamnionitis, no examination of placenta	0	0.0	1	0.4	1	0.1
TOTAL	20	4.1	87	38.5	107	15.0
10. Unexplained antepartum death						
With evidence of reduced vascular perfusion on Doppler studies and/or placental histopathology	34	7.0	0	0.0	34	4.8
With chronic villitis	2	0.4	0	0.0	2	0.3
No placental pathology	86	17.7	0	0.0	86	12.1
No examination of placenta	8	1.6	0	0.0	8	1.1
Other specified placental pathology	37	7.6	0	0.0	37	5.2
Unspecified or not known whether placenta examined	5	1.0	0	0.0	5	0.7
TOTAL	172	35.3	0	0.0	172	24.1
11. No obstetric antecedent						
Other specified	0	0.0	1	0.4	1	0.1
Unknown/unexplained	0	0.0	1	0.4	1	0.1
TOTAL	0	0.0	2	0.9	2	0.3
TOTAL	487	100.0	226	100.0	713	100.0

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

1. Congenital abnormality

In 2008, congenital abnormalities as a group were the most common cause of perinatal death, responsible for 161 deaths. The most common abnormalities were chromosomal (*n*=33, 20.5%). Of these, 13 were trisomy 21, 8 were trisomy 18, 2 were trisomy 13, and 1 was Turner syndrome. Forty-four deaths were associated with abnormalities of the central nervous system (27.3%) and included 27 deaths due to neural tube defects and 8 deaths associated with congenital hydrocephalus. Twenty deaths were associated with abnormalities of the cardiovascular system, which included 8 cases of hypoplastic left heart syndrome, 1 case of transposition of the great vessels, 1 case of hypoplastic right heart and 1 case of Tetralogy of Fallot. Twenty-two deaths were due to multiple abnormalities not associated with a chromosomal abnormality.

2. Perinatal infection

Seventy deaths (9.8%) were due to infection, of which 51 were stillbirths and 19 were neonatal deaths. For 39 deaths there was an associated chorioamnionitis. The most common infective organism was group B streptococcus infection (*n*=9) followed by *Escherichia coli* (*n*=6). Five perinatal deaths followed congenital parvovirus infection, 1 followed a cytomegalovirus infection, and 1 followed an infection with *Listeria Monocytogenes*.

3. Hypertension

Thirty-six deaths (5.0%) were considered to be due to maternal hypertension. There were 27 stillbirths and 9 neonatal deaths. The majority (*n*=17) occurred in mothers with pre-eclampsia. There were 9 deaths attributed to chronic hypertension, and 8 to gestational hypertension.

4. Antepartum haemorrhage

Sixty-six deaths were due to antepartum haemorrhage, of which 42 were due to placental abruption, 4 were due to placenta praevia, and 5 due to vasa praevia. Of the 42 deaths due to placental abruption, 2 were associated with maternal hypertension.

5. Maternal disease

Fourteen deaths were attributed to other maternal conditions including: diabetes (*n*=9), maternal injury (*n*=2), lupus obstetric syndrome (*n*=1), and termination of pregnancy (*n*=2).

6. Specific perinatal conditions

Twin-to-twin transfusion accounted for the majority of deaths in this group (*n*=21), followed by antepartum cord complications (*n*=5), idiopathic hydrops (*n*=4), and uterine abnormality (*n*=2).

7. Hypoxic peripartum death

There were 28 deaths associated with peripartum hypoxia. Five deaths followed cord prolapse, 2 deaths were associated with shoulder dystocia and 2 deaths followed uterine rupture. Twelve deaths occurred before the onset of labour, 8 during labour and the remaining 8 deaths occurred in the neonatal period.

8. Fetal growth restriction

In 20 cases the main cause of death was considered to be fetal growth restriction (FGR). Of these, 12 were stillbirths and 8 were neonatal deaths. FGR is defined as less than the tenth percentile of birth weight 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 107 (15.0%) perinatal deaths associated with spontaneous preterm birth, which comprises normally formed and appropriately grown babies born before 37 weeks gestation. Of these, 20 (18.7%) were stillbirths and 87 (81.3%) were neonatal deaths.

Of all deaths in this category, 53 (49.5%) were at less than 23 weeks gestation, 49 (45.8%) were at 23–25 weeks gestation, and 5 (4.7%) occurred between 26 and 36 weeks gestation. Twenty-nine deaths (27.1%) were associated with membrane rupture of 24 hours or more.

10. Unexplained antepartum death

Of the 172 unexplained stillbirths, 107 (62.2%) were low birth weight babies and 117 (68.0%) were premature. A variety of associated maternal conditions were reported in this group including: multiple pregnancy (*n*=19 deaths), maternal hypertension (*n*=5), diabetes (*n*=5), and hypothyroidism (*n*=2). Postmortem examination was carried out in 53 cases (30.8%). Placental histopathology results were provided for 153 (89.0%) unexplained antepartum deaths.

11. No obstetric antecedent

No obstetric cause of death was identified for 2 neonatal deaths. One death was due to thromboembolism and one death was unexplained.

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 114). 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 2008

Of the 713 perinatal deaths reviewed for 2008, 336 (47.1%) occurred before the onset of labour, 64 (9.0%) occurred during labour, 87 (12.2%) occurred at an unknown time before birth, and 226 (31.7%) were neonatal deaths.

Table 114. Perinatal deaths by PSANZ-PDC classification and maternity service level, NSW 2008#

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 abnormality	0	0.0	8	15.4	11	11.1	30	22.9	92	26.5	20	24.1	161	22.6
2. Perinatal infection	0	0.0	5	9.6	11	11.1	11	8.4	31	8.9	12	14.5	70	9.8
3. Hypertension	0	0.0	3	5.8	4	4.0	8	6.1	17	4.9	4	4.8	36	5.0
4. Antepartum haemorrhage	0	0.0	3	5.8	15	15.2	11	8.4	29	8.4	8	9.6	66	9.3
5. Maternal disease	0	0.0	0	0.0	1	1.0	7	5.3	4	1.2	2	2.4	14	2.0
6. Specific perinatal conditions	0	0.0	1	1.9	2	2.0	3	2.3	30	8.6	1	1.2	37	5.2
7. Hypoxic peripartum death	0	0.0	5	9.6	2	2.0	5	3.8	11	3.2	5	6.0	28	3.9
8. Fetal growth restriction	0	0.0	0	0.0	0	0.0	6	4.6	10	2.9	4	4.8	20	2.8
9. Spontaneous preterm	0	0.0	5	9.6	10	10.1	15	11.5	68	19.6	9	10.8	107	15.0
10. Unexplained antepartum death	1	100.0	22	42.3	43	43.4	34	26.0	54	15.6	18	21.7	172	24.1
11. No obstetric antecedent	0	0.0	0	0.0	0	0.0	1	0.8	1	0.3	0	0.0	2	0.3
TOTAL	1	100.0	52	100.0	99	100.0	131	100.0	347	100.0	83	100.0	713	100.0

Source: NSW Maternal and Perinatal Committee, NSW Department of Health.
The maternity service level is the level of the hospital of death.

Of the 64 deaths that occurred during labour, 38 (59.4%) occurred at less than 23 weeks gestation, 10 (15.6%) occurred at 23 to 25 weeks gestation, and 16 (25.0%) occurred at 26 weeks or more.

Neonatal causes of death

In 2008 extreme prematurity (26 weeks gestation or less) accounted for 47.3% of all neonatal deaths (Table 115). Congenital abnormalities were the next most common cause of neonatal death, accounting for about one in five deaths.

Of the 226 neonatal deaths, 200 (88.6%) were preterm (Table 116). Twenty-six neonatal deaths were among babies born at term, of which 10 deaths were due to neurological conditions, and a further 8 deaths were due to congenital abnormalities.

Perinatal deaths associated with maternal drug dependency–abuse 2008

No perinatal deaths were directly attributed to maternal drug dependency or drug abuse in 2008. Twelve 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 2008

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 235 (33.0%) perinatal deaths: 182 stillborn infants (37.4% of all reported stillbirths) and 53 neonatal deaths (23.5% of all reported neonatal deaths). Placental histopathology was carried out for 596 (83.6%) perinatal deaths.

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.

2. Perinatal Society of Australia and New Zealand. *Clinical Practice Guideline for Perinatal Mortality Audit.* PSANZ, 2005.

Table 115. Neonatal deaths by PSANZ-NDC classification, NSW 2006–2008#

PSANZ neonatal death classification	Year					
	2006		2007		2008	
	No.	%	No.	%	No.	%
Congenital abnormality						
Central nervous system	5	1.9	20	8.1	15	6.6
Cardiovascular system	8	3.0	10	4.0	4	1.8
Urinary tract	7	2.6	6	2.4	3	1.3
Gastrointestinal tract	5	1.9	0	0.0	2	0.9
Chromosomal	16	5.9	4	1.6	8	3.5
Metabolic	2	0.7	2	0.8	0	0.0
Multiple	12	4.5	5	2.0	9	4.0
Musculoskeletal	4	1.5	4	1.6	3	1.3
Respiratory	1	0.4	1	0.4	1	0.4
Diaphragmatic hernia	3	1.1	4	1.6	0	0.0
Haematological	0	0.0	1	0.4	0	0.0
Tumours	1	0.4	2	0.8	0	0.0
Other specified congenital abnormality	1	0.4	1	0.4	1	0.4
Unspecified	1	0.4	1	0.4	0	0.0
TOTAL	66	24.5	61	24.7	46	20.4
Extreme prematurity						
Not resuscitated	72	26.8	83	33.6	74	32.7
Unsuccessful resuscitation	10	3.7	11	4.5	12	5.3
Resuscitation unspecified or unknown	26	9.7	17	6.9	21	9.3
TOTAL	108	40.1	111	44.9	107	47.3
Cardio-respiratory disorders						
Hyaline membrane disease / Respiratory distress syndrome	18	6.7	5	2.0	8	3.5
Meconium aspiration syndrome	4	1.5	2	0.8	2	0.9
Primary persistent pulmonary hypertension	1	0.4	1	0.4	1	0.4
Pulmonary hypoplasia	4	1.5	3	1.2	4	1.8
Chronic neonatal lung disease	0	0.0	0	0.0	1	0.4
Other	3	1.1	5	2.0	2	0.9
TOTAL	30	11.2	16	6.5	18	8.0
Infection						
Congenital bacterial	5	1.9	6	2.4	14	6.2
Acquired bacterial	6	2.2	2	0.8	3	1.3
Congenital viral	2	0.7	1	0.4	0	0.0
Acquired viral	0	0.0	1	0.4	0	0.0
Other	0	0.0	1	0.4	0	0.0
Unspecified organism	5	1.9	1	0.4	2	0.9
TOTAL	18	6.7	12	4.9	19	8.4
Neurological						
Hypoxic ischaemic encephalopathy / perinatal asphyxia	27	10.0	26	10.5	10	4.4
Intracranial haemorrhage	8	3.0	10	4.0	16	7.1
Other	0	0.0	1	0.4	0	0.0
TOTAL	35	13.0	37	15.0	26	11.5
Gastrointestinal						
Necrotising enterocolitis	3	1.1	2	0.8	5	2.2
TOTAL	3	1.1	2	0.8	5	2.2
Other						
SIDS	1	0.4	0	0.0	1	0.4
Trauma	1	0.4	0	0.0	0	0.0
Other specified	3	1.1	0	0.0	3	1.3
Unknown/Undetermined	4	1.5	8	3.2	1	0.4
TOTAL	9	3.3	8	3.2	5	2.2
TOTAL	269	100.0	247	100.0	226	100.0

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

Table 116. Neonatal deaths by PSANZ-NDC classification and gestational age, NSW 2008

PSANZ neonatal death classification	Gestational age					
	< 37 weeks		> 37 weeks		TOTAL	
	No.	%	No.	%	No.	%
Congenital abnormality						
Central nervous system	14	7.0	1	3.8	15	6.6
Cardiovascular system	4	2.0	0	0.0	4	1.8
Urinary tract	3	1.5	0	0.0	3	1.3
Gastrointestinal tract	1	0.5	1	3.8	2	0.9
Chromosomal	5	2.5	3	11.5	8	3.5
Multiple	7	3.5	2	7.7	9	4.0
Musculoskeletal	2	1.0	1	3.8	3	1.3
Respiratory	1	0.5	0	0.0	1	0.4
Other specified congenital abnormality	1	0.5	0	0.0	1	0.4
TOTAL	38	19.0	8	30.8	46	20.4
Extreme prematurity						
Not resuscitated	74	37.0	0	0.0	74	32.7
Unsuccessful resuscitation	12	6.0	0	0.0	12	5.3
Resuscitation unspecified or unknown	21	10.5	0	0.0	21	9.3
TOTAL	107	53.5	0	0.0	107	47.3
Cardio-respiratory disorders						
Hyaline membrane disease / Respiratory distress syndrome	8	4.0	0	0.0	8	3.5
Meconium aspiration syndrome	1	0.5	1	3.8	2	0.9
Primary persistent pulmonary hypertension	1	0.5	0	0.0	1	0.4
Pulmonary hypoplasia	2	1.0	2	7.7	4	1.8
Chronic neonatal lung disease	1	0.5	0	0.0	1	0.4
Other	1	0.5	1	3.8	2	0.9
TOTAL	14	7.0	4	15.4	18	8.0
Infection						
Congenital bacterial	14	7.0	0	0.0	14	6.2
Acquired bacterial	2	1.0	1	3.8	3	1.3
Unspecified organism	1	0.5	1	3.8	2	0.9
TOTAL	17	8.5	2	7.7	19	8.4
Neurological						
Hypoxic ischaemic encephalopathy / perinatal asphyxia	4	2.0	6	23.1	10	4.4
Intracranial haemorrhage	12	6.0	4	15.4	16	7.1
TOTAL	16	8.0	10	38.5	26	11.5
Gastrointestinal						
Necrotising enterocolitis	5	2.5	0	0.0	5	2.2
TOTAL	5	2.5	0	0.0	5	2.2
Other						
SIDS	1	0.5	0	0.0	1	0.4
Other specified	1	0.5	2	7.7	3	1.3
Undetermined	1	0.5	0	0.0	1	0.4
TOTAL	3	1.5	2	7.7	5	2.2
TOTAL	200	100.0	26	100.0	226	100.0

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