Stillbirth Investigations Flowchart

Core investigations	Findings from core investigations	Indicated selective investigations
Mother • Maternal history • Maternal examination • Kleihauer-Betke or flow cytometry	Personal or family history of thrombosis	APS (anticardiolipin, lupus anticoagulant, anti-B2 glycoprotein-1 antibodies)
	Suspected cholestasis	Bile acids; LFTs
Baby • Clinical examination at birth • Full autopsy	Non-consent for full autopsy	MRI; NIA; MIA; Clinical photographs
	LGA	HbA1c
	FGR or SGA	Infectious diseases (e.g. CMV); HbA1c; APS (anticardiolipin, lupus anticoagulant, anti-B2 glycoprotein-1 antibodies)
Placenta • Macroscopic examination • Histopathology studies • Cytogenetic analysis	Placental abruption or infarction	APS (anticardiolipin, lupus anticoagulant, anti-B2 glycoprotein-1 antibodies)
	Infection	Further testing as directed by pathologist

APS: Antiphospholipid syndrome; CMA: Chromosomal microarray; CMV: Cytomegalovirus; FGR: Fetal growth restriction; LFTs: Liver Function Tests; LGA: Large-for gestational-age; HbA1c: Haemoglobin A1c; MIA: Minimally-invasive autopsy; MRI: Magnetic Resonance Imaging; NIA: Non-invasive autopsy; SGA: Small for gestational age

1: Perinatal Society of Australia and New Zealand Clinical Practice Guideline for Perinatal Mortality Audit Third Edition, December 2017

PERINATAL SOCIETY of Australia & New Zealand PSANZ

SANDA Stillbirth And Neonatal Death Alliance a sub committee of PSANZ

Stillbirth CENTRE OF RESEARCH EXCELLENCE

APPENDIX B
ESTIMATION OF SEVERITY OF FETO-MATERNAL HAEMORRHAGE

To determine if a positive test for FMH should be considered as the likely cause of fetal death, the *percent of total fetal blood volume lost* should be calculated. Such a calculation uses the following correction factors: fetal red cells are 122% the size of adult red blood cells; 92% of fetal red cells are detected by the Kleihauer-Betke test on average; maternal red cell volume near term averages about 1800 ml; average fetal hematocrit is about 50%; fetal blood volume is about 150 ml per kilogram of body weight. Combining all of these then means that:

$$\text{Percent Fetal Blood Volume Lost} = \frac{\text{Fetal Cells}}{\text{Maternal Cells}} \times \frac{1800 \times 1.22 \times 100}{92 \times 2 \times 100} \times \frac{100}{150 \times \text{fetal wt in kg}}$$

Or, to simplify,

$$\text{Percent Fetal Blood Volume Lost} = \frac{\text{Fetal Cells}}{\text{Maternal Cells}} \times \frac{3200}{\text{fetal wt in kg}}$$

So, for example, if the Kleihauer-Betke shows that 200 of 5000 cells counted are fetal and the fetus weighs 2.0 kg, then the estimate of percent blood volume loss would be:

$200/4800 \times 3200 \div 2.0$, or 66%.

Probably less than 20% volume loss is enough to cause death if it happens all at once. On the other hand, much larger volumes can be lost over a long period and the fetus can compensate. Unfortunately there is no straightforward way to know whether one is dealing with acute or chronic haemorrhage. This makes determination of whether a haemorrhage is or is not causal more problematic.

Taken from **Fetal-Maternal Hemorrhage and Stillbirth**
Richard M. Pauli, M.D., Ph.D.
http://www2.marshfieldclinic.org/wissp/wisspers/93940001.htm

APPENDIX C: ACCOUCHEUR PLACENTAL EXAMINATION AND PREPARATION FOR PATHOLOGY

Please complete details as required

Maternal Sticker

(Inc Name, DOB, UR, Address, Telephone Number)

Singleton Multiple Baby number..... (e.g. Twin 1)

Step 1 Accoucheur examination of the placenta, membranes and cord using sterile gloves

Cord insertion *(Circle)* Eccentric / Central / Marginal / Velamentous / Other.....

Cord appearance (*Circle*) Thin / Thick / Meconium Stained / Other.....

No. of cord vessels ..... **Total cord length**.....cm **Cord knots (Circle)** Yes / No

Placental dimensions .....cm **Placental weight** .....gms **Placental odour**.....

Maternal surface (*Circle all that apply*) Intact / Incomplete / Gritty / Fatty Infarcts / Retroplacental Clot / Succenturiate / Circumvallate / Bipartite

Step 2 Tissue sampling for chromosomal analysis

Prior to sending the placenta to pathology, a sample of umbilical cord should be collected using aseptic technique as outlined below. If there are any clinical indications of placental mosaicism, then a placental sample may be required as well

- Collect a $1cm^3$ sample of the middle of the umbilical cord, using a sterile surgical knife and dissecting forceps.

- Place in either a designated cytogenetics bottle or a sterile container, with either sterile saline solution or Hank's solution. Then seal the bottle and label with maternal name, medical record number, date and time of collection and multiple number if appropriate

Step 3 Send Placenta, Membrane and Cord to the Pathology fresh and unfixed for histopathological examination

APPENDIX D: CLINICAL EXAMINATION OF BABY CHECKLIST

Please tick appropriate box and complete details as required

Maternal Sticker

(Inc Name, DOB, UR, Address, Telephone Number)

Baby measurements
1. Crown – heel (stretched) ..... cms
2. Head circumference ..... cms
3. Weight ..... gms

If Stillbirth
Estimated date of IUFD: ...../...../.....
Maceration degree
- Fresh; no skin peeling ..... ☐
- Slight; focal minimal skin slippage..... ☐
- Mild; some skin sloughing, moderate skin slippage..... ☐
- Moderate; much skin sloughing but no secondary comprehensive changes or decomposition ..... ☐
- Marked, advanced..... ☐

Singleton ☐ **Multiple** ☐ **Baby number**..... (e.g. Twin 1)

HEAD AND FACE

Head
- Relatively normal ☐ Collapsed ☐
- Anencephalic ☐ Hydrocephalic ☐
- Abnormal shape ☐
- If abnormally shaped, describe: .....

Eyes
- Normal ☐ Prominent ☐ Sunken ☐
- Straight ☐ Far apart ☐ Close together ☐
- Upslanting ☐ Downslanting ☐
- Globes normal ☐ Absent ☐
- Eyes very small ☐ Very large ☐
- Lens opacity ☐ Corneal opacity ☐
- Eyelids fused ☐ Other ☐
- If other, describe: .....

Nose
- Normal ☐ Abnormally small ☐
- Asymmetric ☐ Abnormally large ☐

Nostrils
- Apparently patent ☐ Obstructed ☐
- Single nostril ☐ Other ☐
- If other, describe: .....

Mouth
- Normal size ☐ Large ☐ Small ☐

Upper Lip
- Intact ☐ Cleft ☐
- *If cleft, location*:
- Left ☐ Right ☐
- Bilateral ☐ Midline ☐

Palate
- Intact ☐ Cleft ☐

Mandible
- Normal ☐ Large ☐
- Small ☐ Other ☐
- If other, describe: .....

Ears
- Normal ☐ Preauricular tags ☐
- Lowset ☐ Preauricular pits ☐
- Other ☐ Posteriorly rotated ☐
- If other, describe: .....

NECK
- Normal ☐
- Mass ☐
- Describe: .....

CHEST
- Normal ☐ Long & narrow ☐
- Short & broad ☐ Other ☐
- If Spina bifida, describe: .....

ABDOMEN
- Normal ☐ Flattened ☐
- Distended ☐ Hemia ☐
- Omphalocele ☐ Gastroschisis ☐

BACK
- Normal ☐ Spina bifida ☐
- If Spina bifida, describe: .....
- Scoliosis ☐ Kyphosis ☐
- Other ☐
- If other, describe: .....

GENITALIA

Anus
- Normal ☐ Imperforate ☐ Other ☐
- If other, describe: .....

Gender
- Male ☐ Female ☐ Ambiguous ☐

Male

Penis
- Normal ☐ Very small ☐
- Hypospadias ☐ Chordee ☐
- Hypospadias, level of opening .....

Scrotum
- Normal ☐ Abnormal ☐
- If abnormal, describe .....

Testes
- Descended ☐ Undescended ☐
- Other ☐
- If other, describe: .....

Female

Urethral opening
- Present ☐ Absent/unidentifiable ☐

Vaginal introitus
- Present ☐ Absent/unidentifiable ☐

Clitoris
- Present ☐ Unidentifiable ☐
- Enlarged ☐ Other ☐
- If other, describe: .....

Ambiguous sex .....

LIMBS

Length
- Normal ☐ Short ☐ Long ☐
- If Short, what segments seem short .....

Form
- Normal ☐ Asymmetric ☐ Missing parts ☐
- If other, describe: .....

HANDS

Length
- Appearance: Normal ☐ Abnormal ☐
- If abnormal, describe: .....

Fingers
- Number present: .....
- If not 4 + 4, describe .....
- Unusual form of fingers ☐
- Unusual position of fingers ☐
- Abnormal webbing or syndactyly ☐
- If abnormal, describe .....

Thumbs
- Number present: .....
- If not 1+ 1 describe .....
- Unusual position ☐
- Looks like a finger ☐
- If abnormal, describe .....

Finger nails
- All present ☐
- If not describe .....

FEET
- Appearance Normal ☐ Abnormal ☐
- If abnormal, describe .....

Toes
- Number present: .....
- If not 5+ 5 describe .....
- Spacing: Normal ☐ Abnormal ☐
- If abnormal, describe .....

Toe nails
- All present ☐
- If not describe .....

Revised gestational age .....
Based on .....

Examined by: ..... (*Print name*)
Date: .....
Summary of key findings: .....

Australian Perinatal Mortality Clinical Audit Tool

Type of Perinatal Death

☐ STILLBIRTH (Fetal death):

Death prior to the complete expulsion or extraction from its mother of a product of conception of 20 or more completed weeks of gestation or of 400 g or more birthweight where gestation is not known. The death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

Please select type:

☐ Antepartum fetal death

☐ Intrapartum fetal death

☐ Termination of pregnancy

☐ Unknown

☐ NEONATAL DEATH

Death of a liveborn infant occurring before 28 completed days after birth.

Please select type:

☐ Non-admitted neonatal death

☐ Neonatal death in hospital

☐ Unknown

Please follow the instructions and answer all questions as directed. You may not know the answer to some of the questions but please provide as much detail as possible. Personally identifiable information collected on this form will be kept confidential. Information included in reports will be grouped and non-identifiable.

Section 1: CLINICAL DATA RELEVANT TO PERINATAL DEATH

PLEASE COMPLETE THIS SECTION WITHIN 48 HOURS OF THE STILLBIRTH OR NEONATAL DEATH

Baby Details

1) Case Number_____

2) Was this a multiple pregnancy

☐Yes ☐No ***(go to Question 3)*** ☐Unknown ***(go to Question 3)***

a) Plurality of pregnancy

☐Twin ☐Triplet ☐Quadruplet
☐Quintuplet ☐Sextuplet ☐Unknown
☐Other_____

b) Birth Order

☐First ☐Second ☐Third
☐Other *(please specify)*_____

c) Chorionicity

☐Dichorionic Diamniotic (DCDA) ☐Monochorionic diamniotic (MCDA) ☐Monamniotic (MA)
☐Unknown ☐Other *(please specify):*_____

3) Baby Urn_____

4) Type of Death

☐Undetermined
☐Stillbirth (fetal death)
If yes, please specify the timing of the fetal death:
☐Antepartum fetal death
☐Intrapartum fetal death
☐Unknown
☐Neonatal death
If yes, please specify the hospital episode for neonatal/post neonatal death
☐Hospital other
☐Hospital of birth
☐Home
☐Unknown
☐Postneonatal Death
If yes, please specify the hospital episode for neonatal/postneonatal death
☐Hospital other
☐ Hospital of birth
☐Home
☐Unknown

5) Was this perinatal death a result of a termination of pregnancy

☐Yes ☐No ***(go to Question 6)*** ☐Unknown ***(go to Question 6)***

a) What was the reason for termination of the pregnancy?

☐Congenital abnormality ☐Medical/pregnancy condition ☐Psychosocial reason
☐Unknown

b) If medical/pregnancy conditions, what was the pregnancy or medical condition requiring termination of pregnancy?

☐Fetal growth restriction ☐Pre-eclampsia ☐Preterm PROM
☐Other:_____

6) Date of baby's birth_____

7) Time of baby's birth_____

8) Gender

☐Male ☐Female ☐Intersex or indeterminate
☐Unknown

9) Indigenous status

☐ Aboriginal but not Torres Strait Islander origin ☐ Torres Strait Islander but not Aboriginal origin ☐ Both Aboriginal and Torres Strait Islander origin
☐ Neither Aboriginal nor Torres Strait Islander origin ☐Not stated/unknown

10) Calculated gestation of pregnancy at birth_____

11) Birth weight (g)_____

12) Did this baby have a major congenital abnormality

☐Yes ☐No ☐Unknown

13) Was this death unexpected

☐Yes ☐No ☐Unknown
☐Cannot be determined

Mother's Details

14) Mother

Surname:_____

Given name(s): _____

Other(s): _____

15) Mother's Unit Record No:_____

16) Mother's Date of Birth: _____

17) Usual residential address of mother at time of birth

Country: _____

Town/City/Locality: _____

State: _____

Post Code: _____

18) Indigenous status

☐ Aboriginal but not Torres Strait Islander origin ☐ Torres Strait Islander but not Aboriginal origin ☐ Both Aboriginal and Torres Strait Islander origin
☐ Neither Aboriginal nor Torres Strait Islander origin ☐Not stated/Unknown

19) Mother's understanding of spoken English

☐Very well ☐ Well (help with medical terminology) ☐ Not well (help with everyday English)
☐Not at all ☐Unknown

Previous Pregnancies

20) Number of mother's previous pregnancies: _____ ☐Unknown

21) Mother's parity (Do not include current pregnancy): _____ ☐Unknown

	Date of Birth	Place of birth *(see options below)*	Gestation *(weeks)*	Pregnancy Outcome *(codes below)*	Type of birth *(codes below)*	Birth weight *(grams)*	Complications (e.g. FGR) (*codes below*)
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							

Place of birth: Home, Birth Centre, Public Hospital, Private Hospital, Unattended / Free birth, Born before arrival (in transit), Other, Unknown.

Pregnancy Outcome: LB = live birth; **SM** = spontaneous miscarriage; **TOP** = termination of pregnancy; **E** = ectopic pregnancy; **SB** = stillbirth; **NNDE** = early neonatal death (<7 days age); **NNDL** = late neonatal death (7 days – 28 days); **INFD** = infant death (28 days – 1 year); **U** = unknown.

Type of Birth: NVB = normal vaginal birth; **OVD** = operative vaginal delivery; **VB** = vaginal breech; **CS** = caesarean section; **U** = unknown.

Complications: NIL = no complications; **HE** = hyperemesis; **APH** = ante partum haemorrhage/abruption; **CxS** = cervical stitch; **FGR** = fetal growth restriction; **GDM** = gestational diabetes mellitus; **GH** = gestational hypertension; **U** = unknown; **Other** = please comment in summary section.

Current Pregnancies

(This section is not required for terminations of pregnancy for maternal psychological reasons)

22) Mother's height: _____cm

23) Mother's weight :
Current (around time of birth):_____kg
At booking (antenatal visit):_____ kg

24) Artificial reproductive technology in this pregnancy?
☐Yes ☐No ***(go to Question 25)*** ☐Unknown ***(go to Question 25)***

If yes, please specify fertility treatment

☐Ovulation induction agents ☐Donor insemination ☐Embryo transfer to fallopian tubes (TEST) (ZIFT)

☐Embryo transfer to uterus (GIFT) ☐In vitro fertilisation other/unspecified ☐Intracytoplasmic sperm injection (ICSI)

☐Other_____

25) What was the mother's smoking status and history during pregnancy?

☐ Smoking during pregnancy ☐ Never smoked ☐ Stopped before this pregnancy

☐ Stopped smoking during the first 20 weeks of pregnancy ☐ Stopped smoking after the first 20 weeks of pregnancy ☐ Unknown

26) Did the mother drink alcohol during this pregnancy?

☐Yes ☐No ***(go to Question 27)*** ☐Unknown ***(go to question 27)***

If yes, specify the average number of standard alcoholic drinks per week

First trimester: _____ standard drinks per week or ☐Unknown

Month prior to birth: _____ standard drinks per week or ☐Unknown

27) Did the mother use illicit drugs during this pregnancy

☐Yes ☐No ***(go to Question 28)*** ☐Unknown ***(go to Question 28)***

Please specify

	First trimester	Month prior to birth
Heroin	☐	☐
Cannabis	☐	☐
Amphetamines	☐	☐
Ecstasy	☐	☐
Hallucinogens	☐	☐
Cocaine	☐	☐
Chroming/Petrol/Paint	☐	☐
Methadone	☐	☐
Herbal Highs	☐	☐
Unknown	☐	☐
Other: _____	☐	☐

28) Has the mother suffered family violence during this pregnancy

☐Yes ☐No ☐Not Asked ☐Unknown

29) Place of birth

Please select from both columns

	Intended place of birth before labour	Actual place of birth
Hospital, excluding birth centre	☐	☐
Birth centre, attached to hospital	☐	☐
Birth centre, free standing	☐	☐
Home (other)	☐	☐
Home- private midwife care	☐	☐
Home- public homebirth program	☐	☐
In transit	☐	☐
Unknown	☐	☐
Other	☐ _____	☐ _____

30) Model of antenatal maternity care

	Booking	At birth
Private obstetrician (specialist care)	☐	☐
Private midwifery care	☐	☐
General Practitioner obstetrician care	☐	☐
Shared care	☐	☐
Combined care	☐	☐
Public hospital maternity care	☐	☐
Public hospital high risk maternity care	☐	☐
Team midwifery care	☐	☐

Midwifery group practice caseload care	☐	☐
Remote area maternity care	☐	☐
Private obstetrician and privately practicing midwife joint care	☐	☐
No antenatal care provider	☐	☐
If other, please specify	☐ _____	☐ _____

31) Maternal outcome

☐Alive and generally well ☐Alive but serious morbidity ☐Died

Mothers Medical History

---

32) Does the mother have any pre-existing medical conditions

☐Yes ☐No ***(go to Question 33)*** ☐Unknown ***(go to Question 33)***

If yes, please specify:

		Yes	No	Unknown
a)	Asthma	☐	☐	☐
b)	Diabetes pre pregnancy (type 1 or 2)	☐	☐	☐
	i) If yes, is the diabetes well controlled	☐	☐	☐
	ii) How is the diabetes managed			
	☐ Insulin			
	☐ Oral hypoglycaemic			
	☐ Diet and exercise			
	☐ Unknown			
	☐ Other *(please specify)*_____			
c)	Epilepsy	☐	☐	☐
d)	Heart condition (congenital or acquired)	☐	☐	☐
e)	Hypertension	☐	☐	☐
f)	Thyroid abnormality	☐	☐	☐
	i) *If yes, please specify*			
	☐ Hyperthyroidism			
	☐ Hypothyroidism			
	☐ Unknown			
g)	Inflammatory bowel disease	☐	☐	☐
h)	Systemic lupus erythematosus	☐	☐	☐
i)	Other autoimmune disorder	☐	☐	☐
j)	Mental health disorder	☐	☐	☐
	i) If yes, please specify			
	☐Depression			
	☐Psychotic disorder			
	☐Other *(please specify)*_____			
k)	Renal disease	☐	☐	☐
l)	Venous thromboembolism	☐	☐	☐
m)	Haematological disorders	☐	☐	☐
	i) *If yes, please specify*			
	☐Anaemia			
	☐Thalassaemia trait			
	☐Thrombophilia			
	☐Other*(please specify)*_____			
n)	Cervical surgery	☐	☐	☐
o)	Uterine surgery	☐	☐	☐
p)	Urinary tract infection	☐	☐	☐
q)	Uterine abnormality	☐	☐	☐
r)	Other: _____	☐	☐	☐

Further medical conditions:_____

_____

_____

33) Family history of thrombosis?

☐Yes ☐No ☐Unknown

Obstetric Conditions

34) Obstetric complications during this pregnancy and obstetric consultation

Indicate all conditions known to be present during this pregnancy

a) Hypertension ☐Yes ☐No ☐Unknown

i) *If yes, please specify type of hypertension*
- ☐ Eclampsia
- ☐ Preeclampsia
- ☐ Gestational hypertension
- ☐ Chronic hypertension
- ☐ Unknown

ii) *Was there consultation with an obstetrician for hypertension*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

b) HELLP Syndrome ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for HELLP syndrome*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

c) Preterm labour ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for preterm labour*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

d) Pre-labour rupture of membranes ☐Yes ☐No ☐Unknown

i) *If yes, please specify the gestation of the membrane rupture* _____ *or* ☐Unknown

ii) *Was there consultation with an obstetrician for pre-labour rupture or membranes*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

e) Obstetric cholestasis ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for obstetric cholestasis*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

f) Vaginal bleeding ☐Yes ☐No ☐Unknown

i) *If yes, what gestation did vaginal bleeding occur*
- ☐ Before 20 weeks
- ☐ At or after 20 weeks
- ☐Unknown

ii) *Reasons for vaginal bleeding*
- ☐ Abruption
- ☐ Placenta praevia
- ☐ Vasa praevia
- ☐ Uterine rupture
- ☐ Cervical cause
- ☐ Unknown
- ☐ Other *(please specify):* _____

iii) *Was there consultation with an obstetrician for vaginal bleeding*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

g) Placental praevia without haemorrhage ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for placental praevia without haemorrhage*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

h) Gestational diabetes ☐Yes ☐No ☐Unknown

i) *If yes, please indicate*

First HbA1C measure during pregnancy _____

Last HbA1C measured during pregnancy _____

ii) *How was the diabetes managed*
- ☐ Insulin
- ☐ Oral hypoglycaemic
- ☐ Diet and exercise
- ☐ Unknown
- ☐ Other *(please specify):* _____

iii) *Was there consultation with an obstetrician for gestational diabetes*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

i) Multiple pregnancy ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for multiple pregnancy*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

j) Prolonged pregnancy (<41 weeks) ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for prolonged pregnancy*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care

☐ Unknown

k) Breech presentation ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for breech presentation*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

l) Unstable lie ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for unstable lie*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

m) Size of fetus ☐Yes ☐No ☐Unknown

i) *If yes, please specify the size of the fetus*
- ☐ Large
- ☐ Small
- ☐Unknown

ii) *Was there consultation with an obstetrician for size of fetus*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

n) Decreased fetal movements ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for decreased fetal movements*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

o) Polyhydramnios ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for polyhydramnios*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

p) Oligohydramnios ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for oligohydramnios*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

q) Non-reassuring CTG ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for non-reassuring CTG*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

r) Fetal abnormality ☐Yes ☐No ☐Unknown

i) *If yes, was there consultation with an obstetrician for fetal abnormality*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

s) Other obstetric conditions ☐Yes ☐No ☐Unknown
*Please specify:*_____

i) *If yes, was there consultation with an obstetrician for other obstetric conditions*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

35) Were there any medical complications during this pregnancy

☐Yes ☐No ***(go to Question 36)*** ☐Unknown ***(go to Question 36)***

If yes, indicate all medical complications known to be present during this pregnancy:

a) Confirmed maternal infection ☐Yes ☐No ☐Unknown

i) *If yes, what type of infection*
- ☐ Pyelonephritis
- ☐ Lower urinary tract infection
- ☐ Unknown
- ☐ Other *(please specify:)* _____

ii) *Was there consultation with an obstetrician for confirmed maternal infection*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

b) Trauma ☐Yes ☐No ☐Unknown

i) *If yes, what type of infection*
- ☐ Vehicular
- ☐ Fall
- ☐ Violent personal injury
- ☐ Unknown
- ☐ Other *(please specify):* _____

ii) *Was there consultation with an obstetrician for trauma*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

c) Renal ☐Yes ☐No ☐Unknown

i) *Was there consultation with an obstetrician for renal complications*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care
- ☐ Unknown

d) Cardiac ☐Yes ☐No ☐Unknown

i) *Was there consultation with an obstetrician for cardiac complications*
- ☐ Yes
- ☐ No
- ☐ Already under obstetric care

☐ Unknown

36) Were there other reason for obstetric consultations

☐Yes ☐No ***(go to Question 37)*** ☐Unknown ***(go to Question 37)***

If yes, what was/were the reason(s) for the obstetric consultation? Please select all that applicable:

☐ Mother's request
☐ Previous perinatal death
☐ Recurrent miscarriage
☐ Previous intrauterine growth restriction
☐ Previous pre-term birth
☐ Previous caesarean section
☐ Other poor obstetric history
☐ Mother's age >=35 years
☐Raised BMI
☐Surgery
☐Unknown
☐Other: _____
_____

37) Was the mother referred to another healthcare service during pregnancy

☐Yes ☐No ***(go to Question 38)*** ☐Unknown ***(go to Question 38)***

If yes, what healthcare service was the mother referred to? Please select all that applicable:

☐ Medical service (please specify reason for referral to medical services)

_____

☐ Mental health
☐ Drug and alcohol
☐ Social Worker
☐Other: _____
☐ Previous caesarean section
☐ Other poor obstetric history
☐ Mother's age >=35 years
☐ Surgery
☐Unknown

Antenatal Procedures

38) Antenatal visits

☐Yes ☐No ***(go to Question 39)*** ☐Unknown ***(go to Question 39)***

If yes, please indicate:

a) Total number of visits recorded: _____

b) Gestation at first antenatal visit: _____ weeks _____ days or ☐Unknown

39) Antenatal procedures

Please indicate all procedures undertaken in pregnancy excluding those after fetal death in utero

a)	First trimester screening ultrasound scan	☐Yes	☐No	☐Unknown
b)	Morphology/anomaly ultrasound scan at 18-20 weeks' gestation	☐Yes	☐No	☐Unknown
c)	Total Number of antenatal ultrasound scans (exclude those performed after fetal death)	Number of ultrasounds _____		☐Unknown
d)	Chorion villus sampling	☐Yes	☐No	☐Unknown

If yes, what were the CV results?

☐ Normal
☐ Abnormal
☐Uncertain
☐Unknown

What was the chromosomal microarray results?

☐ Not performed
☐ Normal
☐ Abnormal
☐ Uncertain
☐ Unknown

e)	Cervical suture (vaginal or transabdominal)	☐Yes	☐No	☐Unknown
	If yes, what was the dates of cervical suture: _____			or ☐Unknown
f)	Amniocentesis	☐Yes	☐No	☐Unknown

If yes, what were the Amniocentesis results?

☐ Normal
☐ Abnormal
☐Uncertain
☐Unknown

What were the chromosomal microarray results?

☐ Not performed
☐ Normal
☐ Abnormal
☐ Uncertain
☐ Unknown

g) Doppler studies ☐Yes ☐No ☐Unknown

If yes, what were the studies performed?

☐ Umbilical artery doppler ☐ Normal ☐ Abnormal ☐Unknown
☐ Uterine artery doppler ☐ Normal ☐ Abnormal ☐Unknown
☐Middle-cerebral artery doppler ☐ Normal ☐ Abnormal ☐Unknown
☐ Other: _____ ☐ Normal ☐ Abnormal ☐Unknown
☐Unknown

h) External cephalic version ☐Yes ☐No ☐Unknown
If yes, what was the dates this was performed: _____ or ☐Unknown

i) Fetocide ☐Yes ☐No ☐Unknown

j) Amnioreduction ☐Yes ☐No ☐Unknown

k) Laser treatment ☐Yes ☐No ☐Unknown

l) Intrauterine fetal blood transfusion ☐Yes ☐No ☐Unknown

m) Ligation of vessels for twin to twin transfusion ☐Yes ☐No ☐Unknown

n) Other: _____ ☐Yes ☐No ☐Unknown

40) Were maternal corticosteroids given in pregnancy

☐Yes ☐No ***(go to Question 41)*** ☐Unknown ***(go to Question 41)***

If yes, please indicate:

a) Course of corticosteroids started at what gestation: _____ weeks _____ days or ☐Unknown

b) Was course of corticosteroids completed ☐Yes ☐No ☐Unknown

Mothers Medications

41) Were medications and supplements taken in this pregnancy

Please indicate all over the counter and traditional medicines taken in the pregnancy

☐Yes ☐No ***(go to Question 42)*** ☐Unknown ***(go to Question 42)***

If yes, please select medications:

☐ACE inhibitor ☐Antihypertensives ☐Magnesium sulphate
☐Glyceryl trinitrate ☐Nifedepine ☐Salbutamol
☐Ritodrine ☐Other tocolytic ☐Steroids other than fetal lung maturation
☐Valproate ☐Anticonvulsant/other ☐Infertility treatment
☐Antiemetics ☐Antibiotics ☐Antidepressants
☐Sedatives or anxiolytics ☐Indomethacin ☐NSAID/other
☐Aspirin ☐Clexane ☐Heparin
☐Warfarin ☐Narcotics ☐Non-narcotic analgesia
☐Other *Please indicate:* _____

42) Was folic acid taken pre pregnancy?

☐Yes ☐No ☐Unknown

43) Was folic acid taken during the first trimester

☐Yes ☐No ☐Unknown

Labour and Birth

(This section is not required for terminations of pregnancy for maternal psychological reasons)

44) Date of admission to hospital for birth episode

Date: _____ ☐Unknown

Time: _____ ☐Unknown

45) Primary caregiver at onset of labour

☐Obstetrician ☐Midwife ☐General Practitioner
☐No intrapartum care provider ☐Unknown
☐Other: _____

46) Onset of labour

☐ Spontaneous ***(go to Question 47)*** ☐Induced ☐No labour (***go to Question 50)*** ☐Unknown (***go to Question 47)***

If induced, please provide the following information:

a) Date of induction of labour: _____ ☐Unknown

b) Time of induction of labour: _____ ☐Unknown

c) Specify methods used to induce labour

☐Oxytocin ☐Prostaglandins ☐Artificial rupture of membranes (ARM)
☐Balloon ☐Unknown
☐Other: _____

d) Main indication for induction

☐Prolonged pregnancy ☐Prelabour rupture of membranes ☐Diabetes
☐Hypertensive disorders ☐Multiple pregnancy ☐Chorioamnionitis (includes suspected)
☐Cholestasis of pregnancy ☐Antepartum haemorrhage ☐Maternal age
☐Body Mass Index (BMI) ☐Maternal mental health indication ☐Previous adverse perinatal outcome
☐Other maternal obstetric or medical indication ☐Fetal compromise (includes suspected) ☐ Fetal growth restriction (includes suspected)
☐Fetal macrosomia (includes suspected) ☐Fetal death ☐Fetal congenital anomaly
☐Administrative or geographical indication ☐Maternal choice in the absence of any obstetric, medical, fetal, administrative, or geographical indication ☐Unknown
☐Other: _____

47) Labour augmentation ☐Yes ☐No ***(go to Question 48)*** ☐Unknown ***(go to Question 48)***

If yes, please select method used to augment labour

☐Oxytocin ☐Prostaglandins ☐Artificial rupture of membranes (ARM)
Please specify the day of ARM
Date: _____
☐Unknown ☐Other: _____

48) Analgesia during labour ☐Yes ☐No ***(go to Question 49)*** ☐Unknown ***(go to Question 49)***

If yes, please indicate type of analgesia administered

☐Nitrous oxide ☐Systemic opioids ☐Epidural or caudal
☐Spinal ☐Combined spinal/epidural ☐Unknown
☐Other: _____

49) Did part of labour occur in bath/pool ☐Yes ☐No ***(go to Question 50)*** ☐Unknown ***(go to Question 50)***

If yes, was the baby born in the bath/pool? ☐Yes ☐No ☐Unknown

50) Was there fetal monitoring during the labour ☐Yes ☐No ***(go to Question 51)*** ☐Unknown ***(go to Question 51)***

If yes, what was the method of fetal monitoring

☐Intermittent auscultation ☐Admission cardiotocography ☐ Intermittent cardiotocography
☐Continuous external cardiotocography ☐Internal cardiotocography (scalp electrode) ☐Fetal blood sampling
☐Unknown ☐Other: _____

51) What was the method of birth of this baby

☐ Vaginal- non-instrumental ***(go to Question 52)***
☐ Vaginal- forceps ***(go to Question 51a)***
☐ Vaginal- vacuum extraction ***(go to Question 51a)***
☐ Vaginal- forceps and vacuum extraction ***(go to Question 51a)***
☐ Planned caesarean- no labour ***(go to Question 51b)***
☐ Planned caesarean- labour ***(go to Question 51b)***
☐ Unplanned caesarean- labour ***(go to Question 51b)***
☐ Unplanned caesarean- no labour ***(go to Question 51b)***
☐ Unknown ***(go to Question 52)***

a) Was anaesthetics administered? ☐Yes ☐No ☐Unknown

If yes, please select which method

☐Local anaesthetic to perineum ☐Pudendal block ☐Epidural or caudal block
☐Spinal block ☐General anaesthesia ☐Combined spinal-epidural block
☐Unknown ☐Other: _____

b) What was the main indication for caesarean

☐Fetal compromise ☐Suspected fetal macrosomia ☐Malpresentation
☐Lack of progress; less than or equal to 3cm cervical dilatation ☐Lack of progress in the first stage; greater than 3cm to less that 10cm cervical dilatation ☐Lack of progress in the second stage
☐Placenta praevia ☐Placental abruption ☐Vasa praevia
☐Antepartum/intrapartum haemorrhage ☐Multiple pregnancy ☐Unsuccessful attempt at assisted delivery
☐Cord prolapse ☐Previous adverse perinatal outcome ☐Previous caesarean section
☐Previous severe perineal trauma ☐Previous shoulder dystocia ☐Maternal choice in the absence of any obstetric, medical, surgical, psychological indications
☐Other: _____

i) Were forceps or vacuum tried first?

☐Forceps ☐Vacuum ☐Forceps and vacuum
☐No instrumental attempted before caesarean ☐Unknown

ii) Was anaesthetics administered? ☐Yes ☐No ☐Unknown

If yes, please select which method

☐Local anaesthetic to perineum ☐Pudendal block ☐Epidural or caudal block
☐Spinal block ☐General anaesthesia ☐Combined spinal-epidural block
☐Unknown ☐Other: _____

52) What was the birth presentation

☐Vertex ☐Breech ☐Face
☐Brow ☐Unknown ☐Other:
_____

53) Complications in labour/birth ☐Yes ☐No ***(go to Question 54)*** ☐Unknown ***(go to Question 54)***

If yes, please indicate relevant option

☐APH ☐Cord entanglement/prolapse ☐Meconium stained liquor
☐Shoulder dystocia ☐Fetal bradycardia ☐Failure to progress/dystocia
☐Non-reassuring CTG ☐Unknown ☐Other:
_____

54) Labour and membrane rupture duration

a) First stage of labour duration: _____ hours _____ minutes ☐Unknown

b) Second stage of labour duration known: _____ hours _____ minutes ☐Unknown

c) Duration of membrane rupture prior to birth: _____ days _____ hours _____ minutes ☐Unknown

55) Were antibiotics given in labour ☐Yes ☐No ***(go to Question 56)*** ☐Unknown ***(go to Question 56)***

a) If yes, what was the indication?

☐Group B streptococcus ☐Prolonged rupture of membranes ☐Clinical chorioamnionitis
☐Suspected or confirmed infection ☐Unknown ☐Other _____

b) Date antibiotics given: _____ ☐Unknown

Baby Resuscitation at Birth

(This section is not required for terminations of pregnancy for maternal psychological reasons)

---

56) Apgar scores

Please indicate a score between 1-10 with no decimals

a) 1 min: _____ ☐Unknown

b) 5 min: _____ ☐Unknown

c) 10 min: _____ ☐Unknown

d) 15 min: _____ ☐Unknown

57) Did the baby receive any resuscitation at birth? ☐Yes ☐No ***(go to Question 58)*** ☐Unknown ***(go to Question 58)***

a) If yes, what was the outcome of the resuscitation?

☐Baby resuscitated and stayed with mother ☐Baby resuscitated and transferred to neonatal special or intensive care nursing ☐Baby was no able to be resuscitated

☐Unknown

b) What was the method of resuscitation at birth?

☐Continuous positive airway pressure with air ☐CPAP with oxygen ☐Endotracheal intubation and IPPR with oxygen
☐Endotracheal intubation and IPPR with air ☐External cardiac massage and ventilation ☐Intermittent positive pressure respiration bag and mask with air

☐Intermittent positive pressure respiration bag and mask with oxygen ☐Oxygen therapy ☐Suction

☐Medications ☐Unknown ☐Other: _____

Which medications?

☐Adrenalin
☐Narcotic antagonist
☐Sodium bicarbonate
☐Volume expander
☐Unknown
☐Other:
_____

c) What was the professional category of the most senior staff member at the resuscitation?

☐Student ☐Midwife ☐Paediatric resident
☐Paediatric registrar ☐Obstetric registrar ☐Obstetric consultant
☐Consultant paediatrician ☐Neonatal consultant ☐Unknown

58) Were cord gases taken at birth? ☐Yes ☐No ***(go to Question 59)*** ☐Unknown ***(go to Question 59)***

If yes, please indicate:

a) ph- arterial: _____ ☐Unknown
b) Base deficit- arterial: _____ ☐Unknown
c) Lactate- arterial: _____ ☐Unknown
d) CO2- arterial: _____ ☐Unknown
e) ph- venous: _____ ☐Unknown
f) Base deficit- venous: _____ ☐Unknown
g) Lactate- venous: _____ ☐Unknown
h) CO2- venous: _____ ☐Unknown

Neonatal/Post Neonatal Care

59) Was the baby transferred from place of birth (e.g. via NETS) prior to death to a higher level of care? ☐Yes ☐No ***(go to Question 60)*** ☐Unknown ***(go to Question 60)***

a) If yes, what was the main reason for the transfer?

☐Prematurity
If yes, please specify
☐ Less than 28 weeks gestation
☐28-31 weeks gestation
☐32-36 weeks
☐ Unknown

☐Respiratory
If yes, please specify
☐Hyaline membrane disease (respiratory distress syndrome)
☐Meconium aspiration
☐PPHN
☐Pneumothorax
☐Congenital adenomatoid lesion of the lung
☐Tracheoesophageal fistula
☐Other: _____
☐Unknown

☐Cardiac
If yes, please specify
☐Coarctation of the aorta

☐Transposition of the great arteries
☐Tetralogy of Fallot
☐Hypoplastic left heart
☐Atrioventricular septal defect
☐Other: _____
☐Unknown

☐Gastrointestinal
If yes, please specify
☐Necrotising enterocolitis
☐Pyloric stenosis
☐Other: _____
☐Unknown

☐Neurological
If yes, please specify
☐HIE
☐Seizures
☐Intraventricular haemorrhage
☐Other intracranial haemorrhage
☐Neuromuscular disorder
☐Other: _____
☐Unknown

☐Musculoskeletal
If yes, please specify
☐Congenital diaphragmatic hernia
☐Gastroschisis
☐Omphalocele
☐Other: _____
☐Unknown

☐Sepsis
If yes, please specify
☐GBS
☐E. Coli
☐Other: _____
☐Unknown

☐Metabolic
If yes, please specify
☐Hypoglycaemia
☐Hyponatraemia
☐Other: _____
☐Unknown

☐Haematology
If yes, please specify
☐Rh isoimmunisation
☐ABO isoimmunisation
☐Alloimmune thrombocytopenia
☐Other: _____
☐Unknown

☐Other: _____
☐Unknown

b) On what date was the baby transferred: _____ ☐Unknown

60) Neonatal Diagnosis (select all applicable)

☐Prematurity
If yes, please specify
☐ Less than 28 weeks gestation
☐28-31 weeks gestation
☐32-36 weeks
☐ Unknown

☐Respiratory

If yes, please specify

☐Hyaline membrane disease (respiratory distress syndrome)
☐Meconium aspiration
☐PPHN
☐Pneumothorax
☐Congenital adenomatoid lesion of the lung
☐Tracheoesophageal fistula
☐Other: _____
☐Unknown

☐Cardiac

If yes, please specify

☐Coarctation of the aorta
☐Transposition of the great arteries
☐Tetralogy of Fallot
☐Hypoplastic left heart
☐Atrioventricular septal defect
☐Other: _____
☐Unknown

☐Gastrointestinal

If yes, please specify

☐Necrotising enterocolitis
☐Pyloric stenosis
☐Other: _____
☐Unknown

☐Neurological

If yes, please specify

☐HIE
☐Seizures
☐Intraventricular haemorrhage
☐Other intracranial haemorrhage
☐Neuromuscular disorder
☐Other: _____
☐Unknown

☐Musculoskeletal

If yes, please specify

☐Congenital diaphragmatic hernia
☐Gastroschisis
☐Omphalocele
☐Other: _____
☐Unknown

☐Sepsis

If yes, please specify

☐GBS
☐E. Coli
☐Other: _____
☐Unknown

☐Metabolic

If yes, please specify

☐Hypoglycaemia
☐Hyponatraemia
☐Other: _____
☐Unknown

☐Haematology

If yes, please specify

☐Rh isoimmunisation
☐ABO isoimmunisation
☐Alloimmune thrombocytopenia

☐Other: _____
☐Unknown
☐Other: _____
☐Unknown

61) Did the baby receive any neonatal treatment ☐Yes ☐No ***(go to Question 62)*** ☐Unknown ***(go to Question 62)***

If yes, please specify

☐IV therapy ☐Antibiotics ☐Nitric Oxide
☐Inotropes ☐Mechanical ventilation ☐Phototherapy
☐Extracorporeal membrane oxygenation ☐Therapeutic hypothermia ☐Unknown
☐Other: _____

62) Were active life supporting measures withdrawn? ☐Yes ☐No ***(go to Question 63)*** ☐Unknown ***(go to Question 63)***

a) If yes, on what date were the measures withdrawn: _____ ☐Unknown

b) At what time were the measures withdrawn: _____ ☐Unknown

63) Please provide summary of significant neonatal events

_____
_____
_____
_____
_____
_____
_____
_____
_____

64) Place of neonatal/post neonatal death

☐Home ☐Emergency department ☐NICU
☐PICU ☐SCN ☐Paediatric ward
☐Unknown ☐Other: _____

Maternal Investigations after Stillbirth or Neonatal Death

(This section is not required for terminations of pregnancy for maternal psychological reasons)

65) Maternal blood tests

a) Was a full blood count performed? ☐Yes ☐No ☐Unknown

If yes, please indicate:

i) Hb: _____ g/L ☐Unknown
ii) WCC: _____x10^9 ☐Unknown
iii) Platelets: _____x10^9 ☐Unknown

b) Was a blood group and antibody screen performed? ☐Yes ☐No ☐Unknown

i) If yes, what was the blood group?

☐A positive ☐A negative ☐AB positive
☐AB negative ☐B positive ☐B negative
☐O positive ☐O negative ☐Unknown

ii) What was the antibody screen?

☐Positive ☐Negative ☐Unknown

Please specific antibody:

☐D RHESUS
☐C (LITTLE C) RHESUS
☐K- KELL
☐C (BIG C) REHSUS
☐E (LITTLE E) RHESUS
☐E (BIG E) RHESUS
☐JKA- KDD
☐JKB- KDD
☐FYA- DUFFY
☐FYB- DUFFY
☐Other:

_____

Please note, Question **c)** is a core test for all stillbirths

c) Was testing for maternal fetal haemorrhage performed? ☐Yes ☐No ☐Unknown

If yes, please indicate:

i) Date tests performed: _____ ☐Unknown

ii) What was the results of testing for maternal fetal haemorrhage? ☐Positive ☐Negative ☐Unknown

iii) Please state which test was performed to detect maternal fetal haemorrhage

☐Kleinhauer-Betke ☐Flow cytometry ☐Unknown
☐Other: _____

iv) Was the estimated fetal to maternal transfusion volume more than 1 ml? ☐Yes ☐No ☐Unknown

If yes, what was the estimated volume of maternal transfusion?: _____

d) Renal function tests? ☐Yes ☐No ☐Unknown

If yes, please indicate:

i) Creatinine: _____ umol/L ☐Unknown
ii) Uric acid (Urate): _____ mmol/L ☐Unknown
iii) Urea: _____ mmol/L ☐Unknown

e) Liver function test ☐Yes ☐No ☐Unknown

If yes, please indicate:

i) AST: _____ umol/L ☐Unknown
ii) ALT: _____ U/L ☐Unknown
iii) Bilirubin Total: _____ umol/L ☐Unknown

f) HBA1c? ☐Yes ☐No ☐Unknown

If yes, what was the result: _____ *mmol/mol or % or* ☐Unknown

g) Thyroid function test? ☐Yes ☐No ☐Unknown

If yes, please indicate:

i) TSH: _____ mU/L ☐Unknown
ii) Free T4: _____ pmol/L ☐Unknown

h) Bile acids? ☐Yes ☐No ☐Unknown

If yes, please indicate:

i) Results: _____ umol/L ☐Unknown
ii) Type of test ☐Fasting ☐Non-fasting ☐Unknown

i) CMV ☐Yes ☐No ☐Unknown

If yes, please indicate:

i) CMV-IgM result ☐Reactive ☐Non-reactive ☐Unknown
ii) CMV-IgG result ☐Reactive ☐Non-reactive ☐Unknown

iii) CMV avidity testing ☐Yes ☐No ☐Unknown
If yes, result?: _____

j) Toxoplasma ☐Yes ☐No ☐Unknown
If yes, please indicate:
i) Toxoplasma- IgM result ☐Reactive ☐Non-reactive ☐Unknown
ii) Toxoplasma- IgG result ☐Reactive ☐Non-reactive ☐Unknown
iii) Toxoplasma avidity testing ☐Yes ☐No ☐Unknown
If yes, result?: _____

k) Parvovirus B19 ☐Yes ☐No ☐Unknown
If yes, please indicate:
i) Parvovirus B19- IgM result ☐Reactive ☐Non-reactive ☐Unknown
ii) Parvovirus B19-IgG result ☐Reactive ☐Non-reactive ☐Unknown
iii) Parvovirus B19 avidity testing ☐Yes ☐No ☐Unknown
If yes, result?: _____

l) Rubella
☐Performed at routine antenatal screen ☐Yes ☐No ☐Unknown

If yes or performed at routine antenatal screen, please indicate result:
☐Immune ☐Not immune ☐Indeterminate ☐Unknown

m) Syphilis serology
☐Performed at routine antenatal screen ☐Yes ☐No ☐Unknown

If yes or performed at routine antenatal screen, please indicate result:
☐Positive ☐Negative ☐Unknown

n) Thrombophilia tests at time of birth ☐Yes ☐No ☐Unknown
If yes, please indicate:
i) ☐ Anticardiolipin antibodies ☐Positive ☐Negative ☐Unknown
ii) ☐ Lupus anticoagulant ☐Positive ☐Negative ☐Unknown
iii) ☐ APC resistance ☐Positive ☐Negative ☐Unknown
If positive, Factor V Leiden?
☐Yes
Result?
☐Positive
☐Negative
☐Unknown
☐No
☐Unknown
iv) ☐ AntiB2 glycoprotein-1antibodies ☐Positive ☐Negative ☐Unknown
If yes, result?: _____

66) Was Thrombophilia testing undertaken around the time of the follow-up visit ☐Yes ☐No ***(go to Question 67)*** ☐Unknown ***(go to Question 67)***
If yes, please indicate:
a) Anticardiolipin antibodies ☐Yes ☐No ☐Unknown

If yes, please indicate:
i) Date : _____ ☐Unknown
ii) Results ☐Positive ☐Negative ☐Unknown
iii) AntiB2 glycoprotein-1antibodies ☐Yes ☐No ☐Unknown
If yes, please indicate:
(1) Date: _____ ☐Unknown
(2) Results ☐Positive ☐Negative ☐Unknown

67) Were there any other maternal investigations performed to investigate the cause of death ☐Yes ☐No ***(go to Question 68)*** ☐Unknown ***(go to Question 68)***

a) If yes, please specify other investigations: _____

b) If yes, please specify the results: _____

External Examination of the Baby, Cord, Placenta and Membranes by Clinician

(Core tests required for all stillbirths)

---

68) Was an external examination of the baby performed? ☐Yes ☐No ***(go to Question 71)*** ☐Unknown ***(go to Question 71)***

If yes, please indicate:

a) Were any external abnormalities identified on external examination of the baby? ☐Yes ☐No ☐Unknown

If yes, please specify: _____

b) Length: _____cm ☐Unknown

c) Head circumference: _____cm ☐Unknown

69) Was an examination of the placenta, cord and membrane performed? ☐Yes ☐No ***(go to Question 72)*** ☐Unknown ***(go to Question 72)***

If yes, please indicate:

a) Placenta weight: _____gm ☐Unknown

b) Cord length: _____cm ☐Unknown

c) Were any placental abnormalities noted on external examination ☐Yes ☐No ☐Unknown

If yes, please specify

☐Incomplete ☐Retroplacental clot ☐Gritty/Calcified
☐Ragged membranes ☐Offensive odour ☐Vasa praevia
☐Succenturiate lobe/bi-lobed ☐Circumvallate ☐Bipartite
☐Unknown ☐Other: _____

d) Were any features apparent in the umbilical cord? ☐Yes ☐No ☐Unknown

If yes, please specify

☐Hyper-coiled appearance ☐Hypo-coiled appearance ☐Marginal cord insertion
☐Velamentous cord insertion ☐Abnormal cord length- short ☐Abnormal cord length- long
☐Unusual cord thickness- thin ☐Unusual cord thickness- thick ☐Meconium stained
☐Two vessels in the cord ☐True knot- loose ☐True knot- tight
☐Unknown ☐Other: _____

e) Was the cord wrapped around the neck or other structure?

☐No ☐Nuchal cord ☐Unknown ☐Other: _____

If yes to nuchal cord, how many times was the cord wrapped around the neck? _____ *or* ☐Unknown

f) Were there any membrane abnormalities identified? ☐Yes ☐No ☐Unknown

If yes, please specify

☐Abnormal colour- green ☐Malodour ☐Retro-membranous blood- fresh
☐Retro-membranous blood- old ☐Spotty (e.g. Amnion nodosum) ☐Unknown

☐Other: _____

70) External examination of the baby by expert in addition to clinician at birth? ☐Yes ☐No ***(go to Question 73)*** ☐Unknown ***(go to Question 73)***

If yes, please indicate

a) External examination performed by

☐Perinatal/Paediatric pathologist ☐Pathologist other ☐Pathologist unspecified
☐Clinical geneticist ☐Paediatrician ☐Neonatologist
☐Unknown ☐Other: _____

b) Were abnormalities identified ☐Yes ☐No ☐Unknown

If yes, please specify: _____

Placental Histopathology and Autopsy

(This section is not required for terminations of pregnancy for maternal psychological reasons)

(Core tests required for all stillbirths)

---

71) Placental and cord histopathology

a) Placental histopathology

☐Not performed ☐Normal ☐Abnormal
☐Uncertain ☐Unknown

If abnormal, please specify

☐Funisitis ☐Chorioamnionitis ☐Acute villitis
☐Placental abscesses ☐Infarct- single ☐Infarct- multiple
☐Massive perivillous fibrin ☐Histiocytic intervillositis ☐Maternal floor infarction
☐Villitis of unknown aetiology ☐Fetal thrombotic vasculopathy ☐Retroplacental haemorrhage
☐Chorioangioma ☐Metastatic tumour ☐Haemosiderin laden macrophages
☐Unknown ☐Other : _____

b) Placental swab for culture

☐Not performed ☐No pathogen ☐Pathogen
☐Uncertain ☐Unknown

If pathogen found, please specify

☐Group B Streptococcus ☐Group A Streptococcus ☐Other Streptococcus
☐E coli ☐Trichomonas Vaginalis ☐Gardbnerella Vaginalis
☐Chlamydia Trachomatis ☐Ureaplasma Urealyticum ☐Mycoplasma Hominis
☐Candida ☐Neisseria Gonorrhoea ☐Herpes
☐Pseudomonas ☐Klebsiella ☐Clostridium
☐Proteus ☐Bacteroids ☐Enterococcus
☐Fusobacterium ☐Enterobacterium ☐Hep A
☐Hep B ☐Hep C ☐HIV
☐Syphilis- Treponema Pallidum ☐Rubella ☐CMV
☐Toxoplasma Gondii ☐Parvovirus ☐Listeria
☐Varicella ☐Malaria ☐Echovirus
☐Chlamydia Psittaci ☐Haemophilus ☐Unknown
☐Other:_____

c) Other site culture taken by pathologist ☐Yes ☐No ☐Unknown

If yes, please specify

i) Site of other culture taken: _____

ii) Results of other culture taken

☐No pathogen ☐Pathogen ☐Uncertain ☐Unknown

If pathogen, please specify

☐Group B Streptococcus	☐Group A Streptococcus	☐Other Streptococcus
☐E coli	☐Trichomonas Vaginalis	☐Gardbnerella Vaginalis
☐Chlamydia Trachomatis	☐Ureaplasma Urealyticum	☐Mycoplasma Hominis
☐Candida	☐Neisseria Gonorrhoea	☐Herpes
☐Pseudomonas	☐Klebsiella	☐Clostridium
☐Proteus	☐Bacteroids	☐Enterococcus
☐Fusobacterium	☐Enterobacterium	☐Hep A
☐Hep B	☐Hep C	☐HIV
☐Syphilis- Treponema Pallidum	☐Rubella	☐CMV
☐Toxoplasma Gondii	☐Parvovirus	☐Listeria
☐Varicella	☐Malaria	☐Echovirus
☐Chlamydia Psittaci	☐Haemophilus	☐Unknown

☐Other:_____

d) Genetic testing ☐Yes ☐No ☐Unknown

If yes, please specify the following

i) Culture karyotype

☐Not performed ☐Normal ☐Abnormal ☐Uncertain ☐Unknown

Please specify abnormal or uncertain results: _____

ii) Chromosomal microarray

☐Not performed ☐Normal ☐Abnormal ☐Uncertain ☐Unknown

Please specify abnormal or uncertain results: _____

iii) Other genetic testing (please specify): _____

☐Not performed ☐Normal ☐Abnormal ☐Uncertain ☐Unknown

Please specify abnormal or uncertain results: _____

72) Autopsy

a) Were parents offered the option of an autopsy examination

☐Yes ***(go to Question 74ai-ii)***
☐No ***(go to Question 74aiii-iv)***
☐Unknown ***(go to Question 74b)***

i) Parental consent for an autopsy examination

☐Yes- full ***(go to Question (1))***
☐Yes- limited (*please describe autopsy limitations)****(go to Question (1) and (3)):***

_____

☐No ***(go to Question (2) and (3))***
☐Unknown ***(go to Question 74b)***

(1) If yes-full or yes-limited, please specify the following

1. What were the autopsy results

☐No abnormality ☐Abnormal ☐Inconclusive ☐Unknown

If abnormal or inconclusive, please describe: _____

2. What was the autopsy examination and clinical diagnosis

☐Confirms clinical diagnosis (no change in counselling for future pregnancies	☐Changes clinical diagnosis (diagnosis changed enough to alter counselling for future pregnancies)	☐Additional information (clinical diagnosis not altered but additional	☐Additional information (clinical diagnosis not altered but additional clinical findings e.g.	☐Unknown

from Pm information) | clinical findings e.g. Abnormalities) | Abnormalities)

(2) If no, please specify the following

1. What was the most relevant reason why the parents did not consent to an autopsy examination

☐Inexperience of staff in counselling about autopsy ☐Lack of rapport with the parents ☐ Lack of diagnostic value in this case ☐Staff workload ☐Parent emotional distress

☐Religious or cultural beliefs ☐Time to receive results ☐Negative perceptions in general about autopsy ☐Multiple pregnancy fetocide ☐Unknown

☐Other: _____

(3) If yes-limited or no, please provide comments on the barriers to approach and consent for autopsy in this case :

_____

_____

ii) Who sought consent for autopsy

☐Junior medical staff ☐Midwife ☐Nurse ☐Obstetric specialist

☐Obstetric registrar ☐GP ☐Paediatrician ☐Unknown

☐Other: _____

If yes-limited or no, please provide comments on the barriers to approach and consent for autopsy in this case :

_____

_____

iii) Please indicate the most relevant reason from the clinical staff perspective why the option of an autopsy was not offered in this case

☐Inexperience of staff in counselling about autopsy ☐Lack of rapport with the parents ☐ Lack of diagnostic value in this case ☐Staff workload ☐Parent emotional distress

☐Religious or cultural beliefs ☐Time to receive results ☐Negative perceptions in general about autopsy ☐Multiple pregnancy fetocide ☐Unknown

☐Other: _____

iv) Please provide comments on the barriers to approach and consent for autopsy in this case:

_____

b) Was a Babygram (skeletal survey) performed?

☐Not performed

☐Yes- No abnormality

☐Yes- Abnormal

☐Yes- Inconclusive

☐Unknown

If yes-abnormal or yes-inconclusive, please specify results:

_____

Baby Pathology and Imaging

(This section is not required for terminations of pregnancy for maternal psychological reasons)

Please note, Question **73** is a core test for all stillbirths

73) What were the clinical photographs?

☐Not taken ☐Normal ☐Abnormal ☐Unknown

If abnormal, please specify: _____

74) Swabs of ear and throat taken for culture?

☐No ***(go to Question 77)*** ☐Yes, no pathogens ***(go to Question 77)*** ☐Yes, pathogen isolated

☐Uncertain ***(go to Question 77)*** ☐Unknown ***(go to Question 77)***

If yes, pathogens isolated, please specify:

☐Group B Streptococcus	☐Group A Streptococcus	☐Other Streptococcus
☐E coli	☐Trichomonas Vaginalis	☐Gardbnerella Vaginalis
☐Chlamydia Trachomatis	☐Ureaplasma Urealyticum	☐Mycoplasma Hominis
☐Candida	☐Neisseria Gonorrhoea	☐Herpes
☐Pseudomonas	☐Klebsiella	☐Clostridium
☐Proteus	☐Bacteroids	☐Enterococcus
☐Fusobacterium	☐Enterobacterium	☐Hep A
☐Hep B	☐Hep C	☐HIV
☐Syphilis- Treponema Pallidum	☐Rubella	☐CMV
☐Toxoplasma Gondii	☐Parvovirus	☐Listeria
☐Varicella	☐Malaria	☐Echovirus
☐Chlamydia Psittaci	☐Haemophilus	☐Unknown

☐Other:_____

75) Magnetic resonance imaging?

☐Not performed ***(go to Question 78)*** ☐Normal ***(go to Question 78)*** ☐Abnormal
☐Inconclusive ☐Unknown ***(go to Question 78)***

If abnormal or inconclusive, please specify:

_____

76) Were cord and cardiac blood samples taken?

☐Yes, cord ☐Yes, cardiac ☐No ***(go to Question 79)*** ☐Unknown ***(go to Question 79)***

If cord or cardiac blood samples were taken, was a full blood count with smear done (nucleated red count)?

☐Yes ☐No ☐Unknown

If yes, please specify:

a) Hb: _____ g/L ☐Unknown

b) WCC: _____x10^9 ☐Unknown

c) Platelets: _____x10^9 ☐Unknown

77) Genetic testing of the baby- tissue or blood?

☐Yes ☐No ***(go to Question 80)*** ☐Unknown ***(go to Question 80)***

If yes, please specify:

a) Specimen from the baby for the genetic testing

☐Cord ☐Blood ☐Skin
☐Cartilage ☐Unknown ☐Other: _____

b) Type of genetic testing

☐Karyotype ☐Chromosomal microarray ☐Unknown ☐Other: _____

What were the results of the testing?

☐Normal ☐Abnormal ☐Uncertain ☐Unknown

*If abnormal or uncertain, please describe:*_____

78) Were any other investigations performed?

☐Yes ☐No ***(go to Question 81)*** ☐Unknown ***(go to Question 81)***

If yes, please specify investigations and results:

_____
_____

_____
_____

Case Documents

79) Please attach an autopsy, placental pathology and other relevant pathology results

Case Summary

80) Please provide a brief summary of key clinical events including factors which you consider may have contributed to the death. Please also provide any information you think relevant that was not covered in the previous questions, which you consider may have contributed to the outcome.

_____
_____
_____
_____
_____
_____
_____
_____
_____

Hospital Review Details

81) Was this case referred to the coroner?

☐Yes ☐No ***(go to Question 84)*** ☐Unknown ***(go to Question 84)***

If yes, was this the coroner's case?

☐Yes ☐No ☐Unknown

*Please provide details:*_____

82) Sentinel event report

☐Yes ☐No ***(go to Question 85)*** ☐Unknown ***(go to Question 85)***

*If yes, please provide details:*_____
_____

83) Root cause analysis report

☐Yes ☐No ***(go to Question 86)*** ☐Unknown ***(go to Question 86)***

*If yes, please provide details:*_____
_____

84) Date scheduled for hospital committee review:_____ ☐Unknown

85) Responsibility for the completion of the data

a) Name:_____

b) Designation:_____

c) Date completed:_____

Section 2: MATERNITY SERVICE REPORT

COMPLETE THIS SECTION AT PERINATAL MORTALITY COMMITTEE REVIEW

Mothers Surname: (*If multiple birth, indicate birth number of this baby)*	
Date of perinatal death	
Gestation	
Facility reporting	

Death certificate details:

1) Main disease or condition in fetus or infant:_____

_____

2) Other diseases or conditions in fetus or infant: _____

_____

3) Main maternal disease or condition affecting fetus or infant: _____

_____

4) Other maternal diseases or conditions affecting fetus or infant: _____

_____

5) Other relevant circumstances: _____

_____

Classification of Cause of Death

6) **PSANZ Perinatal Death Classification** – Primary condition. Presumed at time of death (PSANZ-PDC)

Category classification

Please insert full numerical code _____

Please insert full text _____

NB. If stillbirth, go to question 8.

7) **PSANZ Neonatal Death Classification – Primary condition.** Presumed at time of death (PSANZ-NDC)

Category classification

Please insert full numerical code _____

Please insert full text _____

_____

8) **Level of understanding of the diagnosis at time of death** (rated by clinician completing the death certificate)

☐ Well understood ☐Poorly understood ☐Not understood

☐ Not recorded ☐Unknown

9) **PSANZ Perinatal Death Classification – Primary condition.** (PSANZ-PDC)

Category classification

Please insert full numerical code _____

Please insert full text _____

_____

10) Were any associated conditions present according to PSANZ-PDC which contributed to the death?

☐ Nil ☐ One ☐ Two

☐ Three ☐ Not Recorded ☐ Unknown

a) PSANZ Perinatal Death Classification (PSANZ-PDC) – Associated condition 1

Category classification

Please insert full numerical code _____

Please insert full text _____

_____

b) PSANZ Perinatal Death Classification (PSANZ-PDC) – Associated condition 2

Category classification

Please insert full numerical code _____

Please insert full text _____

_____

c) PSANZ Perinatal Death Classification (PSANZ-PDC) – Associated condition 3

Category classification

Please insert full numerical code _____

Please insert full text _____

_____

NB. If stillbirth, go to question 13.

11) PSANZ Neonatal Death Classification – Primary condition. (PSANZ-NDC)

Category classification

Please insert full numerical code _____

Please insert full text _____

_____

12) Were any associated conditions present according to PSANZ-NDC which contributed to the death?

☐ Nil ☐ One ☐ Two

☐ Three ☐ Not Recorded ☐ Unknown

a) PSANZ Neonatal Death Classification (PSANZ-NDC) – Associated condition 1

Category classification

Please insert full numerical code _____

Please insert full text _____

_____

b) PSANZ Neonatal Death Classification (PSANZ-NDC) – Associated condition 2

Category classification

Please insert full numerical code _____

Please insert full text_____

_____

c) PSANZ Neonatal Death Classification (PSANZ-NDC) – Associated condition 3

Category classification

Please insert full numerical code _____

Please insert full text_____

_____

13) Was the perinatal death referred to the coroner?

☐ Yes ☐No ☐Unknown

14) Please list any associated conditions present according to the PSANZ-NDC which contributed to the death (following the outline in question 2 including the sub classifications)

_____
_____
_____
_____

Factors Related to Care

1) Were factors relating to organisational and/or management identified? (e.g. inadequate supervision of staff, lack of appropriate clinical management protocols, lack of communication between services)

☐Yes ☐No ***(go to Question 5)*** ☐Unknown ***(go to question 5)***

If yes, please specify each question based on the following rates:
1- Insignificant. Sub-optimal factors identified but unlikely to have contributed to the outcome
2- Possible- Sub-optimal factors identified might have contributed to the outcome
3- Significant. Sub-optimal factors identified were likely to have contributed to the outcome
4- Undetermined. Insufficient information available
5- Unknown

	Please rate	Please state the specific factors and include any relevant comments
☐Poor organisational arrangements of staff		_____ _____ _____
☐Inadequate education and training		_____ _____ _____
☐Lack of policies, protocols or guidelines		_____ _____ _____
☐Inadequate number of staff		_____ _____ _____

☐Poor access to senior clinical staff		_____ _____ _____
☐Failure or delay in emergency response		_____ _____ _____
☐Delay in procedure (e.g. Caesarean section)		_____ _____ _____
☐Inadequate systems/process for sharing of clinical information between services		_____ _____ _____
☐Delayed access to test results or inaccurate results		_____ _____ _____
☐Equipment (e.g. faulty equipment, inadequate maintenance or lack of equipment)		_____ _____ _____
☐Building and design functionality (e.g. space, privacy, ease of access, lighting, noise, power failure, operating theatre in distant location)		_____ _____ _____
☐Other: _____		_____ _____ _____
☐Unknown		

2) Were factors relating to personnel identified? (staff factors relating to professional care and service provision)

☐Yes ☐No ***(go to Question 6)*** ☐Unknown ***(go to question 6)***

If yes, please specify each question based on the following rates:
1- Insignificant. Sub-optimal factors identified but unlikely to have contributed to the outcome
2- Possible- Sub-optimal factors identified might have contributed to the outcome
3- Significant. Sub-optimal factors identified were likely to have contributed to the outcome
4- Undetermined. Insufficient information available
5- Unknown

	Please rate	Please state the specific factors and include any relevant comments
☐Knowledge and skills of staff were lacking		_____ _____ _____
☐Delayed emergency response by staff		_____ _____ _____
☐Failure to maintain competence		_____ _____ _____
☐Communication between staff was inadequate		_____ _____

		_____
☐Failure to seek help/supervision		_____ _____ _____
☐Failure to follow recommended best practise		_____ _____ _____
☐Lack of recognition of complexity or seriousness of condition by care giver		_____ _____ _____
☐Other: _____ _____ _____ _____		_____ _____ _____
☐Unknown		

3) Were barriers to accessing/engaging with care identified? (e.g. no, infrequent or late booking for antenatal care, women decline treatment/advice)

☐Yes ☐No ***(go to Question 7)*** ☐Unknown ***(go to Question 7)***

If yes, please specify each question based on the following rates:
1- Insignificant. Sub-optimal factors identified but unlikely to have contributed to the outcome
2- Possible- Sub-optimal factors identified might have contributed to the outcome
3- Significant. Sub-optimal factors identified were likely to have contributed to the outcome
4- Undetermined. Insufficient information available

	Please rate	Please state the specific factors and include any relevant comments
☐No antenatal care		_____ _____ _____
☐Infrequent or late booking		_____ _____ _____
☐Declined treatment or advice		_____ _____ _____
☐Obesity impacted on delivery of optimal care (e.g. USS)		_____ _____ _____
☐Substance use		_____ _____ _____
☐Family violence		_____ _____ _____

☐Lack of recognition by the woman or family of the complexity or seriousness of the condition		_____ _____ _____
☐Maternal mental illness		_____ _____ _____
☐Cultural barriers		_____ _____ _____
☐Language barriers		_____ _____ _____
☐Not eligible to access free care		_____ _____ _____
☐Environmental (e.g. isolated, long transfer, weather prevented transport)		_____ _____ _____
☐Other: _____ _____ _____ _____		_____ _____ _____
☐Unknown		

Recommendations for Improvement

4) How many recommendations resulted from the review meeting: _____

5) Please list the recommendations and the action required

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

6) Has the action/s been completed?

☐Yes ☐No ☐Unknown

If yes, please specify the action taken and the date the action was taken:

_____
_____
_____
_____

If no, why has this action not been completed:

_____

_____
_____
_____
_____

Further Comment

7) **Please provide any further comments on factors which you consider may have contributed to the death:**

_____
_____
_____
_____
_____
_____
_____
_____

Perinatal Mortality Review Administration Details

8) **Location of perinatal mortality review:** _____
9) **Date of review:** _____
10) **Have the [parents been provided with an update on results as required?**
11) **Has the GP and other relevant care providers been sent a case summary?**
12) **Responsibility for completion of data**

Name: _____

Designation: _____

Date completed: _____

PMMRC

Perinatal and Maternal Mortality Review Committee

RAPID REPORTING FORM FOR A PERINATAL DEATH - BABY

Please use the "*Guidelines for the completion of the mother and baby forms following a perinatal death March 2016 Version 10" to help* completion of this form. You can obtain these guidelines from www.otago.ac.nz/pmmrc

Both the PMMRC mother and baby forms need to be completed by the Lead Maternity Carer or other clinician for any baby dying from 20 weeks gestation (i.e.: ≥20^0, or **if gestation is unknown** a birth weight ≥400gm) including all terminations, to before 28 completed days of life (i.e.: up to midnight on the 27th day).

This Baby Form can be submitted electronically after submitting the Mother form.
(If sending in written forms please send this in with the Mother form) address and fax number at end of form.

PLEASE COMPLETE WITHIN 48 HOURS OF THE BABY'S DEATH IF POSSIBLE

Personally identifiable information (of the mother, baby or lead maternity carer) collected on this form will be kept confidential. The information included in reports by the PMMRC is grouped and non-identifiable.

1. **Mother's NHI:** ☐

2. **Baby's NHI:** ☐

3. **Mother's first name(s):** ☐ **Surname:** ☐

   Mother's other name(s): ☐

4. **Baby's first name(s):** ☐ **Surname:** ☐

   Baby's other name(s): ☐

5. **Sex:**

   Male ☐ Female ☐ Indeterminate ☐ Unknown ☐

6. **Baby's ethnicity** *(Select all relevant)*

- ☐ New Zealand European
- ☐ Māori
- ☐ Samoan
- ☐ Cook Island Māori
- ☐ Tongan
- ☐ Niuean
- ☐ Chinese
- ☐ Indian
- ☐ Other (such as Dutch, Japanese, Tokelauan), Please state: ☐

Source of ethnicity information: *(Select all relevant)*

- ☐ Parents
- ☐ Family/Whanau
- ☐ DHB Patient Registration Form
- ☐ LMC notes
- ☐ Clinical notes
- ☐ NHI details
- ☐ Other please state:_____

7. Live or still birth *(Select one of the following)*

- Stillbirth ☐
- Live birth ☐
- Unknown ☐

8. Was this birth the result of a termination of pregnancy?

Yes ☐ **No** ☐ **Unknown** ☐

9. Date and time of birth:

Date: ☐☐/☐☐/☐☐☐☐ (DD/MM/YYYY)

Time: ☐☐:☐☐ hrs (24hour Clock)

10. Gestation at birth: ☐☐ **week's** ☐ **days** **Unknown** ☐

Best estimate of gestational age based on:

- ☐ Ultrasound in first trimester
- ☐ Ultrasound ≤ 20 weeks gestation
- ☐ Ultrasound > 20 weeks gestation
- ☐ Last menstrual period
- ☐ Clinical examination at birth

11. Baby's Birthweight: ☐☐☐☐ **gm** **Unknown** ☐

12. If this was multiple pregnancy birth order of the deceased fetus/baby:

☐ First ☐ Second ☐ Other

13. When did death occur?

- ☐ Antepartum
- ☐ Intrapartum – first stage
- ☐ Intrapartum – second stage
- ☐ Intrapartum - Unknown
- ☐ Neonatal
- ☐ Unknown

(Answer Question 14 if stillbirth, if not go to Question 15)

14. Estimated gestational age at time of fetal death ☐☐ **week's** ☐ **days** **Unknown** ☐

(If live birth or unknown answer Question 15)

15. Place of death for live born babies:

Home ☐

Hospital ☐

Other ☐

If other please state: ☐

(If "Hospital" selected in Question 15 answer the below)

Area of hospital where baby died

Delivery suite ☐

Postnatal ward ☐

Neonatal unit ☐

Children's ward ☐

Operating theatre ☐

Antenatal ward ☐

Emergency department ☐

PICU ☐

Other ☐

If other please state: ☐

16. Baby Examination:

Were there any external abnormalities noted on external examination of the baby?

Yes ☐ **No** ☐

If yes, please specify _____

_____

_____

17. Post-mortem examination:

Parents offered a post-mortem examination? **Yes** ☐ **No** ☐ **Unknown** ☐

If yes, who discussed/offered the post-mortem? (*Please select all relevant*)

Fetal Medicine Specialist	☐	Paediatric/Neonatal SMO	☐
Perinatal Pathologist	☐	Paediatric Registrar	☐
Obstetric SMO	☐	Paediatric SHO	☐
Obstetric Registrar	☐	Midwife LMC	☐
Obstetric SHO	☐	Midwife Core	☐

Other

If other please state: ☐

	Yes	No	Unknown
If yes, did the Parents consent to a post-mortem?	☐	☐	☐
Death referred to the Coroner?	☐	☐	☐

18. If neonatal death date and time of death:

Date: ☐☐/☐☐/☐☐☐☐ (DD/MM/YYYY)

Time: ☐☐:☐☐ Hrs (24hour Clock)

19. Apgar scores:

1 minute ☐

5 minutes ☐ *(If the score for 5 minutes is less than 9 then answer the 3 below)*

10 minutes ☐

15 minutes ☐

20 minutes ☐

20. Cord gases: Not taken ☐

		Arterial		Venous
pH		☐.☐☐		☐.☐☐
Base deficit	+ / -	☐☐.☐	+ / -	☐☐.☐
CO_2		☐☐.☐		☐☐.☐
Lactate		☐☐.☐		☐☐.☐

21. Was the baby resuscitated at birth? **Yes** ☐ **No** ☐ **Unknown** ☐

(If "Yes" for Question 21 select one of the below)

Baby resuscitated and transferred to another clinical care area ☐

Baby unable to be resuscitated ☐

22. Were maternal corticosteroids given antenatally? **Yes** **No** **Unknown**

(If "Yes" is selected answer the below) ☐ ☐ ☐

Course of corticosteroids started at what gestation? ☐ **week's** ☐ **days**

Was course of corticosteroids completed? ☐ ☐ ☐

23. Was the baby transferred from their place of birth prior to death?

Yes ☐ **No** ☐ **Unknown** ☐

(If "Yes" is selected for Question 23 answer the below)

24. Where was the baby transferred to? *(Select one)*

NICU/SCU* ☐ *Neonatal Intensive Care Unit/Special Care Unit

SCBU** ☐ **Special Care Baby Unit

Post natal ward ☐

Home ☐

Died in transfer ☐

Tertiary Services ☐

Other ☐

If other please state: ☐

(If baby not transferred after birth answer the below)

25. Why wasn't the baby transferred?

Died at place of birth ☐

Died in birthing unit/theatre ☐

Other ☐ If other please state: ☐

26. Summary

Please provide any information you think relevant, that was not covered in the previous questions, which you consider may have contributed to the outcome.

Form completed by:
Name:
Designation:
Contact details: Phone -
Email -
Date:

Please send (mail or fax) the completed form to:
National Coordination Service
Perinatal and Maternal Mortality Review Committee (PMMRC)
Department of Obstetrics and Gynaecology
University of Auckland
Private Bag 92019
Auckland 1142
Phone: 09 923 4440 Fax: 09 305 59

PMMRC

Perinatal and Maternal Mortality Review Committee

RAPID REPORTING FORM FOR A PERINATAL DEATH - MOTHER

Please use the "*Guidelines for the completion of the mother and baby forms following a perinatal death March 2014 Version 10" to help* completion of this form. You can obtain these guidelines from www.otago.ac.nz/pmmrc

Both the PMMRC mother and baby forms need to be completed by the Lead Maternity Carer or other clinician for any baby dying from 20 weeks gestation (i.e. ≥20^0, or **if gestation is unknown** a birth weight ≥400gm) including all terminations, to before 28 completed days of life (i.e. up to midnight on the 27th day).

This Mother form should be submitted electronically before the Baby form is submitted.
Compulsory entries are: - Number of babies born in this pregnancy, number of perinatal losses linked to this pregnancy and Mother's NHI

We understand that you may not know the answer to some of the questions but we would appreciate it if you can answer as much as possible.

If sending in written copies please send this together with the PMMRC Baby Form (see address and fax numbers at back of form).

PLEASE COMPLETE WITHIN 48 HOURS OF THE BABY'S DEATH IF POSSIBLE

Personally identifiable information (of the mother, baby or lead maternity carer) collected on this form will be kept confidential. The information included in reports by the PMMRC is grouped and non-identifiable.

1. **How many perinatal losses are linked to this pregnancy** ☐
2. **Mother's NHI:** ☐
3. **First name(s):** ☐ **Surname:** ☐

   Mother's other name(s): ☐
4. **Date of birth:** ☐☐/☐☐/☐☐☐☐ (DD/MM/YYYY)
5. **Usual residential address at time of delivery:**

Property /house name	☐
Flat/Unit number	☐
Street Number/rapid number (rural)	☐
Street name	☐
Suburb /locality	☐
Town/City	☐
Country (if not New Zealand)	☐
Post Code	☐

6. Ethnicity: *(Select all relevant)*

- ☐ New Zealand European
- ☐ Māori
- ☐ Samoan
- ☐ Cook Island Māori
- ☐ Tongan
- ☐ Niuean
- ☐ Chinese
- ☐ Indian
- ☐ Other (such as Dutch, Japanese, Tokelauan),

If other please state: ☐

Please state the country of birth?

- ☐ New Zealand
- ☐ Australia
- ☐ England
- ☐ China
- ☐ India
- ☐ South Africa
- ☐ Samoa
- ☐ Cook Islands
- ☐ Other Please specify: _____

Source of ethnicity information: *(Select all relevant)*

- ☐ Woman
- ☐ Family/Whanau
- ☐ DHB Patient Registration Form
- ☐ LMC notes
- ☐ Clinical notes
- ☐ NHI details
- ☐ Other please state: _____

7. Maternal height ☐☐☐ cms **and weight** ☐☐☐ kg (earliest measured in pregnancy)

(If not available please measure height and weight)

8. Past obstetric history: previous pregnancies:

Gravidity: ☐☐ **Parity:** ☐☐ *(Do not include index pregnancy in parity. Multiple births counted as one)*

Unknown ☐

Date of Delivery	Place of birth **(Please state)**	Gestation (weeks)	Pregnancy Outcome (see below for codes)	Method of delivery (see below for codes)	Birth weight	SGA <10th centile	Complications (see below for codes)

Pregnancy Outcome – LB = Live born, SM = spontaneous miscarriage, TOP = termination of pregnancy, E = ectopic pregnancy, SB = stillbirth, END = early neonatal death (<7 days age), LND = late neonatal death (7 days – 27 days), CYD = Child and Youth Death (28 days – 24 years), U = unknown
Method of Delivery NVD = Normal vaginal delivery, OV = Operative vaginal delivery, VB = Vaginal breech, CS = Caesarean Section, U = unknown
Complications - NIL = No complications, HE = hyperemesis, APH = Ante partum haemorrhage/Abruption, CxS = cervical stitch, GDM = Gestational diabetes, PET = Pre-eclampsia, Other = please comment in summary section, U = unknown

***All the following questions relate to this pregnancy**

9. Family violence

Has mother suffered family violence during this pregnancy?

Yes ☐ **No** ☐ **Not Asked** ☐ **Unknown** ☐

(If the answer was "Yes" to the above answer the question below)

Was she offered referral to a relevant support services?

Yes ☐ **Yes but declined** ☐ **No** ☐ **Unknown** ☐

10. History of infertility for >12 months before this pregnancy:

Yes ☐ **No** ☐ **Unknown** ☐

11. Fertility treatment for this pregnancy: *(Select all relevant)*

Artificial insemination - donor ☐

Artificial insemination – husband/partner ☐

Clomiphene citrate ☐

Follicle-stimulating hormone ☐

Intra-cytoplasmic sperm injection ☐

In vitro fertilisation ☐ If yes, how many embryos were transferred? ☐

Surgery to increase fertility ☐

Insulin sensitisers e.g. Metformin, ☐

Letrozole ☐

Other ☐

If other please state: ☐

Was treatment in New Zealand? **Yes** ☐ **No** ☐ **Unknown** ☐

If overseas, please state where _____

12. Intended place of birth:

☐ Home

☐ Birthing Unit

☐ Hospital level 1

☐ Hospital level 2

☐ Hospital level 3

☐ Other

☐ Unknown

☐ Not registered

Please state name of place/unit/hospital:

☐

13. Actual place of birth:

☐ Home

☐ Birthing Unit

☐ Hospital level 1

☐ Hospital level 2

☐ Hospital level 3

☐ Other

☐ Fetus still in utero

☐ Unknown

Please state name of unit/hospital:

☐

(If the intended place of birth is different to the actual place of birth then answer the below question)

14. When did mother's transfer to actual place of birth occur?

Before labour ☐

In labour ☐

Unknown ☐

15. Lead Maternity Carer

Please select the mother's lead maternity carer (LMC) at time of first registration and at birth?

(Select one in each column)	**LMC at booking**	**LMC at birth***
Not registered	☐	☐
Self-employed midwife	☐	☐
DHB care	☐	☐
General Practitioner	☐	☐
Obstetrician (private)	☐	☐
Unknown	☐	☐

***For 'LMC at booking' to be different to 'LMC at birth' a new registration must have been completed.**

16. Please indicate who was clinically responsible for the woman's care at time of birth *(Select one)*

- No care ☐
- Self-employed midwife ☐
- DHB care ☐
- General Practitioner ☐
- Obstetrician (private) ☐
- Unknown ☐

If clinical responsibility is different, to 'LMC at booking' when did this transfer of clinical responsibility occur?

a) Antenatal ☐ **b) Intrapartum** ☐

17. Antenatal Procedures: *(Select all relevant)*

	Yes	
Scan at ≤22 gestation	☐	*(If "Yes")* How many scans? ☐
1st trimester screening (MSS1)	☐	
2nd trimester screening (MSS2)	☐	
Anatomy scan	☐	*(If "Yes")* Gestation of 1st anatomy scan ☐ **weeks** ☐ **days**
		(If repeated) gestation of 2nd anatomy scan ☐ **weeks** ☐ **days**
Chorionic villus sampling	☐	
Cervical suture	☐	
Amniocentesis	☐	
Doppler studies	☐	
Growth scan	☐	
External cephalic version	☐	
Fetocide	☐	
Amnioreduction	☐	
Fetoscopic laser treatment	☐	
Traditional massage	☐	
Other	☐	If other please state:
No antenatal procedures	☐	
Unknown	☐	

18. a. Smoking at 1st registration with a LMC (cigarettes)?

Yes ☐ **No** ☐ **Unknown** ☐

b. Smoking status at birth (cigarettes)?

Never smoked ☐

Current non-smoker

Stopped before this pregnancy ☐

Stopped < 16 weeks gestation ☐

Stopped ≥16 weeks gestation ☐

Previous status unknown ☐

Current smoker ☐

How many cigarettes ☐☐ per day ☐ Unknown

Smoking status unknown ☐

c. Smoking cessation support?

No ☐ Yes – by LMC/clinician only ☐ Yes – referred to external agent ☐

Offered but declined ☐ Unknown ☐

19. Maternal use of alcohol and other drugs: **Yes** ☐ **No** ☐ **Unknown** ☐

(If "Yes" select all drugs used by mother during this pregnancy)

	during 1st trimester	**month prior to birth**	**Describe**
Alcohol	☐	☐	
Amphetamine/P	☐	☐	
Cocaine	☐	☐	
Ecstasy	☐	☐	
Hallucinogens	☐	☐	
"Herbal highs"	☐	☐	
Synthetic cannabis	☐	☐	
Marijuana	☐	☐	
Opiates	☐	☐	
Methadone	☐	☐	
Petrol/paint/glue	☐	☐	
Other	☐	☐	

If other please state: ☐

20. Antenatal visits before fetal death/or delivery:

a. Total number of visits from antenatal record ☐☐ **Unknown** ☐

b. Gestation at first antenatal visit with LMC: ☐☐ weeks **Unknown** ☐

c. Gestation at first antenatal visit with any health provider: ☐☐ weeks **Unknown** ☐

21. Mother's clinical history *(including any diagnoses made in this pregnancy)*

(Please answer all questions)	Yes	No	Unknown
a. Asthma	☐	☐	☐
b. Diabetes	☐	☐	☐

If "Yes" answered for part b answer the below)

☐ Type 1 diabetes

☐ Type 2 diabetes

☐ Impaired glucose tolerance

c. Epilepsy	☐	☐	☐
d. Heart condition	☐	☐	☐

(If "Yes" selected for part d answer the below)

☐ Congenital heart condition

☐ Rheumatic heart disease

☐ Coronary artery disease

☐ Other cardiac condition - if other please state: ☐

e. Thyroid abnormality	☐	☐	☐

(If "Yes" answered for part e answer the below)

☐ Hypothyroidism

☐ Hyperthyroidism

☐ Other - if other please state: ☐

f. Inflammatory bowel disease	☐	☐	☐
g. Systemic lupus erythematosus	☐	☐	☐
h. Other autoimmune disorder	☐	☐	☐
i. Mental health disorder	☐	☐	☐

(If "Yes" answered for part i answer the below)

☐ Depression

☐ Psychotic disorder

☐ Other - if other please state: ☐

j. Renal disease	☐	☐	☐
k. Venous thromboembolism	☐	☐	☐
l. Blood disorders	☐	☐	☐

(If "Yes" answered for part l answer the below)

☐ Anaemia

☐ Thalassaemia trait

☐ Thrombophilia

☐ Other - if other please state: ☐

m. Hypertension	☐	☐	☐

(If "Yes" answered for part m answer the below)

☐ Chronic/essential hypertension

☐ Secondary hypertension

Mother's clinical history *continued* | **Yes** | **No** | **Unknown**

n. Cervical surgery ☐ ☐ ☐

o. Urinary tract infection ☐ ☐ ☐

p. Uterine abnormality ☐ ☐ ☐

q. Uterine surgery ☐ ☐ ☐

r. Other ☐

If other please state: ☐

22. a. Screening for diabetes in pregnancy: | **Yes** | **No** | **Unknown** | **Declined**

☐ ☐ ☐ ☐

b. Gestational Diabetes confirmed ☐ ☐ ☐

c. Laboratory results

i) HbA1c at booking

Result:_____ mmol/mol Date __/__/__

ii) HbA1c (≥20 weeks) *(record highest result)*

Result:_____ mmol/mol Date __/__/__

iii) Polycose *(record highest result)*

Result: ☐☐.☐ mmol/L Date__/__/__

iv) Glucose Tolerance Test *(record highest result)*

Result: Fasting: ☐☐.☐ mmol/L 2hour: ☐☐.☐ mmol/L Date__/__/__

| **Yes** | **No** | **Unknown**

23. Was this a multiple pregnancy? ☐ ☐ ☐

(If "Yes" is answered for Question 23 answer the below)

1. Number of fetuses/babies at first ultrasound in pregnancy: ☐
2. Number total number of babies born in this delivery, including stillbirths? ☐
3. Was a fetal reduction performed? If YES, please describe: ☐
4. What type of multiple:

☐ Dichorionic diamniotic

☐ Monochorionic diamniotic

☐ Monoamniotic

☐ Other Multiple – please describe chorionicity ☐

☐ Unknown

(If "Yes" selected in Question 23 answer Question 24)

24. If multiple pregnancy, please note NHI of all fetuses/babies:

☐ First **NHI** ☐

☐ Second **NHI** ☐

If more than two babies in this pregnancy please state other NHI:

☐

25. Was there any vaginal bleeding related to this pregnancy? *(Please complete both)*

	Yes	No	Unknown
Before 20 weeks	☐	☐	☐
After 20 weeks	☐	☐	☐

26. Obstetric conditions

Did the mother have any of these conditions in this pregnancy? *(Select all relevant)*

	Yes	No	Unknown
a. Hypertension	☐	☐	☐

(If "Yes" answered part "a" answer one of the below)

☐ Gestational hypertension

☐ Pre-eclampsia

☐ Pre-eclampsia with chronic hypertension

☐ Eclampsia

☐ Chronic hypertension

☐ Unspecified

b. Preterm labour	☐	☐	☐
c. Prolonged rupture of membranes	☐	☐	☐

(If "Yes" answered to part "c" answer one of the below)

☐ Preterm - rupture < 37 weeks gestation

☐ Term - rupture ≥ 37 weeks gestation

d. Cholestasis of pregnancy	☐	☐	☐
e. Confirmed maternal infection	☐	☐	☐

(If "Yes" answered to part "e" answer the below)

Kind of infection:

☐ Pyelonephritis

☐ Lower urinary tract infection

☐ Other infection

If other please state: ☐

f. Trauma	☐	☐	☐

(If "Yes" answered to part "f" answer one of the below)

Kind of trauma:

☐ Vehicular

☐ Violent personal injury or assault

☐ Other (e.g. falls)

If other please state: ☐

g. Other obstetric condition	☐	☐	☐

If other please state: ☐

h. Surgery in pregnancy	☐	☐	☐

Please state type of surgery: ☐

27. Fetal growth restriction was suspected before fetal demise: *(Select one)*

- ☐ No
- ☐ Yes but no scan performed
- ☐ Yes and confirmed by scan
- ☐ Unknown
- ☐ Yes but normal growth on scan

	Yes	No	Unknown
a. Was a customised growth chart generated for this woman antenatally?	☐	☐	☐

28. Folic Acid taken in this pregnancy? *(Please complete both)*	Yes	No	Unknown
Folic Acid taken pre-pregnancy?	☐	☐	☐
Folic Acid taken first trimester?	☐	☐	☐

29. Was there consultation with an obstetrician during pregnancy?

- ☐ Obstetrician was lead maternity carer
- ☐ Yes *(If "Yes" please - select all relevant below)*
- ☐ No
- ☐ Unknown

What was/were the reason(s) for the obstetrician consultation?

- ☐ Prolonged pregnancy (>41 weeks)
- ☐ Age of mother
- ☐ Breech
- ☐ Recurrent miscarriage
- ☐ Mother's request
- ☐ Stillbirth (this pregnancy)
- ☐ Previous Stillbirth
- ☐ Suspected size of fetus *(If "Yes")* ☐ large fetus ☐ small fetus
- ☐ Previous intrauterine growth restriction
- ☐ Previous Caesarean section
- ☐ Renal
- ☐ Cardiac
- ☐ Hypertension
- ☐ Prolonged rupture of membranes
- ☐ Cholestasis
- ☐ Other medical Please specify: _____
- ☐ Surgery in pregnancy
- ☐ Significant infection
- ☐ Multiple pregnancy
- ☐ Antepartum haemorrhage
- ☐ Diabetes
- ☐ Unstable lie
- ☐ Fetal Abnormality
- ☐ Raised BMI
- ☐ Other reason

If other please state:

30. Was the mother referred to any other healthcare services (apart from midwifery & obstetrics) during pregnancy?

	Yes	No	Unknown
	☐	☐	☐

(If "Yes" answered to Question 30 answer the below – select all relevant)

Medical *(includes MFM, non-obstetric specialists)*	☐	☐	☐
Mental health	☐	☐	☐
Drug and alcohol	☐	☐	☐
Social	☐	☐	☐
Other service	☐		

If other please state: _____

31. Induction

	Yes	No	Unknown
(If "Yes", please select all that apply)	☐	☐	☐

a) Medication/method used

- ☐ Balloon
- ☐ Cervidil
- ☐ Misoprostol – if yes dose: ☐☐☐ mcg
- ☐ Mifegyne
- ☐ Artificial rupture of membranes Time: ☐☐:☐☐ 24 hour clock Date __/__/__
- ☐ Other, please specify: _____
- ☐ PG gel 1 mg
- ☐ PG gel 2 mg
- ☐ PGE2 tablets
- ☐ Oxytocin

b) Reason for induction:

- ☐ Post dates
- ☐ Pre-eclampsia
- ☐ APH
- ☐ Diabetes
- ☐ Maternal request
- ☐ Other, please specify: _____
- ☐ Intrauterine fetal death
- ☐ Intrauterine growth restriction
- ☐ Fetal Abnormality
- ☐ Prolonged rupture of membranes

32. Augmentation: **Yes** ☐ **No** ☐ **Unknown** ☐

(If "Yes", please select all that apply)

Medication/Method:

- ☐ Artificial rupture of membranes Time: ☐☐:☐☐ 24 hour clock Date __/__/__
- ☐ Oxytocin
- ☐ Other, please specify: _____

33. Analgesia in labour **Yes** ☐ **No** ☐ **Unknown** ☐

(If "Yes" answer the below, select all relevant)

- Opiate ☐
- Nitrous oxide ☐
- Epidural ☐
- TENS* ☐ **Transcutaneous electrical nerve stimulation*
- Unknown ☐
- Other ☐ Please specify: _____

34. Bath or pool during labour: | **Yes** | **No** | **Unknown**

Did part of labour occur in bath/pool? ☐ ☐ ☐

(If "Yes" answered in Question 34 answer the below)

Was the baby born in bath/pool? ☐ ☐ ☐

35. Mode of birth: *(Select one for each baby/fetus this pregnancy)*

	First baby/fetus	**Second baby/fetus**
Normal vaginal delivery	☐	☐
Vaginal breech	☐	☐
Operative vaginal delivery	☐	☐
Caesarean section	☐	☐
Unknown/not stated	☐	☐

If more than two babies/fetuses please state: ☐

(If "Vaginal breech" selected for Question 35 answer the three questions below)

a. When was breech diagnosed?

☐ Breech identified prior to labour

☐ Breech identified during labour

b. Mode of delivery

☐ Assisted

☐ Extraction

☐ Spontaneous

c. Was an anaesthetic administered? **Yes** ☐ **No** ☐ **Unknown** ☐

(If "Yes", please select one)

General ☐ Local ☐

Spinal ☐ Other ☐

Epidural ☐ If other please state: ☐

(If "Operative delivery"" selected for Question 35 answer the two questions below)

a. Mode of delivery

☐ Forceps low ☐ Ventouse low

☐ Forceps mid-cavity ☐ Ventouse mid

☐ Forceps mid-cavity with rotation ☐ Ventouse mid-rotation

b. Was an anaesthetic administered? **Yes** ☐ **No** ☐ **Unknown** ☐

(If "Yes", please select one)

General ☐ Local ☐

Spinal ☐ Other ☐

Epidural ☐ If other please state: ☐

(If "Caesarean section" selected for Question 35 answer the three questions below)

a. Were forceps tried first?

☐ Forceps/Ventouse attempted **before** Caesarean

☐ Forceps/Ventouse **not** attempted before Caesarean

b. Type of caesarean section

If the baby born by caesarean section, please state the type of caesarean section

Planned - no labour ☐ **Unplanned** - no labour ☐

Planned - during labour ☐ **Unplanned** - during labour ☐

c. Was an anaesthetic administered? **Yes** ☐ **No** ☐ **Unknown** ☐

(If "Yes", please select one)

General ☐ Local ☐

Spinal ☐ Other ☐

Epidural ☐ If other please state: ☐

36. Maternal outcome:

☐ Alive and generally well

☐ Alive but with serious morbidity e.g. admitted to ICU, hysterectomy or stroke.

☐ Dead *(Please add further details if morbidity or mortality has occurred)*

☐

37. Placenta:

a) Placenta weight: ☐☐☐☐ gm **or** placenta not weighed ☐ Unknown ☐

b) Placental examination: ☐ Not examined ☐ Normal ☐ Some abnormalities

(If "Some abnormalities" select all relevant)

☐ Retroplacental clot

☐ Gritty/ calcified

☐ Circumvallate placenta

☐ Other If other please state: ☐

38. Umbilical cord examined? **Yes** **No** **Unknown**

(If "Yes" selected answer the below) ☐ ☐ ☐

Any problems with cord? *(Select all relevant)* ☐ ☐ ☐

True knot ☐ *(If selected answer)* tight knot ☐ loose knot ☐

Cord round neck ☐ *(If selected answer)* tight around ☐ loose around ☐

Cord round limbs or body ☐ *(If selected answer)* tight around ☐ loose around ☐

Torsion/spring-like cord (e.g. hypercoiled) ☐

Marginal/ velamentous insertion ☐

Abnormal cord thickness ☐ *(If selected answer)* thin cord ☐ thick cord ☐

Meconium stained ☐

Tear in cord ☐

2 vessels ☐

Other abnormality ☐ If other please state: ☐

39. Summary

Please provide any information you think relevant that was not covered in the previous questions, which you consider may have contributed to the outcome. *(Please continue over page)*

Form completed by:

Name:

Designation:

Contact details: Phone-
Email-

Date:

LMC name and address if different to clinician completing the form

_____
_____
_____
_____

Please send (mail or fax) the completed form to:

National Coordination Service
Perinatal and Maternal Mortality Review Committee (PMMRC)
Department of Obstetrics and Gynaecology
University of Auckland
Private Bag 92019
Auckland
Phone 09 923 4440
Fax 09 303 5969

APPENDIX H
INSTRUCTIONS ON TAKING CLINICAL PHOTOGRAPHS

Clinical photographs should be taken by an expert trained in perinatal pathology or medical imaging, at the time of postmortem. Occasionally situations may arise where by clinical staff (doctor, midwife, nurse) are required to take clinical photographs. Photographs may be critical to making a diagnosis in a non-examined baby. Reasons for staff taking these photographs may include: family not wanting to be separated from the baby, immediate burial is required thus precluding postmortem examination, or prior to deterioration if there is a delay in postmortem being conducted.

Purpose

High quality medical photographs are necessary as part of the clinical investigation pathway, and ideally digital photographs should be taken. These are most often taken in Perinatal Pathology by trained staff, and/or Medical Imaging may be the appropriate unit in some organisations. There must be a secure process for storage of these images (see local unit policy).

These photographs are in addition to bereavement/social photographs, which are commonly taken by midwives in attendance in the Labour and Birth Suite. There are a number of volunteer organisations who will provide professional bereavement photographs to bereaved parents, often at no charge, and all institutions should be aware of local availability of such a service. There must be a process in place for providing these photographs to parents (see local unit policy).

Consent

Parental consent is necessary prior to taking clinical photographs (see local unit policy on 'Consent for Taking Clinical Photographs' or similar). If there is no consent policy or consent proforma, ensure that the consent process is documented in the maternal medical record. A generic 'consent' form may be considered if there is no specific consent form available. Documentation should include: information provided on benefit/need for clinical photographs, who will be using the photographs, how photographs are stored, and the purposes for which the photographs can be used, options include for visual examination, for presentation, for publication etc.

Bereavement photographs may require verbal agreement that they are taken and provided (see local unit policy).

Identification

The baby must be identified in the photographs. Write the baby's medical record number, if available, depending on status at birth, place of birth and local unit policy. If there is no individual medical record number, write the maternal medical record number with the babies date and time of birth. This identifying information should be written on the paper tape measure for identification, some local policy will allow a baby leg/arm band to be used as identification.

Stillborn babies often do not have a medical record number, then use the mother's medical record number and the baby's date and time of birth to identify the body.

If photographs are being used for publication or presentation, it is important that no identifying features are seen.

Setting

Photographs should be taken in a private area away from the parents, with sensitivity, however. Some parents may request the photographs be taken in their presence.

The setting should comply with Occupations Safety and Health regulations, such as Infection Control Guidelines, Work Place design, etc.

Scale

Place a paper tape measure next to the baby (a plastic ruler will create glare) for scale. Ensure zero is aligned at the base of the foot or crown of the head; and extend lengthways. You can use sticky tape to ensure the tape is straight (rigid); and measure should be on the bottom of the frame or the left.

Technique

A hard surface with a blue background is best when taking clinical photos.

The photographs should be taken from directly above the baby. Consequently, it is best to place the baby on a low bench, in order to get sufficient height above the baby.

Magnification

Use a digital camera to take the photographs, do not use the zoom to get a close up, however, do make sure you move the camera closer to the body. This will produce better quality photographs that may be enlarged for presentation.

Baby

The baby should be naked for all the photographs.

Position

- Anterior Posterior (AP) view – whole body frontal including limbs
- Posterior Anterior (PA) view – whole body back including limbs
- Lateral view of the body
- Lateral views of the face
- Frontal view of the face
- Photographs of any abnormalities.

General Comments

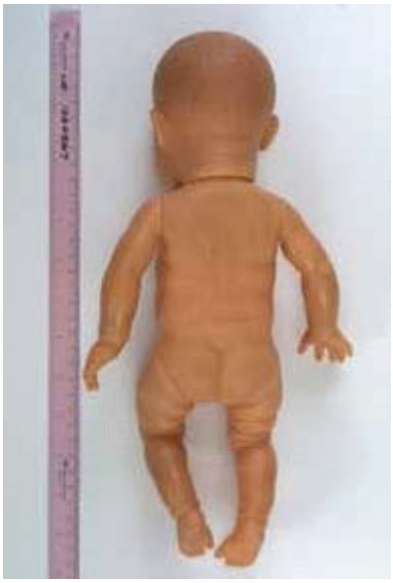
Additionally, staff should

- Refer to local unit policy/guidelines
- Document processes and actions
- Ensure a documentation trail for storage.

AP View – Whole body frontal including limbs

- Tape measure to the left
- Palms facing up

PA View – Whole body back including limbs



- Keep the baby in this position for the minimum time possible.
- Tape measure to the left
- Palms facing down

Lateral view of the body

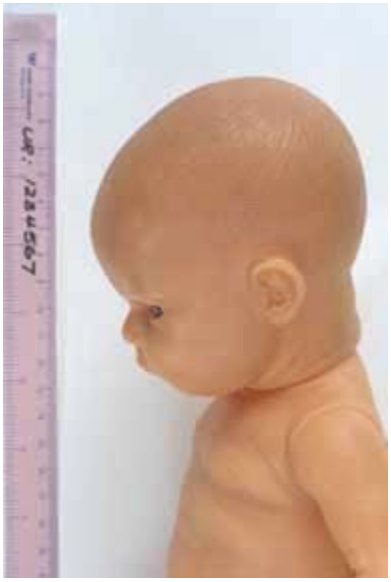
To stabilise:

- Pull underneath arm forwards
- Legs in 'running position'
- Top arm and leg will fall forward which will aid stability
- Keep the tape measure to the left

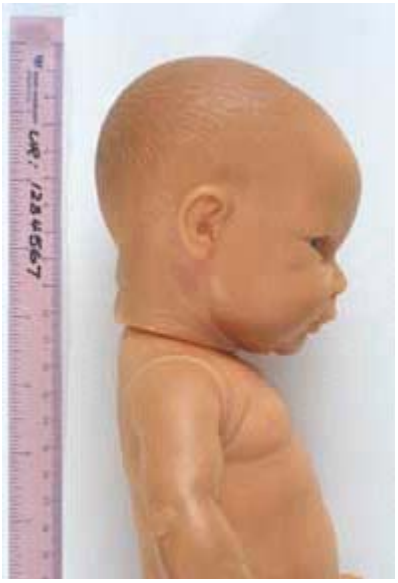
Frontal view of the face

- Ensure tape measure is in the frame.

Right lateral views of the face



Left lateral views of the face



- Keep tape measure to the left of the frame to aid easy identification of the side being viewed.

Note: If there are any specific abnormalities these should be photographed individually, with a scale in view and the photograph labelled with the baby's identification.

APPENDIX I
AUTOPSY CLINICAL SUMMARY FORM

Maternal Sticker

(Inc Name, DOB, UR, Address, Telephone Number)

Please attach the following:

- copy of the death certificate;
- copies of all antenatal ultrasound reports; and
- copy of amniocentesis report if available

Singleton **Multiple** **Baby number.....** (e.g. Twin 1)

Baby Details

UR number: ……..**Sex** Male ☐ Female ☐ Undetermined ☐

Gestational age ..... wks ..... days Birthweight ..... gms Date & Time of birth: ...../...../.....; ....:..... ....:...

Place of birth .....

Type of death: Fetal ☐ **Antepartum death** Unknown ☐ No ☐ Yes ☐ If yes estimated date of death ...../...../.....

Neonatal (NND) ☐ → NND date & time of death: ...../...../.....; ....:..... .....:....

Death Certificate completed Yes ☐ No ☐

Treatment or condition likely to cause hazard at autopsy

Hepatitis B Pos ☐ Tuberculosis ☐ HIV (Aids Virus) ☐ Other ☐

Specify.....

Clinical summary *(including details to be clarified at autopsy)*

.....

.....

.....

.....

Provisional clinical diagnosis (*to be completed by physician requesting autopsy)*

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

.....

Please list doctors to receive report

Name **Address**

1 .....

.....

2 .....

.....

Consultant .....

Clinical contact..... ..... Telephone ..... Pager .....

(*Please print)*

Signature (person completing this form)..... **Date** ..…… / ……. /

Print name .....

APPENDIX J - PERINATAL MORTALITY CLASSIFICATIONS – QUICK REFERENCE SHEET

PSANZ-PDC

1 Congenital Anomaly
- 1.1 Structural anomaly
  - 1.11 Nervous system
  - 1.12 Cardiovascular system
  - 1.13 Genitourinary system
  - 1.14 Gastrointestinal system
  - 1.15 Musculoskeletal
    - 1.151 Congenital diaphragmatic hernia
    - 1.152 Gastroschisis/omphalocele
  - 1.16 Respiratory system (include congenital pulmonary airway malformation (CPAM))
  - 1.17 Haematological
  - 1.18 Multiple Congenital anomaly (no chromosomal/genetic cause or not tested)
  - 1.19 Other congenital abnormality
    - 1.192 Idiopathic hydrops fetalis
    - 1.193 Fetal tumour (include sacro-coccygeal teratoma)
    - 1.198 Other specified
    - 1.199 Congenital anomaly, unspecified
- 1.2 Chromosomal anomaly
  - 1.21 Down syndrome (trisomy 21)
  - 1.22 Edward syndrome and Patau syndrome (trisomy 18, trisomy 13)
  - 1.23 Other trisomies and partial trisomies of the autosomes, not elsewhere classified (includes pathogenic duplications, unbalanced translocations and insertions)
  - 1.24 Monosomies and deletions from the autosomes, not elsewhere classified (includes pathogenic deletions e.g. 22q11.2 deletion syndrome (diGeorge syndrome), Wolff-Hirschorn syndrome, Cri-du-chat syndrome
  - 1.25 Turner syndrome (monosomy X)
  - 1.26 Other sex chromosome abnormalities (e.g. Klinefelter syndrome)
  - 1.28 Other chromosomal abnormalities, not elsewhere specified (includes Fragile X syndrome, imprinting syndromes, triploidy)
  - 1.29 Unspecified
- 1.3 Genetic anomaly
  - 1.31 Genetic condition, specified (e.g. Tay-Sachs disease; includes inborn errors of metabolism)
  - 1.32 Syndrome/association with demonstrated chromosomal/gene anomaly.
  - 1.39 Genetic condition, unspecified

2 Perinatal Infection
- 2.1 Bacterial
  - 2.11 Group B Streptococcus
  - 2.12 E coli
  - 2.13 Listeria monocytogenes
  - 2.14 Spirochaetal e.g. Syphilis
  - 2.18 Other bacterial
  - 2.19 Unspecified bacterial
- 2.2 Viral
  - 2.21 Cytomegalovirus
  - 2.22 Parvovirus
  - 2.23 Herpes simplex virus
  - 2.24 Rubella virus
  - 2.25 Zika virus
  - 2.28 Other viral
  - 2.29 Unspecified viral
- 2.3 Protozoal e.g. Toxoplasma
- 2.5 Fungal
- 2.8 Other specified organism
- 2.9 Other unspecified organism

3 Hypertension
- 3.1 Chronic hypertension: essential
- 3.2 Chronic hypertension: secondary, e.g. renal disease
- 3.3 Chronic hypertension: unspecified
- 3.4 Gestational hypertension
- 3.5 Pre-eclampsia
- 3.6 Pre-eclampsia superimposed on chronic hypertension
- 3.9 Unspecified hypertension

4 Antepartum Haemorrhage (APH)
- 4.1 Placental abruption
- 4.2 Placenta praevia
- 4.3 Vasa praevia
- 4.9 APH of undetermined origin

5 Maternal Conditions
- 5.1 Termination of pregnancy for maternal psychosocial indications
- 5.2 Diabetes
  - 5.21 Gestational diabetes
  - 5.22 Pre-existing diabetes
- 5.3 Maternal injury
  - 5.31 Accidental
  - 5.32 Non-accidental
- 5.4 Maternal sepsis
- 5.5 Antiphospholipid syndrome
- 5.6 Obstetric cholestasis
- 5.8 Other specified maternal conditions
  - 5.31 Maternal suicide
  - 5.32 Other specified maternal medical or surgical conditions

6 Complications of multiple pregnancy
- 6.1 Monochorionic twins
  - 6.11 Twin to twin transfusion syndrome (TTTS)
  - 6.12 Selective fetal growth restriction (FGR) (i.e. affecting only one twin)
  - 6.13 Monoamniotic twins (including cord entanglement)
  - 6.18 Other
  - 6.19 Unknown or unspecified
- 6.2 Dichorionic twins
  - 6.21 Early fetal death in a multiple pregnancy (<20 weeks gestation)
  - 6.22 Selective fetal growth restriction (FGR)
  - 6.28 Other
  - 6.29 Unknown or unspecified
- 6. 3 Complications of higher order multiples (3 or more fetuses)
  - 6.31 Twin to twin transfusion syndrome (TTTS)
  - 6.32 Selective fetal growth restriction (FGR)
  - 6.33 Monoamniotic multiples (including cord entanglement)
  - 6.34 Early fetal death in a multiple pregnancy (<20 weeks gestation)
  - 6.38 Other
  - 6.39 Unknown or unspecified
- 6.4 Complications where chorionicity is unknown
- 6.8 Other
- 6.9 Unspecified

7 Specific perinatal conditions
- 7.1 Fetomaternal haemorrhage
- 7.2 Antepartum cord or fetal vessel complications (excludes monochorionic twins or higher order multiples)
  - 7.21 Cord vessel haemorrhage
  - 7.22 Cord occlusion (True knot with evidence of occlusion or other)
  - 7.28 Other cord complications
  - 7.29 Unspecified cord complications
- 7.3 Uterine abnormalities
  - 7.31 Developmental anatomical abnormalities (e.g. bicornuate uterus)
  - 7.38 Other
  - 7.39 Unspecified
- 7.4 Alloimmune disease
  - 7.41 Rhesus isoimmunisation
  - 7.42 Other red cell antibody
  - 7.43 Alloimmune thrombocytopenia
  - 7.48 Other
  - 7.49 Unspecified
- 7.5 Fetal antenatal intracranial injury
  - 7.51 Subdural haematoma
  - 7.52 Fetal antenatal ischaemic brain injury
  - 7.53 Fetal antenatal haemorrhagic brain injury
- 7.6 Other specific perinatal conditions
  - 7.61 Complications of antenatal, diagnostic or therapeutic procedures:
    - 7.611 Complications of prenatal diagnostic procedures (e.g. amniocentesis, chorionic villus sampling,) (e.g. rupture of membranes after amniocentesis)
    - 7.612 Complications of fetal ultrasound guided needle interventions (e.g. FBS/fetal transfusion, thoracocentesis, vesicocentesis, fetal cardiac valvoplasty, division of amniotic bands, fetal skin biopsy, unipolar/bipolar diathermy, RFA procedures)
    - 7.613 Complications of fetal shunt interventions (e.g. pleuroamniotic shunt, vesicoamniotic shunt)
    - 7.614 Complications of minimally invasive fetoscopic interventions (e.g. fetoscopic laser surgery for TTTS, FETO for CDH, laser ablation of posterior urethral valves)
    - 7.615 Complications of open maternal fetal surgery (e.g. open maternal fetal surgery for spina bifida)
    - 7.618 Other
  - 7.62 Termination of pregnancy for suspected but unconfirmed congenital anomaly.
  - 7.63 Amniotic band
  - 7.68 Other
- 7. 9 Unspecified

8 Hypoxic peripartum death
- 8.1 With intrapartum complications (sentinel events)
  - 8.11 Uterine rupture
  - 8.12 Cord prolapse
  - 8.13 Shoulder dystocia
  - 8.14 Complications of breech presentation
  - 8.15 Birth trauma
  - 8.16 Intrapartum haemorrhage
  - 8.18 Other
- 8.2 Evidence of significant fetal compromise (excluding other complications)
- 8.3 No intrapartum complications recognised and no evidence of significant fetal compromise identified
- 8.9 Unspecified hypoxic peripartum death

9 Placental dysfunction or causative placental pathology
- 9.1 Maternal vascular malperfusion
- 9.2 Fetal vascular malperfusion
- 9.3 High grade villitis of unknown etiology (VUE)
- 9.4 Massive perivillous fibrin deposition/maternal floor infarction
- 9.5 Severe chronic intervillositis (Histiocytic intervillositis)
- 9.6 Placental hypoplasia
- 9.7 No causal placental pathology demonstrated, with antenatal evidence of poor placental function identified (such as abnormal fetal umbilical artery Doppler)
- 9.8 Placental pathological examination was not performed, with antenatal evidence of poor placental function identified (such as abnormal fetal umbilical artery Doppler)
- 9.9 Other placental pathology (e.g. multiple pathologies with evidence of loss of placental function leading to death)

10 Spontaneous preterm labour or rupture of membranes (<37 weeks gestation)
- 10.1 Spontaneous preterm
  - 10.11 With histological chorioamnionitis
  - 10.12 Without histological chorioamnionitis
  - 10.13 With clinical evidence of chorioamnionitis, no examination of placenta
  - 10.17 No clinical signs of chorioamnionitis, no examination of placenta
  - 10.19 Unspecified or not known whether placenta examined

APPENDIX J - PERINATAL MORTALITY CLASSIFICATIONS – QUICK REFERENCE SHEET

10.2 Spontaneous preterm preceded by premature cervical shortening

11 Unexplained antepartum fetal death
11.1 Unexplained antepartum fetal death despite full investigation
11.2 Unclassifiable antepartum fetal death with incomplete investigation
11.3 Unclassifiable antepartum fetal death due to unknown level of investigation

12 Neonatal death without obstetric antecedent
12.1 Neonatal death with no obstetric antecedent factors despite full investigation
12.2 Neonatal death unclassifiable as to obstetric antecedent with incomplete investigation
12.3 Neonatal death unclassifiable as to obstetric antecedent due to unknown level of investigation

PSANZ-NDC

1 Congenital Anomaly (Please refer to PSANZ PDC)

2 Periviable infants (typically <24 weeks)
2.1 Not resuscitated (including infants where there is an antenatal plan for no resuscitation at birth or in the circumstance of re-directed care)
2.2 Unsuccessful resuscitation
2.9 Unspecified or not known whether resuscitation attempted

3 Cardio-respiratory disorders
3.1 Hyaline membrane disease / Respiratory distress syndrome (RDS)
3.2 Meconium aspiration syndrome
3.3 Primary persistent pulmonary hypertension
3.4 Pulmonary hypoplasia
3.5 Pulmonary haemorrhage
3.6 Air leak syndromes
- 3.61 Pneumothorax
- 3.62 Pulmonary interstitial emphysema
- 3.68 Other

3.7 Patent ductus arteriosus
3.8 Chronic neonatal lung disease (typically, bronchopulmonary dysplasia)
3.9 Other
- 3.91 Neonatal anaemia/hypovolaemia

4 **Neonatal infection**
4.1 Congenital/Perinatal bacterial infection (early onset<48 hrs)
- 4.11 Blood stream infection/septicaemia
  - 4.111 Positive culture of a pathogen
  - 4.112 Clinical signs of sepsis + ancillary evidence but culture negative
- 4.12 Bacterial meningitis
- 4.13 Bacterial pneumonia
- 4.15 Multiple site bacterial infection
- 4.18 Other congenital bacterial infection e.g. gastroenteritis, osteomyelitis, cerebral abscess
- 4.19 Unspecified congenital infection

4.2 Congenital/Perinatal viral infection
4.3 Congenital fungal, protozoan, parasitic infection
4.4 Acquired bacterial infection (late onset>48hrs).
- 4.41 Blood stream infection/septicaemia
  - 4.411 Positive culture of a pathogen
  - 4.412 Clinical signs of sepsis + ancillary evidence but culture negative
- 4.42 Bacterial meningitis
- 4.43 Bacterial pneumonia
- 4.48 Other acquired bacterial infection e.g. gastroenteritis, osteomyelitis
- 4.49 Unspecified acquired infection

4.5 Acquired viral infection
4.6 Acquired fungal, protozoan, parasitic infection

5 Neurological
5.1 Hypoxic ischaemic encephalopathy/Perinatal asphyxia
5.2 Cranial haemorrhage
- 5.21 Intraventricular Haemorrhage
- 5.22 Subgaleal Haemorrhage
- 5.23 Subarachnoid Haemorrhage
- 5.24 Subdural Haemorrhage
- 5.28 Other intracranial haemorrhage

5.3 Post haemorrhagic hydrocephalus
5.4 Periventricular leukomalacia
5.8 Other

6 Gastrointestinal
6.1 Necrotising enterocolitis (NEC)
6.2 Short gut syndrome
6.3 Gastric or intestinal perforation (excluding NEC)
6.4 Gastrointestinal haemorrhage
6.8 Other

7 Other
7.1 Sudden unexpected death in infancy (SUDI)
- 7.11 Sudden Infant Death Syndrome (SIDS)
  - 7.112 SIDS Category IA: Classic features of SIDS present and completely documented.
  - 7.113 SIDS Category IB: Classic features of SIDS present but incompletely documented.
  - 7.114 SIDS Category II: Infant deaths that meet category I except for one or more features.
- 7.12 Unclassified Sudden Infant Death in the neonatal period
  - 7.121 Bed sharing
  - 7.122 Not bed sharing
- 7.19 Unknown/Undetermined

7.2 Multisystem failure
- 7.21 Secondary to intrauterine growth restriction
- 7.28 Other specified
- 7.29 Unspecified/undetermined primary cause or trigger event

7.3 Trauma
- 7.31 Accidental
- 7.32 Non accidental
- 7.39 Unspecified

7.4 Treatment complications
- 7.41 Surgical
- 7.42 Medical

7.5 Unsuccessful resuscitation in infants of 28 weeks gestation or more without an obvious sentinel event
7.8 Other specified

PSANZ ASSOCIATED CONDITIONS

Associated conditions for both stillbirths and neonatal deaths

Categories 1 -11 PSANZ PDC

13 Genetic testing results not diagnostic
13.1 Copy number variant of unknown or uncertain significance
13.2 No mutation identified matching phenotype
13.3 Tested for genetic mutations but failed
13.4 Not tested or not known if tested for genetic mutations

14 Associated placental pathology
14.1 Delayed villous maturation
14.2 Large chorioangioma
14.3 Early bleeding often leading to preterm prelabour ROM
14.8 Other associated placental pathology

15 Associated cord pathology
15.1 True knot (excluding histological evidence of causation)
15.2 Hypercoiled cord
15.3 Tethered cord
15.4 Velamentous insertion
15.8 Other cord associated cord pathology

16 Fetal Growth Restriction
16.1 Autopsy evidence (brain:liver ratio equal to or greater than 4:1)
16.2 Antenatal ultrasound evidence of FGR
16.3 Clinical examination of the baby (by paediatrician, pathologist)
16.4 Birthweight (less than 10th centile for gestational age)
- 16.41 Customised centiles
- 16.42 Population centiles

17 Maternal risk factors (optional category)
17.1 Smoking
17.2 Substance use
17.3 High BMI
17.4 Maternal mental health disorder
17.5 Socioeconomic deprivation
17.6 Refugee or asylum seeker

Associated conditions for neonatal deaths only

NDC Categories 1- 6
In addition to the above for associated maternal/fetal conditions the NDC Categories 1- 6 can be used to assign associated neonatal conditions

APPENDIX K

MORTALITY AUDIT MEETING CODE OF PRACTICE DECLARATION (WHO)[1]

In order to foster an environment of collaboration rather than blame, a written and agreed to code of practice may be be helpful to establish by the Perintal Mortality Audit Steering Committee, in discussion with facility staff and management. Having wording specific to each team is encouraged, but here is suggested short text that can be signed by each individual before each review meeting.

An attendance sheet could also be signed at the end of the meeting, to credit those who stayed and participate throughout the meeting.

To show respect for the babies and families we are responsible to look after, we, the staff of _____ **(name of facility)**, agree to respect the rules of good conduct during meetings reviewing death cases in our facility. We understand and appreciate that the results of these meetings will not result in punitive measures. The rules of our mortality audit meetings include:

- Participate actively in discussions
- Respect everyone's ideas and ways of expressing these
- Accept discussion and disagreement without verbal violence
- Respect the confidentiality of the discussions in the group
- Agree not to hide useful information or falsify information which could allow the understanding of the case under review
- Try (as much as possible as it is not easy) to accept that your own actions can be questioned
- Arrive on time to the audit meeting

Signed: _____Date: _____

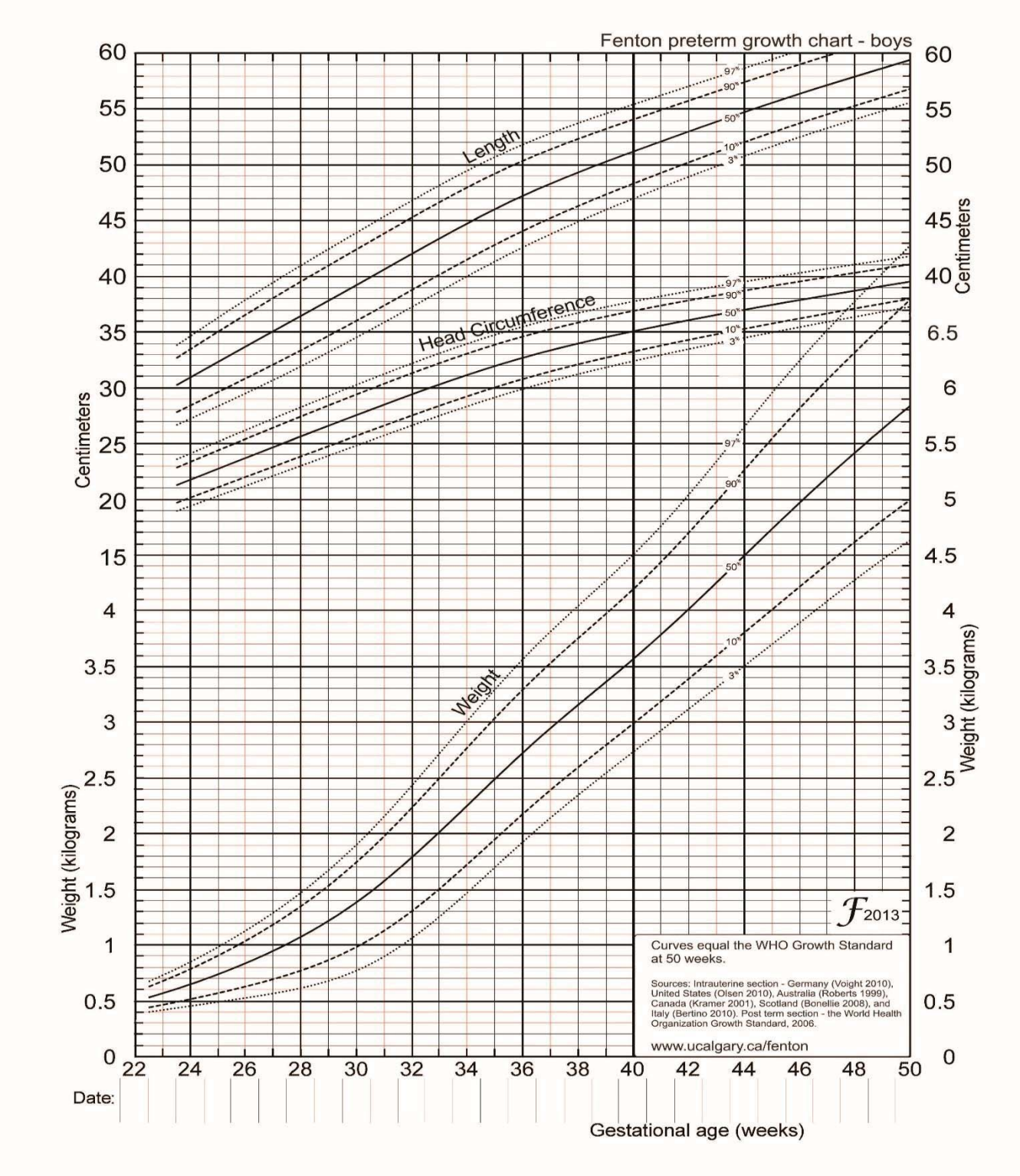
Signed: _____Date: _____

Signed: _____Date: _____

1

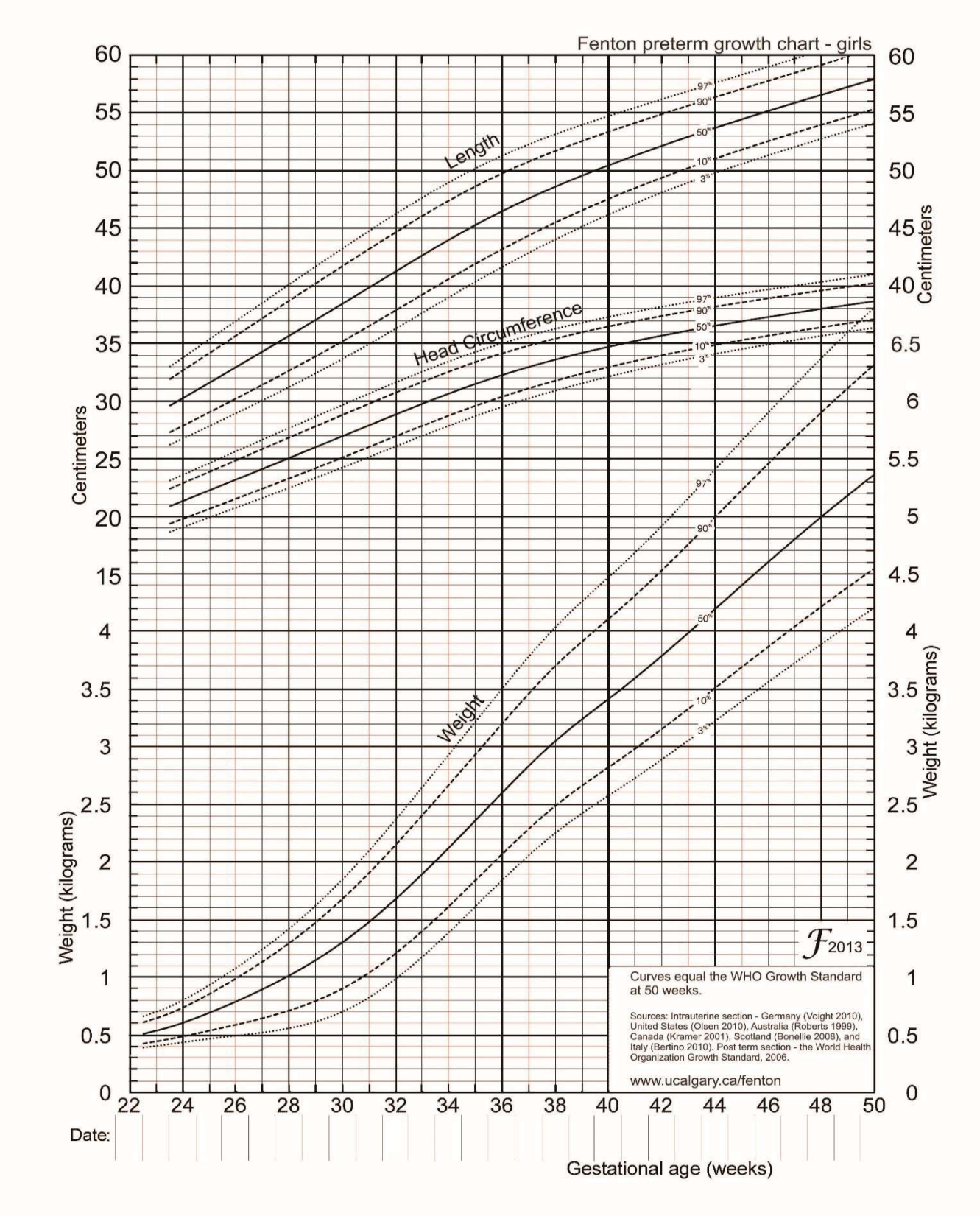
APPENDIX L
BIRTHWEIGHT PERCENTILES

Figure 1. Australian birthweight percentiles for boys



From: Fenton TR, Kim JH. A systematic review and meta-analysis to revise the Fenton growth chart for preterm infants. *BMC Pediatrics* 2013; **13**(1): 59

Figure 2. Fenton birthweight chart for girls



From: Fenton TR, Kim JH. A systematic review and meta-analysis to revise the Fenton growth chart for preterm infants. *BMC Pediatrics* 2013; **13**(1): 59 –check multiple /singletons

Autopsy

Trying to find answers
when your baby has died

Thinking about an autopsy

The death of your child is devastating. You might have known this was coming, or you might not have expected it at all, but nothing could have prepared you for how you would feel.

Unfortunately, at a time of great loss, you have to think about an autopsy, for your sake, for the sake of others and for the sake of your baby.

What is an autopsy?

An autopsy is an examination performed after your baby's death. It is done to find out as much as possible about why your baby died.

All autopsies are carried out by pathologists – doctors who specialise in this field.

Do I have a choice?

In some cases, no, your doctor will explain that an autopsy is essential.

But some people do have a choice. Some parents are able to decide whether or not they agree to their baby having an autopsy. These parents will also be able to decide what type of autopsy their child will have.

Why agree to an autopsy?

An autopsy may help you understand:

- why the baby died
- whether there were any genetic or physical problems
- whether the medical care was appropriate
- when the baby died and how many weeks along he or she was if your baby was stillborn.

An autopsy might also provide information that is important for the health and wellbeing of any other children you have now, or may have in the future.

Does an autopsy guarantee I'll find out why my baby died?

No. Unfortunately, there are no guarantees. But it does give you the best chance of finding out. And it can help to rule out possibilities, so you are not left wondering.

Where does an autopsy take place?

All autopsies are performed at a centre specialising in perinatal autopsies. This may be within the hospital where your baby was born, or it may be somewhere else. Your doctor or hospital staff should be able to tell you where your local centre is.

What happens during an autopsy?

There are different types of autopsy. The more thorough the autopsy, the better the chance of getting good information, and the greater the chance of helping you and others.

Full autopsy

A surgical cut (or incision) is made from the shoulder blade to just below the naval, which allows an examination of chest and abdominal organs. A small incision is also made at the back of the head to examine the brain. These cuts are similar to those used in surgery. Your baby's face, arms, legs, hands and feet will not be cut.

Your baby will be x-rayed, and the placenta will be examined.

Once the autopsy is over, all the wounds will be stitched up carefully. Once your baby is dressed, you will not be able to see the wounds.

Limited autopsy

If you have a choice, you can set limits on what can be examined. For example, you may decide to have only the abdominal organs examined, and not have incisions in the head or chest. Or you may decide that you don't want the placenta examined. It's up to you.

External examination only

If you have a choice, you may decide you want only an x-ray and external examination of your baby's body and the placenta, and not allow any incisions. This means that the pathologist would not be able to examine any internal organs.

Step-wise examination

If you have a choice, you may decide on a step-wise examination. You and the pathologist would agree on how the autopsy would be carried out.

The pathologist would carry out an initial examination. If the pathologist finds something that he or she thinks may give an answer as to why your baby died, they will continue. But if not, the autopsy will stop at the initial examination.

If you are interested in this option, talk to the pathologist.

What happens to my baby's organs?

Most babies have their organs replaced intact after an autopsy.

In some babies, a small sample of tissue is removed. This is about the size of a 10 cent piece, but round. It is examined under a microscope to give you further information, and is not replaced.

If your baby's brain needs to be examined closely, it will have to be removed and treated with chemicals to allow the proper examination. This takes about a week. If this happens, you can:

- delay burial or cremation until the brain is returned to your baby's body
- go ahead with the burial and cremation, and have a separate burial or cremation for your baby's organs later.

These are important decisions, and they are entirely up to you. Your doctor, pathologist or caregiver may be able to help you through this difficult process. It is a good idea to record your decisions and give them to your doctor, pathologist or caregiver in writing.

What can I expect after the examination?

Most people get to see and hold their baby after an autopsy if they want.

Your baby's colour will have changed – that happens to all babies after they have died. Your baby might feel different to hold. Your baby will be cold. There may be other changes as well – these depend on what examination has taken place. You may be able to see some stitches, although these can be covered by clothing if you wish.

You can get more information about seeing and holding your baby after an autopsy from nursing staff, the hospital social worker, or your funeral director.

When can I expect the results from the autopsy?

The doctor who cared for your baby will usually get a preliminary report in two to three weeks. It may take a few months to get the final report.

Sometimes, the results of an autopsy means the cause of death on your baby's death certificate will need to be changed. Although pathologists would want you to know if this happens, that might not happen.

How do I know if I am making the right decision?

It is a difficult decision, and there is no right or wrong answer. You must decide based on what feels right for you

Other people may have their opinions, but whatever decision you make it must be the right decision for you.

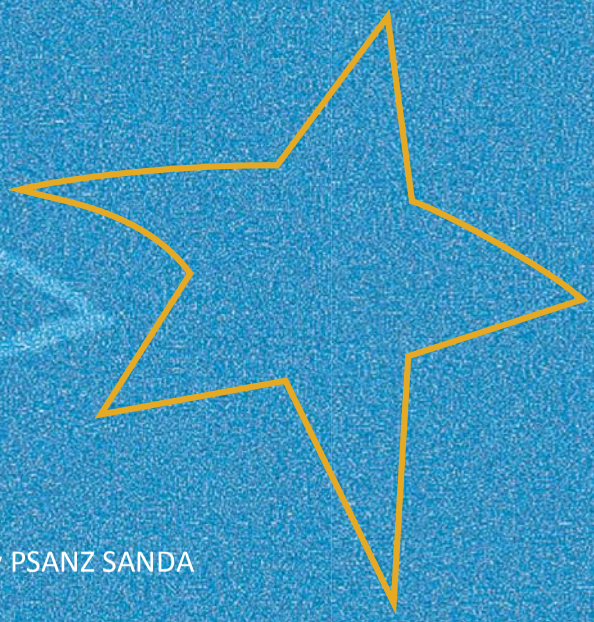
When do I need to decide?

In some cases, a delay may mean you get less accurate information, but not always. You need to decide when you are ready to decide and that may take some time.

Is there someone else I can talk to?

Yes. For further information and support, please contact:

- Sands/Rednose - *we will list phone numbers and websites for each jurisdiction*)
- your general practitioner, obstetrician or midwife.



This brochure was produces by PSANZ SANDA
https://psanz.com.au/
Contact: stillbirthcre@mater.uq.edu.au

Bereavement services are available from:

Red Nose, a national not from profit organisation.
To access services in your State or Territory call their 24 hour bereavement support line on 1300 308 307
For more information go to https://rednose.com.au

SANDS, a self-help support group comprised of parents who have experienced the death of a baby. SANDS provides miscarriage, stillbirth and newborn death support.
If you need support you can call 1300 0 SANDS (1300 0 72637).
For more information go to https://www.sands.org.au

Stillbirth CENTRE OF RESEARCH EXCELLENCE

PERINATAL SOCIETY of Australia & New Zealand PSANZ | SANDA Stillbirth And Neonatal Death Alliance

APPENDIX N
INFORMATION FOR HEALTH PROFESSIONALS SEEKING CONSENT – OBTAINING PARENTAL CONSENT FOR THE AUTOPSY OF A BABY

OBTAINING PARENTAL CONSENT FOR THE AUTOPSY OF A BABY

IMPORTANT INFORMATION FOR THE HEALTH PROFESSIONAL SEEKING CONSENT

The death of a baby is a devastating time for parents and their family. In many situations the death is unexpected and the parent is confronted with both the shock of losing their baby, as well as the overwhelming emotions that follow. Research has indicated the importance of compassionate care and provision of information in the time surrounding the death of a baby*. One aspect of this is approaching bereaved parents to discuss the autopsy. The purpose of this pamphlet is to provide guidance to the health care professional in discussing stillbirth and neonatal autopsy with bereaved parents.

Each hospital should have its own policy and procedures regarding obtaining autopsy consent. This policy should initially be consulted.

Why is it important to seek parental permission for post-mortem examinations?

There are a number of common misunderstandings within the community regarding autopsy. Parents may be unwilling to give consent, due to concerns about organ retention or that they will not be able to see their baby following the examination.
Provision of information regarding the reasons why autopsies are performed may make it easier for parents to consent to its request.

When is the best time to ask?

The best time to request parental consent for a autopsy varies significantly from parent to parent and may also be dependent upon the circumstances surrounding the baby's death. For instance, if a baby dies in utero, the request may be made once the parent has processed the information that their baby has died and prior to delivery. In this instance, some parents may be too distressed immediately following the delivery, while others may not consent after a significant period of time due to protective instincts toward their baby. It is also commonplace for women to not comprehend that their unborn baby has really died until their baby is delivered, so mentioning autopsy prior to the birth of the baby could be very difficult in this circumstance.

Who should ask?

The person who may be best at judging the most suitable time to request consent is the health professional who knows the parents best. If this is not an option, consultation should be sought from a professional experienced in requesting autopsy.
Due to the sensitive nature of the issue, the person most appropriate to approach the parents would be the most senior doctor, consultant obstetrician or paediatrician, or the health professional that has an established relationship with the parents. In all cases, the health professional must be familiar with the process of seeking parental consent for post-mortem examination, and be competent in answering all of the parents' questions relating to the procedure. Excellent interpersonal communication skills are essential to ensure that the request is delivered in a sensitive and informative manner.

Where should the discussion be held?

The most appropriate environment is in a quiet, private room away from other patients, relatives and hospital staff. It is not appropriate to request permission in a corridor, shared room or public waiting room.

How do I ask parents for permission for an autopsy?

The treating consultant should explain to the parents the clinical indications for conducting an autopsy. It is appropriate for the consultant to recommend that an autopsy be performed.

In seeking consent, the health professional should approach the discussion with honesty, integrity and respect.
Do not use terms such as fetus, products of conception or termination, or any words that may take away the humanity or individuality of the baby. Always try to use the baby's name, if culturally appropriate as this helps to validate the importance of the baby to the parents, as well as the significance of the loss.

Parents may require some time to make their decision, during which they may formulate several questions. It is important that these questions are accurately addressed. Parents may prefer that discussions about

autopsy are not conducted in the presence of their baby. Be aware of any cultural or religious beliefs concerning death and dying and show sensitivity to these beliefs when discussing autopsy with parents. On the other hand, do not assume to know what is required of religions with which you are unfamiliar. If you are uncertain, or do not know, it is reasonable to ask the parents what is required.

Be prepared to give parents written information on the autopsy procedure, but be aware of how much detail the parents wish to know before presenting this information. Few people are familiar with autopsy procedures. It is important to know that parents may require information several times due to deficits in information processing as the result of shock and grief.

Information you need to know

- Know where the baby will be taken for the autopsy and when s/he will be returned and available to the parents. Inform them that they will be able to see and hold their baby afterwards if they wish.
- Be able to give advice regarding the presentation of their baby after autopsy, for example, where the incisions will be made, their approximate size and that they will be stitched as in other surgical procedures. Parents should also be told that the baby's body may be more fragile than prior to the autopsy.
- Explain to the parents that the baby will still be returned to them for burial. You will need to explain that if an organ is to be retained, the parents can either delay the funeral, have a separate burial or return of cremated organs at a later time.
- Know, if possible, when the results of the autopsy will be available and if appropriate, make an appointment to see the parents to discuss these results. Give parents the contact details of who will be able to keep them advised about the progress of the report.

The amount of information you give to parents will depend on their need for details. Prompts may be helpful as many parents feel that their questions may be too simple or trivial.

Parents should be provided with written information regarding post-mortem examinations to allow frequent reference. Please refer to the pamphlet: Explaining Autopsy: Information for Parents When Your Baby Has Died"

Before consenting, some parents may like the opportunity to discuss their feelings with other bereaved parents. Please refer to the PSANZ website on http://www.psanz.com.au for a list of relevant support groups for each state.

Discussing results

It is important to explain to parents that results may not be available for several weeks or months and that provisional results may be available sooner. In some cases, final results may not be available for up to 6 months or longer. This will help to reduce anxiety in the parent as they wait for the final report.
Ensure that when the results are discussed with parents, they are fully explained without the use of medical terminology. Allow time to answer all questions and concerns about the results. Do not edit or withhold information from parents.

Summary – Do's and Don'ts

- allow plenty of time with parents
- always be honest
- use the baby's name
- not use terms such as fetus, products of conception, termination, or any words that take away the individuality of the baby
- use a quiet, private place to conduct discussions with parents
- introduce details at the individual's pace and use language that parents understand
- provide written material

- make a note of what you say and of what the parents say
- give parents time to make their decision
- treat parents with respect.
- Do not get defensive. Parents may be looking to blame doctors and they may be feeling hostile and angry. These are real emotions that may help the bereaved parent to maintain a sense of control in an uncontrollable situation. These emotions must be acknowledged by you in an understanding and supportive manner.

Who Can Parents Contact if They Wish to Discuss Their Feelings with Other Bereaved Parents?

Provide SANDS and Red Nose information – whichever is relevant in each state.

*See PSANZ Perinatal Mortality Audit Guideline, Section 3 for list of references.

Acknowledgement: This brochure has been adapted from the original version written by Medical Students of the Graduate Medical Course, University of Queensland in conjunction with bereaved parents of the Stillbirth And Neonatal Death Support Group (Qld) Inc. including Miscarriage Support in May 1999.

APPENDIX O
RCOP GUIDELINES FOR AUTOPSY INVESTIGATION OF FETAL AND PERINATAL DEATH

All hospital post-mortem procedures are subject to parental consent that must not be exceeded. The following guidelines apply to an unrestricted post-mortem examination.

1. External examination

- body weight (to nearest gram, if less than 5kg)
- head circumference
- crown-heel and crown-rump lengths
- abdominal circumference
- foot length
- maceration (if baby is born dead)
- meconium staining
- full description (e.g. fontanelles, eyes, ears, nose, mouth and palate, digits, palmar creases, umbilicus and state of cord, genitalia, anus etc).
- dysmorphic features, congenital malformations and deformities
- other abnormalities

2. Internal examination

- comment on cranial, thoracic and abdominal cavities
- retention and fixation of the brain where practicable, subject to informed consent
- systematic description of major organs and tissues
- specific reference to ductus arteriosus and umbilical vessels
- weights of all major organs in digital balance (to 0.1g)
- comment on muscle and skeleton

3. Placenta

Placenta to be examined in all cases. A convenient method of ensuring the placenta is available in each case may be to send all placentas from babies admitted to the special care baby unit/neonatal intensive care unit to the pathology department. Whilst these need not be examined unless the baby dies, many departments would, in any case, consider it good practise to examine them.

- 3 dimensions
- trimmed weight
- umbilical cord (length, vessels, abnormalities)
- membranes (complete, incomplete, colour, abnormalities)
- fetal, maternal and cut surfaces

For further reference, please see: http://www.rcpa.edu.au/Library/Practising-Pathology/Macroscopic-Cut-Up/Specimen/Gynaecology-and-perinatal/Placenta

4. Histology

- at least one block of all major thoracic and abdominal organs (right and left lungs, heart, liver, kidney, thymus, adrenals and pancreas)
- costochondral junction (over 24 weeks' gestation)
- adequate sampling of brain (varies with case: minimum of one block from hind brain and one from cerebral hemispheres)
- adequate sampling of placenta (cord, membranes, focal lesions, grossly normal parenchyma to include amnion and decidua)

5. Chromosome analysis and genetic testing of the stillborn infant and placenta

If not previously performed antenatally via amniocentesis or other diagnostic fetal sample, a molecular karyotype (i.e. chromosomal microarray, CMA) should be performed for all stillborn infants[1-3]. CMA is preferred over routine conventional G-banded karyotype for two main reasons: (i) high success rate with CMA as cell culture is not required (87.4% successful analysis with CMA vs. 70.5% with karyotype)[2]; (ii) better diagnostic yield with CMA compared with conventional karyotype (8.8% vs. 6.5% detection rate for genetic abnormalities for antepartum stillbirths respectively)[2]. If additional DNA testing for single gene disorders (including metabolic conditions) is being considered, then a request for DNA storage can be made to the cytogenetic laboratory.

Suitable samples for CMA evaluation of the fetus include:

(i) **Fetal tissue** (e.g. cartilage from the patella or costchondral junction)

(ii) If consent for autopsy or fetal tissue collection has not been given, but cytogenetic testing is desired, then an **umbilical cord** sample (1cm segment taken from the placental end) or **placental biopsy** (1cm^3 block of tissue taken from the fetal side of the placenta) would be suitable.

6. Other special procedures and investigations

- X-ray ideally should be undertaken for suspected skeletal dysplasia and multiple malformations
- photography mandatory for dysmorphic fetuses and babies without ante-mortem diagnosis; advised for other gross abnormalities
- bacteriology (blood/spleen/lung/CSF), if clinically indicated
- virology, if clinically indicated
- storage of fibroblasts/frozen tissue/DNA, if clinically indicated
- biochemistry, if clinically indicated
- haematology, if clinically indicated
- neuropathology, if clinical or radiological evidence of CNS pathology or the brain appears abnormal on external examination

7. Autopsy reports

- demographic details
- date of autopsy
- details of consent and any restrictions

- availability of clinical records at time of post-mortem, including anomaly scans if relevant
- clinical history
- systematic description of external, internal and placental examination and results of X-rays and other ancillary investigations
- summary of major findings including sex and apparent gestation, estimated timing of death in babies born dead, adequacy of growth and nutrition, presence/absence of congenital abnormalities, major pathological lesions, evidence of chronic stress or disease prior to death, placental examination
- commentary addressing the clinical questions and significance of pathological findings
- mode/cause of death
- record of photographs and any samples retained
- record of disposal of any tissues or samples
- a provisional report on the macroscopic findings should be issued within 24-48 hours of the autopsy, with histology and further investigations including chromosome analysis incorporated into a final report when available
- timely dispatch to clinicians with particular reference to the timing of postnatal appointments

References

1. Reddy UM, Page GP, Saade GR. The role of DNA microarrays in the evaluation of fetal death. *Prenat Diagn* 2012; **32**(4): 371-5.

2. Reddy UM, Page GP, Saade GR, et al. Karyotype versus microarray testing for genetic abnormalities after stillbirth. *New England Journal of Medicine* 2012; **367**(23): 2185-93.

3. Rosenfeld JA, Tucker ME, Escobar LF, et al. Diagnostic utility of microarray testing in pregnancy loss. *Ultrasound in obstetrics & gynecology : the official journal of the International Society of Ultrasound in Obstetrics and Gynecology* 2015; **46**(4): 478-86.

APPENDIX P
PLACENTA HISTOPATHOLOGY REPORTING FORM

This is a singleton or twin (monochorionic/dichorionic; monoamniotic/diamniotic) placenta with the following features:

Placental maturity: This is a mature/premature/immature placenta in keeping with_____weeks gestation. There is placental dysmaturity (Yes/No)

Placental weight: _____g (_____centile)

Fetoplacental weight ratio:

Placental cord diameter: _____mm

Placental hypoplasia (weight <10th centile for gestation and/or cord diameter <10th centile for gestation or <8 mm diameter at term): Present/Not identified

Placentomegaly (weight >90th centile for gestation): Present/Not identified

Placental vascular processes:

Maternal stromal-vascular lesions: Present/Not identified

Developmental changes: Superficial implantation: Present/Not identified

Changes of maternal malperfusion: Present/Not identified

Global changes:

Early (distal villous hypoplasia): Present/Not identified

Focal (lower 2/3rds placental disc/ >30% of slide/1 slide/Not Identified)

Diffuse (lower 2/3rds placental disc/>30% of slide/>2 slides/Not Identified)

Late (accelerated villous maturation): Present/Not identified

Increased syncytial knots (>30% villi): Present/Not identified

Segmental changes:

Villous infarct(s): Present/Not identified

Number:

Site:

Size:

Age:

Recent Established Variable:

Placental involvement: _____ %

Decidual arteriopathy: (Present/Not identified)

Site: Placental bed/Parietal membranes/Not Identified

Acute atherosis: Present/Not identified

Fibrinoid necrosis: Present/Not Identified

Spiral artery remodelling: Present/Not Identified

Parietal mural hypertrophy: Present/Not Identified

Intramural trophoblast: third trimester: Present/Not Identified

Chronic perivasculitis: Present/Not Identified

Increased immature extravillous trophoblast: Present/Not Identified

Loss of maternal vascular integrity:

Abruptio placenta (arterial): Present (Acute/Chronic)/Not identified

Retroplacental haemorrhage: Present/Not identified

Indentation: Present/Not identified.

Size:

Weight of separate blood clot: _____g

Compression of overlying placenta: Present/Not identified

Villous congestion/haemorrhage: Present/Not identified

Marginal abruption (venous): Present (Acute/Chronic)/Not identified

Fetal stromal-vascular lesions:

Developmental:

Villous capillary lesions: Present/Not identified

Chorangioma: Present/Not identified

Delayed villous maturation (maturation defect; >34 weeks gestation, monotonous villous population, >10 villi >30% 1 slide): Present/Not Identified/Not Applicable (gestational age <34 weeks :

Grade: Focal (1 slide)/Diffuse (>/= 2slides)

Diabetes related

Idiopathic

Dysmorphic villi: Present/Not Identified

Villous oedema: Present/Not Identified

Changes of fetal malperfusion:

Global/partial:

Obstructive lesions of umbilical cord: Present/Not identified.

Recent intramural fibrin in large fetoplacental vessels: Present (site: arterial/venous)/Not Identified

Small foci of avascular or karyorhectic villi: Present/Not Identified

Segmental/complete:

Chorionic plate or stem villous thrombi: Present/Not Identified

Large foci of avascular or karyorhectic villi: Present/Not Identified

***Loss of vascular integrity*:**

Large vessel rupture (fetal haemorrhage): Present/Not Identified

Small vessel rupture (fetomaternal haemorrhage): Present/Not Identified

Placental inflammatory-immune processes:

Acute maternal inflammatory response: Present/Not Identified

Stage 1: Subchorionitis/chorionitis (6-12 hours)

Stage 2: Chorioamnionitis (12-36 hours)

Stage 3: Necrotising chorioamnionitis (>36 hours)

Grade: Severe/Not Severe

Subacute/chronic maternal: Present/Not Identified

Mixed neutrophilic - histiocytic chroioamnionitis (weeks)

Acute fetal inflammatory response: Present/Not Identified

Stage 1: Chorionic vasculitis/umbilical phlebitis (variable time)

Stage 2: Umbilical arteritis (variable time)

Stage 3 Necrotising funistis (days)

Grade: Severe/Not Severe

Subacute/chronic fetal response: Present/Not Identified

Subnecrotising or necrotising funistis/prevasculitis (weeks)

Chronic maternal/fetal inflammatory response:

Villitis: Present/Not Identified

Infectious lesions: Present/Not Identified

Viral inclusions: Present/Not Identified

Other organisms: Present/Not Identified

Immune/idiopathic inflammatory lesions: Present/Not Identified

Villitis of unknown etiology: Present/Not Identified

Location:

Basal: Yes/No

Parabasal: Yes/No

Paraseptal: Yes/No

Random parenchyma: Yes/No

Subchorionic: Yes/No

Type: Lymphocytic villitis/Lymphoplasmacytic villitis/Lymphohisticyitic villitis.

Giant cells: Present/Not Identified

Grade:

Focal low grade (<10 contiguous villi any one focus, on a single slide)

Multi-focal low grade (<10 contiguous villi any one focus, on multiple slides)

Patchy high grade (at least one focus <10 contiguous villi on multiple slides)

Diffuse high grade (at least one focus >10 contiguous villi, 30% terminal villi involved).

Ungradable, possible low grade, villitis (one focus < 10 contiguous villi).

Ungradable, possible high grade, villitis (one focus >10 contiguous villi)

Obliterative fetal vascular changes: Present. Not identified.

Chronic chorioamnionitis: Present/Not Identified

Lymphoplasmacytic deciduitis: Present/Not Identified

Eosinophil T-cell fetal vasculitis: Present/Not Identified

Intervillositis:

Chronic histiocytic intervillositis: Present/Not Identified

Acute intervillositis: Present/Not Identified

Fibrin deposition: Present/Not Identified

Other placental pathology:

Massive perivillous fibrinoid deposition (maternal floor infarction) Present/Not Identified

Abnormal placental shape or umbilical insertion site: Present/Not Identified

Morbidly adherent placentas (accrete): Present/Not Identified

Meconium-associated changes: Present/Not Identified

Increased circulating nucleated red blood cells: Present/Not Identified

Changes of fetal death in utero: Present/Not Identified

Changes suggestive of aneuploidy: Present/Not Identified

Changes suggestive of polyploidy: Present/Not Identified

Comments:

CONCLUSION:

APPENDIX Q
SUSPECTED GENETIC METABOLIC DISORDERS: INVESTIGATION AND AUTOPSY PROTOCOL

Peri-mortem investigation by the clinician should include the following

- Prior to death:
  - seek consent from the parents for a metabolic autopsy;
  - consult metabolic physician or histopathologist before collection of samples;
  - blood sample (0.8ml) in a lithium heparin tube and refrigerate;
  - urine sample (5-10 ml);
  - skin biopsy (3 x 2 mm punch biopsies): It is not necessary for the baby to be taken from the nursery for this procedure. The process, which can be undertaken by a registrar, should only take 15-20 minutes, is minimally invasive, with the sites being covered by a small dressing. See Section 4; Appendix 2a Screening for genetic metabolic disorders for futher details of collection.

- Immediately following the death after consultation with the metabolic team and pathologist:
  - Obtain blood sample by cardiac puncture if blood sample not already taken and only if parental consent has been obtained, or establish a fibroblast culture from the baby.
  - Liver and muscle biopsies (for electron microscopy, histopathology and enzymology (for the latter wrap in aluminium foil, snap freeze and store at -70 ºC). These should ideally be taken pror to death, the yield is very low after death.
  - Contact the laboratory to request that all unused portions of blood or urine specimens are retained. If neonatal screening test has been performed, any unused portions of the blood spots can be requested from the state laboratory. Tandem mass spectrometry can identify selected disorders of fatty acid oxidation and amino acid metabolism in dried blood samples.

A recent publication by Christodoulou and Wilcken in Seminars in Neonatology[61] highlighted the need for an increased index of suspicion for genetic metabolic disorders (inborn errors of metabolism) in neonatal care. The authors describe predominant clinical or biochemical presentations of genetic metabolic disorders in the neonatal period and recommend a protocol for screening for these disorders and also for a genetic autopsy. *Please see Section 4; Appendix 2b, Components of the Genetic Autopsy* for details of a genetic autopsy.

The predominant clinical or biochemical presentations of genetic metabolic disorders are as follows: Acute encephalopathy: hypoglycaemia, hyperammonemia, ketosis, disorders of acid-base balance, seizures as an early predominant feature; Acute hepatocellular disease; sudden death; severe hypotonia; non-immune hydrops fetalis; facial dysmorphism, with or without congenital malformations[61].

Appendix K Recommendations

1	To ensure a precise diagnosis, peri-mortem evaluation of infants suspected of having genetic metabolic disorders is required. Parental consent is required for a post-mortem examination and for tissue and blood samples to be taken prior to the death. Clinicians need to counsel parents sensitively about the importance of an accurate diagnosis for future genetic risks in this very distressing time.
2	Due to the complexity and number of different possible diseases, it is strongly recommended that clinicians discuss each individual case with the regional referral Laboratory to identify the optimum tests to request. Should more expert guidance be required a clinical metabolic specialist should be consulted.
3	All tissue samples should be stored and transported to a Specialist Metabolic Laboratory for investigation as convenient. The current development of genetic testing has altered the investigation pathway of metabolic disorders. Antemortem samples are better than post mortem, and post mortem electron microscopy has limited value and low yield. A fibroblast culture which can be established after death, but again is better taken before death can be invaluable.

APPENDIX R
SCREENING FOR GENETIC METABOLIC DISORDERS

Extract from: Christodoulou J, Wilcken B. Perimortem laboratory investigation of genetic metabolic disorders. Seminars in Neonatology 2004;9(4):275-280[1].

Screening investigations that should be performed in an acutely ill neonate suspected of having a genetic metabolic disorder

Urine

- Odour
- Dipstick tests for ketones, pH, sulphite (a)
- Reducing substances (testing for both glucose and non-glucose reducing substances)
- Amino, organic acid screens (including acylglycines)

Blood

- Full blood count/film
- Urea, electrolytes, anion gap, creatinine
- Glucose
- Calcium
- Blood gases
- Liver enzymes
- Uric acid
- Ammonium
- Lactate and pyruvate
- Amino acids (b)
- Carnitine and acylcarnitines (b)

Cerebrospinal Fluid

- Lactate and pyruvate
- Glucose
- Amino acids (b)

In the case of hypoglycaemia collect blood for the following when the child is hypoglycaemic

- Growth hormone
- Cortisol
- Insulin
- Free fatty acids
- ß – Hydroxybutyrate
- Acylcarnitine profile
- Urine should always be collected at the time of hypoglycaemia

(a) Sulphite is very labile. A negative test result does not exclude sulphite oxidase deficiency or the molybdenum cofactor defect.

(b) These tests should only be ordered after consultation with a biomedical geneticist or metabolic physician.

1. Christodoulou J, Wilcken B. Perimortem laboratory investigation of genetic metabolic disorders. *Semin Neonatol* 2004; **9**(4): 275-80.

APPENDIX S
COMPONENTS OF THE GENETIC AUTOPSY FOR INVESTIGATION OF METABOLIC DISORDERS

Extract from: Christodoulou J, Wilcken B. Perimortem laboratory investigation of genetic metabolic disorders. Seminars in Neonatology 2004;9(4):275-280.

Dedicated examination of the stillborn infant for a metabolic disorder should only be performed after consultation with a clinical geneticist and/or metabolic physician. Where there is no specific suspicion of a metabolic disorder, routine chromosome evaluation with microarray using umbilical cord tissue sample or placental sample would constitute appropriate genetic evaluation of a stillborn infant (see Appendix K). If in doubt, DNA can be stored from the umbilical cord/placental samples if additional genetic testing is being considered.

Components of the Genetic Autopsy

- Careful family history, including three generation pedigree
- Invite a clinical geneticist with expertise in dysmorphic syndromes to inspect the infant
- Clinical photographs
- Full skeletal survey
- Parental investigations for a haemoglobinopathy
- Maternal investigations for a thrombophilic disorder

Samples to collect from the baby

Blood

- Dried blood spots on filter paper (newborn screening cards, at least two to three cards stored at room temperature but NOT in a plastic bag (for acylcarnitine profile analysis and is a source of DNA))
- Whole blood (5ml in lithium heparin tube (for carnitine, quantitative amino acids, very long chain fatty acids; separated within 20 mins of collection and stored at -70 ºc); AND 5ml in EDTA tube (for DNA extraction; can be stored at 4 ºc for 48 h) AND 5ml in lithium heparin tube (for chromosome analysis; must be commenced within 4 h of sample collection))

Urine

- Freeze and store (5ml or more if possible, stored at -70 ºc; (for amino acid and organic acid profiles, acylglycines, orotic acid))

Cerebrospinal Fluid

- Freeze and store (1ml stored at -70 ºc (for amino acid profile))

Skin

- Biopsy (3x2mm full thickness collected under sterile conditions (DO NOT use iodine-containing preparations) into culture or viral transport, or saline soaked gauze. Store at 4 ºc. Best collected within 12 h of death. Cartilage may be taken for culture if there has been a prolonged period after death before biopsies can be taken. Send as soon as possible to a cytogenetics laboratory. To be cultured for archiving in liquid nitrogen)

Other biopsies

- Liver and muscle biopsies (for electron microscopy, histopathology and enzymology (for the latter wrap in aluminium foil, snap freeze and store at -70 ºc). Collect within 4 h (preferably 2 h) of death. Consult metabolic physician or histopathologist before collection of samples)
- Other tissue biopsies if specific diagnoses are under consideration

APPENDIX T – AUSTRALIA AND NEW ZEALAND PERINATAL MORTALITY DEFINITIONS

Terms of Reference					
	Stillbirth		**Fetal Death**	**Neonatal Death**	**Perinatal Death**
	Births, Deaths and Marriages Act	***State Perinatal Mortality Council***			
NZ[1, 2]	A dead foetus that; (a) weighed 400 grams or more when it issued from its mother; or (b) issued from its mother after the 20th week of pregnancy Death is indicated by the fact that, after such separation, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles	Not defined however the PMMRC **does not** include terminations of pregnancy in this definition	Fetal death is the death of a fetus at 20 weeks gestation or beyond (≥20 weeks) or weighing at least 400g if gestation is unknown. Fetal death includes stillbirth and termination of pregnancy.	Death of any baby showing signs of life at 20 weeks gestation or beyond or weighing at least 400 g if gestation is unknown. **Early neonatal death** is a death that occurs up until midnight of the sixth day of life. **Late neonatal death** is a death that occurs between the seventh day and midnight of the 27th day of life	Perinatal death is fetal and early neonatal death from 20 weeks gestation (or weighting at least 400g if gestation is unknown) until less than 7 days of age. **Perinatal related mortality** is fetal deaths and neonatal deaths (up to 28 days) at 20 weeks or beyond, or weighing at least 400g if gestation was unknown.
Australia[3]	n/a	Death, before the complete expulsion or extraction from its mother, of a product of conception of 20 or more completed weeks of gestation or of 400 grams or more birthweight. Death is indicated by the fact that, after such separation, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles	See Stillbirth	Death of a live born baby within 28 days of birth. **Early neonatal death** is death of a live born baby within 7 days of birth. **Late neonatal death** is death of a live born baby after 7 is completed days and before 28 completed days.	A fetal or neonatal death of at least 20 weeks gestation or at least 400 grams birthweight.

APPENDIX T – AUSTRALIA AND NEW ZEALAND PERINATAL MORTALITY DEFINITIONS

QLD[4, 5]	A child who has shown no sign of respiration or heartbeat, or other sign of life, after completely leaving the child's mother; and who; (a) has been gestated for 20 weeks or more; or (b) weighs 400g or more.	Defined by the Registration of Births, Deaths and Marriages Act as a child who has shown no sign of respiration or heartbeat, or other sign of life, after completely leaving the child's mother; and a) who has be gestated for 20 weeks or more; or b) weights 400g or more	See Stillbirth	Neonatal deaths are those occurring in live births within the first 28 days of life.	A fetal or neonatal death of at least 20 weeks gestation or at least 400 grams birthweight. QLD legislation also includes live born babies where the birthweight is less than 400 grams and/or the gestation is less than 20 weeks, and deaths of liveborn babies when the birthweight and gestational age are unknown
SA[6, 7]	A child of (a) at least 20 weeks' gestation, or (b) if it cannot be reliably established whether the period of gestation is more or less than 20 weeks, with a body mass of at least 400 grams at birth, that exhibits no sign of respiration or heartbeat, or other sign of life, after birth but c) does not include the product of a procedure for the termination of pregnancy	The birth of a fetus a) at or after 20 weeks gestation and/or with a birthweight of b) 400g or more, with no signs of life at birth	Not specified	The death of a liveborn infant within 28 days of birth	Includes stillbirth and neonatal death.
NT[8, 9]	A child of; (a) at least 20 weeks' gestation or (b) with a body mass of at least 400 grams at birth that exhibits no sign of respiration or heartbeat, or other sign of life, after birth	A child of; (a) at least 20 weeks' gestation or (b) with a body mass of at least 400 grams at birth that exhibits no sign of respiration or heartbeat, or other sign of life, after birth	See Stillbirth	The death of a live born baby within 28 days of birth	A fetal or neonatal death.

APPENDIX T – AUSTRALIA AND NEW ZEALAND PERINATAL MORTALITY DEFINITIONS

WA[10, 11]	Still born child means a child; a) of at least 20 weeks' gestation, or b) if it cannot be reliably established whether the child's period of gestation is more or less than 20 weeks, with a body mass of at least 400 grams at birth, that exhibits no sign of respiration or heartbeat, or other sign of life, immediately after birth.	The complete expulsion or extraction from its mother of an infant weighing a) at least 400 grams birthweight or b) at least 20 weeks gestation, which shows no sign of life from the time of birth.	See Stillbirth	The death of a liveborn infant within 28 days of birth	A stillbirth (fetal death) or neonatal death.
ACT[12]	A child of; a) at least 20 weeks gestation, or (b) if it cannot be established reliably whether the period of gestation is more or less than 20 weeks—a child with a body mass of at least 400g at birth, who shows no sign of respiration or heartbeat, or other sign of life, immediately after birth.	Refers to death prior to the complete expulsion or extraction from its mother of a product of conception a) of 20 or more completed weeks of gestation or b) of 400g or more of birthweight; the death is indicated by the fact that after separation the fetus does not breathe or show any other evidence of life, such as the beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles	See Stillbirth	The death of an infant within 28 days of birth	A fetal death or a neonatal death
TAS[13-15]	A child of (a) at least 20 weeks' gestation or, (b) if it cannot be reliably established whether the period of gestation is more or less than 20 weeks, with a body mass of at least 400 grams at birth, that	A foetal death prior to the complete expulsion or extraction from its mother of a product of conception of a) 20 or more completed weeks of gestation or	See Stillbirth	A death occurring within 28 days of birth in an infant whose birthweight was at least 400 grams, or if the weight was not known, an infant born after at least 20 weeks of gestation	Perinatal deaths means; (a) the death of a viable foetus at any time up to the moment of its complete expulsion or extraction from its mother; and

APPENDIX T – AUSTRALIA AND NEW ZEALAND PERINATAL MORTALITY DEFINITIONS

	exhibits no sign of respiration or heartbeat or other sign of life after birth.	b) 400 grams or more birthweight; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles			(b) the death of a child born alive where the death occurs before the twenty-ninth day after the date of the birth;
NSW[16-18]	A child that exhibits no sign of respiration or heartbeat, or other sign of life, after birth and that: (a) is of at least 20 weeks' gestation, or (b) if it cannot be reliably established whether the period of gestation is more or less than 20 weeks, has a body mass of at least 400 grams at birth.	The complete expulsion or extraction from its mother of a product of conception of a) at least 20 weeks gestation or b) 400 grams birth weight who did not, at any time after birth, breathe, or show any evidence of life such as a heartbeat	Not specified	Not specified	Perinatal death comprises all deaths of liveborn babies within 28 days of birth, regardless of gestational age at birth, and stillbirths of at least 20 weeks gestation or 400 grams birth weight.
VIC[19, 20]	A child of; a) at least 20 weeks' gestation or; b) if it cannot be reliably established whether the period of gestation is more or less than 20 weeks, with a body mass of at least 400 grams at birth, that exhibits no sign of respiration or heartbeat, or other sign of life, after birth	A stillbirth is defined as the birth of an infant of a) at least 20 weeks gestation or, if gestation is unknown, b) weighing at least 400g, who shows no signs of life at birth	See Stillbirth	Defined as a subcategory of **infant death.** Neonatal death refers to the death of a live-born infant less than 28 days after birth, of at least 20 weeks gestation or, if gestation is unknown, weighing at least 400g	Perinatal death included stillbirth and neonatal deaths within 28 days of birth of infants of gestation ≥ 20 weeks or if gestation is unknown of birth weight ≥ 400g

References

1. PMMRC. Tenth annual report of the Perinatal and Maternal Mortality Review Committee: Reporting mortality: Reporting mortality 2014. Wellington, NZ: Health Quality & Safety Commission, 2016.
2. Births, Deaths, Marriages, and Relationships Registration Act 1995, (April 2015).
3. Australian Institiute of Health and Welfare. Australia's mothers and babies 2013 - in brief. Canberra: AIHW, 2015.
4. Queensland Maternal and Perinatal Quality Council. Maternal and Perinatal Mortality and Morbidity in Queensland: Queensland Maternal and Perinatal Quality Council Report 2013. Queensland: Department of Health, State of Queensland 2013.
5. Births Deaths and Marriages Registration Act 2003, (March 2016).
6. Maternal and Perinatal Mortality Committee. Maternal and perinatal mortality in South Australia 2013. Adelaide: SA Health, Government of South Australia, 2015.
7. Births, Deaths and Marriages Registration Act 1996, (July 2016).
8. Hall J, Case A, O'Neill L. Mothers and Babies 2013. Darwin: Department of Health; 2015.
9. Births, Deaths and Marriages Registration Act, (January 2015).
10. Ballestas T, on behalf of the Perinatal and Infant Mortality Committee of Western Australia. The 14th report of the perinatal and infant mortality committee of Western Australia for deaths in the triennium 2008-2010. Perth: Department of Health, WA, 2014.
11. Births, Deaths and Marriages Registration Act 1998, (May 2016).
12. ACT Health. Perinatal Mortality in the ACT 2006-10,. Canberra, ACT: ACT Government, 2013.
13. Council of Obstetric & Paediatric Mortality & Morbidity. Council of Obstetric & Paediatric Mortality & Morbidity Annual Report 2013. Tasmania: Department of Health and Human Services, Tasmanian Government, 2013.
14. Births, Deaths and Marriages Registration Act 1999, (2016).
15. Obstetric and Paediatric Mortality and Morbidity Act 1994, (March 2014).
16. Centre for Epidemiology and Evidence. NSW Mother's and Babies 2014. Sydney: NSW Ministry of Health; 2016.
17. Births, Deaths and Marriages Registration Act 1995, Stat. 62 (May 2016).
18. Centre for Epidemiology and Evidence. Deaths - Review and Reporting of Perinatal Deaths. North Sydeny: Ministry of Health, NSW; 2011.
19. Consultative Council on Obstetric and Paediatric Mortality and Morbidity. 2012 and 2013 Victoria's Mothers and Babies. Melbourne: State Government of Victoria, 2016.
20. Births, Deaths and Marriages Registration Act 1996, Stat. Act No. 43/1996 (1996).

APPENDIX T – AUSTRALIA AND NEW ZEALAND PERINATAL MORTALITY DEFINITIONS

APPENDIX U
CHANGES TO PSANZ PERINATAL DEATH CLASSIFICATION AND PSANZ NEONATAL DEATH CLASSIFICATION

1. Changes – This revision

1.1 PSANZ Perinatal Death Classification (PSANZ-PDC)

1.1.1 Category 1 – PDC. Addition of new subcategories

PSANZ-PDC version 2009	PSANZ-PDC version 2017
1 Congenital Anomaly (including terminations for congenital abnormalities) 1.1 Central nervous system 1.2 Cardiovascular system 1.3 Urinary system 1.4 Gastrointestinal system 1.5 Chromosomal 1.6 Metabolic 1.7 Multiple/non chromosomal syndromes 1.8 Other congenital anomaly 1.81 Musculoskeletal 1.82 Respiratory 1.83 Diaphragmatic hernia 1.84 Haematological 1.85 Tumours 1.88 Other specified congenital anomaly 1.9 Unspecified congenital anomaly	**1 Congenital Anomaly** 1.1 Structural anomaly 1.11 Nervous system 1.12 Cardiovascular system 1.13 Genitourinary system 1.14 Gastrointestinal system 1.15 Musculoskeletal 1.151 Congenital diaphragmatic hernia 1.152 Gastroschisis/omphalocele 1.16 Respiratory system (include congenital pulmonary airway malformation (CPAM)) 1.17 Haematological 1.18 Multiple Congenital anomaly (no chromosomal/genetic cause or not tested) 1.19 Other congenital abnormality 1.192 Idiopathic hydrops fetalis 1.193 Fetal tumour (include sacro-coccygeal teratoma) 1.198 Other specified 1.199 Congenital anomaly, unspecified 1.2 Chromosomal anomaly 1.21 Down syndrome (trisomy 21) 1.22 Edward syndrome and Patau syndrome (trisomy 18, trisomy 13) 1.23 Other trisomies and partial trisomies of the autosomes, not elsewhere classified (includes pathogenic duplications, unbalanced translocations and insertions) 1.24 Monosomies and deletions from the autosomes, not elsewhere classified (includes pathogenic deletions e.g. 22q11.2 deletion syndrome (diGeorge syndrome), Wolff-Hirschorn syndrome, Cri-du-chat syndrome 1.25 Turner syndrome (monosomy X) 1.26 Other sex chromosome abnormalities (e.g. Klinefelter syndrome) 1.28 Other chromosomal abnormalities, not elsewhere specified (includes Fragile X syndrome, imprinting syndromes, triploidy) 1.29 Unspecified 1.3 Genetic anomaly 1.31 Genetic condition, specified (e.g. Tay-Sachs disease; includes inborn errors of metabolism) 1.32 Syndrome/association with demonstrated chromosomal/gene anomaly. 1.39 Genetic condition, unspecified

1.1.2 Category 2 – PDC. Addition of new subcategories

PSANZ-PDC version 2009		PSANZ-PDC version 2017	
2	**Perinatal infection**	**2**	**Perinatal infection**
2.1	Bacterial	2.1	Bacterial
	2.11 Group B Streptococcus		2.11 Group B Streptococcus
	2.12 E coli		2.12 E coli
	2.13 Listeria monocytogenes		2.13 Listeria monocytogenes
	2.14 Spirochaetal e.g. Syphilis		2.14 Spirochaetal e.g. Syphilis
	2.18 Other bacterial		2.18 Other bacterial
	2.19 Unspecified bacterial		2.19 Unspecified bacterial
2.2	Viral	2.2	Viral
	2.21 Cytomegalovirus		2.21 Cytomegalovirus
	2.22 Parvovirus		2.22 Parvovirus
	2.23 Herpes simplex virus		2.23 Herpes simplex virus
	2.24 Rubella virus		2.24 Rubella virus
	2.28 Other viral		2.25 Zika virus
	2.29 Unspecified viral		2.28 Other viral
2.3	Protozoal e.g. Toxoplasma		2.29 Unspecified viral
2.5	Fungal	2.3	Protozoal e.g. Toxoplasma
2.8	Other specified organism	2.5	Fungal
2.9	Other unspecified organism	2.8	Other specified organism
		2.9	Other unspecified organism

1.1.3 Category 3 – PDC. Removal of subcategories 3.51 and 3.61

PSANZ- PSANZ-PDC version February 2009		PSANZ-PDC version 2017	
3. Hypertension		**3**	**Hypertension**
3.1	Chronic hypertension: essential	3.1	Chronic hypertension: essential
3.2	Chronic hypertension: secondary, e.g. renal disease	3.2	Chronic hypertension: secondary, e.g. renal disease
3.3	Chronic hypertension: unspecified	3.3	Chronic hypertension: unspecified
3.4	Gestational hypertension	3.4	Gestational hypertension
3.5	Pre-eclampsia	3.5	Pre-eclampsia
	3.51 With laboratory evidence of thrombophilia	3.6	Pre-eclampsia superimposed on chronic hypertension
3.6	Pre-eclampsia superimposed on chronic hypertension	3.9	Unspecified hypertension
	3.61 With laboratory evidence of thrombophilia		
3.9	Unspecified hypertension		

1.1.4 Category 4 – PDC. Addition of new category and removal of subcategory 4.11.

PSANZ- PSANZ-PDC version February 2009		PSANZ-PDC version 2017	
4. Antepartum haemorrhage (APH)		**4**	**Antepartum haemorrhage (APH)**
4.1	Placental abruption	4.1	Placental abruption
	4.11 With laboratory evidence of thrombophilia	4.2	Placenta praevia
4.2	Placenta praevia	4.3	Vasa praevia
4.3	Vasa praevia	4.9	APH of undetermined origin

4.8 Other APH 4.9 APH of undetermined origin	

1.1.5 Category 5 – PDC. Addition of subcategories

PSANZ- PSANZ-PDC version February 2009	PSANZ-PDC version 2017
5. Maternal conditions 5.1 Termination of pregnancy for maternal psychosocial indications 5.2 Diabetes / Gestational diabetes 5.3 Maternal injury 5.31 Accidental 5.32 Non-accidental 5.4 Maternal sepsis 5.5 Antiphospholipid Syndrome 5.6 Obstetric cholestasis 5.8 Other specified maternal conditions	**5 Maternal Conditions** 5.1 Termination of pregnancy for maternal psychosocial indications 5.2 Diabetes 5.21 Gestational diabetes 5.22 Pre-existing diabetes 5.3 Maternal injury 5.31 Accidental 5.32 Non-accidental 5.4 Maternal sepsis 5.5 Antiphospholipid syndrome 5.6 Obstetric cholestasis 5.8 Other specified maternal conditions 5.81 Maternal suicide 5.88 Other specified maternal medical or surgical conditions

1.1.6 Category 6 – PDC. Restructure with separation of two Categories

PSANZ- PSANZ-PDC version February 2009	PSANZ-PDC version 2017
6. Specific perinatal conditions 6.1 Twin-twin transfusion 6.2 Fetomaternal haemorrhage 6.3 Antepartum cord complications 6.31 Cord haemorrhage 6.32 True knot with evidence of occlusion 6.38 Other 6.39 Unspecified 6.4 Uterine abnormalities, e.g. bicornuate uterus, cervical incompetence 6.5 Birth trauma (typically infants of >24 weeks gestation or >600g birthweight) 6. Alloimmune disease 6.61 Rhesus 6.62 ABO 6.63 Kell 6.64 Alloimmune thrombocytopenia 6.68 Other 6.69 Unspecified 6.7 Idiopathic hydrops 6.8 Other specific perinatal conditions 6.81 Rupture of membranes after amniocentesis 6.82 Termination of pregnancy for suspected but unconfirmed congenital anomaly, 6.83 Fetal subdural haematoma 6.88 Other 6.9 Unspecified	**6 Complications of multiple pregnancy** 6.1 Monochorionic twins 6.11 Twin to twin transfusion syndrome (TTTS) 6.12 Selective fetal growth restriction (FGR) (i.e. affecting only one twin) 6.13 Monoamniotic twins (including cord entanglement) 6.18 Other 6.19 Unknown or unspecified 6.2 Dichorionic twins 6. 21 Early fetal death in a multiple pregnancy (<20 weeks gestation) 6.22 Selective FGR 6.23 Other 6.29 Unknown or unspecified 6. 3 Complications of higher order multiples (3 or more foetuses) 6.31 Twin to twin transfusion syndrome (TTTS) 6.32 Selective fetal growth restriction (FGR) 6.33 Monoamniotic multiples (including cord entanglement) 6.34 Early fetal death in a multiple pregnancy (<20 weeks gestation) 6.38 Other 6.39 Unknown or unspecified 6.4 Complications where chorionicity is unknown 6.8 Other 6.9 Unspecified **7 Specific perinatal conditions** 7.1 Fetomaternal haemorrhage 7.2 Antepartum cord or fetal vessel complications (excludes monochorionic twins or triplets) 7.21 Cord vessel haemorrhage 7.22 Cord occlusion (True knot with evidence of occlusion or other) 7.23 Other cord complications 7.29 Unspecified cord complications 7.3 Uterine/cervical abnormalities 7.31 Developmental anatomical abnormalities (e.g. bicornuate uterus) 7.38 Other 7.39 Unspecified 7.4 Alloimmune disease 7.41 Rhesus isoimmunisation 7.42 Other red cell antibody 7.43 Alloimmune thrombocytopenia 7.48 Other 7.49 Unspecified 7.5 Fetal antenatal intracranial injury 7.51 Subdural haematoma 7.52 Fetal antenatal ischaemic brain injury 7.53 Fetal antenatal haemorrhagic brain injury 7.6 Other specific perinatal conditions 7.61 Complications of prenatal diagnostic or therapeutic procedures

	7.611 Complications of prenatal diagnostic procedures (e.g. amniocentesis, chorionic villus sampling,) (e.g. rupture of membranes after amniocentesis) 7.612 Complications of fetal ultrasound guided needle interventions (e.g. FBS/fetal transfusion, thoracocentesis, vesicocentesis, fetal cardiac valvoplasty, division of amniotic bands, fetal skin biopsy, unipolar/bipolar diathermy, RFA procedures) 7.613 Complications of fetal shunt interventions (e.g. pleuroamniotic shunt, vesicoamniotic shunt) 7.614 Complications of minimally invasive fetoscopic interventions (e.g. fetoscopic laser surgery for TTTS, FETO for CDH, laser ablation of posterior urethral valves) 7.615 Complications of open maternal fetal surgery (e.g. open maternal fetal surgery for spina bifida) 7.618 Other 7.62 Termination of pregnancy for suspected but unconfirmed congenital anomaly. 7.63 Amniotic band 7.68 Other 7. 9 Unspecified

1.1.7 Category 7– PDC. Restructured and addition of subcategory

PSANZ- PSANZ-PDC version February 2009	PSANZ-PDC version 2017
7. Hypoxic peripartum death (typically infants of >24 weeks gestation or >600g birthweight) 7.1 With intrapartum complications 7.11 Uterine rupture 7.12 Cord prolapse 7.13 Shoulder dystocia 7.18 Other 7.2 Evidence of non-reassuring fetal status in a normally grown infant (e.g. abnormal fetal heart rate, fetal scalp pH/lactate, fetal pulse oximetry without intrapartum complications) 7.3 No intrapartum complications and no evidence of non-reassuring fetal status 7.9 Unspecified hypoxic peripartum death	**8 Hypoxic peripartum death** 8.1 With intrapartum complications (sentinel events) 8.11 Uterine rupture 8.12 Cord prolapse 8.13 Shoulder dystocia 8.14 Complications of breech presentation 8.15 Birth trauma 8.16 Intrapartum haemorrhage 8.18 Other 8.2 Evidence of significant fetal compromise (excluding other complications) 8.3 No intrapartum complications recognised and no evidence of significant compromise identified. 8.9 Unspecified hypoxic peripartum death

1.1.8 Category 8 – PDC. Restructured

PSANZ- PSANZ-PDC version February 2009	PSANZ-PDC version 2017
8. Fetal Growth Restriction (FGR)	**9. Placental dysfunction or causative placental pathology**

8.1 With evidence of reduced vascular perfusion on Doppler studies and /or placental histopathology (e.g. significant infarction, acute atherosis, maternal and/or fetal vascular thrombosis or maternal floor infarction) 8.2 With chronic villitis 8.3 No placental pathology 8.4 No examination of placenta 8.8 Other specified placental pathology 8.9 Unspecified or not known whether placenta examined	9.1 Maternal vascular malperfusion 9.2 Fetal vascular malperfusion 9.3 High grade villitis of unknown etiology (VUE) 9.4 Massive perivillous fibrin deposition/maternal floor infarction 9.5 Severe chronic intervillositis (Histiocytic intervillositis) 9.6 Placental hypoplasia 9.7 No causal placental pathology demonstrated, with antenatal evidence of poor placental function identified (such as abnormal umbilical artery Doppler) 9.7 Placental pathological examination was not performed, with antenatal evidence of poor placental function identified (such as abnormal umbilical artery Doppler) 9.8 Other placental pathology (e.g. multiple pathologies with evidence of loss of placental function leading to death

1.1.9 Category 9 – PDC. Restructured including changes to subcategories

PSANZ- PSANZ-PDC version February 2009	PSANZ-PDC version 2017
9. Spontaneous preterm labour (<37 weeks gestation) 9.1 Spontaneous preterm with intact membranes, or membrane rupture <24 hours before deliver 9.11 With chorioamnionitis on placental histopathology 9.12Without chorioamnionitis on placental histopathology 9.13With clinical evidence of chorioamnionitis, no examination of placenta 9.17No clinical signs of chorioamnionitis, no examination of placenta 9.19Unspecified or not known whether placenta examined 9.2 Spontaneous preterm with membrane rupture ≥24 hours before delivery 9.21With chorioamnionitis on placental histopathology 9.22Without chorioamnionitis on placental histopathology 9.23With clinical evidence of chorioamnionitis, no examination of placenta 9.27No clinical signs of chorioamnionitis, no examination of placenta 9.29Unspecified or not known whether placenta examined 9.3 Spontaneous preterm with membrane rupture of unknown duration before delivery 9.31With chorioamnionitis on placental histopathology 9.32Without chorioamnionitis on placental histopathology 9.33With clinical evidence of chorioamnionitis, no examination of placenta. 9.37 No clinical signs of chorioamnionitis, no examination of placenta 9.39Unspecified or not known whether placenta examined	**10 Spontaneouse preterm labour or rupture of membranes (ROM (<37 weeks gestation)** 10.1 Spontaneous preterm 10.11 With histological chorioamnionitis 10.12 Without histological chorioamnionitis 10.13 With clinical evidence of chorioamnionitis, no examination of placenta 10.17 No clinical signs of chorioamnionitis, no examination of placenta 10.19 Unspecified or not known whether placenta examined 10.2 Spontaneous preterm preceded by premature cervical shortening

1.1.10 Category 10 – Restructured

PSANZ- PSANZ-PDC version February 2009	PSANZ-PDC version 2017
10 Unexplained antepartum death 10.1 With evidence of reduced vascular perfusion on Doppler studies and /or placental histopathology (e.g. significant infarction, acute atherosis, maternal and/or fetal vascular thrombosis or maternal floor infarction) 10.2 With chronic villitis 10.3 No placental pathology 10.4 No examination of placenta 10.8 Other specified placental pathology 10.9 Unspecified or not known whether placenta examined	**11 Unexplained antepartum fetal death** 11.1 Unexplained antepartum fetal death despite full investigation 11.2 Unclassifiable antepartum fetal death with incomplete investigation 11.3 Unclassifiable antepartum fetal death due to unknown level of investigation

1.1.11 Category 10 – PDC. Restructured

PSANZ- PSANZ-PDC version February 2009	PSANZ-PDC version 2017
11. No obstetric antecedent 11.1 Sudden Infant Death Syndrome (SIDS) (See appendix p130) 11.11 SIDS Category IA: Classic features of SIDS present and completely documented. 11.12 SIDS Category IB: Classic features of SIDS present but incompletely documented. 11.13 SIDS Category II: Infant deaths that meet Category I except for one or more features. 11.2 Postnatally acquired infection 11.3 Accidental asphyxiation 11.4 Other accident, poisoning or violence (postnatal) 11.8 Other specified 11.9 Unknown/Undetermined 11.91 Unclassified Sudden Infant Death 11.92 Other Unknown/Undetermined	**12 Neonatal death without obstetric antecedent** 12.1 Neonatal death with no obstetric antecedent factors despite full investigation 12.2 Neonatal death unclassifiable as to obstetric antecedent with incomplete investigation 12.3 Neonatal death unclassifiable as to obstetric antecedent due to unknown level of investigation

1.2 PSANZ Neonatal Death Classification (PSANZ-NDC)

1.2.1 Category 2 – NDC. Name change

PSANZ-NDC version 2009	PSANZ-NDC version 2017
2. Extreme prematurity (typically infants of gestational age ≤24 weeks or birthweight ≤600g) 2.1 Not resuscitated 2.2 Unsuccessful resuscitation 2.9 Unspecified or not known whether resuscitation attempted This group includes infants deemed too immature for resuscitation or continued life support beyond the delivery room, typically infants of gestational age ≤24 weeks or birthweight ≤600g. Resuscitation in this context means the use of positive pressure ventilation.	**2 Periviable infants (typically <24 weeks)** 2.1 Not resuscitated (including infants where there is an antenatal plan for no resuscitation at birth or in the circumstance of re-directed care) 2.2 Unsuccessful resuscitation 2.9 Unspecified or not known whether resuscitation attempted

1.2.2 Category 3 - NDC. Change to subcategories

PSANZ-NDC version 2009	PSANZ-NDC version 2017
3. Cardio-respiratory disorders 3.1 Hyaline membrane disease / Respiratory distress syndrome (RDS) 3.2 Meconium aspiration syndrome 3.3 Primary persistent pulmonary hypertension 3.4 Pulmonary hypoplasia 3.5 Chronic neonatal lung disease (typically, bronchopulmonary dysplasia) 3.6 Pulmonary haemorrhage	**3 Cardio-respiratory disorders** 3.1 Hyaline membrane disease / Respiratory distress syndrome (RDS) 3.2 Meconium aspiration syndrome 3.3 Primary persistent pulmonary hypertension 3.4 Pulmonary hypoplasia 3.5 Pulmonary haemorrhage 3.6 Air leak syndromes 3.61 Pneumothorax

3.7 Pneumothorax 3.8 Other	3.62 Pulmonary interstitial emphysema 3.63 Other 3.7 Patent ductus arteriosus 3.8 Chronic neonatal lung disease (typically, bronchopulmonary dysplasia 3.9 Other 3.91 Neonatal anaemia/hypovolaemia

1.2.3 Category 4 - NDC. Addition of subcategories

PSANZ-NDC version 2009	PSANZ-NDC version 2017
4 Infection 4.1 Bacterial 4.11 Congenital bacterial 4.111 Group B Streptococcus 4.112 E coli 4.113 Listeria monocytogenes 4.114 Spirochaetal, e.g. syphilis 4.118 Other bacterial 4.119 Unspecified bacterial 4.12 Acquired bacterial 4.121 Group B Streptococcus 4.122 E coli 4.125 Other Gram negative bacilli (other than E coli) 4.126 Staphylococcus aureus 4.127 Coagulase negative Staphylococcus 4.128 Other specified bacterial 4.129 Unspecified bacterial 4.2 Viral 4.21 Congenital viral 4.211 Cytomegalovirus 4.213 Herpes simplex virus 4.214 Rubella virus 4.218 Other specified viral 4.219 Unspecified viral 4.22 Acquired viral 4.221 Cytomegalovirus 4.223 Herpes simplex virus 4.224 Rubella virus 4.228 Other specified viral 4.229 Unspecified viral	**4 Neonatal infection** 4.1 Congenital/Perinatal bacterial infection (early onset<48 hrs) 4.11 Blood stream infection/septicaemia 4.111 Positive culture of a pathogen 4.112 Clinical signs of sepsis + ancillary evidence but culture negative 4.12 Bacterial meningitis 4.13 Bacterial pneumonia 4.15 Multiple site bacterial infection 4.18 Other congenital bacterial infection e.g. gastroenteritis, osteomyelitis, cerebral abscess 4.19 Unspecified congenital infection 4.2 Congenital/Perinatal viral infection 4.3 Congenital fungal, protozoan, parasitic infection 4.4 Acquired bacterial infection (late onset>48hrs) 4.41 Blood stream infection/septicaemia 4.411 Positive culture of a pathogen 4.412 Clinical signs of sepsis + ancillary evidence but culture negative 4.42 Bacterial meningitis 4.43 Bacterial pneumonia 4.48 Other acquired bacterial infection e.g. gastroenteritis, osteomyelitis 4.49 Unspecified acquired infection 4.5 Acquired viral infection 4.6 Acquired fungal, protozoan, parasitic infection

1.2.4 Category 5 - NDC. Addition of subcategories

PSANZ-NDC version 2009	PSANZ-NDC version 2017
5. Neurological 5.1 Hypoxic ischaemic encephalopathy / Perinatal asphyxia (typically infants of >24 weeks gestation or >600g birthweight) 5.2 Intracranial haemorrhage 5.21 Intraventricular Haemorrhage	**5 Neurological** 5.1 Hypoxic ischaemic encephalopathy/Perinatal asphyxia 5.2 Cranial haemorrhage 5.21 Intraventricular Haemorrhage 5.22 Subgaleal Haemorrhage

5.22 Subgaleal Haemorrhage 5.23 Subarachnoid Haemorrhage 5.24 Subdural Haemorrhage 5.28 Other Intracranial Haemorrhage 5.8 Other	5.23 Subarachnoid Haemorrhage 5.24 Subdural Haemorrhage 5.28 Other Intracranial Haemorrhage 5.3 Post haemorrhagic hydrocephalus 5.4 Periventricular leukomalacia 5.8 Other

1.2.5 Category 6 - NDC. Addition of subcategories

PSANZ-NDC version 2009	PSANZ-NDC version 2017
6. Gastrointestinal 6.1 Necrotising enterocolitis 6.8 Other	**6 Gastrointestinal** 6.1 Necrotising enterocolitis (NEC) 6.2 Short gut syndrome 6.3 Gastric or intestinal perforation (excluding NEC) 6.4 Gastrointestinal haemorrhage 6.8 Other

1.2.6 Category 7 - NDC. Addition of subcategories

PSANZ-NDC version 2009	PSANZ-NDC version 2017
7. Other 7.1 Sudden Infant Death Syndrome (SIDS) 7.11 SIDS Category IA: Classic features of SIDS present and completely documented. 7.12 SIDS Category IB: Classic features of SIDS present but incompletely documented. 7.13 SIDS Category II : Infant deaths that meet category I except for one or more features. 7.2 Multisystem failure 7.21 Secondary to intrauterine growth restriction 7.28 Other specified 7.29 Unspecified/undetermined primary cause or trigger event 7.3 Trauma 7.31 Accidental 7.32 Non accidental 7.39 Unspecified 7.4 Treatment complications 7.41 Surgical 7.42 Medical 7.8 Other specified 7.9 Unknown/Undetermined 7.91 Unclassified Sudden Infant Death 7.92 Other Unknown/Undetermined	**7 Other** 7.1 Sudden unexpected death in infancy (SUDI) 7.11 Sudden Infant Death Syndrome (SIDS) 7.112 SIDS Category IA: Classic features of SIDS present and completely documented. 7.113 SIDS Category IB: Classic features of SIDS present but incompletely documented. 7.114 SIDS Category II: Infant deaths that meet category I except for one or more features. 7.12 Unclassified Sudden Infant Death in the neonatal period 7.121 Bed sharing 7.122 Not bed sharing 7.19 Unknown/Undetermined 7.2 Multisystem failure 7.21 Secondary to intrauterine growth restriction 7.28 Other specified 7.29 Unspecified/undetermined primary cause or trigger event 7.3 Trauma 7.31 Accidental 7.32 Non accidental 7.39 Unspecified 7.4 Treatment complications 7.41 Surgical 7.42 Medical 7.5 Unsuccessful resuscitation in infants of 28 weeks gestation or more without an obvious sentinel event

	7.8 Other specified to unknown level of

1.2.7 Addition of PSANZ Associated Conditions for both stillbirths and neonatal deaths

2. Changes made in the 2009 revision

The 2009 revision incorporates amendments to the PSANZ Perinatal Death Classification (PSANZ-PDC) and PSANZ Neonatal Death Classification (PSANZ-NDC) based on feedback received from users and discussion with the guideline working party which includes developers of the classification systems. The changes to previous version dated October 2004 are listed here. Previous changes made are listed at the end of this appendix.

2.1 PSANZ Perinatal Death Classification (PSANZ-PDC)

2.1.1 The inclusion of a code to identify terminations of pregnancy for congenital abnormality

PSANZ-PDC version October 2004	PSANZ-PDC version April 2009
1 Congenital Abnormality (including terminations for congenital abnormalities) 1.1 Central nervous system 1.2 Cardiovascular system 1.3 Urinary system 1.4 Gastrointestinal system 1.5 Chromosomal 1.6 Metabolic 1.7 Multiple/non chromosomal syndromes 1.8 Other congenital abnormality 1.81 Musculoskeletal 1.82 Respiratory 1.83 Diaphragmatic hernia 1.84 Haematological 1.85 Tumours 1.88 Other specified congenital abnormality 1.9 Unspecified congenital abnormality	**1 Congenital Abnormality (including terminations for congenital abnormalities)** 1.1 Central nervous system 1.2 Cardiovascular system 1.3 Urinary system 1.4 Gastrointestinal system 1.5 Chromosomal 1.6 Metabolic 1.7 Multiple/non chromosomal syndromes 1.8 Other congenital abnormality 1.81 Musculoskeletal 1.82 Respiratory 1.83 Diaphragmatic hernia 1.84 Haematological 1.85 Tumours 1.88 Other specified congenital abnormality 1.9 Unspecified congenital abnormality Please note that terminations of pregnancy for perinatal deaths within this category should be identified by the inclusion of an “09” for two-digit codes and a “9” for the three digit codes

2.1.2 Change of wording for Category 5.5

PSANZ-PDC version October 2004	PSANZ-PDC version April 2009
5 Maternal conditions 5.1 Termination of pregnancy for maternal psychosocial indications 5.2 Diabetes / Gestational diabetes 5.3 Maternal injury 5.31 Accidental 5.32 Non-accidental 5.4 Maternal sepsis 5.5 Lupus obstetric syndrome 5.6 Obstetric cholestasis 5.8 Other specified maternal conditions	**5 Maternal conditions** 5.1 Termination of pregnancy for maternal psychosocial indications 5.2 Diabetes / Gestational diabetes 5.3 Maternal injury 5.31 Accidental 5.32 Non-accidental 5.4 Maternal sepsis 5.5 Antiphospholipid syndrome 5.6 Obstetric cholestasis 5.8 Other specified maternal conditions

2.1.3 Addition of subcategories under Categories 6.3 and 6.8

PSANZ-PDC version October 2004	PSANZ-PDC version February 2009
6 Specific perinatal conditions 6.1 Twin-twin transfusion 6.2 Fetomaternal haemorrhage 6.3 Antepartum cord complications (e.g. cord haemorrhage; true knot with evidence of occlusion) 6.4 Uterine abnormalities, e.g. bicornuate uterus, cervical incompetence 6.5 Birth trauma (typically infants of >24 weeks gestation or >600g birthweight) 6.6 Alloimmune disease 6.61 Rhesus 6.62 ABO 6.63 Kell 6.64 Alloimmune thrombocytopenia 6.68 Other 6.69 Unspecified 6.7 Idiopathic hydrops 6.8 Other specific perinatal conditions (includes iatrogenic conditions such as rupture of membranes after amniocentesis, termination of pregnancy for suspected but unconfirmed congenital abnormality).	**6 Specific perinatal conditions** 6.1 Twin-twin transfusion 6.2 Fetomaternal haemorrhage 6.3 Antepartum cord complications 6.31 Cord haemorrhage 6.32 True knot with evidence of occlusion 6.38 Other 6.39 Unspecified 6.4 Uterine abnormalities, e.g. bicornuate uterus, cervical incompetence 6.5 Birth trauma (typically infants of >24 weeks gestation or >600g birthweight) 6.6 Alloimmune disease 6.61 Rhesus 6.62 ABO 6.63 Kell 6.64 Alloimmune thrombocytopenia 6.68 Other 6.69 Unspecified 6.7 Idiopathic hydrops 6.8 Other specific perinatal conditions 6.81 Rupture of membranes after amniocentesis 6.82 Termination of pregnancy for suspected but unconfirmed congenital abnormality, 6.83 Fetal subdural haematoma 6.88 Other 6.89 Unspecified

2.1.4 Fetal growth restriction (FGR) Category 8 - customised birthweight centiles

A recommendation for the collection of data to determine FGR according to Customised birthweight centiles.(please see item 7.5.1.)

2.2 PSANZ Neonatal Death Classification (PSANZ-NDC)

2.2.1 Addition of new categories: 3.6 Pulmonary haemorrhage and 3.7 Pneumothorax

PSANZ-NDC version October 2004	PSANZ-NDC version February 2009
3 Cardio-respiratory disorders 3.1 Hyaline membrane disease / Respiratory Distress Syndrome (RDS) 3.2 Meconium aspiration syndrome 3.3 Primary persistent pulmonary hypertension 3.4 Pulmonary hypoplasia 3.5 Chronic neonatal lung disease (typically, bronchopulmonary dysplasia) 3.8 Other	**3 Cardio-respiratory disorders** 3.1 Hyaline membrane disease / Respiratory distress syndrome (RDS) 3.2 Meconium aspiration syndrome 3.3 Primary persistent pulmonary hypertension 3.4 Pulmonary hypoplasia 3.5 Chronic neonatal lung disease (typically, bronchopulmonary dysplasia) 3.6 Pulmonary haemorrhage 3.7 Pneumothorax 3.8 Other

2.2.2 Addition of new categories: 4.1 Congenital and 4.2 Acquired; Additional subcategories under Categories 4.1 and 4.2

PSANZ-NDC version October 2004	PSANZ-NDC version February 2009
4 Infection 4.1 Bacterial 4.11 Congenital bacterial 4.12 Acquired bacterial 4.2 Viral 4.21 Congenital viral 4.22 Acquired viral 4.3 Protozoal e.g. Toxoplasma 4.4 Spirochaetal e.g. Syphilis 4.5 Fungal 4.8 Other 4.9 Unspecified organism	**4 Infection** 4.1 Bacterial 4.11 Congenital bacterial4.111 Group B Streptococcus 4.112 E coli 4.113 Lysteria monocytogenes 4.114 Spirochaetal, e.g. syphilis 4.118 Other bacterial 4.119 Unspecified bacterial 4.12 Acquired bacterial 4.121 Group B Streptococcus 4.122 E coli 4.125 Other Gram negative bacilli (other than E coli) 4.126 Staphylococcus aureus 4.127 Coagulase negative Staphylococcus 4.128 Other specified bacterial 4.129 Unspecified bacterial 4.2 Viral 4.21 Congenital viral 4.211 Cytomegalovirus 4.213 Herpes simplex virus 4.214 Rubella virus 4.218 Other specified viral 4.219 Unspecified viral 4.22 Acquired viral 4.221 Cytomegalovirus 4.223 Herpes simplex virus 4.224 Rubella virus 4.228 Other specified viral 4.229 Unspecified viral 4.3 Protozoal e.g. Toxoplasma 4.5 Fungal

	4.8 Other specified organism 4.9 Unspecified organism

2.2.3 Additional subcategories under Category 5.2 Intracranial haemorrhage

PSANZ-NDC version October 2004	PSANZ-NDC version February 2009
5. Neurological 5.1 Hypoxic ischaemic encephalopathy / Perinatal asphyxia (typically infants of >24 weeks gestation or >600g birthweight) 5.2 Intracranial haemorrhage 5.8 Other	**5. Neurological** 5.1 Hypoxic ischaemic encephalopathy / Perinatal asphyxia (typically infants of >24 weeks gestation or >600g birthweight) 5.2 Intracranial haemorrhage 5.21 Intraventricular Haemorrhage 5.22 Subgaleal Haemorrhage 5.23 Subarachnoid Haemorrhage 5.24 Subdural Haemorrhage 5.28 Other Intracranial Haemorrhage 5.8 Other

2.2.4 Addition of a new category – 7.4 Treatment complications; Additional subcategories under 7.2 and 7.3.

PSANZ-NDC version October 2004	PSANZ-NDC version February 2009
7 Other 7.1 Sudden Infant Death Syndrome (SIDS) 7.11 SIDS Category IA: Classic features of SIDS present and completely documented. 7.12 SIDS Category IB: Classic features of SIDS present but incompletely documented. 7.13 SIDS Category II : Infant deaths that meet category I except for one or more features. 7.2 Multisystem failure-only if unknown primary cause or trigger event 7.3 Trauma 7.8 Other specified 7.9 Unknown/Undetermined 7.91 Unclassified Sudden Infant Death 7.92 Other Unknown/Undetermined	**7 Other** 7.1 Sudden Infant Death Syndrome (SIDS) 7.11 SIDS Category IA: Classic features of SIDS present and completely documented. 7.12 SIDS Category IB: Classic features of SIDS present but incompletely documented. 7.13 SIDS Category II : Infant deaths that meet category I except for one or more features. 7.2 Multisystem failure 7.21 Secondary to intrauterine growth restriction 7.28 Other specified 7.29 Unspecified/undertemined primary cause or trigger event 7.3 Trauma 7.31 Accidental 7.32 Non accidental 7.39 Unspecified 7.4 Treatment complications 7.41Surgical 7.42 Medical 7.8 Other specified 7.9 Unknown/Undetermined 7.91 Unclassified Sudden Infant Death 7.92 Other Unknown/Undetermined

3. Changes made in the October 2004 revision

3. 1 Classification of associated factors

To enable consideration of factors associated with perinatal death, following classification of the main obstetric antecedent factor according to the PSANZ-PDC, and in addition for neonatal deaths the neonatal factor according to the PSANZ-NDC, it is now recommended that up to two associated factors, where present, be recorded using the classifications.

For example, when the death was due to placental abruption which was preceded by pre-eclampsia, according to the PSANZ-PDC, the death is classified as *Hypertension - Pre-eclampsia* (subcategory 3.5) and the associated factor is classified as *Antepartum Haemorrhage Placental Abruption* (subcategory 4.1).

3.2 Subcategories for Special Interest Groups: PDC and NDC

The subcategories in Addendums 1 and 2 for Special Interest Groups in the PSANZ-PDC and PSANZ-NDC version May 23rd 2003 have been removed from the guideline. These subcategories have been superseded by the incorporation of classifying associated factors as discussed in 1 above and the additional of subcategories within the classification (*Please see Hypertension* Category 3 and *APH* Category 4).

3. 3 Minimum data set for perinatal deaths

The SIG has developed a recommended core dataset for the purpose of classification and reporting of perinatal deaths (see *PSANZ Perinatal Mortality Audit Package* Section 2; Appendix 1) is recommended for this purpose. It is hoped that the use of this core dataset will enhance the quality of perinatal audit and thus the value of analyses of perinatal mortality audit and research activities across ANZ.

3.4 Changes to the Perinatal Death Classification Categories

3.4.1 Congenital abnormality: Category 1.

Additional subcategories have been included under Category 1.8 *Other congenital abnormality*. These are: Category 1.84 *Haematological* for classification of deaths due to haematological abnormalities such as thalassemia; and Category 1.85 *Tumours* for classification of tumours which includes cystic hygroma. Subcategory 1.7 has been renamed to *Multiple/non chromosomal syndromes*. In addition, clarification of Categories 1.8 *Other congenital abnormality* and 1.9 *Unspecified congenital abnormality* has been included in the Classification Guide. Categories 1.3 *Urinary tract* and 1.4 *Gastrointestinal tract* have been renamed to Urinary system and Gastrointestinal system.

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
1 Congenital Abnormality (including terminations for congenital abnormalities) 1.1 Central nervous system	**1 Congenital Abnormality (including terminations for congenital abnormalities)** 1.1 Central nervous system

1.2 Cardiovascular system 1.3 Urinary tract 1.4 Gastrointestinal tract 1.5 Chromosomal 1.6 Metabolic 1.7 Multiple 1.8 Other congenital abnormality 1.81 Musculoskeletal 1.82 Respiratory 1.83 Diaphragmatic hernia 1.88 Other specified congenital abnormality 1.9 Unspecified congenital abnormality	1.2 Cardiovascular system 1.3 Urinary system 1.4 Gastrointestinal system 1.5 Chromosomal 1.6 Metabolic 1.7 Multiple/non chromosomal syndromes 1.8 Other congenital abnormality 1.81 Musculoskeletal 1.82 Respiratory 1.83 Diaphragmatic hernia 1.84 Haematological 1.85 Tumours 1.88 Other specified congenital abnormality 1.9 Unspecified congenital abnormality

3.4.2 Perinatal infection: Category 2.

Subcategory 2.4 *Spirochaetal e.g. Syphilis* has been moved to 2.14. Category 2.8 has been renamed *Other specified organism* and 2.9 *Other unspecified organism*. In addition, clarification of the use of subcategories 2.8 and 2.9 has been included in the Classification Guide.

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
2 Perinatal infection 2.1 Bacterial 2.11 Group B Streptococcus 2.12 E coli 2.13 Listeria monocytogenes 2.18 Other bacterial 2.19 Unspecified bacterial 2.2 Viral 2.21 Cytomegalovirus 2.22 Parvovirus 2.23 Herpes simplex virus 2.24 Rubella virus 2.28 Other viral 2.29 Unspecified viral 2.3 Protozoal e.g. Toxoplasma 2.4 Spirochaetal e.g. Syphilis 2.5 Fungal 2.8 Other 2.9 Unspecified organism	**2 Perinatal infection** 2.1 Bacterial 2.11 Group B Streptococcus 2.12 E coli 2.13 Listeria monocytogenes 2.14 Spirochaetal e.g. Syphilis 2.18 Other bacterial 2.19 Unspecified bacterial 2.2 Viral 2.21 Cytomegalovirus 2.22 Parvovirus 2.23 Herpes simplex virus 2.24 Rubella virus 2.28 Other vira 2.29 Unspecified viral 2.3 Protozoal e.g. Toxoplasma 2.5 Fungal 2.8 Other specified organism 2.9 Other unspecified organism

3.4.3 Hypertension: Category 3

Two subcategories have been included to identify laboratory evidence of thrombophilia with pre-eclampsia (Subcategories 3.51 and 3.61). These categories were included in the previous version of the guideline in the Addendum for Special Interest Groups.

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
3 Hypertension 3.1 Chronic hypertension: essential 3.2 Chronic hypertension: secondary, e.g. renal disease 3.3 Chronic hypertension: unspecified 3.4 Gestational hypertension 3.5 Pre-eclampsia 3.6 Pre-eclampsia superimposed on chronic hypertension 3.9 Unspecified hypertension	**3. Hypertension** 3.1 Chronic hypertension: essential 3.2 Chronic hypertension: secondary, e.g. renal disease 3.3 Chronic hypertension: unspecified 3.4 Gestational hypertension 3.5 Pre-eclampsia 3.51 With laboratory evidence of thrombophilia 3.6 Pre-eclampsia superimposed on chronic hypertension 3.61 With laboratory evidence of thrombophilia 3.9 Unspecified hypertension

3.4.4 Antepartum haemorrhage Category 4

An additional subcategory 4.11 has been included to identify laboratory evidence of thrombophilia with placental abruption. This category was previously included in the Addendum for Special Interest Groups.

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
4 Antepartum Haemorrhage (APH) 4.1 Placental abruption 4.2 Placenta praevia 4.3 Vasa praevia 4.8 Other APH 4.9 APH of undetermined origin	**4 Antepartum Haemorrhage (APH)** 4.1 Placental abruption 4.11 With laboratory evidence of thrombophilia 4.2 Placenta praevia 4.3 Vasa praevia 4.8 Other APH 4.9 APH of undetermined origin

3.4.5 Maternal conditions: Category 5.

Category 5.1 has been renamed to *Termination of pregnancy for maternal psychosocial indications.* Additional subcategories have been included as follows: 5.5 *Lupus obstetric syndrome* and 5.6 *Obstetric cholestasis* (previously classified under 5.8 *Other maternal conditions).*

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
5 Maternal Conditions 5.1 Termination of pregnancy (other than for congenital (fetal) abnormality) 5.2 Diabetes / Gestational diabetes 5.3 Maternal injury 5.31 Accidental 5.32 Non-Accidental 5.4 Maternal sepsis 5.8 Other maternal conditions, e.g. Lupus obstetric syndrome	**5 Maternal Conditions** 5.1 Termination of pregnancy for maternal psychosocial indications 5.2 Diabetes / Gestational diabetes 5.3 Maternal injury 5.31 Accidental 5.32 Non-accidental 5.4 Maternal sepsis 5.5 Lupus obstetric syndrome

	5.6 Obstetric cholestasis 5.8 Other specified maternal conditions

3.4.6 Hypoxic peripartum death: Category 7

An additional subcategory has been included: 7.2 Evidence of non-reassuring fetal status in a normally grown infant (e.g. abnormal fetal heart rate, fetal scalp ph/lactate, fetal pulse oximetry without intrapartum complications). This category identifies hypoxic peripartum deaths where there was evidence of fetal distress in a normally grown infant without apparent intrapartum complications as defined in 7.1. A new subcategory 7.3 has been included to identify deaths where there are no apparent complications as defined in 7.1 and no evidence of non-reassuring fetal status as defined in 7.2.

In the circumstance of a growth restricted infant fulfilling the criteria for this category, the death should be classified as Category 8 *Fetal Growth Restriction* with the exception of deaths due to an intrapartum obstetric complication where the death should be classified as Category 7.1. The Classification Guide has been updated to incorporate these changes and also to clarify the application of Category 7.9 *Unspecified hypoxic peripartum death.*

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
7 Hypoxic Peripartum Death (typically infants of >24 weeks gestation or >600g birthweight) 7.1 With intrapartum complications 7.11 Uterine rupture 7.12 Cord prolapse 7.13 Shoulder dystocia 7.18 Other 7.2 No apparent complications 7.9 Unspecified hypoxic peripartum death	**7 Hypoxic Peripartum Death (typically infants of >24 weeks gestation or >600g birthweight)** 7.1 With intrapartum complications 7.11 Uterine rupture 7.12 Cord prolapse 7.13 Shoulder dystocia 7.18 Other 7.2 Evidence of non-reassuring fetal status in a normally grown infant (e.g. abnormal fetal heart rate, fetal scalp pH/lactate, fetal pulse oximetry without intrapartum complications) 7.3 No intrapartum complications and no evidence of non-reassuring fetal status. 7.9 Unspecified hypoxic peripartum death

3.4.7 Fetal Growth Restriction (FGR): Category 8

Revised definition

The definition of FGR in the case of a macerated stillborn infant with suspected Small for Gestational Age (SGA) and without prior antenatal ultrasound evidence of FGR has been revised to include infants with a brain:liver ratio of 4:1 at autopsy. Suspected Small for Gestational Age (SGA) macerated stillbirths without prior ultrasound evidence of FGR or brain:liver ratio of 4:1 at autopsy should be classified as *Unexplained Antepartum Death* (Category 10), as the weight discrepancy may be a post mortem effect. Customised centiles[2] should be used in determining the presence of FGR, however, as yet data are not available to recommend their routine use in ANZ. It is also recommended that for fetal deaths, where possible, the date of death and not date of birth be used to define the presence of FGR.

The changes to subcategories are as follows:
Subcategory 8.1 description changed to include Doppler evidence; subcategory 8.3 new wording: *No placental pathology*; new subcategory 8.8 *Other placental pathology* is used when placental pathology as described in the subcategories 8.1 or 8.2 is not present.

Clarification of the use of subcategory 8.9 *Unspecified or not known whether placenta examined* has been included in the Classification Guide.

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
8 Fetal Growth Restriction (FGR) 8.1 With evidence of uteroplacental insufficiency e.g. significant infarction, acute atherosis, maternal and/or fetal vascular thrombosis or maternal floor infarction 8.2 With chronic villitis 8.3 Without the above placental pathology 8.4 No examination of placenta 8.9 Unspecified FGR or not known whether placenta examined	**8 Fetal Growth Restriction (FGR)** 8.1 With evidence of reduced vascular perfusion on Doppler studies and /or placental histopathology (e.g. significant infarction, acute atherosis, maternal and/or fetal vascular thrombosis or maternal floor infarction) 8.2 With chronic villitis 8.3 No placental pathology 8.4 No examination of placenta 8.8 Other specified placental pathology 8.9 Unspecified or not known whether placenta examined

3.4.8 Spontaneous preterm: Category 9

Description change for subcategories 9.11, 9.21 and 9.31 to *With chorioamnionitis confirmed on placental histopathology* to clarify the need for placental confirmation of chorioamnionitis for this category; new subcategories 9.13, 9.23 or 9.33 for clinical chorioamnionitis where no placental histopathology is available; new subcategories 9.17, 9.27 and 9.37 *No clinical signs of chorioamnionitis, no examination of placenta.*

Clinical chorioamnionitis is defined as maternal fever (≥38 ^{0}C) associated with one or more of the following symptoms or signs: maternal or fetal tachycardia, uterine tenderness, malodorous amniotic fluid, and maternal leukocytosis or raised C-reactive protein. Clarification on the use of subcategory 9.39 has been included in the Classification Guide.

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
9 Spontaneous Preterm (<37 weeks gestation) 9.1 Spontaneous preterm with intact membranes, or membrane rupture <24 hours before delivery 9.11 With chorioamnionitis 9.12 Without chorioamnionitis 9.13 No examination of placenta 9.19 Unspecified or not known whether placenta examined 9.2 Spontaneous preterm with membrane rupture ≥24 hours before delivery 9.21 With chorioamnionitis, 9.22 Without chorioamnionitis,	**9 Spontaneous Preterm (<37 weeks gestation)** 9.1 Spontaneous preterm with intact membranes, or membrane rupture <24 hours before delivery 9.11 With chorioamnionitis on placental histopathology 9.12 Without chorioamnionitis on placental histopathology 9.13 With clinical evidence of chorioamnionitis, no examination of placenta 9.17 No clinical signs of chorioamnionitis, no examination of placenta 9.19 Unspecified or not known whether placenta

9.23 No examination of placenta 9.29 Unspecified or not known whether placenta examined 9.3 Spontaneous preterm with membrane rupture of unknown duration before delivery, 9.31 With chorioamnionitis 9.32 Without chorioamnionitis 9.33 No examination of placenta 9.39 Unspecified or not known whether placenta examined	examined 9.2 Spontaneous preterm with membrane rupture ³24 hours before delivery 9.21 With chorioamnionitis on placental histopathology 9.22 Without chorioamnionitis on placental histopathology 9.23 With clinical evidence of chorioamnionitis, no examination of placenta 9.27 No clinical signs of chorioamnionitis, no examination of placenta 9.29 Unspecified or not known whether placenta examined 9.3 Spontaneous preterm with membrane rupture of unknown duration before delivery 9.31 With chorioamnionitis on placental histopathology 9.32 Without chorioamnionitis on placental histopathology 9.33 With clinical evidence of chorioamnionitis, no examination of placenta 9.37 No clinical signs of chorioamnionitis, no examination of placenta 9.39 Unspecified or not known whether placenta examined

3.4.9 Unexplained antepartum death: Category 10

Description change to subcategory 10.1 to include Doppler evidence of reduced vascular perfusion; subcategory 10.3 has been reworded; new subcategory 10.8 *Other placental pathology* is used when placental pathology as described in the subcategories 10.1 or 10.2 is not present; Category 10.9 description changed for clarity. Clarification of the use of subcategory 10.9 *Unspecified or not known whether placenta examined* has been included in the Classification Guide.

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
10 Unexplained Antepartum Death 10.1 With evidence of uteroplacental insufficiency, e.g. significant infarction, acute atherosis, maternal and/or fetal vascular thrombosis or maternal floor infarction 10.2 With chronic villitis 10.3 Without the above placental pathology 10.4 No examination of placenta 10.9 Unspecified unexplained antepartum death or not known whether placenta examined	**10 Unexplained Antepartum Death** 10.1 With evidence of reduced vascular perfusion on Doppler studies and /or placental histopathology (e.g. significant infarction, acute atherosis, maternal and/or fetal vascular thrombosis or maternal floor infarction) 10.2 With chronic villitis 10.3 No placental pathology 10.4 No examination of placenta 10.8 Other specified placental pathology 10.9 Unspecified or not known whether placenta examined

3.4.10 No obstetric antecedent: Category 11.

Subcategories 11.1 *SIDS* and 11.91 *Unclassified Sudden Infant Death* are defined according to the new SIDS classification system by Krous et al[11]. This classification system provides a broad overall definition of SIDS which is then subcategorised on the basis of specific epidemiological features and the amount of information available (*Please* see below). Subcategory 11.92 *Other*

Unknown/Undetermined has been included to identify unknown causes of death which do not fulfil the criteria of Category 11.92.

An explanation of the categories is included in the Classification Guide.

In addition, subcategory 11.8 has been renamed to *Other specified* for clarity and includes classification of conditions which are not included in subcategories.

PSANZ-PDC version May 23rd 2003	PSANZ-PDC version October 2004
11 No Obstetric Antecedent 11.1 SIDS 11.11 Consistent with SIDS 11.12 Possible SIDS 11.2 Postnatally acquired infection 11.3 Accidental asphyxiation 11.4 Other accident, poisoning or violence (postnatal) 11.8 Other 11.9 Unknown / Unexplained	**11 No Obstetric Antecedent** 11.1 Sudden Infant Death Syndrome (SIDS) 11.11 SIDS Category IA: Classic features of SIDS present and completely documented. 11.12 SIDS Category IB: Classic features of SIDS present but incompletely documented. 11.13 SIDS Category II : Infant deaths that meet Category I except for one or more features. 11.2 Postnatally acquired infection 11.3 Accidental asphyxiation 11.4 Other accident, poisoning or violence (postnatal) 11.8 Other specified 11.9 Unknown/Undetermined 11.91 Unclassified Sudden Infant Death 11.92 Other Unknown/Undetermined

3.5 Changes to the Neonatal Death Classification Categories

3.5.1 Congenital abnormality: Category 1.

Changes to subcategories have been made as for the Perinatal Death Classification.

3.5.2 Other: Category 7.

Changes to the classification of SIDS have been made as for the Perinatal Death Classification.

APPENDIX V
DEVELOPMENT OF PSANZ PERINATAL DEATH CLASSIFICATION AND PSANZ NEONATAL DEATH CLASSIFICATION

Since 1986, clinicians in some Australian States and Territory Perinatal Committees (notably South Australia and Queensland) and the Perinatal Mortality Committee at the National Women's Hospital in Auckland, have been considering ways of classifying fetal and neonatal deaths beyond standard ICD (International Classification of Diseases) coding, with a view to better assessing aetiology (in order to consider preventable factors) and to more accurately determine specific factors leading to neonatal death.

Experience with the Whitfield obstetric antecedent classification[1] led to realisation that there were shortcomings with this system - it was not hierarchical and did not accommodate more recent knowledge about the causation of some perinatal deaths. Modifications of the Whitfield system were made and published independently by the South Australian and Queensland committees and in the National Women's Hospital report. In 1999, the National Perinatal Data Development Committee (NPDDC) recommended that the topic be further considered at a workshop to be held about the time of the 4th Annual Conference of the Perinatal Society of Australia and New Zealand, held in Brisbane on the 16th March 2000, attended by representatives of most jurisdictions. This was the third such workshop, the two previous being in Brisbane 1996 and Alice Springs 1998. At this workshop it was agreed to attempt to develop uniform classification systems for use throughout Australia and New Zealand. It was agreed that drafts be developed by the Queensland and South Australian representatives, and circulated for comment and discussion, to representatives from the other Australian States and Territories and from New Zealand, with a view to presenting a consensus to the NPDDC in July 2000. Consensus was reached and the finalised classifications were accepted by the NPDDC.

The classifications systems were originally named the Australian and New Zealand Antecedent Classification of Perinatal Mortality (ANZACPM), and the Australian and New Zealand Neonatal Death Classification (ANZNDC). Following endorsement of this activity as a Special Interest Group of the PSANZ in March 2003, the classifications have been renamed to the Perinatal Society of Australia and New Zealand Perinatal Death Classification (PSANZ-PDC) and the Perinatal Society of Australia and New Zealand Neonatal Death Classification (PSANZ-NDC). A description of the classification development in the context of other classification systems was recently published in the Journal of Paediatrics and Child Health [2].

References

1. Whitfield CR, Smith NC, Cockburn F, Gibson AA. Perinatally related wastage – a proposed classification of primary obstetric factors. *Br J Obstet Gynaecol* 1986; **93**.

2. Chan A, King JF, Flenady V, Haslam RH, Tudehope DI. Classification of perinatal deaths: development of the Australian and New Zealand classifications. *J Paediatr Child Health* 2004; **40**.

APPENDIX W
METHODS OF GUIDELINE DEVELOPMENT AND REVISION

The guideline has been developed by the Perinatal Society of Australia and New Zealand Perinatal Mortality (PSANZ-PMG)[1] The Centre for Clinical Studies (CCS) (now Mater Mothers' Research Centre - MMRC), Mater Health Services, Brisbane was originally commissioned by the PSANZ-PMG (through funding made available by the Royal Australian and New Zealand College of Obstetricians and Gynaecologists, SANDS Queensland and SIDS and Kids) to coordinate the development of the guidelines. The MMRC conducted the literature search and collated the review and assembled the draft guidelines in consultation with Working Party members. In the second revision (2008/2009), the PSANZ-PMG collaborated with Australia and New Zealand Stillbirth Alliance (ANZSA) with funds made available by PSANZ and ANZSA. In the third revision of the guideline in 2017, the PSANZ Stillbirth and Neonatal Death Alliance (previously PSANZ PMG) worked in partnership with NHMRC Centre of Research Excellence (previously ANZSA) following the methods of the original version of the guidelines. Literature searches were updated to Dec 2015.

Perinatal Mortality Guidelines Working Party

The Working Party was originally convened in March 2004 to:

- Produce a guideline on Perinatal Mortality Audit for use in Australia and New Zealand;
- Identify gaps in current information and data for the ongoing refinement and evaluation of the above guideline; and
- Collaborate with local and national bodies in the development, implementation and evaluation of the guideline including the impact on health outcomes

In fulfilling this task, the Working Party followed the procedures recommended in the NHMRC documents: Handbook series on preparing clinical practice guidelines, endorsed November 1999[2] and 2011[3] for subsequent updates This process included attention to the following steps:

- Define the scope of the guidelines in order to: ensure clinical relevance; identify further questions, target groups and relevant health outcomes to be addressed by the guidelines;
- Assess any existing guidelines;
- Undertake (or commission) a systematic review of the literature and evaluate the extent and strength of the scientific evidence relating to the effectiveness and appropriateness of the relevant interventions;
- Refine the evidence-based guidelines and other materials to explain guidelines to consumers and other defined target groups;
- Undertake wider consultation;
- Disseminate and implement guidelines; and
- Evaluate and maintain guidelines.

The Working Party was re-convened in February 2008 to review and update the guideline. A one-day meeting was held in Sydney to discuss the required changes on the basis of which amendments were made and finalised through email communication. Section 7 was finalised in April 2009.

Consultation process

For the first version of the guideline, two meetings were held in March 2004 at the PSANZ 8th Annual Congress, Sydney, Australia; one meeting involved the whole Working Party; the other, the perinatal pathologists. Subsequently, subgroups of the Working Party were set up for each of the major sections of the guideline based on the interests of the members. Consultation was undertaken with the subgroup members by email and telephone to produce a final draft for consultation.

Organisations included in the wider consultation up to and including the 2008/9 update were as follows:

ACMI	Australian College of Midwives Incorporated
ACNN	Australian College of Neonatal Nurses
HGSA	Human Genetics Society Australasia
PSANZ	Perinatal Society of Australia and New Zealand
RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynaecologists
SANDS (Qld)	Stillbirth and Neonatal Death Support Group (Qld)
SIDS & Kids	Sudden Infant Death & Stillbirth and Kids
ANZNN	Australian and New Zealand Neonatal Network
BBF	Bonnie Babes Foundation*
SBF	The Stillbirth Foundation Australia*

*second edition of the Guideline only.

Organisations included in the wider consultation for the 2017 update are as follows:

Australian College of Midwives

Australian College of Neonatal Nurses

Human Genetics Society Australasia

Perinatal Society of Australia and New Zealand

Royal Australian and New Zealand College of Obstetricians and Gynaecologists

Women's Healthcare Australasia

Stillbirth and Neonatal Death Support National

Red Nose

Australian and New Zealand Neonatal Network

The Stillbirth Foundation Australia

Still Aware

Bears of Hope

Queensland Maternal Perinatal Quality Council

Consultative Council on Obstetric and Paediatric Morbidity and Mortality, Victoria

Maternal and Perinatal Mortality Committee, South Australia

Council on Obstetric and Paediatric Mortality, Tasmania

Perinatal and Infant Mortality Committee of Western Australia

Perinatal Mortality and Morbidity Review Committee, New Zealand

Search strategy

A comprehensive search strategy was developed based on the initial discussions of the Working Party and those of the Working Party's subgroups. The search strategy included an electronic database search and guideline website search. In addition, the CCS and members of the Working Party searched previous reviews including cross references and contacted experts in the field for additional information.

The search strategy for the first edition included searches of the following electronic databases: The Cochrane Library (Issue 2, 2004); MEDLINE (1966-2004); and CINAHL (1982-2004). Generic terms were used throughout the guideline, with additional terms included in the section specific searches.

Generic search terms included: text terms; f?etal death, f?etal wastage, perinatal mortality, perinatal death, stillb*, neonatal mortality, neonatal death, NND and MeSH terms; fetal death and perinatal death.

The generic search terms were combined with section specific terms, including the following: review, audit, classification, investigat*, guideline, protocol, test*, explor* rural, non-metropolitan, outreach, isolat*, info*, brochure*, pamphlet*, parent*, mother*, father*, profession*, nurs*, midwi*, doctor*, p?ediatric*, neonatolog*, bereave*, grief, emotion*, care, psycho*, funeral, social*, suboptimal, substandard, standard*, inadequate, compliance, manage*, HBA1c, glucose tolerance test, GTT, Fasting blood glucose.

This search was updated and expanded in February 2008, searching the years 2004 to March 2008.

The following guideline web sites were searched in March 2008 for existing perinatal mortality audit guidelines.

Web site name/Organisation name	Web site address/URL
Alberta Medical Association, Canada	http://www.albertadoctors.org/home
American College of Obstetrics and Gynecology	http://www.acog.com/
Association of Women's Health, Obstetric and Neonatal Nurses	http://www.awhonn.org/awhonn
Australian Government, Department of Health & Ageing: Safety & Quality in Health Care	http://www.health.gov.au
Australian Government, National Health & Medical Research Council	http://www.nhmrc.gov.au
British Columbia Perinatal Care Program,, Canada	http://www.bcphp.ca/Perinatal%20Mortality%20Guidelines.htm
Canadian Paediatric Society	http://www.cps.ca/english/publications
Canadian Task Force On Preventive Health Care: Evidence-Based Clinical Prevention	http://www.ctfphc.org/
Confidential Enquiry into Maternal and Child Health (CEMACH)	http://www.cemach.org.uk/Publications.aspx
Department of Health, New South Wales	http://www.health.nsw.gov.au/

Department of Health, United Kingdom	http://www.dh.gov.uk/Home/fs/en
Department of Health, Western Australia	http://www.health.wa.gov.au/
Guideline Advisory Committee, Ontario, Canada	http://www.gacguidelines.ca/
HSTAT – Health Services/Technology Assessment Text	http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=hstat
Human Tissue Authority, United Kingdom	http://www.hta.gov.uk/guidance/codes_of_practice.cfm
Institute of Clinical Systems Improvement	http://www.icsi.org/guidelines_and _more/
King Edward Memorial Hospital for Women, Subiaco, Western Australia	http://www.kemh.health.wa.gov.au/
National Guideline Clearinghouse	http://www.guideline.gov/
National Institute for Clinical Excellence, UK	http://www.nice.org.uk/
Neonatology on the Web	http://www.neonatology.org/
New Zealand Guidelines Group	http://www.nzgg.org.nz/index.cfm?screensize=1024&ScreenResSet=yes
Princess Margaret Hospital for Children, Subiaco, Western Australia	http://www.pmh.health.wa.gov.au/
Queensland Health, Australia	http://qheps.health.qld.gov.au/
Royal Children's Hospital, Melbourne, Australia	http://www.rch.org.au/clinicalguide/index.cfm?doc_id=5033
Royal College of Obstetricians and Gynaecologists, UK	http://www.rcog.org.uk/index.asp?PageID=8
Royal College of Pathologists	http://www.rcpath.org/
Royal Prince Alfred Hospital, Camperdown, New South Wales	http://www.cs.nsw.gov.au/rpa/
Scottish Intercollegiate Guidelines Network (SIGN)	http://www.sign.ac.uk/
Society of Obstetricians and Gynaecologists of Canada	http://www.sogc.org/index_e.asp
Three Centres Collaboration, Australia	http://www.3centres.com.au/
University of California and San Francisco, United States	http://medicine.ucsf.edu/resources/guidelines/
University of Manitoba, Canada	http://umanitoba.ca/

Wisconsin Stillbirth Service Program	http://www.wisc.edu/wissp/
Women's and Children's Hospital, Adelaide, Australia	http://www.wch.sa.gov.au/

The guideline web site search yielded the following 22 guidelines on aspects of perinatal mortality audit:

Association	Guideline
Alberta Medical Association	Alberta Medical Association. Investigation of Stillborn Protocol. In: Alberta Medical Association; 1998 (updated 2005). http://www.albertadoctors.org/bcm/ama/ama-website.nsf/AllDoc/FB1F65D913EDB64787256E2A005E700E?OpenDocument accessed 2008
British Columbia Reproductive Care Program	British Columbia Reproductive Care Program. Perinatal Mortality Guideline 1: The Perinatal Mortality Review Process. British Columbia; 1999. http://www.bcrcp.xplorex.com//sites/bcrcp/files/Guidelines/Pmg/MasterPM1ReviewProcessApril99.pdf accessed 2008
British Columbia Reproductive Care Program	British Columbia Reproductive Care Program. Perinatal Mortality Guideline 2: Hospital Perinatal Mortality Review Committee: Terms of Reference. British Columbia; 1999. http://www.bcrcp.xplorex.com//sites/bcrcp/files/Guidelines/Pmg/MasterPM2TORHospReviewCommApril99.pdf accessed 2008
British Columbia Reproductive Care Program	British Columbia Reproductive Care Program. Perinatal Mortality Guideline 3: Classification of Perinatal Deaths. British Columbia; 1999. http://www.bcrcp.xplorex.com//sites/bcrcp/files/Guidelines/Pmg/MasterPM3ClassifDeathsApril99.pdf accessed 2008
British Columbia Reproductive Care Program	British Columbia Reproductive Care Program. Perinatal Mortality Guideline 4: Clinical Examination of the Placenta. British Columbia; 1999. http://www.bcrcp.xplorex.com//sites/bcrcp/files/Guidelines/Pmg/MasterPM4ExamPlacentaApril99.pdf accessed 2008
British Columbia Reproductive Care Program	British Columbia Reproductive Care Program. Perinatal Mortality Guideline 5: Investigation and Assessment of Stillbirths. British Columbia; 1999. http://www.bcrcp.xplorex.com//sites/bcrcp/files/Guidelines/Pmg/MasterPM5InvestAssesStillbirthsMay2000.pdf accessed 2008
Canadian Paediatric Society	Canadian Paediatric Society Statement. Guidelines for health care professionals supporting families experiencing a perinatal loss. Paediatric Child Health 2001;6(7):469-477. (Re-affirmed May 2007) http://www.cps.ca/english/statements/FN/FN01-02.pdf accessed 2008
South Australian Department of Human Services	Department of Human Services South Australia. Maternal, Perinatal and Infant Mortality in South Australia 2006. Including South Australian Protocol for investigation of stillbirths. In: Department of Human Services, South Australia; 2007. http://www.dh.sa.gov.au/pehs/PDF-files/0712-mortality-report-2006.pdf accessed 2008
Royal Prince Alfred Hospital, Sydney, NSW	Department of Neonatal Medicine RPAH. Stillbirths. In: Central Sydney Area Health Service. http://www.cs.nsw.gov.au/rpa/neonatal/default.htm accessed 2008

Department of Health, UK	DH Clinical Ethics and Human Tissue Branch. Families and post mortems - A code of practice. Best Practice Guideline. London: Department of Health; 2003 April 2003. http://www.dh.gov.uk/assetRoot/04/05/43/12/04054312.pdf accessed 2008
Department of Health, UK	DH Clinical Ethics and Human Tissue Branch. A guide to the post mortem examination procedure involving a baby or child. In: Department of Health; 2003. http://www.dh.gov.uk/assetRoot/04/08/39/60/04083960.pdf accessed 2004
Queensland Department of Health	Queensland Maternal and Perinatal Quality Council. Maternal and Perinatal Mortality Audit: Guidelines for Maternity Hospitals. Queensland: Queensland Government, Queensland Health; 2003.
Royal Children's Hospital, Melbourne, VIC	Kane H, Wilkinson G. Reproductive Loss: Pre 20 Week / Stillbirth / neonatal death / infant death, Melbourne. Melbourne: Royal Children's Hospital, Melbourne; 2003 19/05/2003. Report No.: 9W-04-1-002. http://www.rch.org.au/intranet/policy/9W041002.htm accessed 2004 Not able to be accessed March 2008
Royal Children's Hospital, Melbourne, VIC	Kane H, Wilkinson G. Reproductive Loss: Stillbirth 20 weeks and over, Melbourne. Electronic. Melbourne: Royal Children's Hospital, Melbourne; 2003 17/05/2003. Report No.: 9W-04-2-038. http://www.rch.org.au/intranet/policy/9W042038.htm accessed 2004 Not able to be accessed March 2008
Western Australia Department of Health	McLaughlin V. Non-Coronial Post-Mortem Examinations: Code of Practice 2007, WA: Health Department, WA; 2007. http://www.health.wa.gov.au/postmortem/docs/Non-Coronial_Post-Mortem_Examinations_Code_of_Practice_2007.pdf accessed March 2008
New South Wales Department of Health	NSW Health Department. Stillbirth: Management and Investigation.. Electronic/circular. Sydney: NSW Health Department; 1997 27/10/1997. Report No.: 97/107. http://www.health.nsw.gov.au/policies/pd/2007/pdf/PD2007_025.pdf accessed March 2008
New South Wales Department of Health	NSW Health Department. Hospital Procedures for review and reporting of perinatal deaths. In; 2006. http://www.health.nsw.gov.au/policies/pd/2006/pdf/PD2006_006.pdf accessed March 2008
Royal College of Pathologists, UK	Royal College of Pathologists. Appendix 6: Guidelines for autopsy investigation of fetal and perinatal death. London: Royal College of Pathologists; 2002 Sept 2002. http://www.rcpath.org/resources/pdf/appendix_6.pdf accessed March 2008
Royal Children's Hospital, Melbourne, VIC	Ross J, Smith M, Dutton G. Reproductive Loss: Neonatal / Infant Death. Electronic. Melbourne: Royal Children's Hospital, Melbourne; 1999 18/11/99. Report No.: 9W-04-2-019. http://www.rch.org.au/intranet/policy/9W042019.htm accessed March 2008
King Edward Memorial Hospital, WA	Women's and Children's Health Services WA. Perinatal Death. In: King Edward Memorial Hospital; 2001. http://www.kemh.health.wa.gov.au/development/manuals/guidelines.htm accessed March 2008

Women's and Children's Hospital, Adelaide, SA	Women's and Children's Hospital Adelaide. Perinatal Protocols and Guidelines for Management; 1996. http://www.wch.sa.gov.au/services/az/divisions/wab/deliverysuite/ accessed 2004 Directed to South Australian Government. (below)
Government of South Australia. Department of Health.	South Australian Perinatal Practice Guidelines http://www.health.sa.gov.au/PPG/Default.aspx?tabid=113 accessed March 2008.

Levels of evidence

As defined by "A guide to the development, implementation and evaluation of clinical practice guidelines"[4], http://www.nhmrc.gov.au/publications/synopses/cp30syn.htm

Level I evidence obtained from a systematic review of all relevant randomised controlled trials.

Level II evidence obtained from at least one properly designed randomised controlled trial.

Level III-1 evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method).

Level III-2 evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case control studies, or interrupted time series with a control group.

Level III-3 evidence obtained from comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group.

Level IV evidence obtained from case series, either post-test or pre-test and post-test.

Although an attempt was initially made to apply the above quality ratings to the available literature, due to limited resources available for development of the guideline combined with the apparent paucity of high quality evidence, it was decided not to continue with this activity. Therefore, recommendations are based on consensus by the Working Party after review of the available information and levels of evidence are not referred to in the guideline.

2. Section notes

Section 2

In the development of this section an attempt was made to obtain all existing national and international guidelines and protocols on perinatal mortality review. The following guideline/policy statements were used as a basis for development of this guideline:

1. Queensland Maternal and Perinatal Quality Council. Maternal and Perinatal Mortality Audit: Guidelines for Maternity Hospitals. Queensland: Queensland Government, Queensland Health; 2003[5].

2. Centre for Epidemiology and Evidence. Deaths - Review and Reporting of Perinatal Deaths. North Sydney: Ministry of Health, NSW; 2011.

3. Perinatal Mortality Guidelines in British Columbia. Vital Statistics. In. Victoria, British Columbia; 1998[6].

Section 3

We would like to acknowledge those who have significantly contributed to the review and update of this section of the guidelines.

First edition: Kylie Lynch, Liz Davis, Sonia Herbert, Ros Richardson, Dell Horey, Vicki Flenady

Second edition: (minor review): Liz Davis, Ros Richardson and Vicki Flenady

Third edition: (major review): Trish Wilson, Belinda Jennings, Diana Bond, Paula Dillon, Fran Boyle

Section 4

This section was first developed by Adrian Charles, Susan Arbuckle, Diane Payton, Vicki Flenady, Jane Dahlstrom, Jane Zuccolo, Yee Khong and Nick Smith.

The main resource documents used in the development of this section were:

1. The Royal College of Pathologists of Australasia Autopsy Working Party. The decline of the hospital autopsy: a safety and quality issue for healthcare in Australia. Med J Aust 2004;180(6):281-5.

2. The Royal College of Pathologists of Australasia. Autopsies and the use of tissues removed from autopsies. In. Sydney: Royal College of Pathologists of Australasia; 2002.

3. The Royal College of Pathologists. Guidelines for Post Mortem Reports. London: The Royal College of Pathologists; 1993.

4. The Royal College of Pathologists. Guidelines on autopsy practice: Report of a working group of the Royal College of Pathologists. In. London: Royal College of Pathologists; 2002.

5. AHMAC Subcommittee on Autopsy Practice. The national code of ethical autopsy practice. Adelaide: SA Department of Human Services; 2002 5 April.

6. SIDS & Kids Australia. SIDS Focussing on Stillbirth: Investigation and Prevention of Stillbirth: Setting the Policy and Research Agenda: SIDS and Kids Australia; 2001 29/11/2001.

7. SIDS & Kids Australia. SIDS and Kids Focussing On Stillbirth: Report from the SOS Pathology Workshop. Sydney: SIDS & Kids Australia; 2002 22 Nov.

8. Royal College of Paediatrics and Child Health. The future of paediatric pathology services: fetal, perinatal and paediatric pathology; a critical future. Report of a working group to restore and develop specialist paediatric pathology: a critically important specialty, essential for the best quality care of children. London: Royal College of Paediatrics and Child Health; 2002 March.

Section 5

A subgroup of the Working Party (Glenn Gardener, Lesley McCowan, James King, Jane Zucculo, Katie Day (nee Waters), Gus Dekker, Hanna Reinebrant, Kimberly Abussi and Vicki Flenady) drew on existing national and international protocols for stillbirth investigation and the findings of a comprehensive literature search in the initial development of this section of the guideline.

The main initial resource documents used in the development of this section were:

1. Queensland Maternal and Perinatal Quality Council. Maternal and perinatal mortality audit: Guidelines for maternity hospitals. Queensland: Queensland Government, Queensland Health; 2003.

2. Department of Human Services South Australia. Maternal, Perinatal and Infant Mortality in South Australia 2002. Including South Australian Protocol for investigation of stillbirths. In: Department of Human Services, South Australia; 2002.

3. Wisconsin Stillbirth Service Program. Guide to etiologic evaluation of the stillborn infant: The WiSSP Protocol. In. Wisconsin: Wisconsin Stillbirth Service Program.

4. British Columbia Reproductive Care Program. Perinatal Mortality Guideline 5: Investigation and Assessment of Stillbirths. British Columbia; 1999.

5. The American College of Obstetricians and Gynecologists. Management of Stillbirth. In: ACOG Practice Bulletin: Clinical management for Obstetricians and Gynaecologists; 2009.

6. Alberta Perinatal Health Program. Stillborn Protocol: Investigation of Stillborn protocol. In Alberta Medical Association, Alberta; 1998.

7. Institute of Obstetricians and Gynaecologists, Royal College of Physicians of Ireland. Investigation and Management of Late Fetal Intrauterine Death and Stillbirth Clinical Practice Guideline; 2011

8. Iowa Department of Public Health. Fetal Death Evaluation Protocol. Iowa State Health; 2011

9. Royal College of Obstetricians and Gynaecologists. Late intrauterine Fetal Death and Stillbirth. In Greentop Guideline No. 55; 2010

10. Maternal Fetal Medicine Committee of Society of Obstetricians and Gynecologists of Canada. Stillbirth and Bereavement: Guidelines for investigation. In: SOGC Clinical Practice Guidelines; 2006

Section 6

A subgroup of the Guideline Working Party worked collaboratively in the development of this Section, the members were: Alison Kent, Lucy Cooke, David Tudehope, Ross Haslam, Jane Dahlstrom and Adrienne Gordon.

Section 7

A subgroup of the Guideline Working Party worked collaboratively in the development of this Section. We wish to acknowledge and Annabelle Chan and James King for their leadership in reaching consensus on the initial PDC system and Ross Haslam and Andy McPhee for development of the NDC. All revisions will be summarized in the Appendix of Section 7.

5. References

1. PSANZ PMN-SIG. Perinatal Society of Australia and New Zealand: Special Interest Group. Australia and New Zealand: PSANZ, 2004.
2. National Health and Medical Research Council. How to present the evidence for consumers: Preparation of consumer publications. Canberra: NHMRC, 1999.
3. National Health and Medical Research Council. 2011. Melbourne: National Health and Medical Research Council; Procedures and requirements for meeting the 2011 NHMRC standard for clinical practice guidelines
4. National Health and Medical Research Council. A guide to the development, implementation and evaluation of clinical practice guidelines. Canberra: Commonwealth of Australia, 1998.
5. Queensland Maternal and Perinatal Quality Council. Maternal and perinatal mortality audit: Guidelines for maternity hospitals. Queensland: Queensland Government, Queensland Health, 2003.
6. British Columbia vital statistics agency. Vital Statistics. Victoria; 1998 http://www.vs.gov.bc.ca/.

APPENDIX X
GLOSSARY OF TERMS AND ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACMI	Australian College of Midwifes Incorporated
ACNN	Australian College of Neonatal Nurses
aetiology	The science of causes, especially of disease
amnion	A thin but tough extraembryonic membrane of reptiles, birds and mammals that lines the chorion and contains the foetus and the amniotic fluid around it, in mammals it is derived from trophoblast by folding or splitting.
amniotic fluid	The fluid that surrounds the developing foetus within the amniotic sac. This environment cushions the baby from injury and plays an important role in foetal development.
antepartum death	Death of a baby before the onset of labour
ANZNN	Australian and New Zealand Neonatal Network
ANZSA	Australian and New Zealand Stillbirth Alliance
APC resistance	Activated protein C resistance
Apgar score	A system to assess the status of the infant after birth. The Apgar score is based on the following five variables: heart rate, respiratory effort, muscle tone, reflex irritability and colour. Maximum score is 10. It is recorded at one minute and five minutes after birth.
APS	Antiphospolipid syndrome
AP view	Anterio-posteria view
autopsy	A surgical procedure postmortem, which involves the examination of body tissues (including internal organs), often to determine cause of death.
cardiotocography (CTG)	The electronic monitoring of the fetal heart rate and of uterine contractions. The fetal heart rate is recorded by means of either an external ultrasonic abdominal transducer or a fetal scalp electrode. Uterine contractions are recorded by means of an abdominal pressure transducer. The recordings are graphically represented on a continuous paper printout (trace).

case control studies	Case control studies are used to evaluate multiple risk factors associated with a particular disease or outcome. They are particularly useful when the condition is rare.
chorion	Extraembryonic membrane surrounding the embryo of amniote vertebrates. The outer epithelial layer of the chorion is derived from the trophoblast.
chromosome analysis (karyotype)	A picture of the chromosomes of an individual arranged in a standard manner so that abnormalities of chromosome number or form can be identified.
confidential enquiry	Enquiry by peer groups, including experts in the field, into the cause of, and the factors surrounding, a death, where strict confidentiality is observed at all stages of the process. It is a form of clinical audit, with the important difference that the feedback or 'closing of the audit loop' is via reports on the general findings, and not direct feedback to those involved with the individual cases subjected to enquiry.
CESDI	Confidential Enquiry into Stillbirths and Deaths in Infancy
CMA	Chromosomal microarray
CMV	cytomegalovirus
confidence intervals (95% CI)	A range of values about which there is a 95% chance that it includes the true value. For example, if the stillbirth rate is 5.4 per 1000 total births and the 95% confidence intervals are 5.3 to 5.5 per 1000 total births, then there is a 95% chance that the actual stillbirth rate lies between 5.3 and 5.5 per 1000 total births.
congenital anomaly	A physical malformation, chromosomal disorder or metabolic abnormality which is present at birth.
control	As used in a case control study, 'control' means person(s) in a comparison group that differ only in their experience of the disease or condition in question. If matched controls are used they are selected so that they are similar to the study group, or cases, in specific characteristics, eg age, sex, weight.
customised birthweight	The principle that the weight reference for the fetus should be individualised (customised), and not based on population averages. Factors shown to be predictive of birthweight are maternal height, weight at booking for the first antenatal visit, ethnicity and fetal gender and gestational age. The customised birthweight is an adjusted standard for the individual infant. *Gardosi, J., M. Mongelli, M. Wilcox, and A. Chang. 1995. An adjustable fetal weight standard. Ultrasound Obstet Gynecol 6 (3):168-74.*

cytogenetics	The study of the structure of chromosomes; cytogenetic tests are carried out to detect any chromosomal abnormalities associated with a disease; these help in the diagnosis and selection of optimal treatment.
denominator	The population at risk in the calculation of a rate or ratio. An example relevant to CESDI is the number of all live births as the denominator for neonatal mortality rate.
DIC	Disseminated intravascular coagulation is an acquired disorder of clotting characterised by intravascular fibrin formation which occurs in the course of a variety of conditions including sepsis and pre-eclampsia.
DCT	direct Coombs test
early neonatal death	Death of a liveborn infant occurring less than 7 completed days (168 hours) from the time of birth.
EFM	electronic fetal monitoring
fasting blood glucose	A method for finding out how much glucose (sugar) is in the blood. The test can show if a person has diabetes.
FBS	Fetal blood sampling. This is a test performed in labour to obtain a capillary blood sample from the baby to check for well-being.
fetal growth restriction (FGR)	This is a term often used interchangeably with the term 'small for gestational age' (SGA). SGA is defined as a baby/fetus with antenatal ultrasound biometry assessment less than the 10th centile for gestational age according to National birthweight centiles. FGR strictly refers to babies that have failed to reach their growth potential during pregnancy. They are frequently but not always SGA. FGR is defined antenatally by an estimated fetal weight or serial antenatal ultrasound evidence of growth restriction or growth arrest and at birth a birthweight below the 10th centile using the National birthweight centiles. Ideally FGR should be defined according to the infant's individual growth potential using customised birthweight centiles. See customised birthweight.
fetal death	See stillbirth.
FHR	fetal heart rate
GBS	group B streptococcus
gestation	The time from conception to birth. The duration of gestation is measured from the first day of the last normal menstrual period.
gestational diabetes	A carbohydrate intolerance of variable severity with onset, or first recognition during pregnancy.
glucose tolerance	A test for diagnosing diabetes, where blood glucose is measured in

test	intervals after a glucose-rich meal is taken.
GP	General practitioner
growth restriction	See also fetal growth restriction. Birthweight below the 10th centile for gestational age according to National birthweight centiles. Ideally FGR should be defined according to the infant's individual growth potential using customised birthweight centiles.
GTT	Glucose tolerance test. This is a test for diagnosing diabetes, where blood glucose is measured at specific intervals after a glucose-rich meal is taken.
haemoglobin A1c (Hba1c)	The substance of red blood cells that carries oxygen to the cells and sometimes joins with glucose. Because the glucose stays attached for the life of the cell (about 4 months), a test to measure haemoglobin A1C shows what the person's average blood glucose level was for that period of time.
HELLP syndrome	haemolysis, elevated liver function, low platelets
histology	The study of cells and tissue on the microscopic level.
histopathology	This is the science concerned with the study of microscopic changes in diseased tissues.
infant death	Death in the first year following live birth; on or before the 365th day of life (366th in a leap year).
infant mortality rate	See mortality rates.
intermittent auscultation	Listening to the fetal heart at regular intervals between contractions.
intrapartum death	Fetal death during labour. If a baby is born without signs of life, but also without maceration (the skin and other changes that occur at varying lengths of time after death in the womb), there is a strong presumption that death occurred during labour. There are exceptions in both directions, which require judgement on the timing of death in relation to the presumed onset of labour.
intrauterine fetal death (IUFD)	Death of a fetus in utero after 20 weeks gestation or at birth weighing at least 400gms. See stillbirth.
ITP	idiopathic thrombocytopenia purpura
IUFD	See intrauterine fetal death

intra-uterine growth restriction (IUGR)	See fetal growth restriction.
karyotype	The complete set of chromosomes of a cell or organism; used especially for the display prepared from photographs of mitotic chromosomes arranged in homologous pairs
Kleihauer-Betke	A blood test performed on the mother's blood to identify whether substantial bleeding has occurred from the fetus into the mother's circulation.
live birth	A livebirth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered liveborn.
methylenetetrahydrofolate reductase (MTHFR) gene	The MTHFR gene provides instructions for making an enzyme called methylenetetrahydrofolate reductase. This enzyme plays a role in processing amino acids (the building blocks of proteins).
MIA	Minimally-invasive autopsy
mortality rates	Perinatal mortality rate. The number of stillbirths and neonatal deaths per 1000 births.
MRI	magnetic resonance imaging
MTHFR	methylenetetrahydrofolate reductase
necropsy	Rarely used term for autopsy.
neonatal death	Death before the age of 28 completed days following livebirth.
neonatal death rate	The number of neonatal deaths (those occurring within the first 28 days of life) per 1000 livebirths.
NHMRC	National Health & Medical Research Council
NIA	Non-invasive autopsy
odds ratio (OR)	This is a measure of the excess risk or degree of protection given by exposure to a certain factor. An odds ratio of greater than one shows an increased risk and less than one shows a protective effect.

PA view	Posterio-anteria view
pathology	The branch of medicine concerned with disease, especially its structure and its functional effects on the body.
PCR	polymerase chain reaction
Perinatal mortality rate (PMR)	See mortality rates.
post-mortem	After death. Hence a post-mortem examination may or may not include an autopsy.
Postneonatal infant death	Death occurring after 28 completed days up to 1 year following live birth.
PSANZ	Perinatal Society of Australia and New Zealand
PSANZ-PDC	Perinatal Society of Australia and New Zealand – Perinatal Death Classification
PSANZ-NDC	Perinatal Society of Australia and New Zealand – Neonatal Death Classification
PSANZ-PMG	Perinatal Society of Australia and New Zealand Perinatal Mortality Group
RACP	Royal Australasian College of Physicians – Division of Paediatrics & Child
RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynaecologists
RCP	Royal College of Pathologists
RCPA	Royal College of Pathologists of Australasia
SAFDA	Support After Fetal Diagnosis of Abnormality
SANDS	Stillbirth And Neonatal Death Support Group
SGA	Small for gestational age – see IUGR.
SLE	systemic lupus erythematosus
Stillbirth (fetal death)	Death prior to the complete expulsion or extraction from its mother of a product of conception of 20 or more completed weeks of gestation or of 400g or more birthweight where gestation is not known. The death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary

	muscles.
stillbirth rate	The number of stillbirths per 1000 births.
sudden infant death syndrome (SIDS)	General Definition of SIDS SIDS is defined as the sudden unexpected death of an infant <1 year of age, with onset of the fatal episode apparently occurring during sleep, that remains unexplained after a thorough investigation, including performance of a complete autopsy and review of the circumstances of death and the clinical history. *Krous HF, Beckwith JB, Byard RW, Rognum TO, Bajanowski T, Corey T, et al. Sudden infant death syndrome and unclassified sudden infant deaths: a definitional and diagnostic approach. Pediatrics 2004;114(1):234-8.*
SIDS AND KIDS	An organisation striving to eliminate sudden and unexpected infant deaths, supporting bereaved families and funding research.
termination of pregnancy	This is the term used to describe deliberate ending of a pregnancy with the intention that the fetus will not survive.
VTE	venous thromboembolism
WISSP	The Wisconsin Stillbirth Protocol Program

APPENDIX Y
CONTACT DETAILS AND REGIONAL COORDINATORS

PSANZ – SANDA Coordinating Centre

NHMRC Centre of Research Excellence in Stillbirth
Mater Research Institute-The University of Queensland
Telephone: 061 7 3840 1592
Email: stillbirthcre@mater.uq.edu.au

PSANZ - SANDA Regional Coordinators

Western Australia – Ms Belinda Jennings
Clinical Midwife Consultant,
Perinatal Loss Service
King Edward Memorial Hospital
Email: Belinda.Jennings@health.wa.gov.au

South Australia – Prof Yee Khong
Associate Professor
Department of Histopathology
Women's and Children's Hospital
Email: yee.khong@adelaide.edu.au

Northern Territory – Dr Sujatha Thomas
Specialist Obstetrician Gynaecologist
Obstetrics & Gynaecology
Royal Darwin Hospital
Email: sujatha.thomas@nt.gov.au

Queensland – Prof Vicki Flenady
Acting Director
Centre of Research Excellence in Stillbirth
Mater Research Institute-The University of Queensland
Email: vicki.flenady@mater.uq.edu.au

New South Wales – Dr Adrienne Gordon
Neonatologist and Clinical Senior Lecturer
Royal Prince Alfred Hospital
Email: adrienne.gordon@sydney.edu.au

Australian Capital Territory – Prof Alison Kent
Consultant Neonatologist
The Australian National University Medical School and The Canberra Hospital
Email: Alison.Kent@act.gov.au

Victoria - Professor Sue McDonald
Professor of Midwifery
Mercy Hospital for Women and School of Nursing and Midwifery
Latrobe University
Email: s.mcdonald@latrobe.edu.au

Tasmania – Dr Amanda Henry
Senior Lecturer in Obstetrics and Gynaecology
School of Women's and Children's Health
University of New South Wales
amanda.henry@unsw.edu.au

New Zealand – Prof Lesley McCowan
Sub- specialist in Maternal Fetal Medicine
Department of Obstetrics and Gynaecology
University of Auckland
Email: l.mccowan@auckland.ac.nz