MALAYSIAN NATIONAL NEONATAL REGISTRY (CRF 2026)

Centre Name:	◯ **New Case** ◯ **Readmission** ◯ **Transfer from another SDP Hospital or IJN:**	**MNNR No (Office use):** ☐☐☐☐☐☐ / ☐☐☐☐☐☐ **Centre:** ☐☐☐
Date of Admission: **(dd/mm/yy)**		

Admitted to neonatal ward: ◯ Yes → (Proceed to complete ALL sections in this CRF) ◯ No → (Proceed to complete Section 1, 2 [without No.30], 4[No.47 only] and 5)

☐ Abandoned baby → (if this box is ticked, item No.1, No.3a & 3b, No.5 to No.20 are not mandatory)

Instruction: Where check boxes ☐ are provided, ticked (√) one or more boxes. Where radio buttons ◯ are provided, ticked (√) one box only.

* **RN of baby:**	

SECTION 1 : PATIENT PARTICULARS & MATERNAL HISTORY

* **1. Name of mother:**	
2. Name of baby (Optional):	
* **3a. Mother's I/C number:**	MyKad: ☐☐☐☐☐☐ – ☐☐ – ☐☐☐☐ Other ID document No: ☐☐☐☐☐☐☐☐☐☐☐☐ Specify document type (if others): ◯ Passport ◯ Armed Force ID ◯ Driver's License ◯ Old IC ◯ Hospital RN ◯ Father's I/C ◯ Work Permit Number ◯ Police ID Card ◯ Immigration Permit ◯ Other, specify:.....
3b. Baby's MyKid number:	☐☐☐☐☐☐ – ☐☐ – ☐☐☐☐
* **4a. Date of birth of baby:** (dd/mm/yy)	☐☐ / ☐☐ / ☐☐☐☐ **4b. Time of birth**: (24 hour format. Enter the best estimated time of birth if the exact time unknown) ☐☐☐☐
* **5. Ethnic group of Mother:**	◯ Malay ◯ Indian ◯ Bumiputra Sabah, specify:..... ◯ Other, Malaysian ◯ Chinese ◯ Orang Asli ◯ Bumiputra Sarawak, specify:..... ◯ Non-citizen, specify country.....
* **6. Maternal age:**	☐☐
* **7. GPA:** (current pregnancy before delivery of this child)	***Gravida:** ☐☐ ***Parity:** ☐☐ ***Abortion:** ☐☐
* **8. Maternal diabetes (including gestational diabetes):**	◯ Yes ◯ No ◯ Unknown
* **9. Maternal hypertension, Chronic/Pregnancy induced/PE:**	◯ Yes ◯ No ◯ Unknown
* **10. Maternal Eclampsia:**	◯ Yes ◯ No ◯ Unknown
* **11. Maternal Chorioamnionitis:**	◯ Yes ◯ No ◯ Unknown
* **12. Maternal Anaemia:** (<11g/dL)	◯ Yes ◯ No ◯ Unknown
* **13. Maternal abruption placenta:**	◯ Yes ◯ No ◯ Unknown
* **14. Maternal bleeding placenta praevia:**	◯ Yes ◯ No ◯ Unknown
* **15. Cord prolapse:**	◯ Yes ◯ No ◯ Unknown
* **16. Maternal obesity:**	◯ Yes ◯ No ◯ Unknown
* **17. Other current maternal illness:**	◯ Yes If yes,specify : ..... ◯ No

SECTION 2 : BIRTH HISTORY

* **18. Antenatal steroid:**	◯ Yes → ◯ complete ◯ incomplete ◯ No ◯ Unknown
* **19. Antenatal magnesium sulphate:**	◯ Yes ◯ No ◯ Unknown
* **20. Intrapartum antibiotic:**	◯ Yes ◯ No ◯ Unknown
* **21. Birth weight:**	☐☐☐☐ (gram)
* **22. Gestation:**	☐☐ (weeks)
* **23. Gender:**	◯ Male ◯ Female ◯ Ambiguous / Indeterminate
* **24. Growth status:**	◯ SGA ◯ AGA ◯ LGA (autocalculate)
* **25. Place of birth:**	◯ Inborn ◯ Outborn → ◯ Home ◯ Health Clinic ◯ Private Hospital ◯ Government hospital with specialist ◯ Government hospital without specialist ◯ University hospital ◯ Enroute / during transport ◯ Maternity home with specialist ◯ Maternity home without specialist ◯ Alternative Birthing centre (ABC) ◯ Urban ◯ Rural ◯ Others / specify..... ◯ Unknown
* **26. Multiplicity:**	◯ Singleton ◯ Twin ◯ Triplet ◯ Other, specify:..... Specify birth order if not a singleton: ☐☐
* **27a. Final Mode of delivery:**	◯ Vaginal delivery → ◯ SVD ◯ Breech ◯ Instrumental → ☐ Vacuum ☐ Forceps ◯ Caesarean section → ◯ Elective ◯ Emergency ◯ Others, specify:..... ◯ Unknown
* **27b. Delayed cord clamping:**	◯ Yes ◯ No

SECTION 2 : BIRTH HISTORY (continue)

* 28. Apgar score at 1 min and 5 min (0-10)	a) Score at 1 min:	☐ Unknown	b) Score at 5 min: (Please score even if the baby is intubated)	☐ Unknown
* 29a. Active resuscitation:		○ Yes ○ No		
* 29b. Initial resuscitation: (applicable for inborn only)	a) Oxygen:	○ Yes ○ No	d) Endotracheal tube vent:	○ Yes ○ No
	b) Early CPAP :	○ Yes ○ No	e) Cardiac compression:	○ Yes ○ No
	c) Bag and mask ventilation:	○ Yes ○ No	f) Adrenaline:	○ Yes ○ No
* 30a. Plastic wrap at birth without drying (for <1500 gm)		○ Yes ○ No		
30b. Admission temperature: (mandatory if admitted to Neonatal ward)		☐☐ . ☐ (ºC)		

SECTION 3: NEONATAL EVENT

* 31. Respiratory support: If none = state 0 day If <12 hours = state 0.5 day If >12 to 24 hours = state 1 day If >24 hours = state to the next completed day Complete entry a) to g) for each type of respiratory support given in your centre	○ Yes →	a) nCPAP, duration:	☐☐ . ☐ Day (s)
	○ No	b) bilevel CPAP, duration:	☐☐ . ☐ Day (s)
		c) HFNC, duration:	☐☐ . ☐ Day (s)
		d) NIPPV, duration:	☐☐ . ☐ Day (s)
		e) Conventional ventilation, duration:	☐☐ . ☐ Day (s)
		f) High frequency ventilation (HFOV/HFJV), duration:	☐☐ . ☐ Day (s)
		g) Inhaled Nitric Oxide:	☐☐ . ☐ Day (s)
* 32. Surfactant:	○ Yes →	○ < 1 hr ○ 1-2 hrs ○ > 2 hrs	
	○ No		
* 33. Parenteral nutrition:	○ Yes	○ No	

SECTION 4: PROBLEMS/ DIAGNOSES

* 34. Respiratory:	☐ Meconium aspiration syndrome ☐ Pulmonary haemorrhage ☐ Congenital pneumonia ☐ Community acquired pneumonia ☐ Transient tachypnoea of newborn ☐ Pulmonary interstitial emphysema ☐ Nosocomial pneumonia ☐ None	
* 35. RDS:	○ Yes ○ No	
* 36. Pneumothorax:	○ Yes →	Pneumothorax developed during: ○ Spontaneous ○ CPAP ○ CMV ○ HFV
	○ No	
* 37. BPD: (Only for < 32 weeks GA)	a) Is the baby on respiratory support/supplemental oxygen at 36 weeks PMA? ○ Yes ○ No	
	b) If Yes	(i) Type of respiratory support: ○ nasal cannula < 1L/min ○ nasal cannula 1 - 3L/min ○ CPAP/bilevel CPAP/NIPPV/nasal cannula ≥ 3L/min ○ mechanical ventilation
		(ii) FiO2 ○ 21% ○ 22 - 29% ○ ≥ 30 - 69% ○ ≥ 70%
* 38. CVS:	*38a. PPHN : ○ Yes ○ No	*38b. Heart Failure : ○ Yes ○ No
* 39. PDA: (Only for < 37 weeks GA)	○ Yes →	a) ECHO done: ○ Yes ○ No
	○ No	b) Pharmacological closure ○ Yes ○ No → If Yes then to choose ☐ Indomethacin ☐ Ibuprofen ☐ Paracetamol
		c) Intervention: ○ No ○ Ligation ○ Transcatheter closure
* 40. NEC (stage 2 and above):	○ Yes →	a) surgical treatment: ○ Yes ○ No
	○ No	b) NEC present before admission to your centre: (for outborn baby only) ○ Yes ○ No
* 41. ROP Retinal Exam Done < 34 weeks OR ≤ 1750g - option 'Not Applicable' will be auto blocked ≥ 34 weeks AND > 1750g - option 'Yes' & 'No' will be auto blocked	○ Yes → (If yes, worst stage of ROP):	a) Date of first screening: ☐☐ / ☐☐ / ☐☐ b) Post conceptional age at 1st screening : ☐☐ (autocalculate) c) Stages: ○ No ROP ○ Stage 1 ○ Stage 2 ○ Stage 3 ○ Stage 4 ○ Stage 5 ☐ PLUS disease d) Types: ○ Prethreshold Type 1 ○ Prethreshold Type 2 ○ Threshold ○ AROP e) Treatment: ○ Laser Therapy ○ AntiVEGF ○ Vitrectomy f) ROP present prior to admission? (for outborn baby only) ○ Yes ○ No
	○ No →	Appointment given: ○ Yes ○ No Date of appointment: ☐☐ / ☐☐ / ☐☐
	○ Not Applicable	

SECTION 4: PROBLEMS/ DIAGNOSES (continue)

*** 42a. IVH:**
< 37 weeks - option 'Not Applicable' will be auto blocked

- ○ Yes — *If yes, worst grade:* → ○ Grade 1 ○ Grade 2 ○ Grade 3 ○ Grade 4
  - ☐ VP shunt/reservoir insertion for posthaemorrhagic hydrocephalus
- ○ No
- ○ Not applicable (term infant)
- ○ Ultrasound not done

*** 42b. Cystic Periventricular Leukomalacia**

○ Yes ○ No

*** 43a. Central line**
To include all central catheters inserted throughout admission.

If 2 or more central catheters present at same time, to count as 1 catheter day

i. ○ Yes ○ No

ii. Total catheter days : _____days

*** 43b. CLABSI**

○ Yes ○ No

*** 44. Confirmed sepsis:**

(Blood culture positive only)

○ Yes ○ No

☐ ≤ 72 hours of life

I) **Type of organism** (can tick more than one)

☐ Acinetobacter sp ☐ Candida sp ☐ Coagulase-negative Staphylococcus (CONS) ☐ Escherichia coli
☐ Enterobacter sp ☐ Klebsiella pneumoniae ☐ Pseudomonas aeruginosa ☐ Staphylococcus aureus
☐ Streptococcus agalactiae (GBS) ☐ Others, specify:……..

II) **Antibiotic resistance** (can tick more than one)

☐ Carbapenem-resistant (CRE) ☐ Extended Spectrum Beta-Lactamase (ESBL) ☐ Methicillin-resistant (MRSA, MRCONS)
☐ Multidrug-resistant Organism (MDRO) ☐ Vancomycin-resistant (VRE) ☐ Others, specify:……..

☐ > 72 hours of life

I) **Type of organism** (can tick more than one)

☐ Acinetobacter sp ☐ Candida sp ☐ Coagulase-negative Staphylococcus (CONS) ☐ Escherichia coli
☐ Enterobacter sp ☐ Klebsiella pneumoniae ☐ Pseudomonas aeruginosa ☐ Staphylococcus aureus
☐ Streptococcus agalactiae (GBS) ☐ Others, specify:……..

II) **Antibiotic resistance** (can tick more than one)

☐ Carbapenem-resistant (CRE) ☐ Extended Spectrum Beta-Lactamase (ESBL) ☐ Methicillin-resistant (MRSA, MRCONS)
☐ Multidrug-resistant Organism (MDRO) ☐ Vancomycin-resistant (VRE) ☐ Others, specify:……..

*** 45. Neonatal meningitis:**

○ Yes ○ No

CSF Culture positive : ○ Yes ○ No

I) **Type of organism** (can tick more than one)

☐ Acinetobacter sp ☐ Candida sp ☐ Coagulase-negative Staphylococcus (CONS) ☐ Escherichia coli ☐ Enterobacter sp
☐ Klebsiella pneumoniae ☐ Pseudomonas aeruginosa ☐ Staphylococcus aureus ☐ Streptococcus agalactiae (GBS)
☐ Others, specify:……..

II) **Antibiotic resistance** (can tick more than one)

☐ Carbapenem-resistant (CRE) ☐ Extended Spectrum Beta-Lactamase (ESBL) ☐ Methicillin-resistant (MRSA, MRCONS)
☐ Multidrug-resistant Organism (MDRO) ☐ Vancomycin-resistant (VRE) ☐ Others, specify:……..

*** 46. HIE:**
(Only for ≥ 35 weeks GA)

If None option chosen leave b and c blank

a) HIE severity	○ None ○ Mild ○ Moderate ○ Severe
b) Cooling therapy :	○ Yes → If yes i) state age of baby (hours of life) when started:……. ii) choose type of of cooling therapy: ○ Cooling blanket or cap ○ Passive cooling ± gel pack ○ Both ○ No → If no, state reason cooling therapy not started ○ Not indicated ○ Contraindicated
c) Seizures in HIE cases:	○ Yes ○ No

*** 47. Congenital anomalies:**

*** 47a. Major congenital anomalies :**

○ Yes ○ No

○ Syndrome (known)
- ☐ Down
- ☐ Edward
- ☐ Patau
- ☐ Others, specify (Refer to ICD 10):

○ Not a recognized syndrome

○ Isolated major abnormality

***47b. Types of abnormalities (check all that are present. Applies to all including 'known syndromes', 'not a recognized syndrome' or isolated major abnormality'**

☐ CNS →
- ○ Hydrocephalus
- ○ Hydrancephaly
- ○ Holoprosencephaly
- ○ Others (Refer to ICD 10) : _____

☐ Neural Tube Defect →
- ○ Myelomeningocoele
- ○ Anencephaly
- ○ Encephalocoele
- ○ Others (Refer to ICD 10) : _____

☐ CVS → Please see (page 4)

☐ Skeletal dysplasia
☐ Respiratory
- ☐ CDH

☐ GIT
☐ Hydrops
☐ Renal
☐ Others, specify (Refer ICD10):
☐ None of the above

SECTION 4: PROBLEMS/ DIAGNOSES (continue)

*** 47c.** ☐ CVS

Tick all present

◯ Duct dependent lesion →
- ☐ TGA
- ☐ TOF or PA with VSD
- ☐ Pulmonary atresia (PA) with Intact ventricular septum
- ☐ Complex cyanotic heart with PA
- ☐ Critical PS
- ☐ Hypoplastic left heart syndrome
- ☐ Interrupted aortic arch
- ☐ Coarctation of aorta
- ☐ Critical AS
- ☐ Tricuspid atresia
- ☐ Others, specify……

◯ Non duct dependent lesion →
- ☐ TAPVD
- ☐ ASD
- ☐ VSD
- ☐ AVSD
- ☐ PDA (for term infant)
- ☐ Others, specify……..

Date of echo diagnosis: Date done: ____/____/____ auto calculate age (days)

Intervention →
- ◯ Nil done
- ◯ Surgery — Date done: ____/____/____ auto calculate age (days)
- ◯ Catheterization — Date done: ____/____/____ auto calculate age (days)
- ◯ Died before operation
- ◯ Palliative
- ◯ For review later

Name of procedure: _____

48. Palliative care:	◯ Yes ◯ No

SECTION 5: OUTCOME

***49a. Date of discharge / transfer / death:** (dd/mm/yy)	☐☐/☐☐/☐☐	**49b. Time of Death:** (24 hour format) (mandatory for death cases) ☐☐☐☐ (enter the best estimated time of death if the exact time is unknown)
*** 50. Weight and growth status on discharge:**	**a) Weight:** ☐☐☐☐ (grams)	
	b) Growth status: ◯ SGA ◯ AGA ◯ LGA (autocalculate)	
	c) Post conceptional age on discharge: ☐☐ (autocalculate)	
*** 51. Total duration of hospital stay (neonatal/ paeds care):**	☐☐☐ (in completed days) (auto calculate)	
*** 52. Home oxygen therapy:**	◯ Yes ◯ No	
*** 53. Outcome:**		

◯ Alive →

Place discharged to:
- ◯ Home
- ◯ Social welfare home
- ◯ Other wards within hospital
- ◯ Still hospitalized as of 1st birthday / on close out date the following year
- ◯ Transfer to other hospitals →

a) Name of hospital:	
b) Reason for transfer:	◯ Growth/ stepdown care ◯ Acute medical/ diagnostic services ◯ Social/Logistic reason ◯ Lack of NICU bed ◯ Other, specify: …… ◯ Chronic/ Palliative care ◯ Surgery
c) Post transfer disposition: (Please fill this section if place transferred is not part of the NNR Network)	◯ Home ◯ Transferred again to another hospital ◯ Death ◯ Readmitted to your hospital ◯ Still in ward

◯ Dead →

Place of death:	◯ Labour room/OT ◯ Neonatal unit ◯ In transit ◯ Others, specify: ……..

Name : _____ **Signature:**_____ **Date:** ☐☐☐ **(dd/mm/yy)**

MALAYSIAN NATIONAL NEONATAL REGISTRY

Supplementary Form

Instruction:
1) For term babies please fill in according to the most pertinent underlying cause of death.
2) For preterm babies please fill in according to the most immediate cause of death.

1. Centre Name:				Office use:	/
2. Name:		**3. RN:**		Centre:	
4. Mother's I/C Number:	**New IC:**		**Passport:**		

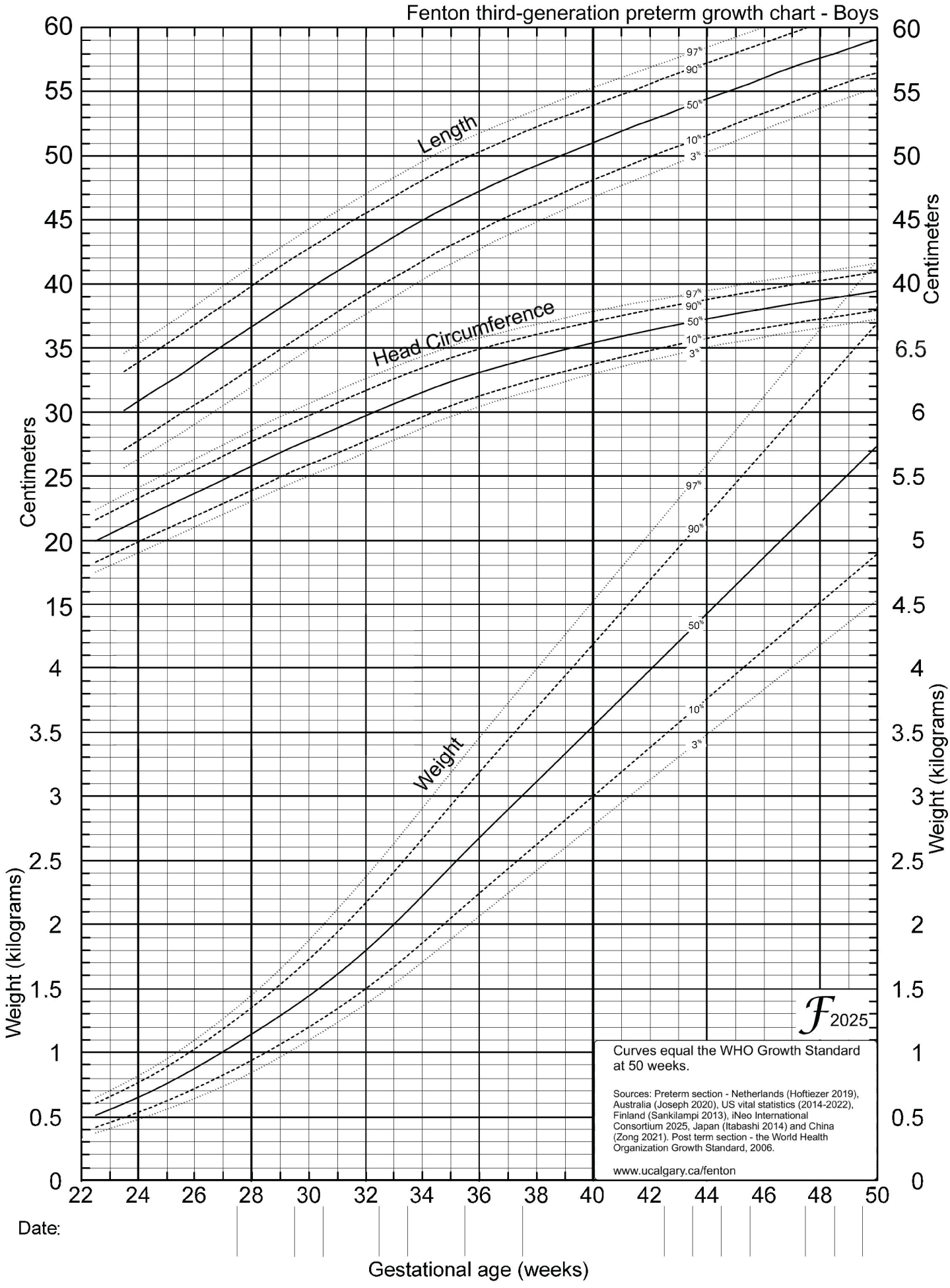
Immediate cause of death (Modified Wigglesworth): Tick relevant button to reach correct classification

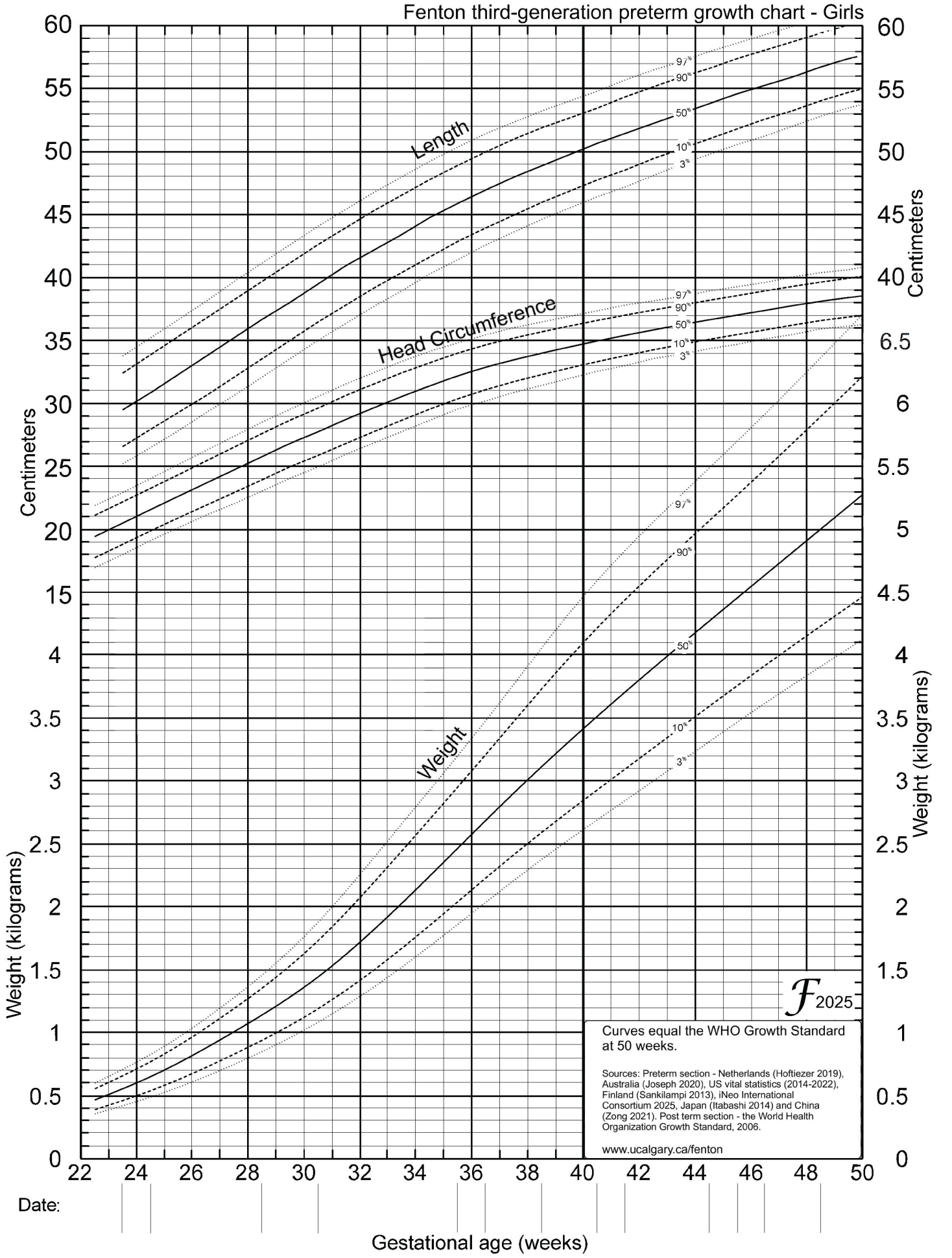
NEONATAL DEATH
(Is there any LCM?)

Note: LCM = Lethal Congenital Malformation

- ○ LCM present
  - a) Lethal congenital malformation/defect, specify:
    - ○ Neural tube defects
      - ○ Anencephaly
      - ○ Encephalocoele
      - ○ Others, specify ..... (Refer to ICD 10):
    - ○ CVS
      - ○ Complex Heart Disease
      - ○ Acyanotic
    - ○ CNS
      - ○ Hydrancephaly
      - ○ Holoprosencephaly
      - ○ Others, specify ..... (Refer to ICD 10):
    - ○ Recognisable syndrome
      - ○ Edward
      - ○ Patau
      - ○ Others, specify ..... (Refer to ICD 10):
    - ○ Not recognisable syndrome
    - ○ Skeletal dysplasia
    - ○ Respiratory (eg. lung hypoplasia)
    - ○ GIT
    - ○ Hydrops foetalis
    - ○ Renal
    - ○ Others, specify: .....
- ○ LCM absent
  - b) (Is gestation <37 weeks?)
    - ○ Yes
      - c) Gestation <37weeks (Preterm Death without LCM) due to:
        - ○ IVH
        - ○ Septicaemia
        - ○ PDA in failure
        - ○ Pulmonary hemorrhage
        - ○ NEC
        - ○ Pneumonia
        - ○ PIE / BPD
        - ○ Pneumothorax
        - ○ Extreme prematurity
        - ○ Acute intrapartum event
        - ○ Severe RDS
        - ○ Others (specify)
    - ○ No
      - Gestation ≥37 weeks (Did the baby have an asphyxial condition?)
        - ○ d) Asphyxial condition absent (Did the baby die from infection?)
          - ○ e) If term and infection present
            - ○ Group B streptococcal septicaemia
            - ○ Meningitis
            - ○ Congenital pneumonia
            - ○ Congenital Infection
            - ○ Others, specify .....
          - ○ If term and infection absent (Are there any other specific causes of death?)
            - ○ f) Other specific causes of death:
              - ○ Kernicterus / severe neonatal jaundice
              - ○ Haemorrhagic disease of newborn / Vitamin K deficiency
              - ○ Intracranial bleed / SAH
              - ○ Pneumothorax
              - ○ Pulmonary hemorrhage
              - ○ IEM
              - ○ MAS
              - ○ Surgical, specify: .....
              - ○ Others, specify: .....
            - ○ Unknown cause
        - ○ Asphyxial condition present

Name : _____ **Signature:**_____ **Date:** ☐☐☐ **(dd/mm/yy)**


Fenton third-generation preterm growth chart - Boys
Length
Head Circumference
Weight
97%
90%
50%
10%
3%
Centimeters
Weight (kilograms)
Gestational age (weeks)
Date:
Curves equal the WHO Growth Standard at 50 weeks.
Sources: Preterm section - Netherlands (Hoftiezer 2019), Australia (Joseph 2020), US vital statistics (2014-2022), Finland (Sankilampi 2013), iNeo International Consortium 2025, Japan (Itabashi 2014) and China (Zong 2021). Post term section - the World Health Organization Growth Standard, 2006.
www.ucalgary.ca/fenton
F2025


Fenton third-generation preterm growth chart - Girls
Length
Head Circumference
Weight
97%
90%
50%
10%
3%
Centimeters
Weight (kilograms)
Gestational age (weeks)
Date:
2025
Curves equal the WHO Growth Standard at 50 weeks.
Sources: Preterm section - Netherlands (Hoftiezer 2019), Australia (Joseph 2020), US vital statistics (2014-2022), Finland (Sankilampi 2013), iNeo International Consortium 2025, Japan (Itabashi 2014) and China (Zong 2021). Post term section - the World Health Organization Growth Standard, 2006.
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