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MEDICAL DEVELOPMENT DIVISION
MINISTRY OF HEALTH MALAYSIA
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GUIDELINES

FOR MANAGEMENT OF UNDER-FIVE CHILDREN BROUGHT IN DEAD (BID)

TO MINISTRY OF HEALTH FACILITIES

MEDICAL DEVELOPMENT DIVISION
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Foreword by the Director General of Health Malaysia

Investigation into death of children plays important part towards improvement in healthcare delivery and prevention of future deaths. As children below five years of age can be presented as sudden and unexpected death to healthcare facilities, it is imperative for all personnel from multi-disciplinary team managing such cases to understand the nature of investigation and being able to practice efficiently. These deaths tend to be reported to the investigating authority as required under the law, hence effective communication between specialties and the police investigating team is of utmost importance while maintaining empathy towards parents or caretakers who lost their loved ones.

The production of this concise guideline is to complement and further strengthen the existing mandatory reporting of Stillbirth and Under-Five Death Investigation System which is currently in place and follows the World Health Organization (WHO) requirement under Goal 3 of Sustainable Development Goals (SDG). It provides essential management guidance, practical aspect and good practice points complete with flowcharts, possible scenarios and suggested proformas that are feasible to be applied within our healthcare facilities. It is my fervent hope that everyone involve will work hand-in-hand towards intended goals of this guideline.

I would like to thank and congratulate the Taskforce Working Committee of the guideline comprising of representatives from Forensic Medicine, Paediatrics, Emergency & Trauma, Family Medicine and Public Health Services together with Medical Development Division of Ministry of Health for their commendable effort in producing this long-awaited guideline. I wish the standard of management of this subgroup of child mortality will be further enhanced.

TAN SRI DATO' SERI
DR. NOOR HISHAM ABDULLAH
DIRECTOR-GENERAL OF HEALTH MALAYSIA

Foreword by the Deputy Director General of Health (Medical)

First and foremost, I would like to thank the various departments for their collaboration to create this guideline. The teamwork displayed by the committee members from different departments under the Ministry of Health is to be applauded.

Our Malaysian health care system has achieved a remarkable improvement in the overall health status of our population over the years. We have witnessed a rapid decline in the infant, child and maternal mortality rates. However, this decline has plateaued with no further notable improvement. We were lacking a comprehensive guideline to identify the preventable causes of death among the under 5 children brought in dead to healthcare facilities. This has a huge impact at the level of policy makers to reduce these deaths.

The publication of this guideline is timely and necessary to coordinate and guide all agencies and departments involved in managing under 5 deaths brought in dead to the health facilities.

This guideline is aimed at doctors, nurses and other health care workers who are responsible in managing

the under 5 brought in dead mortalities at the health facilities. I hope that various departments will collaborate and be guided by the practices highlighted in this guideline and together we can eliminate preventable deaths among under 5 children in Malaysia.

Thank you.

DATO' DR. ASMAYANI BINTI KHALIB
DEPUTY DIRECTOR GENERAL OF HEALTH (MEDICAL)
MINISTRY OF HEALTH MALAYSIA

Foreword by Deputy Director General of Health Malaysia (Public Health)

Reducing child mortality and improving the well-being of children has always been part of the national development goals. The U5MR has reduced from 16.8 per 1000 liverbirths (LB) in 1990 to 8.4/1000LB in 2015, then further reduced to 6.9 per 1000 LB in 2020. Similarly, the infant mortality in the Millenium Development Goal (MDG) era reduced from 13.1 per 1000LB in 1990 to 6.9/1000LB in 2015 and latest data was at 5.7 per 1000 LB in 2020. Neonatal mortality rates have also reduced from 8.4 per 1000LB to 4.3 per 1000LB during the same period and further reduced to 3.9 in year 2020. The SDG target for child mortality is to end preventable deaths of new-borns and children.

Malaysia has already achieved the said SDG targets, and moving forward we will focus on improving quality of care to further reduce the under-5 mortality. This requires deeper analysis into the cause of death and details of the event leading to death.

This guideline provide guidance for health professionals to manage sudden unexpected death in children aged from 0 to less than 5 years old, presenting as brought in dead (BID) to healthcare facilities in Malaysia. It describes a smooth process of investigation by healthcare professionals in related departments ensuring that the process is performed timely, thoroughly and effectively while enhancing the coordination by various specialties and ensuring effective communication and appropriate information sharing occurs throughout every level of investigation.

I wish to congratulate all involved in the development and publication of this guideline. Ministry of Health would be very enlightened to focus our effort to achieve targets set to secure sustainable environment to improve health status for the optimal growth and children's development.

Thank you.

DATUK DR. CHONG CHEE KHEONG
DEPUTY DIRECTOR GENERAL
OF HEALTH MALAYSIA (PUBLIC HEALTH)
MINISTRY OF HEALTH MALAYSIA

SELECTED ABBREVIATIONS

BID	-	Brought in Dead
MOH	-	Ministry of Health, Malaysia
CPC	-	Criminal Procedure Code (Act 593)
FMS	-	Family Medicine Specialist
NAI	-	Non-Accidental Injury
SCAN	-	Suspected Child Abuse & Neglect
IEM	-	Inborn Error of Metabolism
NAR	-	No Active Resuscitation
APLS	-	Advanced Paediatric Life Support
WHO	-	World Health Organization
MDG	-	Millennium Development Goal
SDG	-	Sustainable Development Goal
U5MR	-	Under-Five Mortality Rate
IMR	-	Infant Mortality Rate
NMR	-	Neonatal Mortality Rate
ALTE	-	Apparent Life Threatening Event
COD	-	Cause of Death
SUDI	-	Sudden Unexpected Death in Infancy
SUDC	-	Sudden Unexpected Death in Children
SIDS	-	Sudden Infant Death Syndrome
SUDEP	-	Sudden Unexpected Death in Epilepsy
USIC	-	Unclassified Sudden Infant Death

Chapter 1:

Introduction, Definition & Background

1.0 Chapter 1: Introduction, Definition & Background

1.1 Introduction

This guideline is developed to manage sudden unexpected death in children aged from 0 to less than 5 years old, presenting as brought in dead (BID) to healthcare facilities in Malaysia. It aims to provide a smooth process of investigation by healthcare professionals in ensuring that the process is performed timely, thoroughly and effectively while enhancing the coordination by various specialties as well as ensuring effective communication and appropriate information sharing occurs throughout every level of investigation. It emphasizes the need to maintain support to family members and treat them with compassion, sensitivity and consideration throughout. It also aims to maintain effective communication and understanding between healthcare professionals, family members and investigating officers throughout investigation process.

1.2 Definition

1.2.1 A BID child is a child with clear signs of death at time of arrival to facilities.

1.2.2 Clear signs of death means either irreversible post-resuscitation efforts or with the following signs;

i. asystole rhythm
ii. rigidity (rigor mortis)
iii. hypostasis (livor mortis)
iv. cold body (algor mortis)
v. fixed and dilated pupils.

1.2.3 Time of death is the earliest documented time of arrival to facilities with or without resuscitation performed.

1.2.4 An Under-5 child is a child who has not reached his/her 5th birthday.

1.3 Background

Investigation into death of children in Malaysia started many years ago at Ministry of Health level as part of improving healthcare delivery and prevention of future deaths. Mandatory reporting in stillbirth and under-5-year-old deaths started since 2013. This system of investigation follows the WHO requirement under Millennium Development Goal (MDG) which continued further under Sustainable Development Goal (SDG). As of 2020, Malaysian Under-5 Mortality Rate (U5MR), Infant Mortality Rate (IMR) and Neonatal Mortality Rate (NMR) stood at 6.9, 5.7 and 3.9 per 1000 live birth respectively. Although these rates are lower than expected rates for U5MR, IMR and NMR for developing countries, there are still possible areas for improvement to enhance better healthcare delivery within this age group.

Meanwhile, Malaysia also has a specific common law that investigates sudden unexpected death of its citizen/non-citizens. It is called Inquiries of Deaths under Special Proceedings of Act 593, Criminal Procedure Code (CPC). It outlines investigation process of sudden death in various circumstances including the need to perform forensic post-mortem examination to ascertain the cause of death if required by the Investigating Police Officer. Hence, forensic post-mortem examination in children is commonly conducted to assist death investigation under this law since many years ago. It is worth mentioning that the investigating officer also has the authority under this law to directly certify the cause of death and issue the death permit without the need to order post-mortem examination.

Meanwhile, Malaysia also has a specific common law that investigates sudden unexpected death of its citizen/non-citizens. It is called Inquiries of Deaths under Special Proceedings of Act 593, Criminal Procedure Code (CPC). It outlines investigation process of sudden death in various circumstances including the need to perform forensic post-mortem examination to ascertain the cause of death if required by the Investigating Police Officer.

In 2015, Ministry of Health Malaysia and Royal Malaysia Police (RMP) decided to collaborate to enhance investigation of BID in Under-5 children. One of the aims was to increase medically certified cause of death for Under-5 BID cases with the hope to reduce and prevent future deaths. In order to achieve this aim, forensic post-mortem examination is invariably required.

Historically, for under-5 mortality cases, primary care providers have never certified the cause of death or release the burial permit. All the cases will be referred and managed by hospital team. However, due to logistic circumstances e.g. being in a remote area or being far away from hospital, it will be troublesome for an established terminal case to travel hundreds of kilometers away just to get a cause of death for burial process.

In view of this issue, this guideline will also help the primary care providers to manage the identified cases confidently. The cases that can be certified at primary care level are children with established terminal/palliative condition and sufficient medical information from the treating medical team is available. For this matter, primary care providers need to engage with the local Police Department to facilitate the process of managing under-5 BID children.

Chapter 2:

Guidance for all professionals

2.0 Chapter 2: Guidance for all professionals

2.1 Primary Care setting

2.1.1 Assistant Medical Officer

- Upon receiving under-5 BID cases, to perform preliminary assessment.
- To confirm signs of death.
- To alert Medical and Health Officer in charge.
- In remote areas with no Medical and Health Officer, the Assistant Medical Officer may pronouce death and shall inform the Medical and Health Officer in charge.

2.1.2 Medical and Health Officer

- To assess, confirm and pronounce death.
- To perform detail clerking and examination in order to establish cause of death (COD).
- To obtain medical information for children with life-limiting condition i.e. documents supporting Advance Care Plan (ACP) and provide cause of death.
- To inform all under-5 BID cases presenting to the health clinic to the Family Medicine Specialist
- To discuss the case with Family Medicine Specialist in-charge of facility.
- Medical and Health Officer shall inform the death to the nearest Police Station.
- If cause of death can be certified, to fill up Register of Death and Cause of Death Forms (Appendix 2c) and release the dead body after gaining police approval. To document details pertaining to police approval such as Police Officer involved in the clinical notes.
- If cause of death is not known, police report is lodged and the case shall be handed over to the police for further investigation.
- Medical and Health Officer must notify death using the *U5MR-N Pindaan 2019* notification form (Appendix 2b).

2.1.3 Family Medicine Specialist (FMS)

- All under-5 BID cases presenting to the health clinic should be informed to the FMS.
- Upon receiving referral from the Medical and Health Officer for under-5 BID case, to evaluate and confirm sufficient medical information for children with life-limiting condition.
- For cases with sufficient medical information to certify cause of death, the Family Medicine Specialist shall provide the cause of death.
- If the cause of death is not known, to advise the Medical and Health Officer to hand over the case to the police.
- Forensic Medicine Department or Unit shall be informed once request for post-mortem examination is issued by the police.

2.2 Hospital setting (with/without specialist)

2.2.1 Emergency and Trauma Department (ETD)

2.2.1.1 Assistant Medical Officer (AMO) / Staff Nurse (SN)

- The AMO/SN shall assess the patient upon arrival and triage appropriately to Resuscitation Zone and alert the ETD Medical Officer.
- AMO/SN shall inform Forensic Medicine Department/Unit prior to carrying out the last office process following death and send the body to Forensic Medicine Department/Unit.

2.2.1.2 Emergency and Trauma Medical Officer

- Upon arrival of patient, Medical Officer working in Resuscitation Zone shall assess signs of death by clinical examination, vital signs and cardiac monitoring.
- A brief history of the patient shall be obtained from pre hospital care team/parents/care giver.
- Medical Officer in charge shall decide the need of active resuscitation.
- Upon confirmation of death, Medical Officer in charge shall pronounce death and inform next of kin.
- Medical Officer shall inform the death to the police.
- Medical Officer shall perform detailed clerking and physical examination based on the History Pro Forma and Examination Pro Forma (Appendix 3).
- All under 5 BID cases need to be informed to Emergency Physician.
- A high index of suspicion is required of the ETD Medical Officer in order not to miss non-accidental injury (NAI) in all under 5 BID cases.
- Medical Officer shall discuss with Emergency Physician or Paediatrician on site or referral centre to determine the cause of death or suspicion of foul play.
- Postmortem investigation/X-ray may be taken (consent required).

- If cause of death can be certified, to fill up Register of Death and Cause of Death Forms (Appendix 2c) and release the dead body after police approval. To document details pertaining to police approval such as Police Officer involved in the clinical notes.
- If cause of death is not known and police report is lodged, Forensic Medicine Department or Unit shall be informed once request for post-mortem examination is issued by the police.
- For under-5 BID cases with suspected NAI, the Suspected Child Abuse and Neglect (SCAN) team is informed.
- Medical Officer must notify death using the *U5MR-N Pindaan 2019* notification form (Appendix 2b) and fill up the SU5MR-1/2012 form as per Guidelines for Stillbirth and Under Five Mortality Reporting System.

2.2.1.3 Emergency Physician (EP)

- The EP is to be informed of all under-5 BID cases brought to ETD.
- To facilitate and guide the Medical Officer in determining the cause of death.
- If cause of death is not known, to advise on referral pathway based on protocol of Under-5 BID cases presenting at ETD in hospital.

2.2.2 Paediatric Department

2.2.2.1 Paediatric Medical Officer

- The Paediatric Medical Officer in charge/on call should be informed of relevant under-5 BID cases presenting to the ETD and attend to the case as necessary.
- The Paediatric Medical Officer shall assist the ETD Medical Officer in reviewing the history and examination findings of the under-5 BID case in ETD to determine the possible/probable cause of death based on the History Pro Forma and Examination Pro Forma (Appendix 3).
- The Paediatric Medical Officer will provide available information if the child was previously followed up by the Paediatric Department.
- The Paediatric Medical Officer will inform and discuss the relevant case with the designated Paediatrician or the Paediatrician on call for possible/probable cause of death and further investigations as deemed necessary.
- The Paediatric Medical Officer will assist the ETD team in performing any investigation(s) required (Appendix 3).

2.2.2.2 Paediatrician

- The designated Paediatrician or the Paediatrician-on-call in the hospital is to be informed by Paediatric Medical Officer in charge/on call of relevant Paediatric under-5 cases that are brought in dead to the ETD.
- For under-5 BID cases presenting to hospitals without a Paediatrician, the attending Medical Officer in charge in ETD is to inform the designated Paediatrician in charge of the hospital or the Paediatrician-on-call covering the hospital.

2.2.3 Forensic Medicine Department/Unit

2.2.3.1 Forensic Medical Officer

- The Forensic Medical Officer shall be notified of any under-5 BID case presenting to ETD with no known cause of death and that police report has been lodged.
- The Forensic Medical Officer shall discuss the case with Forensic Medicine Specialist in charge.
- Upon receiving *Polis 61* order from the police, post-mortem examination shall be carried out accordingly.
- The Medical Officer shall then issue the cause of death and fill up the Register of Death and Cause Of Death Forms (Appendix 2c).
- For under-5 BID cases presenting directly to Forensic Medicine Department/Unit, post-mortem examination shall be conducted upon receiving *Polis 61* order and after discussion with Forensic Medicine Specialist in-charge.
- For under-5 BID cases with suspected NAI, the SCAN team is informed.
- For under-5 BID cases presenting directly to Forensic Medicine Department/Unit, the Forensic Medical Officer must notify death using the *U5MR-N Pindaan 2019* notification form (Appendix 2b).

2.2.3.2 Forensic Medicine Specialist

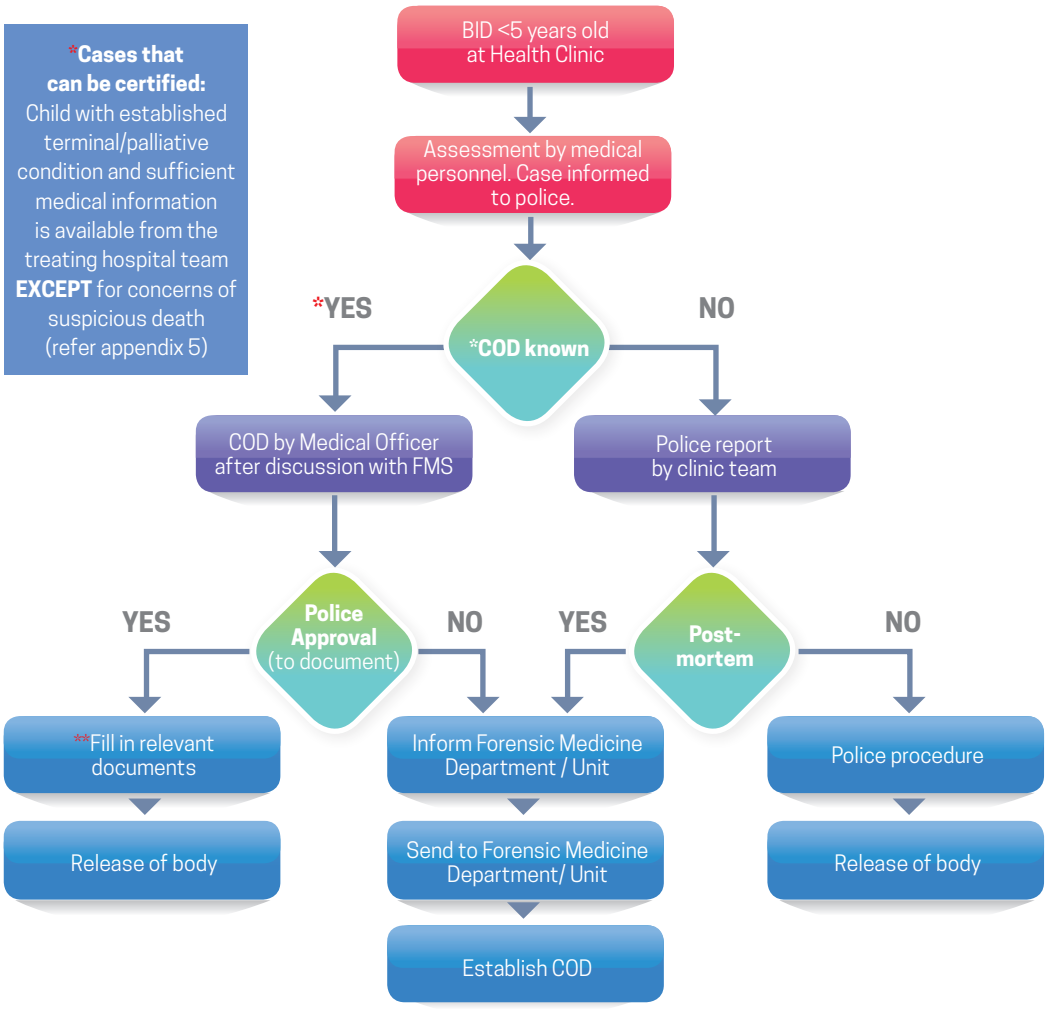
- The Forensic Medicine Specialist is to be informed of all under-5 BID cases with *Polis 61* order issued by Police.
- To facilitate and guide the Forensic Medical Officer in performing the post-mortem examination and issuing the cause of death.
- For post-mortem examination performed at Forensic Medicine Unit, the Forensic Medicine Specialist in-charge will need to determine the most suitable medical personnel to conduct the procedure.
- The Forensic Medicine Specialist in-charge need to ensure the procedure adheres to all requirements as stated in Appendix 4.
- For under-5 BID cases requiring clinical post-mortem examination, the Anatomical Pathologist in-charge shall be informed.
- The performance of clinical post-mortem examination shall be determined following discussion between the Forensic Medicine Specialist and the Anatomical Pathologist as per local protocol.

Chapter 3:

Practice guidelines

3.0 Chapter 3: Practice guidelines

3.1 Flowchart of Under-5 BID Case Management in Primary Care



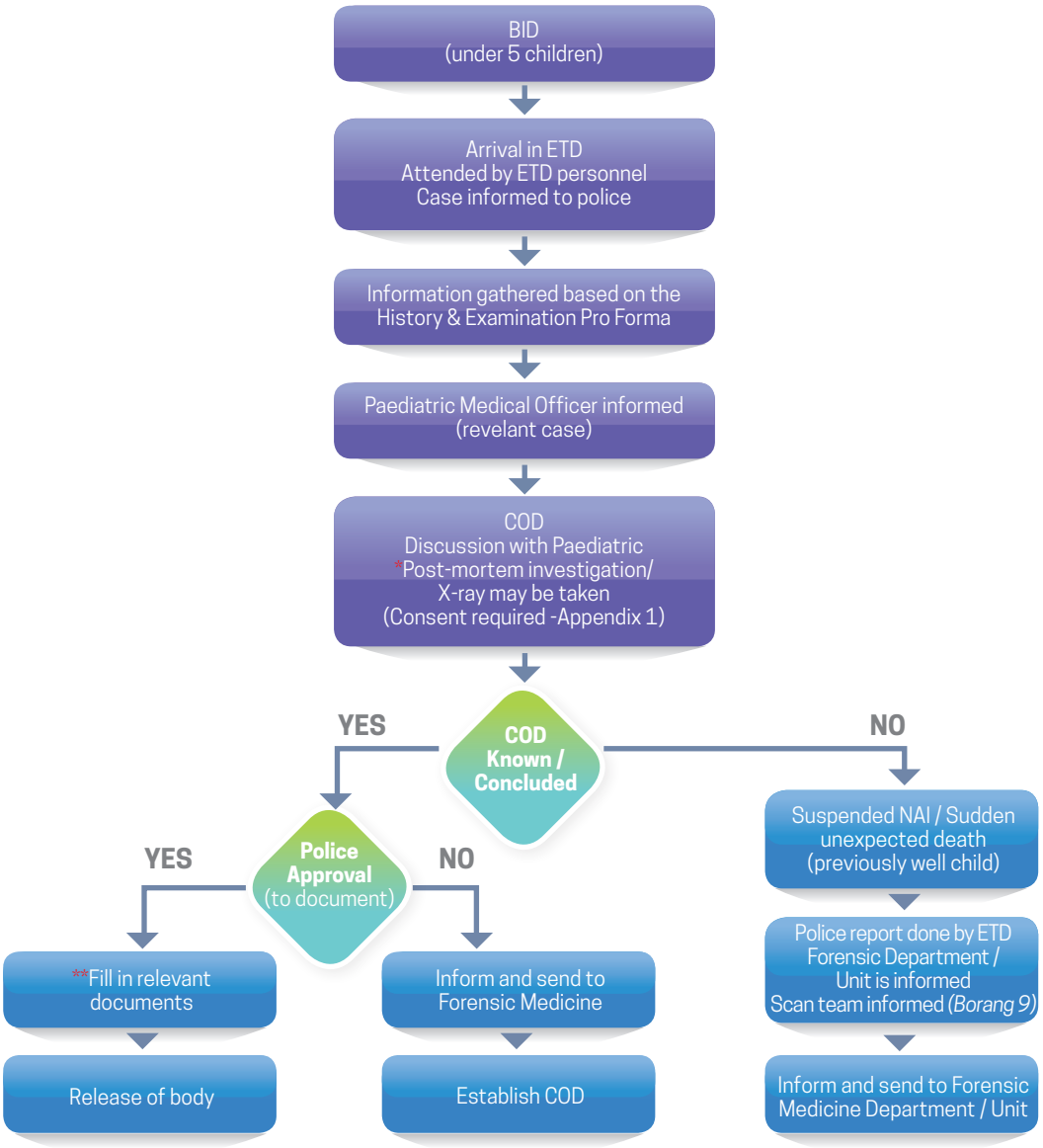
** Relevant Death Registration / Cause of Death forms filled as per local protocol (refer Appendix 2c); Reporting of Under-5 Death, to proceed accordingly as per existing **Guidelines for Stillbirth and Under-5 Mortality Reporting System.**

*** Refer Appendix 7 for Bahasa Melayu version of flowchart *(Carta Alir Pengurusan Kes di Klinik Kesihatan)*

Summary of Flowchart of Under-5 BID Case Management in Primary Care

- For under-5 BID cases presenting to a primary care facility, the case needs to be assessed by the attending staff.
- The need for resuscitation will be decided by the medical personnel attending the case.
- All under-5 BID cases need to be informed to the police.
- Following discussion between Medical Officer and FMS, if the cause of death is known (child with life-limiting condition and sufficient medical information), the Register of Death and Cause Of Death Forms (Appendix 2c) are filled up.
- The body is released after gaining approval by the police. Details pertaining to police approval such as Police Officer involved are to be documented in the clinical notes. However, if police does not approve then the body will be transported by the police to the nearest Forensic Medicine Department/Unit after Forensic Medicine Department/Unit is informed.
- If cause of death is unknown, police report is lodged by the Medical and Health Officer.
- If *Polis 61* order is issued, the body will be transferred by the police to the nearest Forensic Medicine Department/Unit for post-mortem examination after Forensic Medicine Department/Unit is informed.
- If no post-mortem examination is ordered, the release of the body shall follow the police procedure.
- Medical and Health Officer must notify death using the *U5MR-N Pindaan 2019* notification form (Appendix 2b).

3.2 Flowchart of Under-5 BID Case Management in Hospital Setting (presenting to ETD)



* If clinical post mortem requested, it is conducted as per local protocol.

** Relevant Death Registration / Cause of Death forms filled as per local protocol (refer Appendix 2c); Reporting of Under-5 Death, to proceed accordingly as per existing **Guidelines for Stillbirth and Under-5 Mortality Reporting System.**

Summary Flowchart of Under-5 BID Case Management in Hospital Setting (Presenting at ETD)

- The cases which present at the ETD are to be attended by the ETD staff.
- All under-5 BID cases are to be informed to the police.
- The History & Examination Pro Forma is to be completed by ETD personnel.
- The Paediatric Medical Officer is informed to assist in determining the possible/probable cause of death for natural/medical causes. The designated Paediatrician or Paediatrician on-call should be consulted on the possible/probable causes of death. For hospitals without a Paediatrician, the Medical Officer in charge in ETD may directly contact the designated Paediatrician in charge of the hospital or the Paediatrician-on-call covering the hospital.
- For cases with suspected NAI or sudden unexpected death, ETD staff is to lodge a police report, raising concerns about the circumstances of the death. The Forensic Medicine Department/Unit is to be informed regarding the case. The body is sent to the mortuary. SCAN team is informed to arrange for the *Jabatan Kebajikan Masyarakat* (JKM) Borang 9 to be filled (to notify The Child Protector) according to local policy.
- For children with life-limiting conditions and an Advanced Care Plan in place, the underlying condition may be considered as the probable medical cause of death.
- For deaths with a probable medical cause (e.g. pneumonia, acute gastroenteritis or sepsis), the Paediatric Medical Officer/ETD Medical Officer will assist with further post-mortem investigation sampling. A clinical post-mortem examination may be offered.
- For cases that the cause of death is concluded, the necessary documents as listed in the flowchart is completed by the ETD team and the body is released to next-of-kin upon approval by Police via Forensic Medicine Department/Unit. Details pertaining to police approval such as Police Officer involved are to be documented in the clinical notes. However, if police do not approve then the body will be transferred to Forensic Medicine Department/ Unit for postmortem examination. The Forensic Medicine Department/ Unit is to be informed regarding the case.
- The following cases are to be managed by ETD team and Forensic Medicine Department/Unit:

  i. Cases classified under "Accidental Causes"

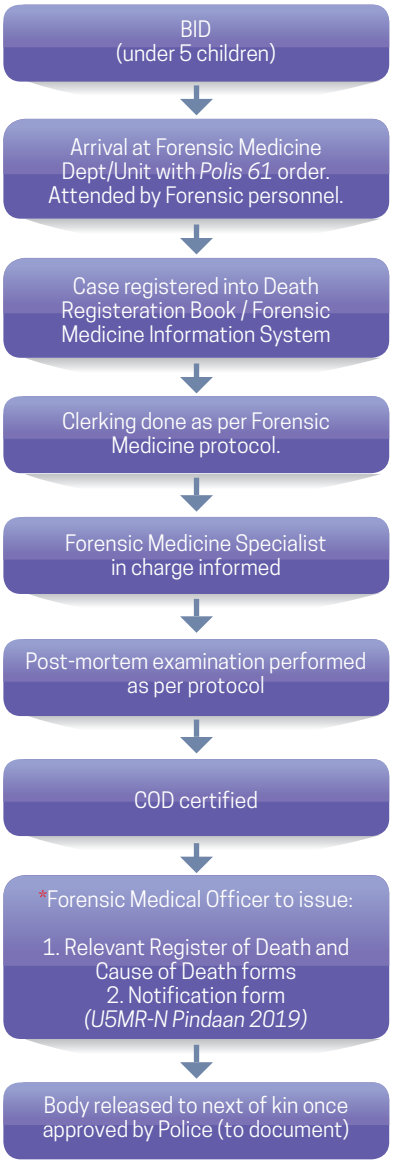
     - Falls
     - Drowning
     - Road traffic accidents (RTA)
     - Electrocution
     - Choking
     - Burn

  ii. Self-inflicted events, e.g. :

     - Hanging
     - Poisoning

  iii. Abandoned foetus/Stillbirth
  iv. Homicides

3.3 Flowchart of Under-5 BID Case Management in Hospital Setting (Presenting at Forensic Medicine Department/Unit)



* For suspected homicide case, SCAN team shall be informed.

Summary Flowchart of Under-5 BID Case Management in Hospital Setting (Presenting to Forensic Medicine Department/Unit)

- This flowchart is for under-5 BID cases that present directly to Forensic Medicine Department/Unit.
- These cases are usually brought by the police with *Polis 61* order for post-mortem examination.
- The case is attended by the Forensic personnel and registered in Death Registration Book / Forensic Medicine Information System.
- Clerking of the case will be done accordingly and the Forensic Medicine Specialist in-charge shall be notified.
- Post-mortem examination is conducted as per protocol (Appendix 4) and cause of death is issued accordingly.
- Forensic Medical Officer to fill up the Register of Death and Cause of Death Forms (Appendix 2c) and must notify death using the *U5MR-N Pindaan 2019* notification form (Appendix 2b).
- Body shall then be released to the next of kin once obtained approval from police. Details pertaining to police approval such as Police Officer involved are to be documented in the clinical notes.

3.4 Important Information Required To Determine COD

3.4.1 History

- The attending ETD Medical Officer should obtain all the relevant information as required in the History Pro Forma (Appendix 3).
- Suspicions of foul play or child abuse (non-accidental injury) should not be missed (Appendix 5).
- Obtain past medical/surgical history that may suggest a life-limiting illness/condition.
- A family history of early/recurrent infant death and consanguinity may suggest a possible underlying metabolic / genetic disorders.
- The Child Health Record book should be reviewed and relevant information documented.

3.4.2 Examination

- A careful and thorough examination should be performed immediately after death is confirmed.
- A proper and complete documentation of the Examination Pro Forma is necessary to assist in identifying the cause of death and future medico-legal proceedings (Appendix 3).
- Document any skin discolouration or unusual marks or injuries as soon as possible, as it may help in estimating the time of death, as well as the position in which the child was lying.
- Fundoscopy should be performed. If retinal haemorrhages are seen, need to suspect NAI and proceed with forensic post-mortem.
- Presence of milk in the oral cavity does not necessarily mean milk aspiration. Clinical correlation with the history is crucial.
- Look for any external signs - bruises, injuries and petechiae, fractures (e.g. palpate skull for fracture or bogginess), frenulum tear and genitalia trauma (Appendix 5).

3.4.3 Cause of Death

- The history and physical examination should provide relevant information to arrive to the possible/probable cause of death.
- The relevant investigations (post mortem samples and imaging) can be performed after consent from legal guardian is obtained to support the possible/probable cause of death. (Appendix 3).
- In cases of unexplained sudden death and NAI cannot be ruled out, a police report should be lodged. The SCAN team is to be informed and *Borang 9* filled.

3.4.4 Post-mortem Sampling Investigation

- Investigation samples taken during the process of resuscitation need to be documented. (Checklist included in Examination Pro Forma).
- Post-mortem sampling investigations should be done only if forensic and clinical post-mortem is not required. Post-mortem blood sampling should be taken as soon as possible.
- Consent (legal guardian) is required for post-mortem sampling. (Appendix 1)
- The post-mortem sampling investigations required will depend on the provisional diagnosis.
- The pathologist/lab staff needs to be informed prior to sampling to assist in storage, processing of samples and ensure accurate interpretation of test results.
- The laboratory request form needs to clearly specify that it is a post-mortem sample and timing of sampling.
- Imaging such as Chest or Abdominal X-rays may be requested as necessary.
- Clinical post-mortem is to be conducted as per local protocol after consent from legal guardian has been obtained (Appendix 1).

3.4.5 Care of the Parents/Guardians

- An assigned staff member should attend to the parents and keep them fully informed of the events.
- This should be done in the privacy of an appropriate room/space.
- The family shall be informed that Police and Child Protector will be involved in all cases of sudden, unexpected deaths. Investigations will be done for all medical and non-medical possible/probable causes of death.
- The family should be brought to see the child's body when appropriate and informed what is to be done next in determining the cause of death.
- For hospitals with Specialists, the Paediatric Department will make arrangement for bereavement counselling to discuss the post-mortem results and probable causes of death for selected under-5 BID cases presenting to ETD.
- If bereavement counselling is required for parents/guardians of under-5 BID cases presenting directly to Primary Care setting and Forensic Medicine Department, they may be referred to nearest available hospitals counsellors.

Chapter 4:

Good Practice Points

4.0 Chapter 4: Guidance for all professionals

4.1 Resuscitative Procedure

4.1.1 Resuscitation is not recommended in the following:

- Patient with documented No Active Resuscitation (NAR) order.
- Patient with clear signs of death.

4.1.2 In the event where the patient does not meet the criteria outlined above, resuscitation shall be initiated first by the attending clinician until:

- Consultation with the Specialist or senior Medical Officer in a facility without Specialist.
- Formal documentation from patient's medical records or parents/ guardian regarding his/her disease and prognosis.
- Authorised letter of NAR.

4.1.3 When resuscitation is initiated, appropriate clinical guidelines/protocols e.g. APLS shall be followed. Further clinical management will be based on the outcome of resuscitation as follows:

- If there is no response to resuscitation, patient shall be considered as BID.
- In the event of successful resuscitation, post resuscitation care policy shall be adhered to.

4.1.4 Where attempts are made at resuscitation, the family shall be kept fully informed during the course of the resuscitation. Family shall be briefed and updated of the ongoing resuscitation effort preferably by highest level of nursing personnel.

4.2 Breaking Bad News

- It is recommended that a designated room/area to be used to break bad news.
- A senior doctor attending to the patient shall be responsible to break bad news to parents/guardian and close family members.
- The personnel shall bring additional staffs as extra support.
- The personnel breaking the bad news shall be free from other tasks while relaying the information.
- Consideration shall be given to the capacity of the family to engage in the processes unfolding around them.
- Particular consideration shall be given to issues of language, health or mental capacity. Further considerations must also be given to the faith and culture of the patient and their family.

List of Appendices

Appendix 1

BORANG KEBENARAN UNTUK BEDAH SIASAT KLINIKAL DAN/ATAU PENGAMBILAN SAMPEL DARIPADA JASAD PESAKIT

Saya.....beralamat……..……..... ..... adalah waris/orang yang berhak dari segi undang-undang ke atas jasad bernama: …….....…..……..…… No. KP/Pasport: ..…….. atas hubungan sebagai *Ibu/Bapa/Penjaga/Anak/Suami/Isteri dll (nyatakan)…….....……. dengan si mati membenarkan menjalankan *bedah siasat klinikal **terhad** atau **penuh** dan/atau **pengambilan apa-apa sampel** tisu/organ/bendalir badan- dll nyatakan …… daripada jasad si mati.

Saya mengaku bahawa saya faham akan penerangan yang diberikan dengan sepenuhnya dan menerima penjelasan daripada Pakar/Pegawai Perubatan * melalui penterjemah (jika ada) …….. berkenaan tujuan, tatacara, dan akibat *bedah siasat dan/atau pengambilan sampel tisu/organ/bendalir badan - dll nyatakan ……..…….. tersebut.

.....

Tandatangan/Cap Ibu Jari Waris:
Nama penuh : ……..……..
No KP / Pasport : ……..
Tarikh : ……..

Saksi:

Tandatangan : ……..……..
Nama penuh : ……..
No KP / Pasport : ……..
Hubungan : ……..
Tarikh : ……..

Penterjemah (jika ada):

Tandatangan : ……..……..
Nama penuh : ……..
No KP / Pasport : ……..
Bahasa yang digunakan : ……..……..
Tarikh : ……..

Saya mengaku bahawa saya telah menerangkan berkenaan tujuan, tatacara, akibat dan risiko bedah siasat dan/atau pengambilan sampel tisu/organ/bendalir badan - dll nyatakan ……. kepada waris si mati.

Ditandatangani : ……..……..
(Pakar / Pegawai Perubatan)
Nama penuh : ……..……..
No MPM : ……..
Jawatan : ……..
Tarikh : ……..

potong yang mana tidak berkenaan

Appendix 2a

Example of Writing a Police Report

Natural Death Case

Saya.....
(No. KP:.....)
bertugas sebagai (Penolong Pegawai Perubatan / Jururawat Terlatih / Pegawai Perubatan) di Jabatan Kecemasan dan Trauma, Hospital / Klinik Kesihatan.....
.....
telah menerima seorang kanak-kanak bernama.....
.....
(No.KP/MyKid/Passport/MRN.....)
pada..... tarikh ..... masa .....
Kanak-kanak ini telah disahkan meninggal dunia dan sebab kematian tidak dapat ditentukan. Dengan ini, saya membuat laporan polis untuk memohon kematian ini disiasat dengan lebih lanjut.

Trauma or suspicious of non-accidental injury case

Saya.....
(No. KP:.....)
bertugas sebagai (Penolong Pegawai Perubatan / Jururawat Terlatih / Pegawai Perubatan) di Jabatan Kecemasan dan Trauma, Hospital / Klinik Kesihatan .....
.....
telah menerima seorang kanak-kanak bernama.....
.....
(No.KP/MyKid/Passport/MRN.....)
pada..... tarikh ..... masa .....

Pemeriksaan luaran mendapati terdapat kecederaan seperti berikut:

1 ……..…….....
2 ……..…….....

Kanak-kanak ini telah disahkan meninggal dunia dan sebab kematian tidak dapat ditentukan. Dengan ini, saya membuat laporan polis untuk memohon kematian ini disiasat dengan lebih lanjut.

Appendix 2b

SULIT U5MR-N Pindaan 2019

BORANG NOTIFIKASI KEMATIAN KANAK-KANAK DI BAWAH UMUR 5 TAHUN (0 - < 5 TAHUN)
(Borang ini perlu dihantar dalam tempoh 24 jam masa kematian ke PKD)

Hospital/Klinik Kesihatan :

Daerah : **Negeri :**

1. Nama Kes: .....
2. Tarikh Lahir : ..... / ..... / ..... **Masa:** ..... (24 jam, cth:17.56)
3. Nombor Kad Pengenalan : ..... ☐ MyKid ☐ MyKad Ibu

4. Nama Ibu/Penjaga : .....

5. Umur Kes : ..... ☐ 0-27 hari ☐ 28-364 hari ☐ 1 tahun - <5 tahun

6. Jantina Kes : ☐ Lelaki ☐ Perempuan ☐ Indeterminate

7. Warganegara : ☐ Ya ☐ Bukan Warganegara (LEGAL) ☐ Pendatang Tanpa Izin (ILLEGAL)

8. Berat Lahir (bagi kes neonatal): ..... gram

9. Bangsa : ☐ Melayu ☐ Cina ☐ India ☐ Orang Asli ☐ Bumiputera Sabah (nyatakan) .....
☐ Bumiputera Sarawak (nyatakan) ..... ☐ Lain-lain (nyatakan).....

9a. Alamat kediaman sekarang: **9b. No Tel:** .....
.....
.....

Bandar: ..... **Daerah:** ..... **Negeri:** .....

10. Tarikh Kematian : ..... / ..... / ..... **Masa:** ..... (24 jam, cth:17.56)

11. Tempat kematian : Sila tanda (√)

☐ *Hospital / Klinik Kerajaan	☐ Dalam perjalanan	Alamat Kematian:
☐ *Hospital / Klinik Swasta	☐ Di tempat kejadian (cth: kolam, jalan raya)	
☐ *Hospital / Klinik Universiti	Nyatakan:	
☐ Rumah Sendiri	☐ Lain-lain (cth: RSAT)	.....
☐ Rumah Pengasuh	Nyatakan:	.....
☐ Taska		.....

12. Sebab kematian
Immediate Cause: .....
Underlying Cause: .....

13. Ulasan Lanjut (jika ada):
.....
.....

Dilaporkan oleh :
Nama : **Tandatangan:**
Tempat Bertugas: **Jawatan dan cop:**
Tarikh: **Telefon:**

**Tarikh dan masa borang diterima oleh PKD:

Nota Penting 1. Semua ruangan wajib diisi
2. *Potong mana yang tidak berkenaan

Appendix 2c

Register of Death Form JPN.LM02 (Pin.1/11)

JPN.LM 02
(Pin. 1/11)

DAFTAR KEMATIAN / PERMIT MENGUBUR
Akta Pendaftaran Kelahiran dan Kematian, 1957
[Seksyen 4(1), Kaedah 5]

No: 0000006

No. Permohonan

A MAKLUMAT SIMATI

1 Nama Penuh

2 No. Dokumen Pengenalan Diri

3 Jenis Dokumen Pengenalan / Negara Pengeluar

4 Umur — Tahun / Bulan / Hari

5 Jantina — L Lelaki / P Perempuan / R Ragu

6 Keturunan

7 Warganegara

8 Alamat Terakhir Sebelum Kematian

9 Agama
Islam / Kristian / Buddha / Hindu / Lain-lain. Nyatakan:

10 Tempat Kematian

11 Tarikh Kematian — Hari / Bulan / Tahun

12 Tarikh Lahir — Hari / Bulan / Tahun

13 Negeri Kematian

14 Waktu Kematian — Jam : Minit — Pagi / Petang / Tengahari / Malam

15 Sebab Kematian

16 Tempat Kutipan Sijil Kematian
JPN:

B MAKLUMAT PEMAKLUM

17 Nama Penuh

18 No. Dokumen Pengenalan Diri

19 Jenis Dokumen Pengenalan / Negara Pengeluar

20 Hubungan Dengan Simati

21 Pekerjaan

22 No. Telefon

23 Alamat

Saya membuat akuan bahawa segala maklumat yang diberikan dalam borang ini adalah benar dan betul

TONTOH

Cause of Death Form JPN.LM09

JPN. LM09

No. 388801

PERAKUAN PEGAWAI PERUBATAN MENGENAI SEBAB-SEBAB KEMATIAN
Akta Pendaftaran Kelahiran dan Kematian, 1957
[Seksyen 22(1); Kaedah 9]

Dengan ini saya .....
(Nama dan Nombor Kad Pengenalan Pegawai Perubatan)

mengaku bahawa saya telah merawat:

Nama si mati.....

Nombor Kad Pengenalan si mati.....

Alamat si mati.....

buat kali terakhir pada.....dan beliau telah

meninggal dunia pada..... jam.....

Sebab-sebab utama kematian ialah:

.....

.....
(Tandatangan dan Cop Rasmi)

Tarikh:.....

NOTA:

Borang ini untuk kegunaan Pegawai Perubatan berdaftar bagi memperakui sebab-sebab kematian seseorang semasa penyakit terakhir dirawat olehnya. Perakuan ini hendaklah diberikan kepada waris si mati atau kepada pemaklum yang dikehendaki melaporkan kematian kepada Pendaftar Kelahiran dan Kematian.

JS708094 – PNMB., K.L.

Appendix 3

History Pro forma

Identification Data

Name of Child:	MyKid:	
Gender : M/F	DOB:	Race:
Address:	Tel No:	
Place of death:		
Name of Father/Guardian :	I/C:	
Name of Mother/Guardian :	I/C:	

History of Incident (Witness)

Name of Witness:	I/C:	
Relationship with child :	Are you the usual caregiver : [ ] Yes [ ] No	
Address:	Tel No:	
Describe what happened:		
Did you notice anything unusual or different about the child in the last 24 hrs?		
[ ] No [ ] Yes (Specify)…….		
Did the child experience any falls or injury within the last 72 hrs? [ ] No [ ] Yes (Specify) ……..		
When was the child last known alive? Date:	Time:	Location:
When was the child found? Date:	Time:	Location:
When the child was found, was she/he … [ ] Breathing [ ] Not Breathing		
Describe the child's appearance when found: [ ] Blue.	[ ] Pale	[ ] Others , specify
Did anyone else other than ambulance staff try to resuscitate the child? [ ] Yes [ ] No If yes, Who:	Time:	Location:
Please describe what was done as part of resuscitation: [ ] Mouth to mouth/nose [ ] Chest compression [ ] Mouth to mouth/nose and chest compression		

Has the parent/caregiver ever had a child die suddenly and unexpectedly?
[ ] No
[ ] Yes , specify:

Is the parent/caregiver under the influence of?
[ ] Alcohol [ ] None
[ ] Drugs
[ ] Smoking
[ ] Medication, specify:

Medical History

In the 72 hours prior to death, did the child have:

Condition	Yes	No	Condition	Yes	No
Fever	[ ]	[ ]	Difficulty breathing	[ ]	[ ]
Excessive sweating	[ ]	[ ]	Cyanosis	[ ]	[ ]
Lethargy	[ ]	[ ]	Apnoea	[ ]	[ ]
Iritability	[ ]	[ ]	Seizures	[ ]	[ ]
Loss of appetite	[ ]	[ ]	Cough	[ ]	[ ]
Vomiting	[ ]	[ ]	Choking	[ ]	[ ]
Diarrhoea	[ ]	[ ]			

In the 72 hours prior to the child's death, was the child given any vaccinations or medications?
(Please include any home remedies, herbal medications, prescription medicines, over-the-counter medications)

[ ] Yes, please specify
[ ] No

Any visit to ED/clinics in the 2 weeks?
[ ] Yes
[ ] No

Past Medical/Surgical History

Does the child have any underlying medical condition?
[ ] No
[ ] Yes, please specify:

Has the child been hospitalized before? (details)
[ ] No
[ ] Yes, please specify:

Did the child have previous surgery? (details)
[ ] No
[ ] Yes, please specify:

Nutritional Status

Any allergies: [ ] Yes [ ] No [ ] Food allergies , specify: [ ] Drug allergies, specify:
Does the child has failure to thrive (FTT) or malnutrition? [ ] No [ ] Yes

Developmental History

Is there any delay or regression in developmental milestone? [ ] Yes [ ] No

Family history *(Focus on inherited disorders possibly leading to mortality)*

Consanguinity: [ ] Yes [ ] No
Is there any history of inherited medical condition/early neonatal/infant death? [ ] No [ ] Yes, specify:

Social History (Focus on risk factors for sudden death and possibility of NAI)

Family dynamics: [ ] Parents legally married [ ] Divorced [ ] Separated [ ] Single parent
Socioeconomic status of parents/caregivers briefly: 1. Father's Occupation: 2. Mother's occupation:
Where is the child cared for during the day? [ ] home [ ] babysitter's house [ ] relative's home, specify: [ ] nursery/taska/ preschool [ ] others (specify) :

Doctor's conclusion

Is there any suspicion of NAI?

[ ] No [ ] Yes, please specify: Possible suspect, specify:

Comments:

*** If less than 12 months old (infant), please complete the following:**

Focus on risk factors for SUDI/ Shaken baby syndrome

Where was the infant last placed? [ ] bed [ ] cot [ ] spring cradle /bouncer [ ] floor mattress [ ] others, specify
In what position was the infant found? [ ] Supine [ ] Prone [ ] Lateral
Was anyone sleeping with the infant (Risk of wedging)? [ ] No [ ] Yes, specify:
Was the infant tightly wrapped or swaddled? [ ] Yes [ ] No
Was the infant last placed to sleep with a bottle? [ ] Yes [ ] No

Antenatal and Birth History

Place of Birth: [ ] hospital Birth weight: kg [ ] home [ ] others, specify
Gestation : ☐ Term ☐ Preterm - weeks:
Complications during perinatal period related to delivery: If yes. Please specify [ ] Hypoxic encephalopathy/ birth trauma [ ] History of ventilation during neonatal period [ ] others, specify

Immunisation history

Is the infant Immunised as per national schedule? [ ] Yes [ ] No Any additional vaccine?, (can tick more than one) [ ] Pneumococcal vaccine [ ] rotavirus vaccine [ ] others, specify:
Missed Immunisation: (Please specify)

Nutritional Status

[ ] Breast fed [ ] Formula Fed [ ] Mixed feeding

Name of Doctor: *Designation:*

Signature/Stamp: *Date:*

Examination Pro forma

PHYSICAL EXAMINATION

Time: ____ : _____	Date: ____ / ____ / _____
Infant Name:	Name of Doctor:
Date of Birth: ___ / ___ / ____	Grade:
RN:	Signature:

General appearance:

Rectal Temperature: ……. °C

Height: Weight: Head Circumference:

State of nutrition and cleanliness:

Visible signs of bleeding or discharge:

Was anything abnormal noted in the mouth at intubation?

Examination (To document on images provided):

Head/Face/Neck:

Skull:

Ophthalmic:

ENT:

Chest:

Abdomen:

Upper limbs:

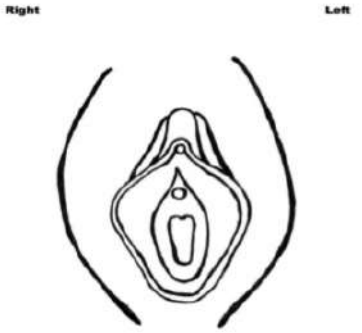
Lower limbs:

Back/Spine/Buttock:

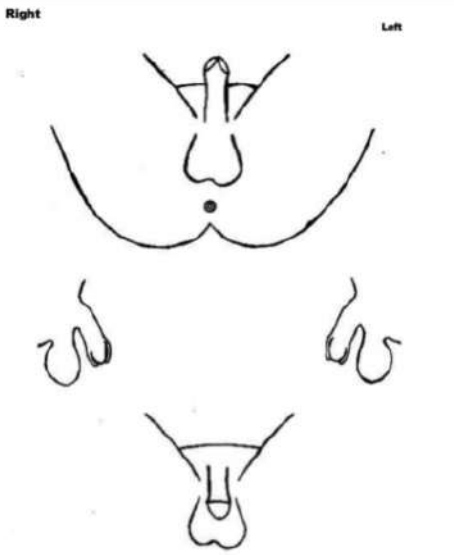
Anus/Genitalia:

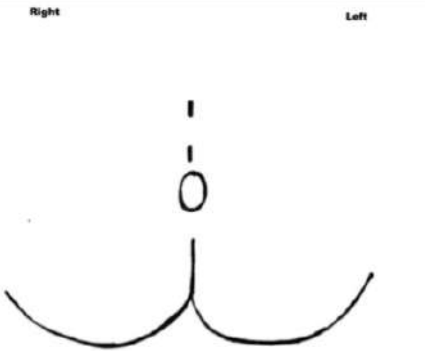
Time: ____ : _____	Date: ____ / ____ / _____
Infant Name:	Name of Doctor:
Date of Birth: ___ / ___ / ____	Grade:
RN:	Signature:

Female



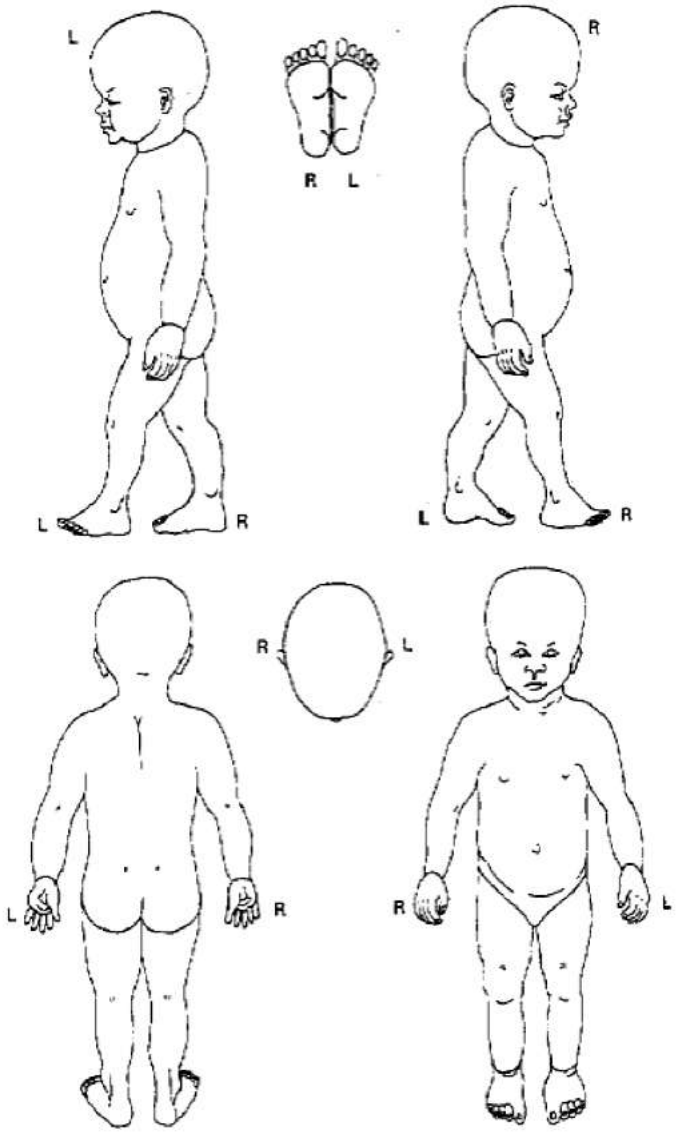
Male





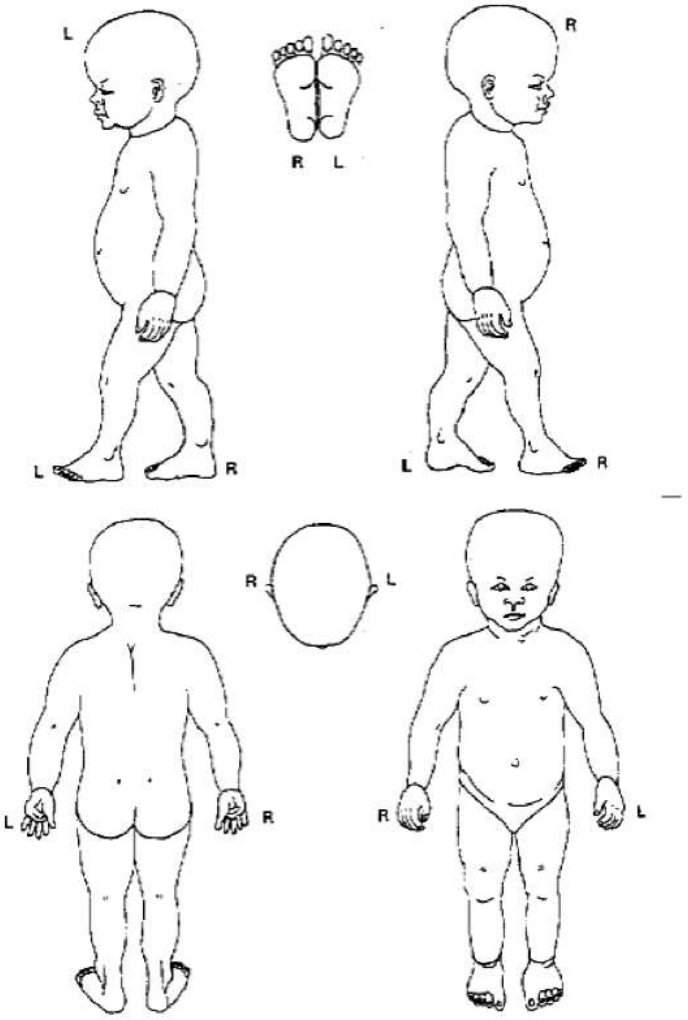
Time: ____ : _____	Date: ____ / ____ / _____
Infant Name:	Name of Doctor:
Date of Birth: ___ / ___ / ____	Grade:
RN:	Signature:

Observe & measure any visible bruises, lacerations or signs of injury



Time: ____ : _____	Date: ____ / ____ / _____
Infant Name:	Name of Doctor:
Date of Birth: ___ / ___ / ____	Grade:
RN:	Signature:

Sites of medical intervention (list & mark on body chart)



Time: ____ : _____	Date: ____ / ____ / _____
Infant Name:	Name of Doctor:
Date of Birth: ___ / ___ / ____	Grade:
RN:	Signature:

Clinical Post-mortem Investigations

SAMPLES TAKEN				
Blood	BUSE	Yes	No	
	Glucose	Yes	No	
	IEM Screening	Yes	No	Filter paper. Dry for 4 hours room temperature Collect 10ml of blood in Lithium heparin – send to lab for plasma and to freeze -20°C
	Blood culture	Yes	No	Strict aseptic technique Cardiac blood – if no PM will be carried out. To identify all organisms in sample if mixed growth (To inform microbiologist)
	DNA	Yes	No	EDTA 10 ml and store in fridge until needed
	Chromosomal	Yes	No	If dysmorphic. 3ml Lithium heparin
	Toxicology	Yes	No	
Urine	IEM screen	Yes	No	1ml sterile bottle – send to lab to freeze
	C&S	Yes	No	Aseptic technique. Suprapubic tap or catheter
CSF (Do not take if suspicion of cranial trauma)	FEME	Yes	No	Lumbar puncture As clinically indicated.
	C&S	Yes	No	
	Others (e.g. viral PCR)	Yes	No	
Radiographs	Chest / Abdomen	Yes	No	
	Others (specify)	Yes	No	
Nasopharyngeal Aspirate (NPA)	Virology	Yes	No	Respiratory viruses as per lab protocol
	Bacteriology	Yes	No	Bordetella pertussis PCR (may be considered)
Liver Biopsy	Trucut	Yes	No	
Others (specify)		Yes	No	

Appendix 4

Forensic Post-mortem Performance & Good Post-mortem Practice

Performance of forensic post-mortem requires instruction from the Investigating Police Officer in the form of *Polis 61* Order. If clinical post-mortem is mandated, the usual criteria for this procedure to be performed and shall be fulfilled accordingly as per local protocol.

Paediatric post-mortem – either conducted as a forensic post-mortem or clinical post-mortem - is a specialised procedure that requires appropriate approach, techniques, appropriately sized instruments and availability of laboratory facilities.

Ideally, the post-mortem shall be carried out by a Forensic Medicine Specialist or a Medical Officer with experience in Forensic Medicine. In hospitals without Forensic Medicine Specialist, a Medical Officer may perform the post-mortem examination upon consultation with the Forensic Medicine Specialist.

The following facilities shall be preferably available to support paediatric post-mortem:

- Portable x-ray machine for skeletal survey.
- Laboratory facilities.
- Paediatric post-mortem equipments.

Good Forensic Post-mortem Practice includes the following:

- Availability of scene of death information in infant death.
- Detailed history including clinical information/medical record to be gathered as part of post-mortem examination such as antenatal and perinatal history, developmental milestones and immunization record.
- Availability of references for external parameters and weights of internal organs.
- Post-mortem photographic documentation is highly advisable for future reference.
- Skeletal survey (AP & lateral view) in infant death and if indicated in other cases.
- In neonatal or early infant death, special emphasis is recommended to rule out congenital structural diseases (predominantly of cardiovascular, respiratory and urinary systems).
- Placental examination if available in perinatal/early neonatal death.
- Lists of laboratory analysis
- Microbiology analysis (covering Central Nervous System(CNS), pulmonary, gastrointestinal systems according to presentation)
- Bacteriology

- Virology
- Inborn error of metabolism (IEM)
- Biochemistry
- Histology examination
- Toxicology analysis
- Genetic studies in certain cases eg: syndromic/dysmorphic features, previous early childhood death in family.
- Marrow studies if indicated/suspected.

Categorisation of Cause of Death after Post-mortem Examination

Following a detailed forensic post-mortem and review of investigation results, cause of death can be generally categorised into **Sudden Unexpected Death Infancy (SUDI) and Sudden Unexpected Death in Childhood (SUDC)**.

SUDI is the sudden death of an infant which was not anticipated by any professionals or carers involved in the child 24 hours prior to the event that led to death. SUDI is restricted to death under 1 year of age. It is further divided into **Explained SUDI** and **Unexplained SUDI**.

In **Explained SUDI**, a reasonable cause of death is established from forensic post-mortem for example Pneumonia or Congenital Heart Disease. The final cause of death should be reported as Pneumonia or Congenital Heart Disease, rather than Explained SUDI.

Unexplained SUDI is a cause of death given to a case whereby a reasonable cause of death is not established following detailed forensic post-mortem. Unexplained SUDI includes **Sudden Infant Death Syndrome (SIDS)**, **Sudden Unexpected Death in Epilepsy (SUDEP)** and **Unascertained** cause of death. Should the case fulfil international diagnostic criteria for SIDS, then SIDS should be given as the final cause of death, rather than Unexplained SUDI. Should the case also fulfil international diagnostic criteria for SUDEP, then SUDEP should be given as the final cause of death, rather than Unexplained SUDI.

Unascertained is a cause of death terminology from legal death investigation perspective. It is often used by the pathologist when the medical cause of death has not been determined to the appropriate legal standard, which is usually the balance of probabilities.

When the pathologist certifies the cause of death after a detailed forensic post-mortem as Unascertained, the final cause of death is recommended to be listed as Unexplained SUDI (cause Unascertained).

SUDC is a cause of death restricted for above 1 year up to 5 years old case and forensic post-mortem has been performed accordingly. If a reasonable cause of death is detected, the final cause of death is given as such. Unexplained SUDC is reserved to no reasonable cause of death detected or cause of death is issued as Unascertained by the pathologist.

This categorisation would help to reduce the use of different terms by different professionals at various level of meetings.

SIDS is officially defined in 1969. Later in 1989, National Institute of Child Health and Human Development refined its definition as 'the sudden death of an infant under 1 year of age which remained unexplained after a thorough case investigation, including a performance of a complete post-mortem, examination of the death scene and review of clinical history'. In 2004, SIDS was further refined to include that 'the onset of lethal episode apparently occurring during sleep' and subclassification was agreed upon during a meeting in San Diego, USA. The categories of SIDS are as the following:

Category IA : Classic features of SIDS present & completely documented. Infant deaths that meet the general requirements and all of these requirements:

Clinical:
More than 21 days & less than 9 months, normal clinical history, term pregnancy (equal or more than 37 weeks), normal growth and development, no similar death in siblings, close genetic relatives or in infants under custody of same caregiver.

Circumstances of death:
Found in a safe sleeping environment with no evidence of accidental death, investigations of death scene do not provide for explanation of death.

Autopsy:
No potentially fatal pathologic findings, acceptable minor respiratory infiltrates, intrathoracic petechial haemorrhages are supportive findings but not obligatory, no unexplained trauma, no substantial thymic stress effects, negative results of toxicology, microbiology, radiologic, vitreous chemistry and metabolic screening studies.

Category IB : Classic features of SIDS present & incompletely documented. Infant deaths that meet the general requirements and all Category 1A requirements except investigation of death scenes were not performed and/or 1 or more of the following analyses was not performed; toxicology, microbiology, radiologic, vitreous chemistry and metabolic screening studies.

Category II: Infant deaths that meet Category I criteria except for 1 or more of the following:

Clinical:
Age range outside that of Category I (less than 21 days & more than 9 months), Similar death in siblings, close relatives or in infants under custody of same caregiver that are considered suspect for infanticide or genetic disorders, neonatal or perinatal conditions have resolved by the time of death.

Circumstances of death:
Mechanical asphyxia of suffocation by overlying not be determined with certainty.

Autopsy:
Abnormal growth and development not thought to have contributed to death, marked inflammatory changes or abnormalities not sufficient to be unequivocal causes of death.

Unclassified Sudden Infant Death

Deaths that do not meet criteria of Category I or II SIDS which alternative diagnosis of natural or unnatural conditions are equivocal including cases for which post-mortems are not performed.

SIDS is not a single disease entity but rather a combination of multiple risk factors based on the Triple Risk hypothesis model; Critical development period, Intrinsic vulnerability and Stressful environment. It is essentially a diagnosis by exclusion which requires knowledge of circumstances of death and full autopsy investigations including histology and ancillary tests. It is best diagnosed by multidisciplinary approach.

Appendix 5

Factors That Suggest A Suspicious Death

The following factors are not put forward as a definitive list but rather to highlight certain factors which, when considered together, may give rise to a higher level of suspicion and merit more detailed investigation. They should be considered in the overall context of the death and wider family environment. The presence of such factors may reinforce the need for an investigative forensic post-mortem examination.

History	Examination
Previous or ongoing child safeguarding concerns - within the family relating to this infant or to other siblings. - if under the care of child protector (JKM)	**Evidence of major bleeding or injury** (cranial, bony, visceral or soft tissue) is suspicious unless proven otherwise. - on the body now or previously documented
Previous sibling deaths (for example, previous unexplained SUDI) - in this case an extended family tree should be documented and discuss role of genetic test if relevant	Multiple bruises to the face, ears, limbs or trunk
Delay in seeking help without an adequate explanation and persistently missing appointments/follow-up	Bruising to an immobile infant or atypical bruising that is out of context with the infant's development
Inconsistent explanations a) The explanation changes with time or questioning b) The reported cause was beyond the infant's development (e.g. an 8-month-old infant falling unaided) c) The explanation in relation to time of death is not supported, for example, where the presence of rigor mortis indicates that the infant has been dead longer than stated.	**The frenulum** – The narrow fold of mucous membrane preventing the lips from moving too far away from the gums – can be torn through such actions as force-feeding (but note that this could also happen during vigorous resuscitation)
History of domestic abuse within the family.	Fingerprint bruises and linear bruises

History	Examination
Evidence of past or present drug or alcohol abuse, including if the parents or carers appear to be still intoxicated.	Petechial haemorrhages may or may not be present with suffocation and their absence is not conclusive either way, but their presence should be noted and discussed with the Paediatrician, Ophthalmologist or Pathologist
Evidence of parental mental health problems, including fabricated or induced illness.	Blood around the mouth and nose
Neglect issues - physical environment of the child's home, cleanliness, food and clothing (poor socioeconomic status)	A small amount of bleeding around the mouth and nose may be normal but the presence of frank blood should be treated with suspicion. Some pink frothy mucus around the mouth may be normal. However, in either case, medical opinion should be sought
Previous convictions of parents and carers, in particular violence to children	When on any other part of the body there are burns, scalds, bite marks or injuries to the bone; new or healing fractures; or drugs are present in the deceased infant
If the infant had a learning or physical disability, or a significant pre-existing medical condition	A foreign body in the upper airway
	Poor general hygiene of the child / malnourished suggestive of neglect
	Abusive head trauma: These injuries present with non-specific symptoms ranging from apnoea, apparent life-threatening event (ALTE), seizures, unexplained drowsiness or 'sudden loss of consciousness'. An appropriate suspicious mindset can result in the identification of characteristic retinal haemorrhages on examination of fundi and subdural haemorrhages on CT scan.

Appendix 6

Case Scenario

Primary care setting

Scenario 1

1-year-old girl with underlying complex congenital heart disease, follow up at General Hospital A, was brought in dead by parents to health clinic. The latest medical notes were also available at that time. The assessment showed clear signs of death. Therefore, in this case, the Medical Officer can certify the cause of death after discussing with FMS and notify Police.

Scenario 2

A 4-year-old boy with underlying Cerebral Palsy, defaulted follow up for the past 2 years, was brought in dead by parents to health clinic. No recent medical notes available at that time. The assessment showed clear signs of death. Since the cause of death is not clear, the Medical Officer should report the death to the Police for further investigation.

Scenario 3

A 3-year-old boy with underlying Down's Syndrome was found dead in the swimming pool by mother. The body was brought in to health clinic. The assessment showed clear signs of death. Since the circumstances of death can be suspicious and warrant further investigation, Medical Officer should report the death to the Police for further investigation.

Scenario 4

A 9-month-old girl was brought in unresponsive by the babysitter to health clinic. Clinically the child has no signs of life but according to babysitter, the baby was still warm to touch while in the car. The attending team proceed with active resuscitation for 20 minutes. However, no signs of return of circulation noted and the team pronounced death. The Medical Officer will have to report the death to the Police for further investigation. The time of death should be written as the time of arrival to the clinic.

Scenario 5

A 2-year-old boy died at home 4 hours ago and was brought in dead by the Police to the health clinic. The child showed no signs of life. In this case, Medical Officer can certify that the child is dead but cannot produce cause of death. Medical Officer should advise the Police to bring the body to Forensic Medicine Department for further investigation and to inform the Forensic Medicine Department prior to transport. Medical Officer should also do the under-5 death notification and follow up the parents for grieving issues.

Scenario 6

A 4-year-old boy with underlying Cerebral Palsy, was brought in dead by parents to health clinic. Recent medical notes available produced by mother, showed that child has heart disease and in failure. The assessment showed clear signs of death. However, it was noted that there are bruises over his chest and back. Since there are suspicious signs of abuse, Medical Officer should notify case to Police.

Hospital setting

Scenario 1

JS an 18-month-old boy fell from the 4th floor of his flats while playing with his older brother along the corridor. The incident was witnessed by their neighbours who immediately brought him along with his mother and older brother to the hospital. On arrival to red zone casualty, JS had no signs of life and resuscitation was immediately initiated by the casualty team. Despite 30 minutes of resuscitation there was no return of spontaneous circulation and JS was pronounced dead. The Police and the Forensic Medical Officer on-call was informed of the event and the body was sent to the Forensic Medicine Department as the death was classified as an accident.

Scenario 2

M is a 4-year-old girl diagnosed to have spastic dystonic quadriplegic Cerebral Palsy secondary to Hypoxic Ischemic Encephalopathy (HIE) during the neonatal period. She is totally dependant on her caregivers to fulfil activities of daily living. An advanced directive resuscitation plan had already been discussed with her family. She was noted to be unwell with fever and cough for the past 3 days and became breathless. Her parents decided to bring her to casualty but on arrival to red zone she had no signs of life. No resuscitation was performed. Her death was informed to the Police Department and with approval burial certificate was issued and cause of death issued by ETD.

Scenario 3

MA a 9-month-old boy was taken care by his unemployed father together with his 4 year old sister in a flat. His father claims he became less active after he rolled off a knee height mattress. Therefore, he was rushed immediately to the casualty. He had no signs of life and resuscitation was initiated by the casualty team. Despite 20 minutes of resuscitation there was no return of spontaneous circulation and he was pronounced dead. On examination, he had a bruise over his forehead and his

right elbow appeared swollen. Fundoscopy examination revealed bilateral retinal haemorrhage. A police report was lodged in view of suspicion of non-accidental injury (NAI). The body was sent to the Forensic Medicine Department after the Forensic Medical Officer on-call was informed. Borang 9 was despatched and the hospital SCAN team was informed

Scenario 4

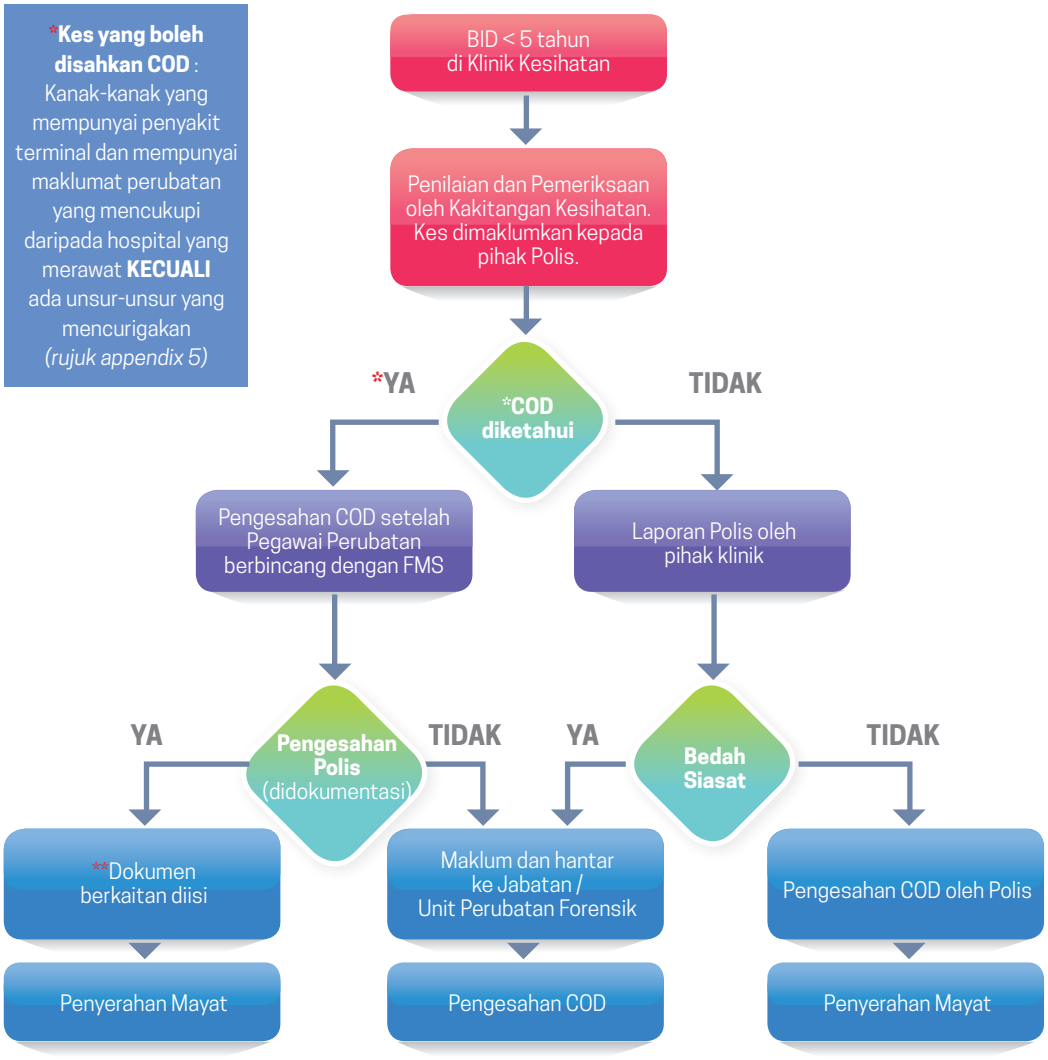
TJ a 4-month-old boy noted to be apparently very well and was sent by his parents to the babysitter's house. However, after a feed around 10 am he was placed in a cot to sleep and when he was checked upon at 10.30 am, he was noted to be cyanosed. The babysitter initiated basic life support and was driven by her husband to casualty. On arrival to casualty, he had clear signs of death and no further resuscitation was done. He was pronounced dead and on examination no abnormality detected. A police report was submitted in view of sudden infant death and body was sent to the Forensic Medicine Department after the Forensic Medical Officer on-call was informed.

Scenario 5

LMJ a 6-month-old girl was apparently unwell with fever, cough and coryza for the past 5 days. Syrup Paracetamol was given by the General Practitioner; however, she was noted to be breathless at day 5 of illness and immediately rushed to the hospital. On arrival, she had no signs of life and resuscitation was initiated. Despite 40 minuses of resuscitation, she had no return of spontaneous circulation and was pronounced dead. She had no previous admission and was a thriving child. No suspicious marks were detected on her body. After discussion with the Paediatrician, a CXR was ordered and it showed bilateral patchy consolidation. Parents were informed and consented for intracardiac blood C&S and NPA for viruses. Case was informed to the Police and cause of death was issued as Community Acquired Pneumonia. Parents refused clinical post mortem. Her parents were seen back in 6 weeks in the bereavement clinic and they were informed that the intracardiac blood culture grew Streptococcus *pneumoniae*.

Appendix 7

Carta Alir Pengurusan Kes BID Kanak-Kanak Bawah 5 Tahun di Klinik Kesihatan



** Dokumen Daftar Kematian / Perakuan Pegawai Perubatan Mengenai Sebab-sebab Kematian adalah berdasarkan ketetapan lokaliti (rujuk *appendix 2c*) ; Pelaporan Kematian Kanak-kanak Bawah 5 Tahun adalah berdasarkan garis panduan sedia ada iaitu ***Guidelines for Stillbirth and Under 5 Mortality Reporting System.***

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