

KINGDOM OF CAMBODIA
NATION RELIGION KING



Ministry of Health

Standard Operating Procedures (SOPs) for

Birth Notification

Death Notification

**Medical Certification of Cause of Death (MCCD) and ICD
Mortality Coding**

Foetal Death Notification

April 2023

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- HE Dr Lo Veasnakiry, Secretary of State
- HE Dr Hok Kim Cheng, Director General for Health, MoH
- Dr Ly Vichearavout, Director of DPHI
- Dr Chev Mony, Deputy Director of DPHI
- Dr Yok Dararith, chief of HIS Bureau
- Dr Sok Srun, Director, Hospital Department
- Dr Sao Sokuna, Deputy Director of Hospital Department

Vital Strategies team:

- Romain Santon, Regional Deputy Director, Asia & Pacific, Civil Registration & Vital Statistics
- Dr. Nandalal Wijesekera, Consultant in MCCD Certification and ICD Coding
- Dr Mean Reatanak Sambath, Country Coordinator for Cambodia

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Acronyms and abbreviations

BN	Birth Notification
CR	Civil Registration
CRVS	Civil Registration and Vital Statistics
DN	Death Notification
DPHI	Department of Planning and Health Information
eMCCD	electronic Medical Certificate of Cause of Death
EMR	Electronic Medical Record
FD	Foetal Death
GDI	General Department of Identification
HF	Health Facility
ICD	International Classification of Diseases
ICD-10	International Classification of Diseases 10 th Revision
MCCD	Medical Certificate of Cause of Death
MOH	Ministry of Health
MOI	Ministry of Interior
MOP	Ministry of Planning
NCOD	Digital Notification and Cause of Death
NIS	National Institute of Statistics
NSCI	National Steering Committee on CRVS and Identification
PHD	Provincial Health Department
SOP	Standard Operating Procedure
ToT	Training of Trainer
UCOD	Underlying Cause of Death
VA	Verbal Autopsy

1. Introduction

Ministry of Health (MOH) as a member of Civil Registration and Vital Statistics (CRVS) National Steering Committee on CRVS and Identification (NSCI) Chaired by Deputy Prime Minister, Minister of Interior, consisting of ministry members (NIS/MOP, MOH) and CRVS National Technical Committee chaired by General Director of General Department of Identification (GDI) is working for contributing CRVS improvement in Cambodia.

With the context of current draft CRVS law, MOH will play an important role in CRVS improvement including registration of birth and death notification, data collection and reporting on cause of death and fetal death. In summary, the MOH shall provide key interventions, in particular establishment of individual medical record, which is going to be the foundation of an Electronic Medical Record (EMR) to record data corresponding to the needs below:

- Record birth and send birth notification data to the competent registrar
- Record death and send death notification data to the competent registrar
- Record cause(s) of death and identify underlying cause of death (UCOD) and send cause of death data to the competent registrar
- Record and send fetal death data to National Institute of Statistics (NIS)

The Department of Planning and Health information (DPHI) of the MOH, Cambodia with the support from Vital Strategies organized Training of Trainer (ToT) training on Medical Certification of Cause of Death-first batch conducted from August 15-19, 2022, for MOH team and national hospitals, second batch conducted from 21-23 June 2022 for provincial hospitals and third batch conducted from 20-21 March 2023. The first and second batch of the trainings were provided by Dr Nandalal Wijesekera, Consultant on Medical Certification of Cause of Death, Vital Strategies, Co-facilitator, Dr Chev Mony, Deputy Director, DPHI/MOH, Cambodia and Dr Mean Reatanak Sambath, Country Coordinator, Vital Strategies. The third batch of the training was provided by Master Trainers who received MCCD ToT training during the first batch of the training.

The DPHI /MOH developed the concept note for developing digital tools called Digital Notification and Cause of Death (NCOD) to record and report case-based data as below:

- Record all births at health facilities with required data for birth notification.

- Record all deaths with required minimum data needed for death notification and medical certification of cause of death (MCCD).
- Transferring data from MCCD form to central ICD mortality coders to determine the Final Underlying Cause of Death (UCOD) using ICD- mortality coding rules (the version used would be 10th revision of ICD).
- Record all fetal deaths (stillbirths) at health facilities based on minimum data needed for production of vital statistics report that would be produced by the National Institute of Statistics (NIS).

The proposed Digital NCOD system is aligned according to National Digital Health Strategic Plan 2022-2033 and the concept note, was approved by National Digital Health Committee on 18 October 2022.

2. Objectives

This standard operating procedure should be used by all health facilities as a guidance on the process of recording:

- Birth Notification
- Death Notification
- Foetal Death Notification
- Medical Certification of Cause of Death (MCCD) and ICD Mortality Coding

Throughout this SOP, a ‘Health Facility/Facilities’ refers to either national hospitals, capital/provincial hospitals, district referral hospitals, health centers and health posts, private hospitals, clinics and care centers, and military and police hospitals.

3. Required forms and database

The Department of Planning and Health information (DPHI) of the Ministry of Health (MOH) developed the following forms and listed below:

- Birth Notification (BN) (Annex 1). The BN form will be used for notifying a live birth. Health facilities will notify live births to CR database in an electronic format and provide one slip to the parents or informants to carryout birth registration at Commune/Sangkats. The BN forms should be used for all births occurring in and outside health facilities in Cambodia.
- Death Notification (DN) (Annex 2). The DN form will be used for all deaths and for notifying them electronically to CR database. One DN slip must be provided to the informant(s) to carryout death registration at Commune/Sangkats. The DN forms should be used for all deaths occurring in and outside health facilities in Cambodia.
- Foetal Death (FD) form (Annex 4). The FD form must be used for recording all foetal deaths (stillbirths) in all health facilities.
- Medical Certification of Cause of Death (MCCD) (Annex 3). The MCCD form must be used for all deaths in and outside health facilities with a contact to an attending physician for all circumstances of death.

Digital Notification and Cause of Death (NCOD)

By completing physical form as mentioned above, health facilities or designated staff will enter data into the NCOD system. NCOD consist of case-based data and are listed below and it will record:

- all birth notifications
- all death notifications
- medical certificate of cause of deaths (MCCDs)
- Final UCOD by central ICD mortality coders employing ICD mortality coding rules using ICD-10.
- all fetal deaths (stillbirths)

NOCD could be accessed at www.hismohcambodia.org or www.digitalncod.org

All health facilities are encouraged to request a user-name and a password from DPHI/MOH, Cambodia.



Notification and cause of death (NCOD)

ឈ្មោះប្រើប្រាស់

ពាក្យសម្ងាត់



 ចូលប្រើប្រាស់

4. SOP for Birth Notification

A birth notification form must be issued within 24 hours to all births occurring in a Cambodian health facility and it must be given to the parents for them to enable notification of the birth to the CR database maintained at GDI/MOI.

A. Birth occurring in a health facility

- When a Birth occurred at a health facility, physician or midwife must complete birth notification within 24 hours and should enter data in NCOD system immediately after completing the birth notification form, and obtain a track form number. Thereafter the attending officer (physician/midwife) must copy the tracking number to birth notification form, sign and hand over to the parent. This process will be same for births occurring outside health facilities. The mother of the baby should ensure to take the baby to a health facility within 48 hours for the registration of the new birth.
- When the relevant staff enter and submit birth data in NCOD, the birth notification will be transmitted to the CR database.

B. Birth occurring outside a health facility

- When a Birth occurs outside a health facility and when the mother does not take the baby to the health facility within 48 hours, the attending physician or midwife or traditional birth attendant must report it to the respective health facility. Thereafter, the health facility must make arrangements to issue birth notification form and complete the process as explained in section A.
- When the relevant staff enter and submit birth data in NCOD, the birth notification will be transmitted to the CR database.

C. Baby abandoned in a health facility

- Health facility must ensure to issue a birth notification and enter birth data in NCOD as explained in section A.
- When the relevant staff enter and submit birth data in NCOD, the birth notification will be transmitted to the CR database.

D. Baby abandoned outside a health facility

- Health facility will not be issuing a birth notification for such births unless there is a request from local authorities to do so.

5. SOP for Death Notification

A death notification form must be issued within 24 hours to all deaths occurring in a Cambodian health facility and it must be given to the deceased relatives for them to enable notification of the death to the CR database maintained at GDI/MOI.

Confirmation of Death

Physicians and/or health staff should observe following clinical signs for a minimum period of 5 minutes to confirm a death:

- Absence of carotid pulse (over 5 minute) and
- Absence of heart sounds (over 5 minute) and
- Absence of respiratory sounds and respiratory effort (over 1 minute) and
- Lack of response to painful stimuli (e.g., trapezius squeeze) and
- Fixed dilated pupils unresponsive to bright light *.

*Where there are defects in the eye e.g., blindness, cataract, false eye, etc., then practitioner may undertake corneal reflex test if competent to do so.

The Final Examination

When you have been asked to confirm the death of a patient, you should observe the patient for a minimum of 5 minutes. To ensure that you perform all necessary steps, approach:

- Airway / Breathing – Auscultate the lungs for >1min: There will be no respiratory effort and no audible breath sounds.
- Circulation – Palpate for a pulse for >1min and auscultate the heart for >1min: There will be no palpable central pulse and no audible heart sounds*
- Make sure you check for any palpable cardiac pacemaker
- Disability – Check for a pupillary response and check for a motor response to pain
- Following 5 minutes of continued cardio-respiratory arrest the patient’s pupils will be fixed, dilated and unresponsive to light.
- There will be no response to a painful stimulus. This can be tested by applying supra-orbital pressure and looking for any motor response.
- Exposure – The patient may be peripherally cold (depending on the timing of your assessment)

*In a patient who had been monitored, you may also notice continuous asystole on the cardiac monitor. In a patient who has an arterial line you can observe an absence of pulsatile flow.

A. Death occurring in a health facility

- For a Death occurring in a health facility, the attending physician must issue a death notification form within 24 hours and enter relevant data in to the NCOD system to obtain a track form number, copy it into the death notification form, place his/her signature and hand it to deceased relatives.
- When the relevant staff member enters and submits the data in NCOD system, the death notification will be transmitted to CR database.

B. Death occurring outside a health facility

In all circumstances, when a death occurs outside a health facility, physicians of the respective health facility must confirm the death and should issue a death notification form. The detailed process of this procedure would be described in the next section.

6. SOP for Medical Certification of Cause of Death (MCCD)

In principle:

- *When a death of a person occurs in a health facility or en-route to the health facility, the head of the health facility, or his/her designee shall determine the cause of death, if possible.*
- *When a death of a person occurs outside a health facility, the head of the health facility, or his/her designee shall determine the cause of death, if possible.*

Cause of Death

Cause of Death is a term used to indicate the medical cause of death. It lists the disease(s) or injuries that caused death. Specific cause of death information is recorded on the MCCD and is entered into the Vital Statistics System of Cambodia.

Completing the Death notification form and MCCD form could be done for deaths occurring at two locations and they include:

- Death at a health facility
- Death at the community where the deceased has a recent encounter with a health facility and a

Manner of Death

Manner of Death is the way to categorize death as required by the MOH, Cambodia. The classifications are natural and non-natural.

- Natural cause

Natural is defined as death caused solely by disease or natural process. If natural death is hastened by injury (such as a fall or drowning in a bathtub), the manner of death is not considered natural

- Sudden Unexplained Infant Death (SUID), formerly known as sudden infant death syndrome (SIDS), is a subset of natural death. It is the sudden death of an infant under one year of age which remains unexplained after a thorough and complete investigation.

Non-natural cause
All deaths that cannot be classified as natural causes are referred to as unnatural deaths. This includes accidents, homicide, suicide, violent death (both intentional and unintentional), falls, poisoning or overdoses (both deliberate and accidental), and drowning.

General Guidance for Cause of Death Notification, Certification and Reporting

- Physicians and health staff are responsible for confirming death and for certifying cause of death.
- All Physicians and health staff who are assigned as certifiers are mandated to indicate the COD, as determined based on his/her best medical opinion and according to the information available in medical records.
- All health facilities and individual key actors in reporting, certifying deaths are required to observe the following guidelines, and the procedures outlined below:
 - a) Deployment of standardized procedures in the certification of in-facility and out-of-facility deaths using MCCD form version MoH 2022.
 - b) Utilize verbal autopsy (VA) in determining the most likely cause for community deaths in identified cases; comply with latest International Classification of Diseases (ICD) when documenting/certifying the cause of death(s) to the utmost level, review all death notification form/certificates for completeness and correctness. (Would have a SOP for VA on later date)

Certification of In-Facility Deaths

- For *In-Facility Deaths*,
 - a. the last attending physician shall prepare the death notification form/certificate (MCCD) using MoH standardized death notification and MCCD form. He/She shall document the death notification form and enter the relevant details in the NCOD system within 24 hours from the time of death and copy track form number from NCOD system recording in physical death notification form, sign it and handover to the deceased relatives. This death information to be channeled through death notification ward counter (already identified for real time transmission of data to NCOD system. This procedure would enable the death notification be notified to the CR database.
 - b. the last attending physician shall complete the MCCD form and transmit data into the NCOD within 3 days.

Certification of Out-of-Facility Deaths

A. Medically Attended Deaths

- For *medically attended out-of-facility deaths*, the deceased nearest relative, shall inform the deceased's last medical attending physician and/or respective health facilities, who shall prepare:
 - a. the death notification form and enter data in the NCOD system within 24 hours of receiving information of death from the relative and
 - b. MCCD form and enter data in the NCOD within 3 days from the time of death.
- For medically attended out-of-facility deaths where the last attending physician is unavailable or could not be found, the procedures under medically unattended deaths shall be followed.

B. Medically Unattended Deaths

- For deaths without medical attendance, the deceased's relatives or in the absence, the person who has known about death, shall report the death to the local authority for calling nearby health facilities:
 - a. To confirm death and issue death notification form within 24 hours from the time of death. The assigned physician/s shall enter death notification data in the NCOD system immediately as described in section A.
 - b. The assigned physicians shall complete the MCCD form and enter data in the NCOD system within 3 days.

Death could occur according to the situations listed below:

- Patient died enroute to the health facility – the health facility must complete both death notification and MCCD from as described in in-facility death mentioned above.
- A Patient who is treated in a health facility where the prognosis is considered to be poor and the family members of the patient wants to transfer out to die at home and if the patient died at home after discharge from the health facility:
 - a. If patient's house is not far or near the original health facility, the treating physician/s of the original health facility could complete the death notification and MCCD following the procedure described above.
 - b. However, if patient's house is too far from the original health facility, the treating physician can inform and/or transfer medical history to the nearby health facility to provide the death notification form and complete MCCD following the procedure described above.

- Patient died at Home with care by a health facility—there are home care services for treating patients at home -if patient died, the treating physician of original health facility must complete the death notification and complete the MCCD following the procedure described above.
- Patient died at home with no attending physician (death of an old person), then informant and/or relatives would call local authority to attend to this situation, and local authority would call nearby health facilities to complete the death notification and the MCCD if possible, following the procedure described above.
- Patient Died in a suspicious manner or if the case is under investigation—follow the relevant procedure described in the next section.

7. SOP for MCCD certification in health facilities

Dead on arrival

- Dead-on-arrival cases (*where, the physician had attended to the decedent and/or able to certify the cause of death*) that do not require medico-legal investigation, the attending physician shall confirm death and complete the death notification form and enter data in the NCOD system, get the relevant tracking number from NCOD and copy it to the death notification, sign and handover the death notification slip to the relatives.
- The attending physician shall assess the medical history to certify cause of death and would complete the MCCD form and enter data in the NCOD system within 3 days.

Brought dead/ received dead

- For brought dead/received dead cases (*where, the physician had not attended to the decedent upon arrival yet or decedent show no signs of life when received*), the physician of the receiving health facility shall complete death notification form and enter data in the NCOD system, obtain a tracking number, record it in the death notification form, sign and handover death notification slip to the relatives.
- Thereafter, if possible, attending physician should complete the MCCD form, to the best of his/her knowledge by assessing the medical history and enter the MCCD data in the NCOD system within 3 days.

Death in an Ambulance and/or Moving Conveyances

- When a death occurs in an ambulance without an attending physician and/or without any referral form from a health facility, the death shall be considered as received dead/dead-on arrival. In this case, the procedures mentioned above death in health facility must followed.
- In case the deceased was being transferred by a referring hospital, the referring hospital shall be responsible for providing any necessary information and documents (e.g., medical chart, discharge summary) to certify and report the death and complete the death notification and MCCD.
- For a death in an Ambulance and/or Moving Conveyances, the health facility of the Ambulance and/or Moving Conveyances shall confirm the death and complete the death notification as the procedure mentioned above and provide the death notification slip to the relatives.

- The physician/s of the health facility must complete the MCCD form and enter into NCOD system within 3 days following the time of death.

General SOP for death notification and MCCD certification in health facilities

- When a patient dies in a ward/unit of a health facility, the attending physician/nurse/midwife must complete the death notification form and enter in NOCD within 24 hours. Thereafter, copy the tracking form number from NCOD and document it in the death notification form, sign and handover to the relatives—this process must be done at ward level—each ward should have a username and a password to access the NCOD.
- The attending physician or duty physician should complete MCCD form and enter data into the NCOD within 3 days following the time of death.

eMCCD

- The physicians could enter MCCD data directly into the eMCCD and thereby to the NCOD without using the physical MCCD form at ward level if this facility is available.




8. SOP for health centers on MCCD certification

Most of the deaths recorded in health centers are perinatal deaths and deaths related to pregnancies. For these deaths the health center staff must complete death the notification form, enter data into the NCOD, obtain a tracking form number, document it to the physical death notification form, sign and handover it to the relatives.

Health center staff must complete the MCCD form within 3 days after the time of death and enter the data into the NCOD.

Short guidance for completing the MCCD for a death related to pregnancy:

- If a woman dies during pregnancy or within 42 days of the termination of a pregnancy, the fact that the woman was pregnant should be indicated on the MCCD, even if the immediate cause of death is not related to the pregnancy or to childbirth. For example, the entry could read ‘pregnant, period of gestation 26 weeks. The pregnancy check box of the new Cambodian MCCD form should be ticked to indicate the women was pregnant or was within 42 days of delivery when the death occurred.





Frame A: Medical data: Part 1 and 2			
1-Report disease or condition directly leading to death on line a			Cause of death
			Time interval from onset to death
Report chain of events in due to order (if applicable)		a	Hemorrhagic shock
		b	
		c	
State the underlying cause on the lowest used line		d	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)	Pregnancy (period of gestation 32 weeks)		

Maternal Death

“The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes”.

Example

A woman who had anemia during pregnancy and after delivery had a postpartum haemorrhage due to uterine atony, and died as a result of hypovolemic shock. This is a clear case of maternal death. The certifier must complete the ‘For women, was the deceased pregnant?’ section in Frame B of the MCCD form accurately.

Frame A: Medical data: Part 1 and 2				
1-Report disease or condition directly leading to death on line a			Cause of death	Time interval from onset to death
Report chain of events in due to order (if applicable)		a	Hypovolemic Shock	10 minutes
		b	Post partum hemorrhage	30 minutes
		c	Uterine Atony	45 minutes
State the underlying cause on the lowest used line		d		
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)	Anemia (months)			

9. SOP for Newborn Death

A newborn who was born alive and died immediately after delivery, the health facility must complete a birth notification form following the procedures described in section 4 above, and then must complete the death notification and MCCD form as the procedures described in section 5 above.

10. SOP for Deaths requiring further investigation

For death in the case of an unnatural or suspicious death, in or outside a health facility, the head of the health facility, medical professional or relevant individuals shall report to the competent authority including health representative to investigate the unnatural/suspicious death. After concluding the investigation on the cause of death, the health professional/physician or the competent authority shall determine the cause of death following the form prescribed for this procedure, complete the death notification form, enter data in NCOD system, obtain a tracking form number and document it on the death notification form, sign and handover it to the relatives. The health professional/physician must complete MCCD form and enter the data into the NCOD within 3 days from the time of death.

The following cases are considered medico-legal cases and shall be referred to the local investigation or death audit committee:

- Deaths due to injuries (physical, thermal, chemical, and electrical) where the circumstances suggest commission of an offense by somebody, including but not limited to:
 - Suspected self-inflicted injuries or has committed suicide
 - The ones been killed by machinery, or by an accident (Vehicular accidents, Work accidents etc.)
 - Unnatural accidents or disasters
 - Firearm or Gunshot injuries
 - Deaths due to fire (Burns)
- Assault and battering, including domestic violence, child abuse, and sexual assault/offenses (has died under circumstances raising a reasonable suspicion that some other person has committed an offense).
 - Cases of poisoning, or intoxication
 - Cases referred from Police Dept. /other law enforcement authorities or persons under police custody.
 - Cases of death due to decapitation.
 - Cases of death where the deceased is in an advanced state of decomposition.
 - Cases brought dead with improbable or inconsistent medical history creating suspicion of an offense. Examples of which include but are not limited to:
 - Death due to external causes
 - Death due to animal bite

- Unidentified bodies (physical characteristics of the deceased and clothes must be reported in these cases)

11. SOP for ICD mortality coding

Following accurate entry of data documented in the MCCD forms by the data entry staff from health facilities using NCOD (e-MCCD module) system these data are received by the ICD mortality coders in an electronic format.

The central ICD mortality coders, working at the MoH must check for inaccuracies in MCCD form before starting the ICD coding process. Thereafter, they must find the relevant ICD-10 chapter specific code/s for the cause(s) of death and enter them into the NCOD system. After entering the relevant ICD-10 chapter specific codes, the central ICD mortality coders must apply the mortality coding rules to identify the Final Underlying Cause of Death (Final UCOD) for each death and record it in the relevant MCCD forms and enter this Final UCOD into the NCOD system.

Validating the Final UCOD

The ICD coder supervisors must validate the Final UCOD identified by the central ICD mortality coders and confirm them in the NCOD system.

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	មូលហេតុនៃការស្លាប់	ចន្លោះពេល(ចាប់ពីពេលចាប់ផ្តើម រហូតដល់ពេលស្លាប់)	Coder		
១. រាយការណ៍អំពីជំងឺ ឬលក្ខខណ្ឌដែលបណ្តាលស្លាប់ដោយផ្ទាល់នៅក្នុងផ្លូវ ក	massive recurrent bleeding	1 day			
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🏠 ទម្រង់ ក៖ ទិន្នន័យវេជ្ជសាស្ត្រ៖ ផ្នែកទី១ និងផ្នែកទី២

🏠 ទម្រង់ ខ៖ ទិន្នន័យវេជ្ជសាស្ត្រដទៃទៀត

🏠 FUCOD

ICD10-FUCOD

Name FUCOD (English)

Name FUCOD (France)



← ទៅទំព័រដើម

📄 រក្សាទុក

Search ICD Code.....

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#	ICD10-FUCOD	Name FUCOD (English)	Name FUCOD (France)
1	A00	Cholera	Choléra
2	A00.0	Cholera due to Vibrio cholerae 01, biovar cholerae	En raison de Vibrio cholerae 01 choléra, biovar cholerae
3	A00.1	Cholera due to Vibrio cholerae 01, biovar eltor	En raison de Vibrio cholerae 01 choléra, biovar eltor
4	A00.9	Cholera, unspecified	Choléra, sans précision
5	A01	Typhoid and paratyphoid fevers	Les fièvres typhoïde et paratyphoïde
6	A01.0	Typhoid fever	La fièvre typhoïde
7	A01.00	Typhoid fever, unspecified	La fièvre typhoïde
8	A01.01	Typhoid meningitis	La méningite typhoïde
9	A01.02	Typhoid fever with heart involvement	La fièvre typhoïde avec une atteinte cardiaque
10	A01.03	Typhoid pneumonia	Pneumonie typhoïde

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Code	Name in English	Name in French
A00	Cholera	Choléra
A00.0	Cholera due to Vibrio cholerae 01, biovar cholerae	En raison de Vibrio cholerae 01 choléra, biovar cholerae
A00.1	Cholera due to Vibrio cholerae 01, biovar eltor	En raison de Vibrio cholerae 01 choléra, biovar eltor
A00.9	Cholera, unspecified	Choléra, sans précision
A01	Typhoid and paratyphoid fevers	Les fièvres typhoïde et paratyphoïde
A01.0	Typhoid fever	La fièvre typhoïde
A01.1	Paratyphoid fever A	La fièvre paratyphoïde A
A01.2	Paratyphoid fever B	La fièvre paratyphoïde B
A01.3	Paratyphoid fever C	La fièvre paratyphoïde B
A01.4	Paratyphoid fever, unspecified	La fièvre paratyphoïde, sans précision
A02	Other salmonella infections	Autres infections à Salmonella

12. Overall MCCD data flow

The Figure 1 illustrates the overall data flow or the business process map depicting the process of death notification, MCCD certification, administrative activities carried out by various staff positions, ICD mortality coding and validation of Final UCODs and sending the relevant data to the CR database.

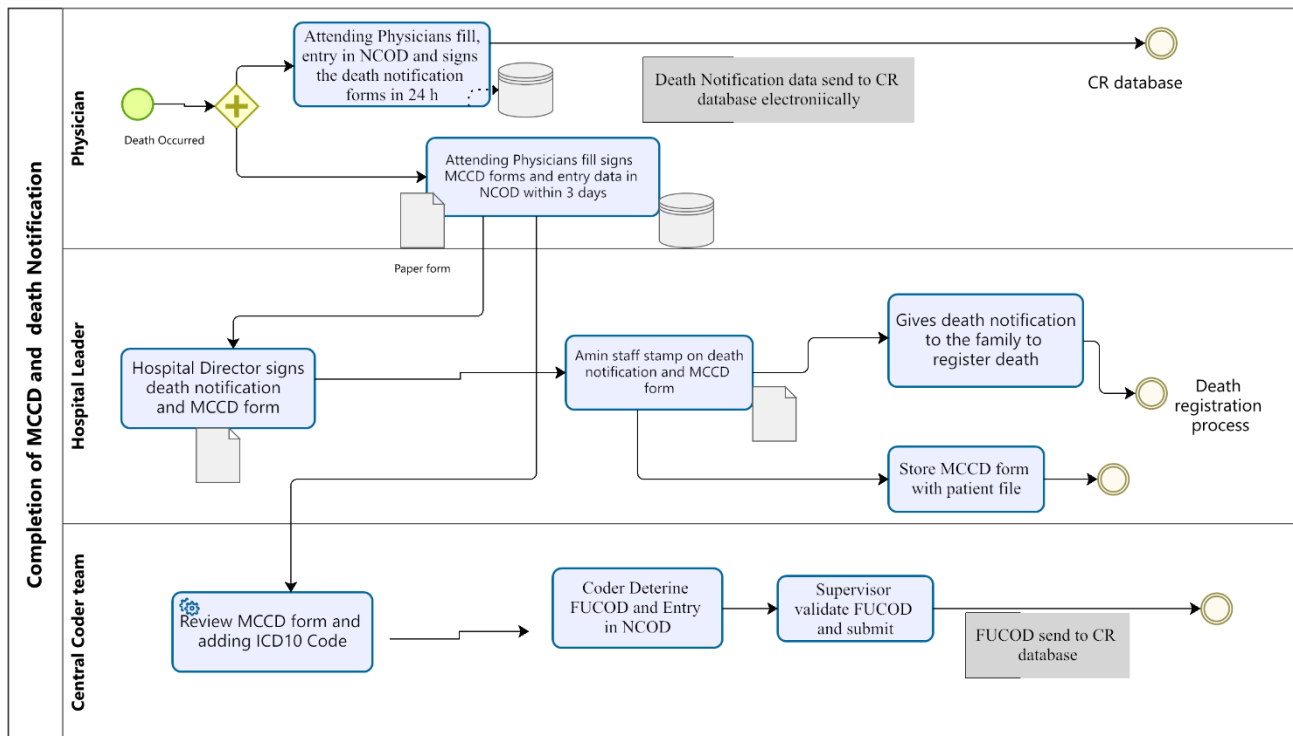


Figure 1: The overall business process map displaying the death notification, MCCD certification and ICD mortality coding process in Cambodia

13. SOP for Foetal Death




Most of the foetal deaths occur at health facilities. The relevant health facility must determine cause of death and complete the foetal death form (Annex 4), enter data into the NCOD system. When a staff member enters and submit the relevant data into the NCOD, the death notification will be transmitted to the NIS.

The DPHI/MOH, Cambodia is collecting 9 data fields for foetal death and transmitting them to the NIS. Those 9 data fields are:

- Date of occurrence (of foetal delivery)
- Place of Occurrence
- Sex of the foetus
- Gestational age of the foetus
- Cause of foetal death
- Date of birth of the mother
- Place of usual residence of mother
- Number of children born alive to the mother (by the time of reporting)
- Number of foetal deaths to the mother (by the time of reporting)

All health facilities must collect foetal death data and could enter this data directly into the NCOD system without the use of a physical foetal death form. Thereafter, the foetal MCCD form would be transmitted to the central ICD mortality coders electronically via the NCOD system and the central coder team would determine the Final UCOD for these foetal deaths by applying mortality coding rules.

Example of a completed MCCD form for a foetal death

Frame A: Medical data: Part 1 and 2				
1 Report disease or condition directly leading to death online a Report chain of events in due to order (if applicable) State the underlying cause on the lowest used line			Cause of death	Time interval from onset to death
		a	Still Birth	on delivery
		b	Maternal Diabetes affecting fetus and new born	
		c		
		d		
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)		Pregnancy (period of gestation 32 weeks)		

14. SOP for Audit, Supervision, Monitoring and Evaluation

In late 2020, The DPHI/MOH, commenced MCCD implementation in Cambodia. Table 1 shows the baseline information of target hospitals earmarked for MCCD implementation.

Baseline information of target hospitals	Number	%
No. of hospitals targeted	34	-
No. of hospitals completed the evaluation	9	26.5
No. of hospitals using standard MCCD form	6	66.7
No. of hospitals not using the standard MCCD form	3	33.3
No. of hospitals that sent MCCD forms for assessment	6	17.6
No. of MCCD evaluated (10 MCCD/facility)	60	17.6
Total No. of treating doctors employed (9 hospitals)	1485	-
No. of doctors trained in MCCD certification	308	20.7
No. of coders/doctors trained in “ICD”	17	-

Table 1: Baseline information of MCCD implementation in target hospitals in Cambodia

Only 9 (26.5%) hospitals out of 34 target hospitals participated for the assessment. Of these 9 hospitals six (66.7%) hospitals are using the standard WHO 2016 MCCD format. It was also noted that out of the 34 target hospitals only 6 (17.6%) hospitals responded and sent the relevant number of scanned copies of filled MCCD for the assessment. The number of doctors trained in MCCD certification in 9 hospitals stood at 308 (20.7%) (Table 2).

Error type (6 Hospitals, 10 forms/hospital)	(n= 60)	
	% Present	% Absent
Multiple causes of death per line	5.0	95.0
Missing time interval	65.5	34.5
Blank lines within sequence of events	0	100
Abbreviations used in certification	24.1	75.9
Illegible handwriting	5.5	94.5
Incorrect/clinically improbable chain of events leading to death	28.6	71.4
Ill-defined condition entered as UCOD	17.9	82.1
Correctly filled MCCD	16.7	83.3

Table 2: Pre-intervention quality of MCCD certification in target hospitals in Cambodia

According to the pre-intervention results the biggest error during MCCD certification was non-inclusion of the ‘time interval’ from an onset of a condition to death and as a percentage it was 65.5%. Other major errors that were committed by the treating doctors during certification included ‘Incorrect/clinically improbable chain of events leading to death’ 28.6%, ‘Use of abbreviations during certification’ 24.1% and ‘Ill-defined condition entered as UCOD’ 17.9%. Overall, the correctly filled MCCD percentage stood at 16.7% (Table 2).

In December 2022, Ministry of Health established a National Death Audit and Investigation Committee, and the directors of the Provincial Health Department (PHD) are members of this committee.

Death audit is an important part in improving quality of MCCD implementation and obtaining accurate Final UCOD for the deaths occurring in Cambodia. Accordingly, health facilities should establish internal death audit committees to perform the following tasks listed below:

- Monitoring process of death notification and MCCD implementation status in health facilities
- Perform data quality checks for MCCD certification to ensure good quality mortality data
- Perform death audits and check for certification errors in filled/completed MCCD forms
- Evaluate the accuracy of data in MCCD certification
- Provide feedback to the physicians on quality of MCCD certification

The MCCD certification audit comprise of two components, namely:

- Reviewing filled/completed MCCD forms using a checklist
- Audit of filled/completed MCCD forms by an audit committee on a monthly basis

Key indicators available to monitor the process of MCCD certification Several key indicators are available to monitor the process of MCCD certification and are listed below:

- Percentage of MCCDs issued as against the number of deaths in a particular health facility or region during a month.
- Percentage of MCCDs issued within the stipulated time (within 24hrs from the time of death) as against the total number of MCCDs issued in a particular health facility or region during a month.

- Percentage of correctly filled MCCDs issued within the stipulated time (within 24hrs from the time of death) from the total number of MCCDs issued within the stipulated time (within 24hrs from the time of death) during a month.
- Percentage of MCCDs with certification errors out of the total number of MCCDs issued during a month.
- Percentage of Physicians trained in accurate MCCD certification and death notification
- Number of live births notified
- Number of deaths notified
- Number of deaths with a completed MCCD form
- Number of deaths with a Final UCOD
- Number and percentage of Health Facilities (HFs) capable of reporting causes of death
- Percentage of reported deaths including the cause of death
- Percentage of reported deaths including a Final UCOD following mortality coding

MCCD certification errors

- Multiple causes of death per line
- Blank time interval between onset of a condition and death
- Keeping blank lines within the sequence of events
- Use of non-standard abbreviations
- Illegible hand writing of the certifier
- Recording incorrect or clinically improbable sequence of events leading to death
- Ill-defined condition entered as the underlying cause of death
- Recording of an impossible underlying cause of death (i.e. recording of signs and symptoms as underlying cause)
- Recording of modes of dying as cause(s) of death (e.g., respiratory arrest, cardiac arrest etc.)
- Presence of other/additional errors on the certificate (additional details missing for deaths from external causes, neoplasms, non-recording of units specified for the age etc.)
- Changes/alterations made by any means other than drawing a line through the original text (i.e., use of correction fluid)

15. Other guidance documents

The Department of Planning and Health information (DPHI) of the Ministry of Health (MOH) developed key guidance documents that are available for use and listed below:

- MCCD Curriculum for Cambodia 2022
- MCCD form completion - Instruction book 2022
- MOH Cambodia short guide on MCCD certification 2022
- Job Aid for Cambodian mortality coders 2023

List of Annexures

Annex 1- Live Birth Notification Form

Kingdom of Cambodia
Nation Religion King

LOGO

Health facility Name:

NOTICE OF BIRTH

TRACKING NO:.....

Issue no.: _____

Type of Health Facility:		Type of place of birth:		HF Code:																			
		<input type="checkbox"/> At Health facility <input type="checkbox"/> House <input type="checkbox"/> Other: Please specify: _____		<table border="1" style="width: 100%; height: 20px;"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																			
Baby name:																							
In Khmer: Surname _____		Given name _____		<input type="checkbox"/> No name yet																			
Sex:	Birthweight (grams):	Type of Birth	Date of Birth:	Time of birth (Use 24h time)																			
<input type="checkbox"/> Male <input type="checkbox"/> Female	<table border="1" style="width: 100%; height: 20px;"> <tr> <td></td><td></td><td></td><td></td><td></td> </tr> </table>						<input type="checkbox"/> Single <input type="checkbox"/> Twin <input type="checkbox"/> Triplet <input type="checkbox"/> Quadruplet <input type="checkbox"/> Other	<table border="1" style="width: 100%; height: 20px;"> <tr> <td>D</td><td>D</td><td>M</td><td>M</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td> </tr> </table>	D	D	M	M	Y	Y	Y	Y	<table border="1" style="width: 100%; height: 20px;"> <tr> <td>H</td><td>H</td><td>:</td><td>M</td><td>M</td> </tr> </table>		H	H	:	M	M
D	D	M	M	Y	Y	Y	Y																
H	H	:	M	M																			
Place of Birth (location of facility, house or other):			Attendant at delivery:																				
Commune/Sangkat: _____ Municipality/District/Khan: _____ Capital/Province: _____			<input type="checkbox"/> Surgeon <input type="checkbox"/> Doctor <input type="checkbox"/> Midwife <input type="checkbox"/> Traditional midwife <input type="checkbox"/> Other (specify): _____																				
Mother/Father information																							
Mothers Name:		Mother's Place of Usual Residence:		Number of children born alive to mother (to date):																			
In Khmer: Surname _____ Given name _____ Mother's Phone number: _____		Commune/Sangkat: _____; Krong/District/Khan: _____; Capital/Province: _____		<table border="1" style="width: 100%; height: 20px;"> <tr> <td></td><td></td> </tr> </table>																			
Father's Name:																							
In Khmer: Surname _____		Given name _____		Father's																			
phone number: _____																							

Wednesday, 13th day of wanning moon, lunar month of Mekasay, lunar year of Tiger, Jaktvasak, 2566 B.E

Phnom Penh, 21 December 2024

Signature _____ :

Seen & Approved

Head of health facility

Signature:

Annex 2-Death Notification form



**Kingdom of Cambodia
Nation Religion King**

Health facility Name: _____

NOTICE OF DEATH

Issue no.: _____

TRACKING NO:.....

Type of Facility: 	Type of place of death: <input type="checkbox"/> at Health facility <input type="checkbox"/> House <input type="checkbox"/> Other: Please specify: _____	Health Facility Code: <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> </tr> </table>													
Deceased's Name*: Surname: _____ Given name: _____ <small>*If deceased is newborn without name, write "baby of <mother's name>"</small>	Date of death: <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 15px; height: 15px; text-align: center;">D</td> <td style="width: 15px; height: 15px; text-align: center;">D</td> <td style="width: 15px; height: 15px; text-align: center;">M</td> <td style="width: 15px; height: 15px; text-align: center;">M</td> <td style="width: 15px; height: 15px; text-align: center;">Y</td> <td style="width: 15px; height: 15px; text-align: center;">Y</td> <td style="width: 15px; height: 15px; text-align: center;">Y</td> <td style="width: 15px; height: 15px; text-align: center;">Y</td> </tr> </table>	D	D	M	M	Y	Y	Y	Y	Time of death: Use 24h time <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 15px; height: 15px; text-align: center;">H</td> <td style="width: 15px; height: 15px; text-align: center;">H</td> <td style="width: 15px; height: 15px; text-align: center;">:</td> <td style="width: 15px; height: 15px; text-align: center;">M</td> <td style="width: 15px; height: 15px; text-align: center;">M</td> </tr> </table>	H	H	:	M	M
D	D	M	M	Y	Y	Y	Y								
H	H	:	M	M											
Date of birth: <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 15px; height: 15px; text-align: center;">D</td> <td style="width: 15px; height: 15px; text-align: center;">D</td> <td style="width: 15px; height: 15px; text-align: center;">M</td> <td style="width: 15px; height: 15px; text-align: center;">M</td> <td style="width: 15px; height: 15px; text-align: center;">Y</td> <td style="width: 15px; height: 15px; text-align: center;">Y</td> <td style="width: 15px; height: 15px; text-align: center;">Y</td> <td style="width: 15px; height: 15px; text-align: center;">Y</td> </tr> </table>	D	D	M	M	Y	Y	Y	Y	Or Age (if DOB unknown) <input checked="" type="checkbox"/><input checked="" type="checkbox"/><input checked="" type="checkbox"/> If less than 24 hours: <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> hours <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> minutes	Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	Type of Death: <input type="checkbox"/> Natural <input type="checkbox"/> Unnatural				
D	D	M	M	Y	Y	Y	Y								
Place of death (location of facility, house or other): Commune/Sangkat: _____ Municipality/District/Khan: _____ Capital/Province: _____	Deceased's Place of Usual Residence (or Place of residence of the mother for infant deaths): Commune/Sangkat: _____; Krong/District/Khan: _____ Capital/Province: _____														
Phone number of relative of deceased or other informant: _____															

Wednesday, 13th day of wanning moon, lunar month of Mekasay, lunar year of Tiger, Jaktvasak, 2566 B.E

Phnom Penh, 21 December 2024

Signature physician

:

Seen & Approved

Head of health facility

Signature:

Annex 5-International form of medical certificate of cause of death (WHO 2016)

<i>Administrative Data</i> (can be further specified by country)																	
Sex	<input type="checkbox"/> Female			<input type="checkbox"/> Male			<input type="checkbox"/> Unknown										
Date of birth	D	D	M	M	Y	Y	Y	Y	Date of death	D	D	M	M	Y	Y	Y	Y
<i>Frame A: Medical data: Part 1 and 2</i>																	
1 Report disease or condition directly leading to death on line a Report chain of events in due to order (if applicable) State the underlying cause on the lowest used line			Cause of death										Time interval from onset to death				
	a																
	b		Due to:														
	c		Due to:														
	d		Due to:														
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)																	
<i>Frame B: Other medical data</i>																	
Was surgery performed within the last 4 weeks?							<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Unknown						
If yes please specify date of surgery										D	D	M	M	Y	Y	Y	Y
If yes please specify reason for surgery (disease or condition)																	
Was an autopsy requested?							<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Unknown						
If yes were the findings used in the certification?							<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Unknown						
Manner of death:																	
<input type="checkbox"/> Disease			<input type="checkbox"/> Assault			<input type="checkbox"/> Could not be determined											
<input type="checkbox"/> Accident			<input type="checkbox"/> Legal intervention			<input type="checkbox"/> Pending investigation											
<input type="checkbox"/> Intentional self harm			<input type="checkbox"/> War			<input type="checkbox"/> Unknown											
If external cause or poisoning:							Date of injury		D	D	M	M	Y	Y	Y	Y	
Please describe how external cause occurred (If poisoning please specify poisoning agent)																	
Place of occurrence of the external cause:																	
<input type="checkbox"/> At home			<input type="checkbox"/> Residential institution			<input type="checkbox"/> School, other institution, public administrative area			<input type="checkbox"/> Sports and athletics area								

<input type="checkbox"/> Street and highway	<input type="checkbox"/> Trade and service area	<input type="checkbox"/> Industrial and construction area	<input type="checkbox"/> Farm
<input type="checkbox"/> Other place (please specify):			<input type="checkbox"/> Unknown
Fetal or infant Death			
Multiple pregnancy	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown
Stillborn?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown
If death within 24h specify number of hours survived		Birth weight (in grams)	
Number of completed weeks of pregnancy		Age of mother (years)	
If death was perinatal, please state conditions of mother that affected the fetus and newborn			
For women, was the deceased pregnant?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown
<input type="checkbox"/> At time of death	<input type="checkbox"/> Within 42 days before the death		
<input type="checkbox"/> Between 43 days up to 1 year before death	<input type="checkbox"/> Unknown		
Did the pregnancy contribute to the death?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown