Republic of Kenya

Ministry of Health

**STANDARD OPERATING PROCECURES IN HANDLING OF
HEALTH RECORDS AND INFORMATION MANAGEMENT
DURING THE COVID-19 PANDEMIC**

April 2020

FOREWORD

The Handling of Health Records and Information Management guidelines and protocols for SARS-CoV 2 and COVID-19 have been developed in response to the pandemic of Coronavirus Disease 2019 (COVID-19). COVID-19 is a serious respiratory viral infection caused by a novel corona virus recently named SARS-COV2. The virus was identified in Wuhan, a city in the Hubei province of China. It has since rapidly spread globally to more than 188 countries and resulted in over A total of 3 Million people tested positive for the COVID-19 infections with 210,000 deaths.   There has been an increase in the number of confirmed cases since the first case was reported in Kenya on 12th March 2020 to the current 374 cases as of 28th April 2020 with 14 deaths.

The Health Records and Information Management guidelines cover 4 Main considerations; General guidance; specific guidance; Medical Certification of Cause of Death (MCCD) for COVID-19; guidelines for death certification and coding and guidance on Coding COVID-19 For Mortality. The disease has been Assigned a special Code by World Health Organisation as a standard for statistics and Connective purposes. Considerable information has been extracted from various related international (World Health Organisation) documents and the linked with the available Kenya's documents.

I expect every Health Records and Information Management Practitioners, clinicians, Nurses and health care workers in general to adhere to these guidelines to aid them in provision of quality and accurate Health and Health related data, diagnosis and Medical Certification of Cause of Death with correct sequencing of the chain of events to have COVID-19 correctly coded and reported into the KHIS Tracker. The experience and knowledge management on COVID-19 should help us consider updating this guideline periodically.

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AG. DIRECTOR GENERAL MINISTRY OF HEALTH

ACKNOWLEDGEMENT

This guideline has been developed through the contribution of a group of experts from the Health Records and Information Management personnel from National, Counties and the Association of Medical Records Officers' Kenya (AMRO-K) who are committed to ensuring effective Health and Health related data for patients are well captured during this pandemic of COVID-19.

The Ministry of Health wishes to thank all the frontline Healthcare workers (Clinicians, Nurses, Laboratory Scientists, Public Health specialist, surveillance officers, Health Records and Information Managers, Research scientists just to mention a few) for documentation, Line listing and timely reporting of COVID-19 cases. Everyone is reminded that "**Everyone Counts**" and correct Health Information statistics is a valuable resource during this COVID-19 Pandemic that should not be lost.

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1. INTRODUCTION:

In January 2020 the World Health Organization (WHO) declared the outbreak of a new coronavirus disease in Hubei Province, China to be a Public Health Emergency of International Concern. WHO stated there is a high risk of the 2019 coronavirus disease (COVID-19) spreading to other countries around the world. Globally, a total of 3 Million people tested positive for the COVID-19 with 217,000 deaths by 31st April, 2020. WHO and public health authorities around the world are taking action to contain the COVID-19 outbreak. However, long term success cannot be taken for granted. All sections of our society have been called upon to play a vital role if we are to stop the spread of this pandemic.

The 2019 novel CoV (SARS-CoV-2) originated in Wuhan China and is currently causing outbreaks globally including Kenya. There has been an increase in the number of confirmed cases since the first case on 12th March 2020 to the current 374 cases as of 28th April 2020 with 14 deaths. The main drivers of the outbreak seem to be symptomatic and asymptomatic humans infected with SARS-CoV-2 from whom the virus can spread to others through respiratory droplets or direct contact with contaminated surfaces. The infective period is on average 14 days (2-21 days) (CDC, 2019).

 WHO has guided that under **Emergency use of ICD codes for COVID-19 Pandemic:**
a) Use an emergency ICD-10 code of **'U07.1** COVID-19, virus identified' is assigned to a disease diagnosis of COVID-19 confirmed by laboratory testing.
b) Use an emergency ICD-10 code of '**U07.2** COVID-19, virus not identified' is assigned to a clinical or epidemiological diagnosis of COVID-19 where laboratory confirmation is inconclusive or not available.
c) **U07.1 or U07.2** may be used for mortality coding as cause of death. See the International guidelines for certification and classification (coding) of COVID-19 as cause of death following the link below.
d) In ICD-11, the code for the confirmed diagnosis of COVID-19 is **RA01.0** and the code for the clinical diagnosis (suspected or probable) of COVID-19 is **RA01.1**.

2. GENERAL GUIDANCE

Health Records and Information Management Personnel MUST:

- Keep yourself safe and Stay informed about the local COVID-19 situation;
- Use provided protocols in Handling of clients, Patients Health Records and Information management;
- Treat clients/patients with respect, compassion and dignity;
- Maintain patient Medical Records and confidentiality of information in it;
- Protect, Maintain patient information with confidentiality;
- Rapidly use established public health reporting procedures of suspect and confirmed cases;
- Collect accurate public health information;
- Analyse and share disease trends with Management for decision making;
- Advise management if they are experiencing upsurge of certain diseases;
- Provide accurate infection prevention and control and public health information;
- Put on, use, take off and dispose of personal protective equipment properly;
- Self-monitor for signs of illness and self-isolate or report illness to managers, if it occurs;
- Advise management if they are experiencing signs of undue stress or mental health challenges that require support interventions;
- Report to their immediate supervisor/clinician any situation which they have reasonable justification to believe presents an imminent and serious danger to life or health;
- Make sure your workplaces are clean and hygienic by ensuring that work surfaces (e.g. desks and tables) and objects (e.g. telephones, keyboards) are wiped with disinfectant regularly;

- Regularly and thoroughly hand-wash with Soap and running water;
- All the time follow established occupational safety and health procedures, avoid exposing others to health and safety risks and participate in provided occupational safety and health training;
- Make sure that they know about healthcare and public health emergency planning and response activities in their workstations/area

3. SPECIFIC GUIDANCE

1.Registration Area requirements/ Clinic preparation areas
1. Organize the clinic clients by observing 1- 2meter social distance
2. Always during registration put on Face maskN95
3. Wear Hand gloves
4. Sanitize, Sanitize, sanitize
5. Red tape that separates registration desk and client
6. No physical contacts with clients
7. Avoid/ minimize use of papers that are used in between patients and providers
8. Decontaminate all surfaces that are in contact with patient/ patient belongings
9. Decontaminate computer key board, Mouse, Door handles and preparation tables, pens etc

2. Filing Area
1. Filing area should only be accessed by authorized Health Records and Information Officers (HRIO).
2. HRIO in filing area should have hand gloves,
3. Lab coats and hospital scrubs should be worn in filling areas
4. HRIOs should use 3 ply surgical face mask
5. HRIOs should sanitize and or hand wash with soap and water when entering and coming out of filling areas
6. Decontaminate any surfaces that are in contact with patient level documents
7. Use reminders such wash hands before entry, No Entry to unauthorized persons

3.Handling of Health Records
1. Clinicians should not handle any medical records when they are donned.
2. They should create a safe place for keeping patient's files away from the room where the clients are being seen;
3. HRIOs should use hand gloves
4. No patient chart/record is to be left in the patient's rooms
5. Clinical notes can be dictated to a HCW on the other side of the fence (demarcation between the clean and dirty area)
6. Ward rounds to be conducted by at least two HCWs, with one providing patient care, the other taking clinical notes without touching anything on the ward so that Health records will be considered uncontaminated and taken out without disinfection

7. Place documents in a container after the outbreak, leave them inside until the virus is considered unviable, or fumigate the container with formaldehyde

4. Handing of Computers/Equipment
1. Health care workers (HCWs) that utilize electronic systems are to ensure shared computer equipment are cleaned and disinfected.

2. Enter data or scan records into a laptop computer left inside, and transmit data via Internet, a cable, or a USB stick disinfected with chlorine to another computer outside the dirty area
3. Have a person entering the designated ward and photographing the clinical records without touching anything else and taking the camera out without disinfection
4. Enter data with a Personal Digital Assistant (PDA) kept inside a plastic cover, disinfect it with chlorine before taking it out, or transmit data via Bluetooth or email.

5. Make carbon copies or photocopies of the clinical records, wrap them in a plastic cover, disinfect the cover and take only the copies out
6. Print patient forms on transparencies, use a permanent marker to fill them out and spray them with chlorine
7. Use a voice recorder inside the ward and transfer the audio cassette or minidisc to the outside
8. Use a walkie-talkie or a cell phone to dictate clinical data to the outside
9. Transmit data with a fax machine inside connected via cable to another fax machine outside
10. Have a video camera pointing at the table where data are documented

5. Patient Education always
Extensive education on:
1. Handwashing
2. Sanitize
3. Maintaining social distance
4. Avoid handshaking
5. Use of masks at all times
6. Observe all the client rights

4. ABOUT HEALTH RECORDS AND INFORMATION MANAGEMENT

Health records serve important patient interests for present health care and future needs, as well as insurance, employment, and other purposes. In keeping with the professional responsibility to safeguard the confidentiality of patients, personal information, Clinicians have an ethical obligation and utmost responsibility to document accurately and comprehensively a Health record appropriately. This obligation encompasses not only managing the Health records of current patients, but also retaining old records against possible future need, and providing copies or transferring records to a third party as requested by the patient or the patient's authorized representative when the Clinician leaves a practice, sells his or her practice, retires, or dies.

To manage Health records responsibly, Clinician or the individual responsible for the practice of Maintaining Health Records and Information Management (Manager as defined the HRIM Act 2016/ Health Laws (Amendment) Act 2019 should:

a) Ensure that the practice or institution has and enforces clear policy prohibiting access to patients' Health/medical records by unauthorized persons.

b) Use medical considerations to keep up to date health records, retaining information that another clinician seeing the patient for the first time could reasonably be expected to need or want to know unless otherwise required by law.

c) Make the Health record available:

1. As requested, or authorized by the patient (or the patient's authorized representative)
2. To the succeeding clinician or other authorized person when the clinician discontinues his or her practice (whether through departure, sale of the practice, retirement, or death)
3. As otherwise required by law
   i. Never refuse to transfer the Health record on request by the patient or the patient's authorized representative, for any reason.
   ii. Appropriately store Health records not transferred to the patient's current Clinician.

5. PRIVACY, CONFIDENTIALITY HEALTH RECORDS

Protecting information gathered in association with the care of the patient is a core value in health care. Patient privacy encompasses a number of aspects, including personal space (physical privacy), personal data (informational privacy), personal choices including cultural and religious affiliations (decisional privacy), and personal relationships with family members and other intimates (associational privacy). Any Health records and patient's information should be kept under strict confidence at all times.

6. THE PURPOSES OF DEATH CERTIFICATION

Prompt and accurate certification of death is essential as it serves a number of functions. A medical certificate of cause of death (MCCD) enables the deceased's family to register the death. This provides a permanent legal record of the fact of death and enables the family to arrange disposal of the body in a safe and dignified burial of a patient who has died from suspected or confirmed COVID-19. Under Public Health Act Cap 242 under Kenya Subsidiary Legislation NO 39 LEGAL NOTICE NO. 46, 2020 the Act specifies ways for removal and disposal of bodies of all persons who die from COVID-19, While, Cap149 of the Laws of Kenya states that: -

(1) "for death occurring in Kenya of any person who has been attended during his last illness by a medical practitioner, that practitioner shall sign a Medical Certificate stating to the best of his knowledge and belief the cause of death".

(2) *Every such certificate of cause of death shall be forwarded forthwith by the Medical practitioner by whom it is signed to the Registrar, and the medical practitioner, on signing a certificate as aforesaid, shall give in the prescribed form to some person required by this Act to give information concerning the death notice in writing of the signing of the certificate.*

A doctor who attended the deceased during their last illness has a legal responsibility to complete a MCCD and arrange for dispatch to the relevant registrar as soon as possible to enable the registration to take place. By law no burial without burial permit. There is a **No** burial without permit in Kenya which states that; *No person shall bury, cremate or otherwise dispose of the body of any deceased person the registration of whose death is compulsory, without a permit issued in accordance with sections 19 and 20 of this the Births And Deaths Registration Act.* There is need for prompt in the filling of medical certification (Notification form) with cause of death as soon as the death occurred to allow issuing of burial permit before body disposal or cremation.

7. WHO SHOULD CERTIFY THE DEATH DURING COVID-19?

The attending clinician or doctor or pathologist can complete the MCCD. When it is impractical for the attending clinician or doctor or pathologies to do so, the hospital management may designate some staff to manage COVID-19 cases and therefore should be the one to ensure notification of cause of death (D1 form) is filled immediately death occurs.

REPUBLIC OF KENYA

FORM D1

THE BIRTHS AND DEATHS REGISTRATION ACT
(Cap. 149)

PERMIT FOR BURIAL

Serial No. DA 068977

IP Number ....

1. NAME OF DECEASED ....
First Name   Middle Name   Father's or husband's name

2. IDENTIFICATION /PASSPORT NUMBER.................................

4. SEX: Male ☐   Female ☐   5. AGE................. 6. DATE OF DEATH ....
Year s Month s Days   Day   Month   Year

9. USUAL RESIDENCE ....
Sub-location or estate and town.   District

After making due inquiry as to cause of the death of the above named deceased person. I hereby authorize the interment of the body.

18. DATE:................... 19. REGISTRATION ASSISTANT FOR: 20. SIGNATURE
Day   Month   Year
....

PERMIT ISSUED TO (NAME): .... ID No. .... SIGNATURE ....

- FORM D1 - - - - - -

REGISTER OF DEATH *(for use in health institutions and by Medical Practitioners)*

Serial No. DA 068977   IP Number ....

1. NAME OF DECEASED **SAMPLE**
First Name   Middle Name   Father's or husband's name

2. IDENTIFICATION /PASSPORT No. .... 3. NATIONALITY.................................

4. SEX: Male ☐   Female ☐   5. AGE................. 6. DATE OF DEATH.................................
Years months days   Day   Month   Year

7. MARITAL STATUS: (a) Married ☐   (b) Divorced ☐   (c)Single ☐   (d) Widowed ☐

8. PLACE OF DEATH:.................................
Health Institution/Sub-location or estate and town.   District

9. USUAL RESIDENCE.................................
Sub-location or estate and town   District

10. LEVEL OF EDUCATION .... 11. OCCUPATION ....

12. CAUSE OF DEATH (PRINT IN BLOCK LETTERS, DO NOT ABBREVIATE) ....

IMMEDIATE CAUSE: disease or condition directly leading to death (a)................

Due to

ANTECEDENT CAUSES: Morbid conditions, if any, which gave rise to immediate cause (a)

(b)................

Due to stating the underlying condition last

(c)................

OTHER SIGNIFICANT CONDITIONS: Contributing to death but not related to (a) ....

13. CERTIFICATE: I certify that:
(a)   I attended the deceased before death or
(b)   I examined the body after death; or
Tick as   (c)   I conducted a post-mortem examination of the body, and that the above information is correct to
Appropriate   the best of my knowledge.

14. NAME................................. 15. TITLE.................................

16. DATE................................. 17. SIGNATURE.................................

18. DATE................. 19. REGISTRATION ASSISTANT FOR: 20. SIGNATURE.................
Day   Month   Year   (Name of health institution)

21. DISTRICT................................. 22. REGISTRATION No.................

23. DATE................. 24. NAME................................. 25. SIGNATURE.................

(Left margin labels: MEDICAL CERTIFICATION, REGISTRATION ASSISTANT, REGISTRAR)

Figure 1: D1 Form

Note: *The first part is the* <u>burial permit</u> <u>which Must be</u> *issued/given to the Next of Kin of the deceased Free of charge to allow them transport, bury/ cremate the body*

The second part is the <u>Death register</u> *which* <u>Must be dully filled by the attending clinician or designate</u> *and the form should be dispatched by the* <u>Health Records and Information officer/ Manager</u> *to civil registration department*

DISCHARGE FORM MOH268

Health Facility Name:……………………………………………………………….... Number:………………

Rote for all Hospitals deaths

Nationality	☐ Kenyan		☐ Others Specify *Name of country if Known*		
Marital status	☐ Married	☐ Divorced	☐ Single	☐ Windowed	
Place of death	*Health institution /estate/town*		Sub-county Name		
Place of usual residence	*Village /estate/town*		Sub-County Name		
Level of Education		Occupation			

Frame A: Medical data: Part 1 and 2				

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		a	**Cause of death** (*PRINT IN BLOCK LETTERS ONLY NO ABBREVIATION*)	Time interval from onset to death
		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)	

This does not mean the mode of dying, e.g. Heart failure, asthenia, etc. it means the disease, injury, or complication which caused death.

Frame B: Other medical data				
Was **surgery** performed within the last 4 weeks?	☐ Yes	☐ No	☐ Unknown	
If yes please specify date of surgery		D D M M Y Y Y		
If yes please specify reason for surgery (disease or condition)				
Was an autopsy requested?	☐ Yes	☐ No	☐ Unknown	
If yes were the findings used in the certification?	☐ Yes	☐ No	☐ Unknown	

Manner of death:

☐ Disease ☐ Accident ☐ Assault ☐ Could not be determined ☐ Legal intervention ☐ Pending investigation ☐ Intentional self harm ☐ War ☐ Unknown

If external cause or poisoning:	Date of injury/poisoning	D D M M Y Y Y
Please describe how external cause occurred (If poisoning please specify poisoning agent)		

Place of occurrence of the external cause:

☐ At home	☐ Residential institution	☐ School, other institution, public administrative area	☐ Sports and athletics area
☐ Street and highway	☐ Trade and service area	☐ Industrial and construction area	☐ Farm
☐ Other place (please specify):			Unknown

Fetal or infant Death

Multiple pregnancy	☐ Yes	☐ No	☐ Unknown
Stillborn?	☐ Yes	☐ No	☐ 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?	☐ Yes	☐ No	☐ Unknown
☐ At time of death ☐ Within 42 days before the death ☐ Between 43 days up to 1 year before death ☐ Unknown			
Did the pregnancy contribute to the death?	☐ Yes	☐ No	☐ Unknown

D D M M Y Y Y Y   Signature: ……………………………

Figure 2: Discharge Summary for the diseased

Note: The above form should be completely filled by the *attending clinician or designate* like other discharge summary with case notes and Must be dispatched to the Health Records and Information officer/ Manager for, *data abstraction, coded and uploaded to KHIS Tracker*.

8. DEFINITION FOR DEATHS DUE TO COVID-19

Mortality data on cause of death is important in the surveillance of infectious diseases, as well as monitoring the effectiveness of immunization and other prevention programmes. If the patient's death involved a notifiable disease, you have a statutory duty to notify the proper officer for the area (administration, public Health officer), unless the case has already been notified.

Therefore, death due to COVID-19 is defined for surveillance purposes as a death resulting from a clinically compatible illness, in a probable or confirmed COVID-19 case, unless there is a clear alternative cause of death that cannot be related to COVID disease (e.g. trauma). There should be no period of complete recovery from COVID-19 between illness and death.

A death due to COVID-19 may not be attributed to another disease (e.g. cancer) and should be counted independently of pre-existing conditions that are suspected of triggering a severe course of COVID-19.

In deaths from infectious disease the attending clinician or designate, should state the manifestation or body site, e.g. pneumonia, pyelonephritis, hepatitis, meningitis, septicaemia, or wound infection. You should also specify, giving as much detail as is available:
- The infecting organism, e.g. pneumococcus, influenza A virus, meningococcus

- Antibiotic resistance, if relevant, e.g. methicillin resistant Staphylococcus aureus (MRSA), or multiple drug resistant mycobacterium tuberculosis

- The source and/or route of infection, if known, e.g. food poisoning, needle sharing, contaminated blood products, post-operative, community or hospital acquired, or health care associated infection.

9. GUIDELINES FOR CERTIFYING COVID-19 AS A CAUSE OF DEATH

In view of COVID-19 it is important to record and report deaths due to COVID-19 in a uniform way.

A- RECORDING COVID-19 ON THE MEDICAL CERTIFICATE OF CAUSE OF DEATH (Section 12 of D1 form)

COVID-19 should be recorded on the Medical Certificate of Cause of Death (MCCD) for **ALL** decedents where the disease caused, or is assumed to have caused, or contributed to death.

B- TERMINOLOGY

The use of official terminology, **COVID-19**, should be used for all certification of this cause of death.

As there are many types of coronaviruses, it is recommended **not to use** "coronavirus" in place of COVID-19. This helps to reduce uncertainty for the classification or coding and to correctly monitor these deaths.

C- CHAIN OF EVENTS

Specification of the causal sequence leading to death in Part 1 of the certificate is important. For example, in cases when COVID-19 causes pneumonia and fatal respiratory distress, both pneumonia and respiratory distress should be included, along with COVID-19, in Part 1. Certifiers should include as much detail as possible based on their knowledge of the case, as from medical records, or about laboratory testing.

Here, on the International Form of Medical Certificate of Cause of Death, is an example of how to certify this chain of events for deaths due to **COVID-19** in Part 1:

Frame A: Medical data: Part 1 and 2				
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	Acute respiratory distress syndrome	2 days
		b	Due to: Pneumonia	10 days
		c	Due to: COVID-19 (test positive)	14 days
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)		Underlying cause of death		
Manner of death:				
Disease		Assault	Could not be determined	
Accident		Legal intervention	Pending investigation	
Intentional self harm		War	Unknown	

Note: This is a typical course with a certificate that has been filled in correctly. Please remember to indicate whether the virus causing COVID-19 had been identified in the defunct.

12. CAUSE OF DEATH (PRINT IN BLOCK LETTERS, DO NOT ABBREVIATE) ....

IMMEDIATE CAUSE: disease or condition directly leading to death (a)................... Acute respiratory Distress Syndrome .

Due to

ANTECEDENT CAUSES: Morbid conditions, if any, which gave rise to immediate cause (a)
(b).......... Pneumonia ....

Due to stating the underlying condition last
(c)............ COVID-19 (Test Positive) ....

OTHER SIGNIFICANT CONDITIONS: Contributing to death but not related to (a) ....

Figure 3: Correct certification of COVID-19

D- COMORBIDITIES

There is increasing evidence that people with existing chronic conditions or compromised immune systems due to disability are at higher risk of death due to COVID-19. Chronic conditions may be non-communicable diseases such as coronary artery disease, chronic obstructive pulmonary disease (COPD), and diabetes or disabilities. If the decedent had existing chronic conditions, such as these, they should be reported in **Part 2** of the Medical Certificate of Cause of Death as other significant conditions contributing to death.

COVID-19 - GUIDELINES FOR DEATH CERTIFICATION AND CODING

Here, on the International Form of Medical Certificate of Cause of Death, are examples of how to certify this chain of events for deaths due to **COVID-19** in Part 1, with comorbidities reported in Part 2:

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
		a	Acute respiratory distress syndrome	2 days
Report chain of events in due to order (if applicable)		b	Due to: Pneumonia	10 days
State the underlying cause on the lowest used line		c	Due to: Suspected COVID-19	12 days
Underlying cause of death		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			**Coronary artery disease [5 years], Type 2 diabetes [14 Years], Chronic obstructive pulmonary disease [8 years]**	

Manner of death:					
▭	Disease	▭	Assault	▭	Could not be determined
▭	Accident	▭	Legal intervention	▭	Pending investigation
▭	Intentional self harm	▭	War	▭	Unknown

Note: This is a typical course with a certificate that is filled in correctly. COVID-19 cases may have comorbidity. **The comorbidity is recorded in Part 2.**

Kenya D1 form

12. CAUSE OF DEATH (PRINT IN BLOCK LETTERS, DO NOT ABBREVIATE) ....

IMMEDIATE CAUSE: disease or condition directly leading to death (a)................. Acute respiratory Distress Syndrome .

Due to

ANTECEDENT CAUSES: Morbid conditions, if any, which gave rise to immediate cause (a)   Pneumonia

(b)...

Due to stating the underlying condition last   COVID-19 (Test Positive)

(c)...

OTHER SIGNIFICANT CONDITIONS: Contributing to death but not related to   **Coronary artery disease [5 years], Type 2 diabetes [14 Years], Chronic obstructive pulmonary disease [8 years]**

Figure 4: Example 1 correctly filled in MCCD with chain of events

Frame A: Medical data: Part 1 and 2

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 Underlying cause of death			Cause of death	Time interval from onset to death
		a	Acute respiratory distress syndrome	2 days
		b	Due to: Pneumonia	10 days
		c	Due to: COVID-19	10 days
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			**Cerebral palsy [10 Years]**	

Note: This is a typical course with a certificate that has been filled in correctly. COVID-19 cases may have comorbidity. **The comorbidity is recorded in Part 2.**

Figure 5: Example 2 of correctly filled in MCCD with a chain of events

E- OTHER EXAMPLES

Frame A: Medical data: Part 1 and 2

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 Underlying cause of death			Cause of death	Time interval from onset to death
		a	Respiratory failure	2 days
		b	Due to: Pneumonia	8 days
		c	Due to: **Pregnancy complicated by COVID-19**	12 days
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)				

Manner of death:					
▬ Disease		▬ Assault		▬ Could not be determined	
▬ Accident		▬ Legal intervention		▬ Pending investigation	
▬ Intentional self-harm		▬ War		▬ Unknown	

For women, was the deceased pregnant?		▬ Yes	▬ No	▬ Unknown
▬ At time of death		▬ Within 42 days before the death		
▬ Between 43 days up to 1 year before death		▬ Unknown		
Did the pregnancy contribute to the death?		▬ Yes	▬ No	▬ Unknown

Note: This is a typical course with a certificate filled in correctly. In case of a pregnancy, puerperium or birth leading to death in conjunction with COVID-19, please record the sequence of events as usual, and remember to enter the additional detail for pregnancies in frame B of the certificate of cause of death.

Figure 6: Example 3 of correctly filled in MCCD with a chain of events

Frame A: **Medical data: Part 1 and 2**				
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	Acute respiratory distress syndrome	3 days
		b	Due to: COVID-19	One week
		c	Due to: Underlying cause of death	
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			**HIV disease [5 years]**	

Manner of death:					
▭	Disease	▭	Assault	▭	Could not be determined
▭	Accident	▭	Legal intervention	▭	Pending investigation
▭	Intentional self-harm	▭	War	▭	Unknown

Note: This is a typical course with a certificate that filled in correctly. The certifier has identified HIV disease as contributing to the death and recorded it in **Part 2**.

Figure 7: Example 4 of correctly filled in MCCD with a chain of events

The examples below show recording of cases where death may have been influenced by **COVID-19**, but death was caused by another disease or an accident.

Frame A: Medical data: Part 1 and 2				
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	Hypovoleamic shock	1 day
		b	Due to: Aortic dissection	1 day
		c	Due to: Motor vehicle accident	2 days
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			COVID-19	

Underlying cause of death

Manner of death:		
▭ Disease	▭ Assault	▭ Could not be determined
▭ Accident	▭ Legal intervention	▭ Pending investigation
▭ Intentional self harm	▭ War	▭ Unknown

NOT COVID-19 DEATH ⚠

Note: Persons with COVID-19 may die of other diseases or accidents, such cases are not deaths due to COVID-19 and should not be certified as such. In case you think that COVID-19 aggravated the consequences of the accident, you may report COVID-19 in Part 2. Please remember to indicate the manner of death and record in part 1 the exact kind of an incident or other external cause.

Figure 8: Example 5 of correctly filled in MCCD with a chain of events but not COVID-19 as underlying cause

Frame A: Medical data: Part 1 and 2				
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	Heart failure	1 day
		b	Due to: Myocardial infarction	5 days
		c	Due to:	
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			COVID-19	

Underlying cause of death

Manner of death:		
▭ Disease	▭ Assault	▭ Could not be determined
▭ Accident	▭ Legal intervention	▭ Pending investigation
Intentional self harm	War	Unknown

NOT COVID-19 DEATH ⚠

Note: Persons with COVID-19 may die due to other conditions such as myocardial infarction. Such cases are not deaths due to COVID-19 and should not be certified as such.

Figure 9: Example 6 of correctly filled in MCCD with a chain of events but not COVID-19 as underlying cause

10. THE PURPOSES OF DEATH CERTIFICATION IN CODING

Prompt and accurate certification of death is essential as it serves a number of functions. A medical certificate of cause of death (MCCD) enables the deceased's family to register the death. This provides a permanent legal record of the fact of death and enables the family to arrange disposal of the body in a safe and dignified burial of a patient who has died from suspected or confirmed COVID-19. Under Public Health Act Cap 242 under Kenya Subsidiary Legislation NO 39 LEGAL NOTICE NO. 46, 2020 the Act specifies ways for removal and disposal of bodies of all persons who die from COVID-19, While, Cap149 of the Laws of Kenya states that: -

(2) *"for death occurring in Kenya of any person who has been attended during his last illness by a medical practitioner, that practitioner shall sign a Medical Certificate stating to the best of his knowledge and belief the cause of death".*

(2) *Every such certificate of cause of death shall be forwarded forthwith by the Medical practitioner by whom it is signed to the Registrar, and the medical practitioner, on signing a certificate as aforesaid, shall give in the prescribed form to some person required by this Act to give information concerning the death notice in writing of the signing of the certificate.*

A doctor who attended the deceased during their last illness has a legal responsibility to complete a MCCD and arrange for dispatch to the relevant registrar as soon as possible to enable the registration to take place. By law no burial without burial permit. There is a **No** burial without permit in Kenya which states that; *No person shall bury, cremate or otherwise dispose of the body of any deceased person the registration of whose death is compulsory, without a permit issued in accordance with sections 19 and 20 of this the Births And Deaths Registration Act.* There is need for prompt in the filling of medical certification (Notification form) with cause death as soon as the death occurred to allow issuing of burial permit before body disposal or cremation.

11. Medical notification and case notes handling

Every institution requires to ensure very high standard of handling case notes and medical notification from COVID-19 Isolation wards.
- The department should have a designated table for handling the case notes and notification forms
- They should use protective gloves while handling Medical/Health records and reports
- The files and notification for COVID-19 should not be mixed with other Medical records for some time to a maximum of 20 days before movement to active filling areas
- Develop a mechanism of every day Coding all discharged files and entry into KHIS tracker to avoid accumulation.

Note: In hospitals with less than the recommended number of required (fewer) Health Records and Information personnel make arrangements with clinicians for all Outpatient clinics to run up to 12.30 pm. Then use 30 Minutes to arrange for next clinic for the following day. Then most of the Health Records and Information Personnel should use their time from 2.30 – 4.30 in discussing cases discharged, meet in the Health records Resource Library (filling) area or Health Records and Information Department to code files and entry into KHIS Tracker.

12. GUIDELINES FOR CODING COVID-19 FOR MORTALITY

This document provides information about the ICD-10 codes for COVID-19 and includes mortality classification (coding) instructions for statistical tabulation in the context of COVID-19. It includes a reference to the WHO case definitions for surveillance.

New ICD-10 codes for COVID-19:

- U07.1 COVID-19, virus identified

   https://icd.who.int/browse10/2019/en#/U07.1

- U07.2 COVID-19, virus not identified
   - Clinically-epidemiologically diagnosed COVID-19
     - Probable COVID-19
     - Suspected COVID-19

   https://icd.who.int/browse10/2019/en#/U07.2

Details of the updates to ICD-10 are available online at:

https://www.who.int/classifications/icd/icd10updates/en/

A- ICD-10 Cause of Death coding of COVID-19

Certifiers use a range of terms to describe COVID-19 as a cause of death, a sample can be found in the annex of this document.

Although both categories, U07.1 (COVID-19, virus identified) and U07.2 (COVID-19, virus not identified) are suitable for cause of death coding, it is recognized that in many countries detail as to the laboratory confirmation of COVID-19 will NOT be reported on the death certificate. In the absence of this detail, it is recommended, for mortality purposes only, to code COVID-19 provisionally to **U07.1** unless it is stated as "probable" or "suspected".

The international rules and guideline for selecting the underlying cause of death for statistical tabulation apply when COVID-19 is reported on a death certificate but, given the intense public health requirements for data, COVID-19 is not considered as due to, or as an obvious consequence of, anything else in analogy to the coding rules applied for **INFLUENZA.** Further to this, there is no provision in the classification to link COVID-19 to other causes or modify its coding in any way.

With reference to section 4.2.3 of volume 2 of ICD-10, the **purpose of mortality classification (coding) is to produce the most useful cause of death statistics possible.** Thus, whether a sequence is listed as 'rejected' or 'accepted' may reflect interests of importance for public health rather than what is acceptable from a purely medical point of view. Therefore, always apply these instructions, whether they can be considered medically correct or not. World Health Organisation has **provided that individual countries should not correct** what is assumed to be an error, since changes at the national level will lead to data that are less comparable to data from other countries, and thus less useful for

analysis.

A manual plausibility check is recommended for certificates where COVID-19 is reported, in particular for certificates where COVID-19 was reported but not selected as the underlying cause of death for statistical tabulation.

Note: Any Hospital that is identified as COVID-19 and Admitting health facility **MUST** have a Health Records and Information Personnel (Manager as defined in the Health Records and Information Managers Act 2016/ Health Laws (Amendment) Act 2019. This will ensure that the Health statistics collected will be accurately coded, classified according to international standards and entered into the KHIS Tracker.

B- CHAIN OF EVENTS

Here, on the International Form of Medical Certificate of Cause of Death, is an example of how to code this chain of events and select the underlying cause of death for deaths due to **COVID-19** in Part 1:

Figure 10: Example 7 of Correct coding for Medical Certificate of Cause of Death (MCCD) with a chain of events

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
		a	Acute respiratory distress syndrome	J80	2 days
Report chain of events in due to order (if applicable)		b	Due to: Pneumonia	J18.9	10 days
State the underlying cause on the lowest used line		c	Due to: COVID-19 (test positive)	U07.1	14 days
		d	Due to:		

Underlying cause of death

2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)

Manner of death:

▬ Disease	▬ Assault	▬ Could not be determined
▬ Accident	▬ Legal intervention	▬ Pending investigation
▬ Intentional self harm	▬ War	▬ Unknown

Note: Select COVID-19 as underlying cause of death. Step SP3 applies as causes have been reported on more than one line in Part 1 and the condition reported first on the lowest used line (COVID-19) can cause all the conditions, pneumonia (J18.9) and acute respiratory distress syndrome (J80), mentioned on the lines above. [See ICD-10 2016 and later, Volume 2, Section 4.2.1].

Remember that all assigned ICD-10 Codes as is above MUST be entered into the KHIS Tracker by the Health Records and Information Personnel (Manager).

C- COMORBIDITIES

Here, on the International Form of Medical Certificate of Cause of Death, are examples of how to code this chain of events and select the underlying cause of death for deaths due to **COVID-19** in Part 1, with comorbidities reported in Part 2:

Figure 11: Example 8 of Correct coding for Medical Certificate of Cause of Death (MCCD) with a chain of events

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
		a	Acute respiratory distress syndrome J80	2 days
Report chain of events in due to order (if applicable)		b	Due to: Pneumonia J18.9	10 days
State the underlying cause on the lowest used line		c	Due to: Suspected COVID-19 U07.2	12 days
Underlying cause death		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)		Coronary artery disease [5 years], Type 2 diabetes [14 Years], Chronic obstructive pulmonary disease [8 years] I25.1, E11.9, J44.9		

Manner of death:					
▭ Disease		▭ Assault		▭ Could not be determined	
▭ Accident		▭ Legal intervention		▭ Pending investigation	
▭ Intentional self harm		▭ War		▭ Unknown	

Note: Code all entries in Part 1 and 2, and in this example select COVID-19, specified as suspected (the case has virus not confirmed) as underlying cause of death. Step SP3 applies as causes have been reported on more than one line in Part 1 and the condition reported first on the lowest used line (COVID-19) can cause all the conditions, pneumonia (J18.9) and acute respiratory distress syndrome (J80), mentioned on the lines above. [See ICD-10 2016 and later, Volume 2, Section 4.2.1].

Figure 12: Example 9 of Correct coding for Medical Certificate of Cause of Death (MCCD) with a chain of events

Frame A: Medical data: Part 1 and 2

		Cause of death		Time interval from onset to death
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 Underlying cause of death	a	Acute respiratory distress syndrome	J80	2 days
	b	Due to: Pneumonia	J18.9	10 days
	c	Due to: COVID-19	U07.1	10 days
	d	Due to:		
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)		Cerebral palsy [10 Years]		G80.9

Manner of death:

Disease	Assault	Could not be determined
Accident	Legal intervention	Pending investigation
Intentional self harm	War	Unknown

Note: Code all entries in Part 1 and 2, and in this example select COVID-19 as underlying cause of death (the case probably has been tested positive). Step SP3 applies as causes have been reported on more than one line in Part 1 and the condition reported first on the lowest used line (COVID-19) can cause all the conditions, pneumonia (J18.9) and acute respiratory distress syndrome (J80), mentioned on the lines above. [See ICD-10 2016 and later, Volume 2, Section 4.2.1].

D- OTHER EXAMPLES

Figure 13: Example 104 of Correct coding for Medical Certificate of Cause of Death (MCCD) with a chain of events

Frame A: Medical data: Part 1 and 2

		Cause of death		Time interval from onset to death
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 Underlying Cause of death	a	Respiratory failure	*Code both, O99.5 and J96.9*	2 days
	b	Due to: Pneumonia	*Code both, O99.5 and J18.9*	8 days
	c	Due to: Pregnancy complicated by COVID-19	*Code both, O98.5 and U07.1*	12 days
	d	Due		
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)				

Manner of death:

Disease	Assault	Could not be determined
Accident	Legal intervention	Pending investigation
Intentional self-harm	War	Unknown

For women, was the deceased pregnant?		Yes	No	Unknown
At time of death		Within 42 days before the death		
Between 43 days up to 1 year before death		Unknown		
Did the pregnancy contribute to the death?		Yes	No	Unknown

Note: Code all entries in Part 1 and 2, and in this example select other viral diseases complicating pregnancy, childbirth and the puerperium (O98.5) as underlying cause of death. Step SP3 applies as

causes have been reported on more than one line in Part 1 and the condition reported first on the lowest used line (other viral diseases complicating pregnancy, childbirth and the puerperium) can cause all the conditions, pneumonia (O99.5 and J18.9) and acute respiratory distress syndrome (O99.5 and J80), mentioned on the lines above. [See ICD-10 2016 and later, Volume 2, Section 4.2.1]. Use additional code to retain COVID-19. [See ICD-10 2016 and later, Volume 2, Section 4.2.8 Special instructions on maternal mortality (Step M4)].

Figure 14: Example 11 of Correct coding for Medical Certificate of Cause of Death (MCCD) with a chain of events

Frame A: Medical data: Part 1 and 2				
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 of deaths on the lowest used line Underlying Cause of death			Cause of death	Time interval from onset to death
		a	Acute respiratory distress syndrome　　　　　J80	3 days
		b	Due to: COVID-19　　　　　　　　　　U07.1	One week
		c	Due to: HIV disease　　　　　　　　　B24	5 years
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			....	

Manner of death:		
▭ Disease	▭ Assault	▭ Could not be determined
▭ Accident	▭ Legal intervention	▭ Pending investigation
▭ Intentional self harm	▭ War	▭ Unknown

Note: The certifier should have added the HIV disease as a comorbidity in Part 2 of the certificate, however the selection rules of ICD allow to identify COVID-19 as underlying cause of death. (COVID-19) is reported in a sequence ending with a terminal condition (Acute respiratory distress syndrome due to COVID-19). Mortality coding rule step SP4 applies as causes have been reported on more than one line in Part 1 and the condition reported first on the lowest used line (HIV disease) cannot cause all the conditions. [See ICD-10 2016 and later, Volume 2, Section 4.2.1].

Figure 15: Example 12 of Correct coding for Medical Certificate of Cause of Death (MCCD) with a chain of events

Frame A: Medical data: Part 1 and 2				
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 Underlying cause of death			Cause of death	Time interval from onset to death
		a	Hypovolaemic shock T79.4	1 day
		b	Due to: Aortic dissection S25.0	1 day
		c	Due to: Motor vehicle accident V89.2	2 days
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			COVID-19 U07.1	
Manner of death:				
▭ Disease		▭ Assault		▭ Could not be determined
▭ Accident		▭ Legal intervention		▭ Pending investigation
▭ Intentional self harm		▭ War		▭ Unknown

Note: Code all entries in Part 1 and 2, and in this example select motor vehicle accident (V89.2) as underlying cause of death. Step SP3 applies as causes have been reported on more than one line in Part 1 and the condition reported first on the lowest used line, motor vehicle accident (V89.2), can cause all the conditions, traumatic aortic dissection (S25.0) and traumatic hypovolemic shock (T79.4), mentioned on the lines above. [See ICD-10 2016 and later, Volume 2, Section 4.2.1].

Figure 16: Example 13 of Correct coding for Medical Certificate of Cause of Death (MCCD) with a chain of events

Frame A: Medical data: Part 1 and 2				
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	Heart failure I50.9	1 day
		b	Due to: Myocardial infarction I21.9	5 days
		c	Due to:	
		d	Due to: Underlying cause of death	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)			COVID-19 U07.1	
Manner of death:				
☐ Disease		☐ Assault	☐ Could not be determined	
☐ Accident		☐ Legal intervention	☐ Pending investigation	
☐ Intentional self harm		☐ War	☐ Unknown	

NOT COVID-19 DEATH

Note: Code all entries in Part 1 and 2, and in this example select acute myocardial infarction (I21.9) as underlying cause of death. Step SP3 applies as causes have been reported on more than one line in Part 1 and the condition reported first on the lowest used line, myocardial infarction (I21.9), can cause the condition, heart failure (I50.9), mentioned on the line above. [See ICD-10 2016 and later, Volume 2, Section 4.2.1].

E- Additional WHO cause of death certification links

- How to fill in a death certificate: Interactive Self Learning Tool (WHO)

  http://apps.who.int/classifications/apps/icd/icd10training/ICD-10 DeathCertificate/html/index.html

- Cause of Death on the Death Certificate: Quick Reference Guide (Section 7.1.2)

  https://icd.who.int/browse10/Content/statichtml/ICD10Volume2_en_2016.pdf

- International form of medical certificate of cause of death (Section 7.1.1)

  https://icd.who.int/browse10/Content/statichtml/ICD10Volume2_en_2016.pdf

2. ANNEX

Examples of terms used by certifiers to describe COVID-19 and that can be coded as synonyms of COVID-19:

> COVID Positive
> Coronavirus Pneumonia
> COVID negative
> COVID-19 Infection
> Sars-Cov-2 Infection (Coronavirus Two Infection)
> COVID-19 Coronavirus
> Infection – COVID-19 (Coroner Informed)
> Hospital Acquired Pneumonia - COVID-Positive
> COVID-19 possible - tested negative
> Corona Virus two infection (SARS-Cov-2)
> Corona Virus Pneumonia (COVID-19)
> Coronavirus-Two Infection
> Novel coronavirus
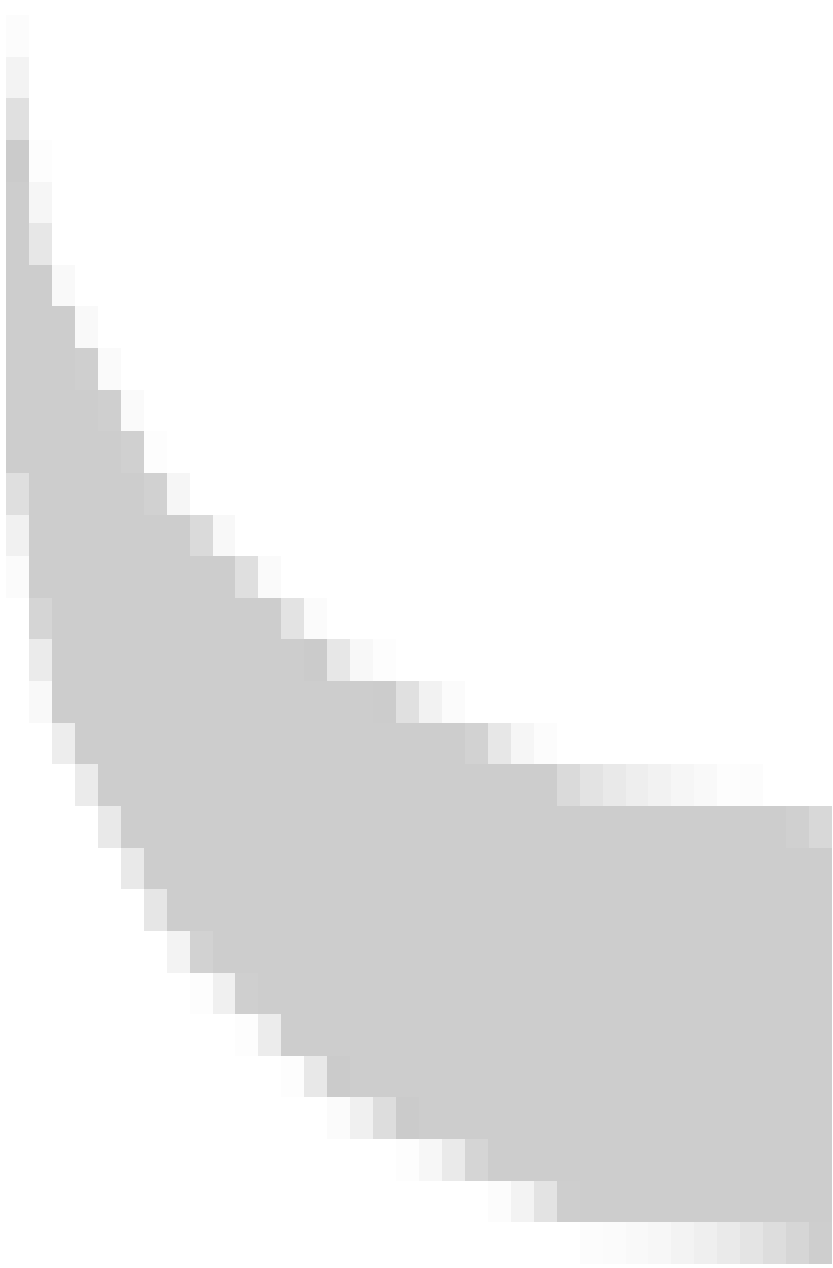
The above form be dispatch to civil registration department

DISCHARGE FORM MOH268

Health Facility Name:…………………………………………………………………. Number:…………………

rote

Nationality	☐ Kenyan		☐ Others Specify *Name of country if Known*	
Marital status	☐ Married	☐ Divorced	☐ Single	☐ Windowed

Place of death *Health institution /estate/town*	Sub-county Name
Place of usual residence *Village /estate/town*	Sub-County Name
Level of Education	Occupation

Frame A: Medical data: Part 1 and 2

1			Cause of death (*PRINT IN BLOCK LETTERS ONLY NO ABBREVIATION*)	Time interval from onset to death
Report disease or condition directly leading to death on line a		a		
Report chain of events in due to order (if applicable)		b	Due to:	
		c	Due to:	
State the underlying cause on the lowest used line		d	Due to:	

2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)	

*This does not mean the mode of dying, e.g. Heart failure, asthenia, etc. it means the disease, injury, or complication which caused death.

Frame B: Other medical data

Was **surgery** performed within the last 4 weeks?	☐ Yes	☐ No	☐ Unknown

If yes please specify date of surgery	D	D	M	M	Y	Y	Y

If yes please specify reason for surgery (disease or condition)	

Was an autopsy requested?	☐ Yes	☐ No	☐ Unknown
If yes were the findings used in the certification?	☐ Yes	☐ No	☐ Unknown

Manner of death:

☐ Disease ☐ Accident ☐ Assault ☐ Could not be determined ☐ Legal intervention ☐ Pending investigation ☐ Intentional self harm ☐ War ☐ Unknown

If external cause or poisoning:	Date of injury/poisoning	D	D	M	M	Y	Y	Y

Please describe how external cause occurred (If poisoning please specify poisoning agent)	

Place of occurrence of the external cause:

☐ At home	☐ Residential institution	☐ School, other institution, public administrative area	☐ Sports and athletics area
☐ Street and highway	☐ Trade and service area	☐ Industrial and construction area	☐ Farm
☐ Other place (please specify):			Unknown

Fetal or infant Death

Multiple pregnancy	☐ Yes	☐ No	☐ Unknown
Stillborn?	☐ Yes	☐ No	☐ 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?	☐ Yes	☐ No	☐ Unknown

☐ At time of death ☐ Within 42 days before the death ☐ Between 43 days up to 1 year before death ☐ Unknown

Did the pregnancy contribute to the death?	☐ Yes	☐ No	☐ Unknown

D	D	M	M	Y	Y	Y	Y

Signature: ……………………………

The above form should be filled like other discharge summary with case notes. Also, data abstracted coded and uploaded to KHIS Tracker.